

# University training and career opportunities





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*HSRC Guidance Series GS-5*

# University training and career opportunities

C.J.S. Coetzee  
Caroline Geggus

Revised edition

Pretoria  
Human Sciences Research Council  
1982

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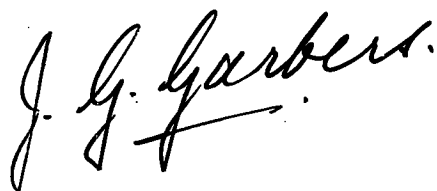
## PREFACE

This publication is a revised edition of *University training and career possibilities* which was published in 1979. Its purpose is to provide, especially to secondary school pupils, essential basic information on university study and possible careers. This publication, together with *Tertiary training outside universities and career opportunities (GS-4)* and *Training and career opportunities for school-leavers before Standard Ten (GS-3)* in the HSRC's Guidance Series, provides information on training and career opportunities over a very broad spectrum.

Information on training is based on the 1981 university calendars and concerns students from all the population groups. The attention of prospective students is especially drawn to the admission requirements of universities. It is essential that applications for admission to particular courses at particular universities be made in good time. It is also desirable and indeed good practice, to contact possible employers beforehand to determine the possibilities of a career in particular occupational fields.

Thanks are due to all bodies which co-operated willingly to provide information. Particular appreciation is expressed to the universities which made information and some of their own publications available; the Department of Manpower and the editorial staff of *My Career*, from which valuable information on career possibilities was obtained; the Commission for Administration for direct information as well as information gleaned from *Careers in Government Departments*, and other public and private bodies.

The HSRC trusts that schools, universities and other organisations and individuals concerned with the guidance of pupils and students will find this book a useful source of information.

A handwritten signature in black ink, appearing to read 'J. G. Garber', written in a cursive style.

PRESIDENT

*Nirgends ist Information wichtiger als im  
Erziehungs- und Bildungswesen. Nur wer  
informiert ist, kann richtige Entscheide  
fällen.*

A. Scherer. Schweizer Studienführer, Bern, Paul  
Haupt. 1977.

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## CHAPTER 1

### UNIVERSITY TRAINING

#### AIM OF UNIVERSITY TRAINING

Students in general and prospective university students in particular should be conversant with the nature and significance of university study. They should be aware of the difference between university training and other training at tertiary level. Unfortunately, it is not possible to present a detailed exposition at this stage. However, a few directives should suffice.

There are various training institutions at tertiary level such as the universities, the technikons, teachers' training colleges and others. All these institutions have a joint, non-competitive function, with the principal aim of training students to achieve their full potential. These institutions function in the entire field of tertiary education and each has a specific function to fulfil. The difference between the universities and the other tertiary education institutions is determined by the variation in functions which each fulfils in the sphere of tertiary education.

The point of departure is that it is not the function of a university to train someone for an occupation but to educate and form the candidate for the eventual pursuit of an occupation. The student is taught to think critically, to develop the ability to acquire new knowledge on his own initiative, to reveal qualities of leadership and to solve problems. The university is consequently not a vocational school. As against this, the technikons for instance, concentrate on developing an attitude and approach in the student that will primarily make of him a person fully able to apply his knowledge in practice. In this case, there is greater emphasis on the application of knowledge than on the knowledge itself.

Although universities are sympathetic towards the wishes of graduates and employers, namely that students should be trained more functionally for the pursuit of an occupation, such training would deviate from the nature, aim and function of the university.

In this regard, employers should be prepared to invest in the in-service training of their personnel in order to cultivate specific knowledge and skills for a particular professional function. As far as the universities are concerned, it will only be possible in the vocationally oriented fields of study to equip the student professionally to any great extent.

University study imposes stringent demands and students who are not willing or able to satisfy these demands, should not attend the university. For such persons there are other training institutions which offer different but by no means inferior training. For this reason, timely guidance and, in particular, knowledge of the inevitable interaction of occupation, field of study and training institution are essential.

Those who cannot or should not attend a university or do not wish to do so, can obtain full particulars on non-university tertiary training in the HSRC publication Tertiary training outside universities and career opportunities.

#### ADMISSION TO UNIVERSITY

##### The Joint Matriculation Board

Every education department has its own system of external or internal senior certificate examination, but admission to university is controlled by the Joint Matriculation Board (JMB). This statutory body was constituted to control and conduct the matriculation examinations of the universities in the RSA, and consists, inter alia, of representatives of the universities and the eight education departments.

A full and official statement of the matriculation requirements of the South African universities is contained in the Matriculation Examination Handbook published annually by the JMB (see list of addresses). It is important to note that the prescriptions in this Handbook are altered from time to time and even from year to year. However, in order to provide a guideline, particulars on the current position for 1981 are briefly discussed in this section.

The qualification for entrance to a course of study for a first degree at any university in South Africa is a Matriculation Certificate of the JMB, or a certificate of exemption issued by the Board. However, the various education departments conduct examinations for a senior certificate based on syllabuses approved by the Board. These examinations are recognised by the JMB for exemption from its own matriculation examination, subject to conditions prescribed by the Board.

A successful candidate at the matriculation examination of the JMB may be awarded either a School-leaving Certificate or a Matriculation Certificate, depending on the subjects passed, the standards attained in specific subjects and aggregate marks.

Likewise, candidates who wrote the senior certificate examinations of the various education departments (see Appendix II), may be awarded either a Senior Certificate or a Senior Certificate (Matriculation Exemption). The conditions for obtaining a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) are the same in both cases.

#### SUBJECTS

The groups of approved subjects for the Matriculation Certificate and the Senior Certificate (Matriculation Exemption) which differ from those for the School-leaving Certificate and the Senior Certificate, are as follows (H = Higher Grade; S = Standard Grade):

- A. Afrikaans First Language H; Afrikaans Second Language H; English First Language H; English Second Language H
- B. Mathematics H or S
- C. Biology H or S; Physical Science H or S
- D. Any Bantu language H selected from Kwanyama, Lozi, Ndonga, Northern Sotho, Southern Sotho, Tsonga, Tswana, Venda, Xhosa and Zulu; any Bantu Language S selected from Northern Sotho, Southern Sotho, Tsonga, Tswana, Venda, Xhosa and Zulu; French H; German H (Mother Tongue); German H (Third Language); Greek S; Hebrew H; Italian S; Latin H; Portuguese S; Spanish S
- E. Biblical Studies H or S; Economics H or S; Geography H or S (if not offered under Group F); History H or S
- F. Accountancy H or S; Additional Mathematics H (not to be taken without Mathematics H and only by candidates presenting 7 subjects); Agricultural Science H or S; +Art H or S; Business Economics S; Commercial Mathematics S (not to be offered with Mathematics H or S); Geography H or S (if not offered under Group E); Home Economics H or S; +Music H or S; Shorthand S; Snelskrif S; Speech and Drama S; \*Technical Drawing H or S; Typing S

+ May be presented as subjects from Group E up to and including the March 1982 examinations.

\* May only be offered at some of the examinations mentioned in appendices I and II.

#### Note: ADDITIONAL SUBJECTS

See APPENDIX I (p.263) for subjects not included in the Board's list of subjects for the Matriculation Certificate which are recognised for exemption purposes when passed at other examinations.

#### ISSUE OF MATRICULATION CERTIFICATE

A Matriculation Certificate shall be issued to a candidate who, at one and the same examination -

- a. offered not fewer than six and not more than seven subjects, selected from Groups A to F but including a subject from each of four different groups;

- b. passed (H = 40%; S and second language H = 33 1/3%) in at least five subjects;
- c. obtained the minimum aggregate of 950 marks (also see Appendix II, p.264);
- d. subject to provisos (iv) and (v) below, passed-
  - . in one official First Language H and
  - . in the other official First or Second Language H;
- e. included amongst the five subjects passed, at least one subject from each of four different groups or two subjects from Group C or Group E and one subject from each of two other groups;
- f. passed in at least three subjects H, of which, subject to provisos (iv) and (v), one shall be an official First Language H and the other two, subject to provisos (vi) - (ix), shall have been selected from two of Groups B, C, D, E and F;
- g. obtained at least 20% in the sixth subject and in a subject from the fourth group as required by sub-paragraph a., in cases where the subjects passed, cover three groups only.

Provided that -

- (i) in the case of candidates offering six subjects, not more than four languages shall have been offered and in the case of candidates offering seven subjects, not more than five languages shall have been offered;
- (ii) the same subjects shall not have been offered on both the Higher and the Standard Grade;
- (iii) as regards the groups -
  - (aa) Xhosa and Zulu; and
  - (bb) Northern Sotho, Southern Sotho and Tswana; not more than one language may be offered from the same group;
- (iv) only a candidate whose home language is a Bantu language may offer that Bantu Language H as a subject from Group A: Provided he also passes in one of the official languages from Group A: Provided further that such a candidate shall also offer the other official First Language H or Second Language H, but need not necessarily obtain a pass mark therein: Provided further that if a candidate passes in both official languages on at least Second Language H level and obtains at least 40% in at least one of them, the subject in which 40% has been obtained shall for purposes of paragraph f. be recognised as an approved Higher Grade subject from Group D: Provided further that a candidate who passes in both official languages may for the purposes of paragraph e. present any one of the subjects from Group A as a subject from Group D;
- (v) only a candidate whose home language is German, who is attending a school in South-West Africa and whose parents are or were domiciled in South-West Africa, may offer German H (Mother Tongue) as a subject from Group A, provided he also offers both Afrikaans and English, one of which shall be First Language H, and passes in both Afrikaans and English on at least Second Language H level: Provided further that such a candidate may offer any one of the official languages from Group A as a subject under Group D;
- (vi) any candidate offering Agricultural Science H, Accountancy H or Technical Drawing H for purposes of paragraph f., shall pass in Mathematics on at least Standard Grade;
- (vii) any candidate offering Home Economics H for purposes of paragraph f., shall pass in Mathematics or a natural science on at least Standard Grade;
- (viii) except as provided for by proviso (iv) in respect of candidates whose home language is a Bantu Language, Second Official Language H shall not be recognised as a Higher Grade subject for purposes of paragraph f.;

- (ix) Additional Mathematics H shall under no circumstances be recognised for purposes of paragraph f.; and
- (x) no subject listed under two groups (Geography, Music and Art) shall be recognised under more than one group for purposes of paragraphs a., e. and f.

#### Note

1. A series of prescriptions by the JMB makes provision, inter alia, for
  - completion of requirements for the Matriculation Certificate;
  - full exemption, partial exemption and conditional exemption from the Matriculation Certificate on grounds of other certificates obtained, mature age or medical or physical disability;
  - the completion of requirements of conditional exemption with a view to obtaining a Matriculation Certificate or a certificate of full exemption;
  - conversion of failures in subjects on the Higher Grade into passes in corresponding subjects on the Standard Grade and conversion of failures in official First Language H or German H (Mother Tongue) into passes in official Second Language H or German H (Third Language);
  - conversion of certificates of partial and conditional exemption into full exemption.
2. The Board has resolved that a candidate who presented the second official language S, and obtained at least 40 per cent therein and otherwise satisfied the requirements for the completion of a Matriculation Certificate, need not repeat the full examination but only official Second Language H and any other outstanding subject(s).
3. Although the Matriculation Certificate or a certificate of exemption is the normal requirement for admission to a degree course, certain subjects and pass marks are prescribed by the universities as prerequisites for enrolment in some departments or faculties. Such prerequisites, which are additional to the Board's requirements, are dealt with in Chapter 3 where the fields of study at the various universities are discussed, or may be obtained direct from the universities (see list of addresses).

#### CHOICE OF A FIELD OF STUDY

The choice of a field of study should be the result of the choice of an occupation and not the other way around. To pursue a university course without further ado in the hope that, on the basis thereof, it will lead to the pursuit of a vocation, may easily lead to disillusionment. Appropriate job opportunities often do not exist. The occupation should consequently determine the field of study and the field of study will, in its turn, determine the training institution.

The most important choice consequently centres in the occupation that will eventually be pursued. However, it often happens that a student makes a vocational choice, in spite of the fact that such a vocation does not represent his main interest, or that he selects a field in which he does not have sufficient aptitude. The subjects which will have to be taken are also not always taken into consideration. In most cases, the subjects are only names to him and the most useful subject combination is often totally ignored.

Persons who have pursued a vocationally oriented course usually do not have problems in obtaining a post in which their training can be utilised. It is mainly those persons with non-vocationally oriented training and particularly those with an ordinary B.A. degree without a professional qualification who have no specific labour market in which they can compete. Many students, even in the course of their university careers, have no certainty about the occupation they are going to pursue. Although there is no doubt concerning the formative value of university study, these students can experience problems in occupational life. They can find employment which is indirectly, vaguely or

in no way related to their study. Often such persons find themselves side by side with non-graduates in the same job situation.

There is no doubt about the momentous importance of a choice, as a career does not simply determine what a person is going to do one day, but also the kind of people he will have to work with, his home and place of work, his level of income, but especially whether lasting satisfaction from his career will be his share in life. Furthermore, in our age there is simply no time or place for failures. The price which must be paid for failure is much too high, since the person who does not equip himself for better things will have to be satisfied with an inferior position in the social and economic sphere. One important cause of failure is insufficient or even incorrect training.

Planning a career necessitates an evaluation of the individual's interest and capability, as well as the demands made by a particular career or occupational field and the field of study which will have to be taken. A large measure of interest in an occupational field, although important, is, however, not sufficient on its own to justify a choice of career. Aptitude and ability are also required. Naturally, the reverse is also true: a person may have all the necessary ability and aptitude for a certain profession, but may nevertheless not be interested in it. What is required, therefore, is a choice which will be marked by the highest correlation between aptitude and ability for a specific career on the one hand, and on the other hand interest in as well as a sound knowledge of the demands made by that career, job opportunities and the possibilities of promotion.

Apart from expert guidance which candidates should already receive at school, the Department of Manpower, by means of its Vocational Service Division, is prepared to assist any young person or adult in the choice of a suitable career or field of study. Where great uncertainty exists, psychological tests are applied to determine fields of interest and aptitude. Trained vocational advisers are stationed in all the larger centres in the country. In addition, the Department publishes a quarterly journal, My Career, which is supplied to schools free of charge and in which a large variety of careers are discussed and extensive knowledge of the professional world is supplied. Various other bodies provide information in connection with careers, but then only for their own purposes. The NIPR of the CSIR also undertakes testing and interviewing in cases where vocational guidance is required.

The tremendous service undertaken by universities in this field deserves special mention. In addition to brief orientation programmes at the beginning of each year by which beginners are introduced to various subjects and fields of study, the functioning of the university machine, etc., considerable amounts of guidance material on courses and careers are made available. Students and prospective students should therefore not hesitate to make use of these facilities. Although it can probably be expected of a prospective student to know upon enrolment which course he wants to take and which subjects he wants to choose, the student guidance bureau of a university is always prepared to render assistance. Attention is given to virtually all aspects of the newcomer's life at the university. First-year students will soon realise that a university is not merely an academic machine, but also an institution where he has the opportunity to develop into a mature, balanced and educated person during his formative years.

#### VOCATIONAL SERVICE

It will be noted that the sections on VOCATIONAL SERVICE in this book mainly provide guidance to students on planning for a career after they have obtained a first degree. However, it should be remembered that we are living in an age of specialization and that the Bachelor's degree, in most cases, merely paves the way towards an occupational field which can be followed after further training. Attention is thus constantly drawn to the necessity for post-graduate study and/or additional professional training. The highest qualification obtained or major subjects for a degree normally correlate with the occupation which will eventually be pursued but this by no means implies that the candidate, having obtained a degree or a diploma or even a degree and a diploma, can regard himself as fully qualified for a position. A person with Economics as a major subject for a degree, for instance, can in no way lay claim to being an economist in the full sense of the word, and Psychology as a major does not mean that such a person is a fully qualified psychologist. To become an economist or psychologist, for example, requires a great deal of experience and advanced post-graduate study. This is



also true of practically all other occupational fields, even those for which specifically defined courses are taken. The early stage of any career is merely a continuation of the person's training.

Students should ascertain, as far as possible, what the demand is for employees in particular occupational fields. It may happen that a number of persons obtain degrees with certain major subjects, while the occupational possibilities in these fields are slight. Candidates proceeding to a university are thus strongly recommended to keep themselves well-informed, not only of the fields of study which will suit them best, but also of those career fields which a particular field of study will possibly open up for them.

The primary aim with the book is to make available information on university training. The information on career opportunities, i.e. vocational service is additional and secondary and unfortunately cannot be discussed in detail. Since the book is not a commercial publication, not much room could be allowed for information on employers in the private sector. It must also be borne in mind that those who have completed their studies cannot automatically be assured of employment by employers mentioned in the vocational service.

### THE FINANCING OF STUDIES

The concept financing of studies implies the defraying of total expenditure in connection with the training of a student at a university, and it embraces much more than merely the amount of money which it will cost a student and the defrayal thereof. To obtain perspective in the matter, the cost of university training should be viewed from two sides at least, viz from the side of the university and secondly from the point of view of the student. With this approach the important question, for example, as to why class fees at a university are so high and why they are increased again and again, will be explained to some extent.

From the side of the university: Of the annual current expenditure of residential universities, approximately 12 per cent is contributed by the student himself, roughly 4 per cent by the university, assisted by the community, and approximately 84 per cent by the State, i.e. the taxpayer. This means that the State and the community pay about 88 per cent of the direct cost of training a student. Students therefore have no reason to complain about their share of current expenditure of universities. One has good reason for referring to people who call themselves students, but who neglect their work and make no progress in their studies, as "subsidized loafers" who "enjoy life" at university at the expense of others who do work.

To be a student, and this phase of life is not begrudged any true student, is therefore not only a great privilege, but also involves tremendous responsibility.

From the point of view of the student: It is practically impossible to give an exact indication of how much money per annum will be sufficient for the needs of each individual student. The amount is determined, inter alia, by the type of a course, the subjects which are studied, the student's personal needs, board and lodging in a hostel, etc. A university is not a school where all the groups of pupils attend the same classes. Students have a free choice of universities, fields of study and subjects. At some universities study, life in general and lodging are more expensive than at others; some courses are more expensive than others at the same university; sometimes fees for the first year differ from fees for the other years of study, and students differ from one another in what they consider essential for their personal needs. However, a prospective student can very easily work out a budget for his intended studies in co-operation with the university of his choice.

Sources of financial assistance: There is a country-wide need of high-level manpower and to provide for this need bursaries, loans, scholarships, etc. are offered to students by, for example, the Government, the provincial administrations, municipalities, large business concerns and the universities themselves. However, it should be remembered that financial aid is more readily available for students with a record of meritorious academic achievement at school and afterwards. The better the progress, the better the chances of awards. This does not mean, however, that only brilliant pupils and students are considered for bursaries. The average student with a fine record of progress can also depend on assistance.

- Bursaries and bursary loans: These two concepts are actually the same thing and amount to awards which are repayable not in cash, but in the form of service. (In exceptional cases no repayment need be made.) Bursaries are normally awarded on the strength of need and academic achievement. When there is a breach of contract, the bursary must be repaid in cash plus interest. Service normally means one year of service for each year for which the award is made.
- Study loans must, as the name implies, be repaid as soon as the student starts working. From that date onwards the interest is also brought into account.
- Scholarships, also called achievement bursaries, are awarded for academic achievement and are normally not repayable. Some universities also award prizes and medals for excellent work.

Information on bursaries and loans may be obtained from:

- Brochures on bursaries from the various universities, which are available on request.
- The publication of the Human Sciences Research Council: Financial assistance for undergraduate study in the RSA.

The book contains the most recent information as obtained from universities, bodies and organizations which make awards available, and information gained from press announcements and other sources.

- Many students provide for their financial needs through part-time work.

Remarks: A few general remarks which may contribute towards facilitating the financing of study, are the following:

- The better a student/pupil performs academically, the easier it is to obtain financial assistance.
- It is normally most difficult to obtain money from normal financing sources for the first year of study. After one year's study and proofs of ability and achievement, the chances of obtaining money improve. This means that a student will normally have to make his own provisions for the first year.
- Part-time study is naturally less expensive than full-time study and many students earn a reasonable amount of money by working part-time. However, it is recommended that priority should be given to study and that part-time work, for example, should not be undertaken during the second semester.
- Full-time holiday work is strongly recommended by universities.
- Short-sightedness, for example, by looking only for bursaries to which no service stipulation is attached, should be avoided.
- It is a good policy to consult possible employers, to whom a field of study may be applicable, directly about financial assistance.
- Collect all information concerning the cost aspect, so that financial assistance may be applied for in good time.

## RESEARCH

In this day and age, large-scale scientific research in nearly every conceivable field has become indispensable for every progressive country, not only for the expansion and enrichment of knowledge, but for effective planning in every sphere of the country's economy. South Africa is no exception and there are numerous research facilities and bodies which cover the broad field of activities involving the natural and human sciences.

Among the most important research bodies in the field of the natural sciences are

- various government departments and the four provincial administrations;
- statutory bodies such as the Council for Scientific and Industrial Research (CSIR), which controls various institutes and departments and subsidizes research at universities and other institutions, the Atomic Energy Board, the Fuel Research Institute of SA, the National Institute for Metallurgy, the National Parks Board of Trustees, the National Road Safety Council, the SABS, the SA Institute for Medical Research, the SA Medical Research Council (various institutes and units), the Water Research Commission;
- seventeen universities (the universities themselves or their research institutes and units, acting on their own initiative or in co-operation with other organizations);
- the various technikons;
- various museums, observatories, botanical and zoological gardens;
- public corporations including Escom, Fisheries Development Corporation of SA, Phoscor, Sasol, Iscor, Soecor, the SA Inventions Development Corporation and the Uranium Enrichment Corporation of SA;
- a number of industrial research institutes which are subsidized by the CSIR or the Government or which function independently, as well as about fifty industrial companies with separate research departments.

Research into the human sciences is undertaken by

- various government departments and the four provincial administrations;
- statutory bodies such as the Human Sciences Research Council (HSRC), which controls a number of research institutes and, in addition, subsidizes research by universities, other bodies and even private persons on an extensive scale; the Africa Institute of SA; the Productivity Advisory Council; the SA Reserve Bank; the IRS and NIPR of the CSIR;
- sixteen universities (the universities themselves or their research institutes and units, acting on their own initiative or in co-operation with other organizations);
- some municipalities.

Young graduates who strive for recognition for original contributions can make use of the opportunity to do research work on their own initiative under the guidance of experienced persons, some of whom are of international repute. There are numerous opportunities and virtually unlimited possibilities in the natural and human sciences. Well-equipped offices, laboratories and libraries, as well as modern equipment such as computers are at the disposal of researchers.

Experience in research work is of inestimable value in any walk of life and is often also a useful point of departure for a career in the Public Service, at a university, in industry or in the many sections of the private sector. The minimum educational requirement for young researchers is usually a Bachelor's degree but in some cases an Honours or Master's degree, depending on the field of research. Post-graduate study remains important and is often a prerequisite for promotion to a senior rank.

## CHAPTER 2

### UNIVERSITIES IN THE RSA

#### Afrikaans-medium universities

University of the Orange Free State  
Potchefstroom University for Christian Higher Education  
University of Pretoria  
Rand Afrikaans University  
University of Stellenbosch

#### English-medium universities

University of Cape Town  
University of Natal  
Rhodes University  
University of the Witwatersrand

#### Dual-medium university

University of Port Elizabeth

#### Both media

University of South Africa

#### Universities for

##### Blacks

University of Fort Hare  
The Medical University of Southern Africa - Medunsa  
University of the North  
University of Zululand

##### Coloureds

University of the Western Cape

##### Indians

University of Durban-Westville

#### FACULTIES AND DEPARTMENTS : 1981

### UNIVERSITY OF CAPE TOWN

#### FACULTY OF ARTS

African Languages; Afrikaans en Nederlands; Anthropology; Archaeology; Classics; Cultural History of Western Europe; Drama; Economic History; English Language and Literature; German Language and Literature; Hebrew Studies; History; School of Librarianship; Philosophy; Political Science; Religious Studies; Romance Studies; French Language and Literature, Italian Language and Literature; School of Economics.

#### FACULTY OF COMMERCE

Accounting; Business Science; Graduate School of Business.

#### FACULTY OF EDUCATION

## FACULTY OF ENGINEERING

Chemical Engineering; Civil Engineering (including Water Resources and Public Health Engineering); Electrical Engineering; Mechanical Engineering; Metallurgy and Materials Science; Surveying.

## FACULTY OF FINE ART AND ARCHITECTURE

School of Architecture; Building; Quantity Surveying; Urban and Regional Planning; Michaelis School of Fine Art.

## FACULTY OF LAW

Commercial Law; Public Law; Roman and Comparative Law; Roman-Dutch Law; South African Private Law.

## FACULTY OF MEDICINE

Anaesthetics; Anatomy; Bacteriology; Biomedical Engineering; Cardiac Surgery; Chemical Pathology; Clinical Science and Immunology; Community Health; Dermatology; Diagnostic Radiology; Forensic Medicine and Toxicology; Haematology; Infectious Diseases; Medical Biochemistry; Medical Physics; Medicine; Neurology; Neurosurgery; Nuclear Medicine; Obstetrics and Gynaecology; Ophthalmology; Orthopaedic Surgery; Otorhinolaryngology; Paediatrics and Child Health; Pathology; Pathological Laboratories; Pharmacology; Physical Medicine; Physiology; Plastic, Reconstructive and Maxillo-facial Surgery; Psychiatry; Radiotherapy; Surgery: General Surgery, Paediatric Surgery, Thoracic Surgery; Urology.

Paramedical Departments: Logopaedics; Occupational Therapy; Physiotherapy; Nursing Tuition.

## FACULTY OF MUSIC

College of Music; School of Ballet; School of Opera.

## FACULTY OF SCIENCE

School of Chemical Sciences: Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Science;

School of Earth Sciences: Geochemistry, Geography, Mineralogy and Geology;

School of Life Sciences: Biochemistry, Botany, Microbiology, Zoology;

School of Mathematical Sciences: Applied Mathematics, Computer Science, Mathematical Statistics, Mathematics;

School of Physical Sciences: Astronomy, Physics, Physical Oceanography.

## FACULTY OF SOCIAL SCIENCE

Applied Sociology in Social Work; Psychology; Public Administration; Sociology; School of Social Work.

## UNIVERSITY OF DURBAN - WESTVILLE

### FACULTY OF ARTS

Afrikaans and Nederlands; Anthropology; Arabic, Urdu and Persian; Classical Languages; Criminology; English; Fine Arts; French and German, Hindi and Telugu; History; History of Art; Islamic Studies; Library Science; Music; Oriental Studies; Philosophy and Political Science; Psychology; Sanskrit; Science of Religion; Social Work; Sociology; Speech and Drama; Zulu.

### FACULTY OF COMMERCE AND ADMINISTRATION

Accounting and Auditing; Business Administration; Business Economics; Economics; Industrial Psychology; Public Administration; Statistics.

## FACULTY OF EDUCATION

Empirical, Special and Remedial Education; History of Education, Comparative Education and Educational Administration; Philosophy and Sociology of Education; Physical Education.

## FACULTY OF ENGINEERING

Chemical Engineering; Civil Engineering; Electrical Engineering; Mechanical Engineering.

## FACULTY OF HEALTH SCIENCES

Anatomy; Dentistry; Dietetics; Logopedics; Medical Rehabilitation; Occupational Therapy; Optometry; Pharmacology; Pharmacy.

## FACULTY OF LAW

Mercantile Law; Private Law; Public Law.

## FACULTY OF SCIENCE

Biochemistry; Botany; Chemistry; Computer Science; Geography; Geology; Human Physiology and Physiological Chemistry; Mathematics and Applied Mathematics; Microbiology and Hygiene; Physics; Zoology.

## FACULTY OF THEOLOGY

## U N I V E R S I T Y O F F O R T H A R E

### FACULTY OF AGRICULTURE

Agricultural Economics; Agricultural Engineering; Agricultural Extension and Rural Development; Agronomy (Sub-departments: Crop Science, Pasture Science and Horticultural Science); Animal Science (Sub-departments: Anatomy and Physiology, Animal Health, Dairy Science and Technology, Poultry Science, Sheep and Wool Science); Genetics and Plant Protection; Soil Science.

### FACULTY OF ARTS

African Studies (Anthropology, Archaeology and Development Studies and Administration); Afrikaans-Nederlands; Classical Languages; Communication; English; Fine Arts; History; Library Science; Philosophy; Political Science and Public Administration; Psychology; Sociology and Criminology; Social Work; Xhosa and Sotho.

### FACULTY OF ECONOMIC SCIENCES

Accountancy; Business Economics and Co-operative Work; Economics; Industrial Psychology.

### FACULTY OF EDUCATION

Didactical and Comparative Education; Empirical Education and Orthopedagogics; Fundamental and Historical Pedagogics; Teaching Science; Music.

### FACULTY OF LAW

Constitutional and Public International Law; Criminal Law and Procedure; Mercantile Law; Private Law.

### FACULTY OF SCIENCE

Applied Computer Science; Applied Mathematics; Biochemistry; Botany; Chemistry; Geography; Geology; Land Surveying; Mathematics; Physics; Statistics; Zoology.

## FACULTY OF THEOLOGY

Ecclesiastical History and Missiology; New Testament Studies and Pastoral Theology; Old Testament Studies and Hebrew; Systematic Theology.

## THE MEDICAL UNIVERSITY OF SOUTHERN AFRICA - MEDUNSA

### FACULTY OF MEDICINE

Anaesthesiology; Anatomical Pathology; Anatomy; Cardiology; Chemical Pathology; Community Health; Dermatology; Diagnostic Radiology; Dietetics; Family Medicine; General Surgery; Haematological Pathology; Internal Medicine; Medical Physics; Microbiology; Neurosurgery; Obstetrics and Gynaecology; Occupational Therapy; Ophthalmology; Orthopaedics; Paediatrics and Child Health; Pharmacology and Therapeutics; Physiology; Physiotherapy; Psychiatry; Radiography; Urology.

### FACULTY OF DENTISTRY

Community Dentistry

### FACULTY OF VETERINARY SCIENCE

## UNIVERSITY OF NATAL

### FACULTY OF AGRICULTURE

Agricultural Economics; Agricultural Engineering; Animal Science and Poultry Science; Biochemistry; Crop Science; Dietetics and Home Economics; Entomology; Genetics; Horticultural Science; Microbiology and Plant Pathology; Pasture Science; Soil Science and Agrometeorology; Statistics and Biometry.

### FACULTY OF ARCHITECTURE AND ALLIED DISCIPLINES

Architecture; Building; Quantity Surveying; Town and Regional Planning.

### FACULTY OF ARTS

Afrikaans en Nederlands; Classics; Divinity; Economics; English; Fine Arts and History of Art; French; General Linguistics and Communication; German; Hebrew and Jewish Studies; Historical and Political Studies; History; Library Science; Music; Philosophy; Political Science; Speech and Drama; Zulu Language and Literature.

### FACULTY OF COMMERCE

Accountancy; Business Administration.

### FACULTY OF EDUCATION

Education; Educational Psychology.

### FACULTY OF ENGINEERING

Agricultural Engineering; Chemical Engineering; Civil Engineering; Electrical Engineering; Electronic Engineering; Mechanical Engineering; Surveying.

### FACULTY OF LAW

Adjectival and Clinical Law; Commercial Law; Private Law; Public Law.

## FACULTY OF MEDICINE

(This faculty caters for Non-White students only.)

Anaesthetics; Anatomical Pathology; Anatomy; Chemical Pathology; Community Health; Experimental and Clinical Pharmacology; Forensic Medicine; Gynaecology and Obstetrics; Haematology;  
Medicine: Cardiology, Dermatology, Physical Medicine;  
Microbiology; Neuro-Surgery; Ophthalmology; Orthopaedic Surgery; Otorhinolaryngology; Paediatrics and Child Health; Physiology; Psychiatry; Radiology; Radiotherapy and Oncology;  
Surgery: Maxillo Facial Surgery, Paediatric Surgery, Plastic and Reconstructive Surgery;  
Thoracic Surgery;  
Urology; Virology.

## FACULTY OF SCIENCE

Biochemistry; Biological Sciences; Botany; Chemistry and Chemical Technology; Computer Science; Entomology; Geography; Geology and Mineralogy; Mathematical Statistics; Mathematics and Applied Mathematics; Physics; Psychology; Statistics and Biometry; Zoology.

## FACULTY OF SOCIAL SCIENCE

African Studies: Social Anthropology, Comparative African Government; Geography; Nursing; University Diploma in Nursing Education; Psychology; Social Work; Sociology.

## U N I V E R S I T Y O F T H E N O R T H

### FACULTY OF ARTS

Afrikaans and Communication Media; Anthropology; Biblical Studies; Classical Languages; Economics; English; General Linguistics and General Literary Science; Geography; German; History; Library Science and Information Science; Northern Sotho; Philosophy; Political Science; Psychology; Social Work; Sociology and Criminology; Southern Sotho; Tsonga; Tswana; Venda.

### FACULTY OF ECONOMICS AND ADMINISTRATION

Accounting and Auditing; Agricultural Economics; Business Economics; Economics; Plant Production; Public Administration.

### FACULTY OF EDUCATION

Comparative Education; Didactics; Empirical Education; Fundamental Education; History of Education; Teaching Practice.

### FACULTY OF LAW

African Government and Law; Criminal and Procedural Law; International Law, Constitutional Law and Administrative Law; Legal Philosophy, Legal History and Comparative Law; Mercantile Law; Private Law.

### FACULTY OF MATHEMATICS AND NATURAL SCIENCES

Animal Production; Applied Mathematics; Botany; Chemistry; Computer Science; Geography; Geology; Mathematical Statistics; Mathematics; Medical Laboratory Sciences; Nursing; Optometry (Professional Section); Pharmaceutical Chemistry; Pharmaceutics; Pharmacology; Physics; Physiology; Psychology; Zoology and Biology.

### FACULTY OF THEOLOGY



# UNIVERSITY OF THE ORANGE FREE STATE

## FACULTY OF AGRICULTURE

Agricultural Economics; Agricultural Engineering; Agrometeorology; Agronomy/Horticulture; Animal Science/Animal Anatomy and Animal Physiology and Animal Diseases; Biometry; Dairy Science; Genetics; Pasture Science; Plant Pathology; Small Stock Science; Soil Science.

## FACULTY OF ARTS

Afrikaans and Nederlands; Anthropology and Applied Anthropology; Bantu Languages; Biblical Studies; Communication; Dramatic Art and Theatrical Art; English; French; General Linguistics; General Literary Science; Geography; German; Greek; History; History of Art and Fine Arts; Latin; Librarianship; Music; Philosophy; Physical Education; Political Science; Semitic Languages.

## FACULTY OF ECONOMIC AND ADMINISTRATIVE SCIENCES

Accounting, Cost Accounting, Auditing and Income Tax; Business Economics; Economics; State and Municipal Administration; Industrial Psychology; Subdepartment: Money and Banking; Transport Economics; Typing and Snelkskrif (Shorthand).

## FACULTY OF EDUCATION

Didactical Pedagogics; Educational Psychology; Historical and Comparative Education; Philosophy of Education and Andragogics.

## TEACHERS' COLLEGE

Afrikaans; Art; Education; Educational Psychology; English; General Science; Geography and History; Infant Teaching; Mathematics; Needlework; Physical Education; Religious Instruction; Singing and Music; Southern Sotho; Speech, Theatrical Art and Elocution; Teaching Aids; Woodwork.

## FACULTY OF LAW

Constitutional Law and Legal Philosophy; Criminal Law and International Law; Mercantile Law; Private Law; Procedural Law; Roman Law and Legal History.

## FACULTY OF MEDICINE

Anaesthetics; Anatomical Pathology; Anatomy; Biophysics; Cardio-Thoracic Surgery; Chemical Pathology; Community Health; Critical Care; Dermatology; Diagnostic Radiology; Family Doctor Practice; Forensic Medicine; Haematology; Hospital Dietetics; Internal Medicine; Microbiology (Medical); Neurology; Neurosurgery; Nuclear Medicine; Obstetrics and Gynaecology; Occupational Therapy; Oncotherapy; Ophthalmology; Orthopaedics; Otorhinolaryngology; Paediatrics and Child Health; Pharmacology; Physiology; Physiotherapy; Plastic Surgery; Psychiatry; Surgery; Subdepartment: Bio-engineering; Urology.

## FACULTY OF SCIENCE

Applied Mathematics; Architecture; Astronomy; Biochemistry; Botany; Chemistry; Computer Science/Business Data Processing; Geology, Geochemistry, Geohydrology and Hydrology; Home Economics; Mathematical Statistics and Statistics; Mathematics; Microbiology; Physics; Quantity Surveying/Building Administration; Town and Regional Planning; Zoology/Entomology.

## FACULTY OF SOCIAL SCIENCES

Criminology; Industrial Sociology; Nursing; Psychology; Social Work; Sociology.

#### FACULTY OF THEOLOGY

Diaconology; Dogmatology; Ecclesiology; Missiology; New Testament Exegesis and Theology; Old Testament Exegesis and Theology.

#### UNIVERSITY OF PORT ELIZABETH

#### FACULTY OF ARTS

Afrikaans/Nederlands; Anthropology; Biblical Studies; English; French; General Linguistics and Literary Theory; Geography; German; Greek; History; Latin; Music; Nguni and Sotho Languages; Nursing Science; Philosophy; Political Science; Psychology; Public Administration; Semitica; Social Work; Sociology.

#### FACULTY OF ECONOMIC SCIENCES

Accountancy; Architectural subjects; Building Management subjects; Business Economics; Economics and Economic History; Industrial and Organizational Psychology; Quantity Surveying subjects.

#### FACULTY OF EDUCATION

Didactical Pedagogics; Didactics of Tertiary Education; Fundamental Pedagogics; Inter-department of Pedagogics; Physical Education; Professional Training of Teachers; Psychological Pedagogics.

#### FACULTY OF LAW

Adjective Law; Mercantile Law; Private Law; Public Law.

#### FACULTY OF SCIENCE

Applied Mathematics; Biochemistry; Botany; Chemistry; Computer Science; Geology; Mathematics; Mathematical Statistics; Physics; Textile Science; Zoology.

#### POTCHEFSTROOM UNIVERSITY FOR CHRISTIAN HIGHER EDUCATION

#### FACULTY OF ARTS

Afrikaans-Nederlands; Anthropology; Bantu Languages; Biblical Studies; Communication and Journalism; Criminology; Development Administration; English; French and Italian; Fine Arts; General Linguistics and Literary Theory; Geography; German; Greek; History; History of Art; International Politics; Latin; Library and Information Science; Music; Nursing; Philosophy; Political Science; Psychology; Semitic Languages; Social Work; Sociology; Speech and Drama; Theory of Science; Town and Regional Planning.

#### FACULTY OF ECONOMIC SCIENCES

Accounting and Auditing; Business Administration; Business Economics; Cost Accounting; Economics (Economics, Economic History and Money and Banking); Industrial and Personnel Psychology; Industrial Sociology; Theory of Science.

#### FACULTY OF EDUCATION

Didactics and Tertiary Education; Empirical Education; Guidance and Special Education; Historical and Comparative Education; Physical Education; Teaching Practice; Theoretical Education; Theory of Science.

#### FACULTY OF LAW

Criminal Law; Mercantile Law; Philosophy of Law; Private Law; Procedural Law and Law of Evidence; Public Law; Roman Law.

## FACULTY OF SCIENCE

Biochemistry; Botany; Chemistry; Computer Science; Electrotechnics; Engineering Chemistry; Geography; Geology; Home Economics and Dietetics; Mathematics and Applied Mathematics; Microbiology and Hygiene; Natural Sciences - Course III; Pedology; Pharmaceutics and Pharmaceutical Chemistry; Pharmacology; Physics; Physiology; Psychology; Statistics and Operations Research; Technical subjects; Theory of Science; Zoology.

## FACULTY OF THEOLOGY

Apologetics, Ethics; Dogmatological subjects; Ecclesiastical Law, Ecclesiastical History; Missiology; New Testament subjects; Old Testament subjects; Official subjects.

## UNIVERSITY OF PRETORIA

### FACULTY OF AGRICULTURAL SCIENCES

Agrarian Extension; Agricultural Economics; Animal Production; Biochemistry; Food Science; Horticulture; Microbiology and Plant Pathology; Plant Production; Soil Science and Plant Nutrition.

### FACULTY OF ARTS

Afrikaans and Netherlands Cultural History; Afrikaans; Anthropology; Archaeology; Bantu Languages; Bantu Law; Criminology; Drama; Economics; English; Fine Arts; Geography; German; Greek; History; History of Art; Latin; Legal History, Comparative Law and Legal Philosophy; Library Science and Information Science; Mathematics; Music; Philosophy; Physical Education; Political Science, Public Administration and International Politics; Psychology; Romance Languages; Roman-Dutch and International Private Law; Semitic Languages; Social Work; Sociology; Speech Science, Logopedics and Audiology; Statistics.

### FACULTY OF DENTISTRY

Community Dentistry; Conservative Dentistry and Pedodontics; Endodontics and Occlusal Rehabilitation; Maxillo, Facial and Oral Surgery; Oral Pathology and Oral Medicine; Orthodontics; Prosthetics and Dental Techniques.

### FACULTY OF ECONOMIC AND POLITICAL SCIENCES

Accountancy and Auditing; Business Economics; Economics; Management; Mercantile and Labour Law; Political Science, Public Administration and International Politics; Statistics.

### FACULTY OF EDUCATION

Didactical Pedagogics and Subject Didactics; Fundamental Pedagogics; Historical and Comparative Pedagogics; Orthopedagogics; Physical Education; Psychological, Sociological and Vocational Orientation Pedagogics.

### FACULTY OF ENGINEERING

Agricultural Engineering; Chemical Engineering; Civil Engineering; Electrical Engineering; Electronic Engineering; Materials Science and Metallurgical Engineering; Mechanical Engineering; Mining Engineering; Production Engineering; Surveying and Town and Regional Planning.

### FACULTY OF LAW

Bantu Law; Constitutional, Administrative and International Law; Criminal Law; Legal History, Comparative Law and Legal Philosophy; Mercantile and Labour Law; Procedural Law and Law of Evidence; Roman-Dutch Law and International Private Law.

## FACULTY OF MATHEMATICS AND SCIENCE

Anatomy; Applied Mathematics; Architecture; Biochemistry; Botany; Building Management; Chemistry; Computer Science; Entomology; Geography; Genetics; Geology; Home Economics and Dietetics; Mathematics; Physics; Physiology; Quantity Surveying; Statistics; Zoology.

## FACULTY OF MEDICINE

Anaesthetics; Anatomical Pathology; Anatomy; Cancer Chemotherapy; Chemical Pathology; Family Doctor Practice; Forensic Medicine; Haematology; Internal Medicine; Medical Microbiology; Nursing; Obstetrics and Gynaecology; Ophthalmology; Orthopaedics; Otorhinolaryngology; Paediatrics; Pharmacology; Physiology; Preventive and Promotive Medicine; Psychiatry; Radiodiagnosis; Radiotherapy; Surgery.

## FACULTY OF THEOLOGY (DIVISION A)

Dutch Reformed Church of Africa (Nederduitsch Hervormde Kerk van Afrika): Dogmatics and Christian Ethics; Ecclesiastical History; New Testament Science; Old Testament Science; Practical Theology; Science of Religion and Science of Mission.

## FACULTY OF THEOLOGY (DIVISION B)

Dutch Reformed Church (Nederduitse Gereformeerde Kerk): Dogmatics and Christian Ethics; Ecclesiastical History; New Testament Exegesis and Theology; Old Testament Exegesis and Theology; Practical Theology; Science of Religion and Science of Mission.

## FACULTY OF VETERINARY SCIENCE

Anatomy; Contagious Diseases; Genesiology; Medicine; Parasitology; Pathology; Physiology, Pharmacology and Toxicology; Surgery; Zootechnology.

## R A N D A F R I K A A N S U N I V E R S I T Y

### FACULTY OF ARTS

Afrikaans-Nederlands; Anthropology; Bantu Languages; Biblical Studies; Classics; Communication; English; General Linguistics; Geography; German; History; History of Art; Indigenous Law and Development Administration; Library and Information Science; Philosophy; Political Science; Psychology; Romance Languages; Semitic Languages; Social Work; Sociology.

### FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

Accounting; Business Economics; Economics; Industrial Psychology; Statistics; Transport Economics.

### FACULTY OF EDUCATION

Education; Nursing.

### FACULTY OF LAW

Mercantile Law; Private Law; Public Law.

### FACULTY OF SCIENCE

Biochemistry; Botany; Chemistry; Computer Science; Experimental and Theoretical Physics; Geography; Geology; Laboratory for Electrical and Electronic Engineering; Laboratory for Mechanical and Civil Engineering; Mathematics; Statistics; Zoology.

# R H O D E S   U N I V E R S I T Y

## FACULTY OF ARTS

African Languages; Afrikaans en Nederlands; Anthropology; Classics; Economics and Economic History; English; Fine Art; French and Italian; Geography; German; History; Journalism; Librarianship; Linguistics and English Language; Music and Musicology; Philosophy; Physical Education; Political Studies; Psychology; Sociology; Speech and Drama.

## FACULTY OF COMMERCE

Accounting; Business Administration; Economics and Economic History.

## FACULTY OF DIVINITY

Divinity

## FACULTY OF EDUCATION

Education

## FACULTY OF LAW

Law

## FACULTY OF PHARMACY

School of Pharmaceutical Sciences

## FACULTY OF SCIENCE

Chemistry; Computer Science; Geography; Geology; Mathematical Statistics; Mathematics (Pure and Applied); Microbiology; Physics and Electronics; Plant Sciences; Psychology; Zoology and Entomology.

## FACULTY OF SOCIAL SCIENCE

Anthropology; Economics and Economic History; Political Studies; Social Work; Sociology.

# U N I V E R S I T Y   O F   S O U T H   A F R I C A

## FACULTY OF ARTS

African Languages; Afrikaans en Nederlands; Anthropology and Indigenous Law; Classics; Communication; Criminology; Development Administration and Politics; English; Geography; German; History; History of Art and Fine Arts; Library Science; Linguistics; Musicology; Nursing Science; Philosophy; Political Science and Public Administration; Psychology; Romance Languages; Russian; Semitics; Social Work; Sociology.

## FACULTY OF COMMERCE AND ADMINISTRATION

Accounting; Applied Accountancy; Auditing; Business Economics; Economics; Industrial Psychology; School for Business Leadership.

## FACULTY OF EDUCATION

Didactics and Comparative Education; Empirical Education; Fundamental Pedagogics; History of Education; Orthopedagogics.

## FACULTY OF LAW

Constitutional and International Law; Criminal and Procedural Law; Legal History, Comparative Law and Legal Philosophy; Mercantile Law; Private Law.

## FACULTY OF SCIENCE

Chemistry; Computer Science and Information Systems; Mathematics and Applied Mathematics; Physics; Statistics and Operational Research.

## FACULTY OF THEOLOGY

Church History, Missiology and Science of Religion; Old and New Testament; Systematic Theology, Theological Ethics and Practical Theology.

## UNIVERSITY OF STELLENBOSCH

### FACULTY OF AGRICULTURE

Agricultural Economics; Agronomy and Pasture Science; Animal Science; Biochemistry; Biometry; Enology; Entomology; Food Science; Genetics; Horticulture; Human and Animal Physiology; Microbiology and Virology; Plant Pathology; Poultry Science; Sheep and Wool Science; Soil Science and Agricultural Hydrology; Viticulture.

### FACULTY OF ARTS

African Studies; Afrikaans Cultural Science and Folklore; Afrikaans en Nederlands; Anthropology; Archaeology; Bantu Languages; Biblical Studies; Development Administration; Drama; English; Fine Art; French; General Linguistics; Geography; German; Greek; History; Italian; Journalism; Latin; Librarianship; Music; Philosophy; Political Philosophy; Psychology; Semitic Languages; Social Work; Sociology; Town and Regional Planning.

### FACULTY OF COMMERCE AND ADMINISTRATION

Accounting; Business Economics; Business Management and Administration; Economics; Industrial Psychology; Political Science and Public Administration; Shorthand and Typing; Statistics; Transport Economics.

### FACULTY OF DENTISTRY

Community Dentistry; Conservative Dentistry; Dental Prosthetics; Maxillo, Facial and Oral Surgery; Oral Biology; Oral Medicine and Periodontology; Oral Pathology; Orthodontics; Röntgenology.

### FACULTY OF EDUCATION

Afrikaans; Didactics; Educational Administration, Comparative Education and History of Education in South Africa; Educational Psychology; English; Fundamental Education and History of Education; Physical Education; School Art; School Music.

### FACULTY OF ENGINEERING

Applied Mathematics;  
Chemical and Metallurgical Engineering: Diffusion Technology; Hydrometallurgy;  
Civil Engineering: Geotechnics; Hydraulics and Oceanology; Structural Engineering; Transport and Project Development; Water Utilisation;  
Electrical and Electronic Engineering (including specialisation in the Electronic Marine option): Computer and Control Systems; Electrical Engineering; Electronics; Telecommunication;  
Mechanical and Industrial Engineering (including specialisations in Machine Construction; Aeronautical, Automobile, Marine and Refrigeration Engineering): Fluid Mechanics; Industrial Engineering; Mechanical Design; Mechanics; Thermodynamics.

### FACULTY OF FORESTRY

Nature Conservation; Silviculture; Wood Science.

## FACULTY OF LAW

Mercantile Law; Private Law and Roman Law; Public Law.

## FACULTY OF MEDICINE

Anaesthetics; Anatomical Pathology; Anatomy and Histology; Cardio-Thoracic Surgery; Chemical Pathology; Community Health; Dermatology; Forensic Medicine; Internal Medicine; Medical Microbiology; Medical Physiology and Biochemistry; Neurosurgery; Obstetrics and Gynaecology; Ophthalmology; Orthopaedics; Otorhinolaryngology; Paediatrics; Pharmacology; Plastic Surgery; Psychiatry; Radiodiagnosis; Radiotherapy; Surgery (general); Urology; Virology.  
Hospital Dietetics; Nursing; Occupational Therapy; Physiotherapy.  
Division: Medical Social Work.

## FACULTY OF MILITARY SCIENCE

Accounting (Mil.) and Auditing (Mil.); Aeronautics; Business Economics (Mil.); Chemistry (Mil.); Economics (Mil.); Mathematics (Mil.); Mercantile Law (Mil.) and Military Law; Military Geography; Military History; Naval Navigation; Physics (Mil.); Political Science (Mil.) and Public Administration (Mil.).

## FACULTY OF SCIENCE

Biochemistry; Botany; Chemistry; Computer Science; Geology; Home Economics; Human and Animal Physiology; Mathematics; Physics; Zoology.

## FACULTY OF THEOLOGY

Diaconological Subjects; Dogmatological Subjects; Ecclesiological Subjects; Missiology; New Testament Subjects; Old Testament Subjects.

## UNIVERSITY OF THE WESTERN CAPE

### FACULTY OF ARTS AND PHILOSOPHY

Afrikaans en Nederlands; Anthropology; Biblical Studies; English; French (incorporated in the Department of Latin); Geography; German; Hellenistic Greek; History; Human Ecology; Industrial Psychology; Latin; Library Science; Linguistics; Music; Nursing; Philosophy; Psychology; Semitics; Social Work; Sociology; Xhosa.

### FACULTY OF DENTISTRY

Anatomy; Community Dentistry; Conservative Dentistry; Dental Prosthetics; Dental Science; Medical Microbiology; Oral Medicine and Periodontics; Oral Surgery and Roentgenology; Pathological Anatomy and Oral Pathology; Physiological Sciences.

### FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

Accounting; Business Economics (includes Typing, Shorthand, Snelskrif); Economics; Industrial Psychology; Political Science; Public Administration; Statistics.

### FACULTY OF EDUCATION

Didactics and Administration; Empirical Pedagogy; Fundamental Pedagogy; Historical Pedagogy; Sociopedagogy.

## FACULTY OF LAW

Comparative Law and International Law; Mercantile Law; Private Law; Public Law.

## FACULTY OF SCIENCE

Applied Mathematics; Biochemistry; Botany; Chemistry; Computer Science; Geography; Geology (incorporated in the Department of Mathematics); Mathematics; Pharmaceutical Chemistry; Pharmaceutics; Pharmacology (includes Health Education); Physics; Statistics; Zoology.

## FACULTY OF THEOLOGY

Diaconology; Ecclesiastical History; New Testament; Old Testament; Missiology; Systematic Theology.

## UNIVERSITY OF THE WITWATERSRAND

### FACULTY OF ARCHITECTURE

Architecture; Building; Quantity Surveying; Town and Regional Planning.

### FACULTY OF ARTS

African Languages; Afrikaans en Nederlands; Applied Mathematics; Archaeology; Classics; Divinity; School of Dramatic Art; Economic History; Economics; English; Fine Arts; French; Geography and Environmental Studies; German Studies and Comparative Literature; Hebrew Studies; History; History of Art; International Relations; Italian; Librarianship and Information Science; Linguistics; Mathematics; School of Music; Philosophy; Political Studies; Portuguese; School of Psychology (Experimental Psychology, Applied Psychology, Industrial Psychology); Russian Studies; Social Anthropology; School of Social Work; Sociology; Speech Pathology and Audiology.

### FACULTY OF BUSINESS ADMINISTRATION

Graduate School of Business Administration.

### FACULTY OF COMMERCE

Accounting; Business Economics; Economic History; Economics.

### FACULTY OF DENTISTRY

Community Dentistry; Conservative Dentistry; Experimental Odontology; General Anatomy; General Physiology; Oral Medicine and Periodontology; Oral Pathology; Orthodontics; Prosthetic Dentistry; Surgery.

### FACULTY OF EDUCATION

Education.

### FACULTY OF ENGINEERING

Chemical Engineering; Civil Engineering; Electrical Engineering; Mechanical Engineering; Metallurgy; Mining Engineering; Surveying.

### FACULTY OF LAW

School of Law.

### FACULTY OF MEDICINE

Anaesthesia; Anatomy; Community Health; Experimental and Clinical Pharmacology; Forensic Medicine; Human Genetics; Medical Biochemistry; Medical Physics; Medicine; Nuclear Medicine; Nursing Education; Obstetrics and Gynaecology; Ophthalmology; Orthopaedic Surgery; Paediatrics; Pathology (Anatomical); Pathology (Haematological); Pathology (Immunological); Pathology (Microbiological); Pathology (Tropical); Pathology (Virology); Physiology; Psychiatry and Mental Hygiene; Radiology (Diagnostic); Radiology (Therapeutic); Surgery.



Sub-departments: Occupational Therapy; Physiotherapy.

FACULTY OF SCIENCE

Anatomy; Applied Mathematics; Archaeology; Biochemistry; Botany (includes the sub-department of Microbiology); Chemistry; General Anatomy; General Physiology; Genetics; Geography and Environmental Studies; Geology; Geophysics; Mathematics; Palaeontology; Physics; Physiology; Zoology.

U N I V E R S I T Y   O F   Z U L U L A N D

FACULTY OF ARTS

Afrikaans; Anthropology and Development Studies; Bantu Languages; Biblical Studies; Classics; Communication; Criminology; English; French; Geography; German; History; Library Science; Music; Nursing; Philosophy; Psychology; Sociology; Speech and Drama.

FACULTY OF ECONOMIC AND POLITICAL SCIENCES

Accounting and Auditing; Business Economics; Economics; Political Science and Public Administration; Industrial Psychology.

FACULTY OF EDUCATION

Didactics; Educational Planning and Administration; Educational Psychology; History of Education and Comparative Education; Philosophy of Education.

FACULTY OF LAW

Constitutional and Public International Law; Criminal and Procedural Law; Mercantile Law; Private Law; Zulu and Roman Law.

FACULTY OF SCIENCE

Applied Mathematics; Biochemistry; Botany; Chemistry; Geography; Geology; Mathematics; Physics; Zoology.

FACULTY OF THEOLOGY

Church History; Diaconology and Ecclesiastical Subjects; Dogmatics and Ethics; New Testament; Old Testament; Science of Mission and Science of Religion.

INSTITUTE FOR PUBLIC SERVICE AND VOCATIONAL TRAINING

Law; Organization and Method Study; Public Administration; State Finance and Auditing.

## CHAPTER 3

### FIELDS OF STUDY, QUALIFICATIONS AND VOCATIONAL SERVICE

Note: In this chapter all the degrees, diplomas and certificates are mentioned, but in most cases only the first degrees, diplomas and certificates are discussed.

The universities which offer the degree, diploma or certificate are given in brackets in alphabetical order.

Abbreviations used for the universities:

UCT	-	University of Cape Town
UDW	-	University of Durban-Westville
UFH	-	University of Fort Hare
MEDUNSA	-	Medical University of Southern Africa
UN	-	University of Natal
UNorth	-	University of the North
UOFS	-	University of the Orange Free State
UPE	-	University of Port Elizabeth
PU for CHE	-	Potchefstroom University for Christian Higher Education
UP	-	University of Pretoria
RAU	-	Rand Afrikaans University
RU	-	Rhodes University
UNISA	-	University of South Africa
US	-	University of Stellenbosch
UWC	-	University of the Western Cape
UW	-	University of the Witwatersrand
UZ	-	University of Zululand

#### POST-GRADUATE DEGREES

##### Honours degree

After obtaining a Bachelor's degree a student may be admitted to the degree of Bachelor with Honours after one year of full-time study or two years of part-time study in one of the major subjects taken for the Bachelor's degree.

The Honours examination consists of such written papers and such practical, oral and other tests as may be prescribed.

##### Master's degree

Normally, only students holding an Honours degree will be accepted as candidates for Master's degrees. Students holding a Bachelor's degree will be accepted only in exceptional cases.

In certain fields of study no Honours degree study is offered. Some universities may also regard some Bachelor's degrees as equivalent to an Honours degree.

A candidate for a Master's degree must be a registered student for at least one year, during which time he has to undertake advanced study, or an approved research project, or both, under the guidance of a supervisor or study leader appointed by the Senate of the university concerned.

The examination usually consists of a dissertation showing acquaintance with the methods of research, or of written papers, or both, as the Senate may prescribe. In some fields of study e.g. Fine Art, Architecture and Music, the rules for the Master's degree may provide for other forms of examination.

### Doctor's degrees

Doctor of Philosophy - Ph.D.: A candidate must be a graduate and be registered as a student for at least two years. He will be required, under the direction of a supervisor to pursue an approved course of special study or research on some subject falling within the scope of studies represented in the university. He must submit a thesis embodying the results of his special study or research. No thesis shall be accepted which does not make a distinct contribution to the knowledge or understanding of the subject and which does not afford evidence of originality shown either by the discovery of new facts or by the exercise of independent critical power.

Other Doctor's degrees: A candidate who holds a Master's or a Ph.D. degree is required to undertake advanced original research and must present for the approval of the Senate original work in an approved field. The work, which must have been published, must constitute a distinguished contribution to the advancement of knowledge in that field.

## F I E L D S   O F   S T U D Y

### ACCOUNTANCY/ACCOUNTING\*

Universities: All the universities except Medunsa

Note: To be able to qualify as a chartered accountant, a student must pass the final qualifying examinations set by the Public Accountants' and Auditors' Board, and serve the required period under Articles of Clerkship. The prescribed period of service is five years, but a two-year remission is given to graduates.

A candidate can take either one of the following degree courses or the Certificate in the Theory of Accountancy.

#### FIRST DEGREES

Bachelor of Commerce and Certificate in the Theory of Accountancy: B.Com., C.T.A. (UCT)

Admission requirements: As for the B.Com. degree. See p.85.

Curriculum: Three years of full-time study for the B.Com. degree and one additional year of full-time study for the C.T.A., after which the candidate has to serve articles of clerkship with an accountant. The C.T.A. may also be completed on a part-time basis while the candidate serves articles.

A candidate may also take the B.Com. (Hons.) degree in Accounting concurrently with the C.T.A. curriculum over a period of four years of full-time study and serve articles of clerkship thereafter.

Bachelor of Accountancy : B.Acc. (UDW)

Admission requirements: As for the B.Com. degree. See p.86. Graduates or non-graduates may receive exemptions in respect of not more than half the number of prescribed courses. However, if they have already obtained credits in respect of more than half the courses prescribed for the B.Acc.degree (i.e. if they hold B.Com. degrees) they must enrol for the Diploma in Accountancy (p.28).

Curriculum: Three years of full-time study followed by two years of part-time study or five years of part-time study. Final-year subjects are Accounting IV, Auditing IV and Management Accounting II.

\*See also COMMERCE p.85.

Bachelor of Accountancy: B.Acc. (UN: Pietermaritzburg)

Admission requirements: As for the B.Com. degree. See p.89.

Curriculum: Four years of full-time study or five years of part-time study. Final-year subjects are Accounting IV, Auditing II and Management Accounting.

Baccalaureus Rationis: B.R. (UNorth)

Admission requirements: As for the B.Com. degree. See p.90.

Curriculum: Four years of full-time study. A candidate has to obtain the B.R.Hons. degree which extends over one year of full-time study before he can qualify as a chartered accountant. The subjects for the Honours degree are Auditing, Financial Accounting, Income Tax, Management Accounting.

Baccalaureus Computationis: B.Compt. (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics SG.

Curriculum: Four years of full-time study. The curriculum comprises 30 semester courses. The major subjects are Accounting, Auditing and Mercantile Law.

Honneursbaccalaureus Computationis: B.Compt. Hons. (UOFS)

Admission requirements: A B.Compt. degree.

Curriculum: The one-year curriculum comprises Accounting, Income Tax, Auditing and an article which can be published.

Bachelor of Accountancy: B.Acc. (PU for CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG.

Curriculum: Three years of full-time study. The major subjects are Accounting, Auditing, Cost Accounting and Mercantile Law.

Honours Bachelor of Accountancy: Hons.B.Acc. (PU for CHE)

Admission requirements: A B.Acc. degree or other approved Bachelor's degree with credits for certain prescribed courses.

Curriculum: One year of full-time study or two years of part-time study. The major subjects are Accounting and Auditing. This degree grants admission to the qualifying examination of the Public Accountants' and Auditors' Board.

Bachelor of Accounting Science: B.Compt. (UNISA)

Admission requirements: As for the B.Com. degree. See p.98.

Curriculum: The curriculum extends over four years and consists of 16 courses. A student does not take more than five courses in one year. Fourth-year courses are Accounting IV, Income Tax, Auditing II.

Honours Bachelor of Accounting Science: Hons. B.Compt. (UNISA)

Admission requirements: The degree of B.Compt. or another degree with Accounting IV, Information Systems (or another approved course in information systems or data processing), Income Tax, Auditing II and Commercial Law III as subjects passed.

Curriculum: The one-year curriculum comprises the following five four-hour papers: Advanced Auditing, Public Audit Practice, Advanced Financial Accounting, Advanced Management Accounting, Advanced Income Tax.

A student who has completed this degree satisfies the requirements for the C.T.A.

Bachelor of Accounting: B.Accounting (US)

Admission requirements: As for the B.Comm. degree. See p.99.

Curriculum: Three years of full-time study or four years of part-time study. The third year subjects include Accounting, Auditing, Cost Accounting, Income Tax, Commercial Law (Commerce).

Honours Bachelor of Accounting: B.Accounting Hons. (US)

Admission requirements: A B.Accounting degree or other approved Bachelor's degree.

Curriculum: The courses for the degrees of B.Accounting Hons. and M.Accounting are only offered extramurally at Bellville. The B.Accounting Hons. degree grants admission to the qualifying examination of the Public Accountants' and Auditors' Board. The curriculum for the Honours degree extends over two years and comprises the following: The advanced aspects of Accounting, Auditing, Management Control and Company Law.

Bachelor of Accountancy: B.Acc. (UW)

Admission requirement: As for the B.Com. degree. See p.102.

Curriculum: At least five years of part-time study. The curriculum includes, inter alia, the following courses: Accounting IV, Auditing II, Commercial Law, Cost and Management Accounting, Income Tax.

This degree meets the requirements of the Public Accountants' and Auditors' Board.

At the University of Fort Hare and the Rand Afrikaans University a candidate may take the B.Com. (Accounting) degree and thereafter the B.Com. (Hons.) degree in Accounting as a part-time student.

Note: Accounting is also offered as an option for the B.Com. degree by most of the universities. See COMMERCE, p.85.

#### POST-GRADUATE DEGREES

Bachelor of Commerce (Honours): B.Com.(Hons.) (UCT)  
Baccalaureus Rationis cum Honoribus: B.R.Hons. (UNorth)

Master of Commerce: M.Com. (UCT)  
Master of Accountancy: M.Acc. (UN)  
Magister Computationis: M.Compt. (UOFS)  
Master of Accounting Science: M.Compt. (UNISA)  
Master of Accounting: M. Accounting (US)

Doctor of Philosophy: Ph.D. (UCT,UN,UW)  
Doctor Computationis: D.Compt. (UOFS)  
Doctor of Accounting Science: D.Compt. (UNISA)  
Doctor of Accounting: D.Accounting (US)

#### CERTIFICATE AND DIPLOMAS

Certificate in the Theory of Accountancy: C.T.A.

#### Cape Town

Admission requirements: As for the B.Com. degree. (See p.85.) No person shall be registered as a candidate for the Certificate unless he has produced evidence that he has either served or is serving or is about to serve under articles registered with the Public Accountants' and Auditors' Board.

Curriculum: Four years of part-time study. The Senate may exempt a candidate from such course or courses on the ground of credits obtained in equivalent courses while registered for a degree, or a diploma or a certificate. A student must complete the following final-year courses: Accounting C, Auditing B, Taxation and Estate Duty II and Costing (Management Accounting) II.

### Orange Free State

After passing the prescribed examinations for the B.Compt.Hons. degree, students may apply for the award of the C.T.A. in order to register for the professional examinations.

### Port Elizabeth

Admission requirements: A B.Com.(Accountancy) degree or any other approved Bachelor's degree provided that the Senate may in such a case prescribe a special curriculum.

Curriculum: To obtain the Certificate, Accounting 4, Auditing 4, Cost and Management Accounting 4 and Income Tax 4 must be completed in not more than two consecutive years of study: provided that Accounting 4 and Auditing 4 must be completed in the final year of study.

### Pretoria

The Certificate in the Theory of Accountancy will only be awarded to graduates who have passed the following courses at the University of Pretoria:

- Accounting I, II, III and IV
- Auditing I, II and III
- Cost Accounting and Control and Management Accounting
- Income Tax and Income Tax II
- Administration of Estates
- Commercial Law I and II
- Statistics I
- Business Economics I and II and Economics I or in any other course or courses which cover the same subject field, but not being of a lower standard
  
- Accountant's Practice
- Orientation course, computer or Informatics.

Where applicable courses taken for the B.Com. (Hons.) (Accountancy) degree, will be recognised for the C.T.A.

### Rhodes

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics.

Curriculum: Four years of full-time study. The curriculum consists of 12 courses and a candidate must obtain credit in all the courses. The following courses are included in the curriculum: Accounting III, Auditing I, Cost and Management Accounting, Estates and Taxation, Mercantile Law II, an approved course in Business Data Processing; Business Mathematics and Statistics; English or Afrikaans; an approved course in Economics. Papers 1 to 4 of the Honours course are prescribed for the fourth year of study.

### Western Cape

Admission requirements: This Certificate may only be taken by articled clerks or persons who have completed their articles.

Curriculum: Five years. The principal subjects are Accounting IV, Auditing III, Cost and Management Accounting II, Income Tax, Mercantile Law II.

A student shall be granted credits for all the prescribed subjects of the C.T.A. which he has already passed as part of the B.Com. degree at this University.

Advanced Diploma in Management Accounting: Adv. Dip. Mgt. A. (UCT)

Admission requirements: A person who holds a degree or an approved professional qualification and/or several years of approved business experience.

Curriculum: One year of full-time study or not less than three semesters of part-time study. The Advanced Diploma examinations comprise formal written examinations. In addition a technical report may be required. A candidate who has not been successful in the examination will not be permitted to present himself for a second time.

Diploma in Accountancy (UDW)

Admission requirements: As for the B.Acc. degree. See p.24.

Curriculum: As for the B.Acc. degree.

Diploma in Accountancy: Dip.Acc. (UN)

Admission requirements: A graduate who has obtained credit for ten courses (Durban) or twelve courses (Pietermaritzburg) prescribed for the B.Com. degree.

Curriculum: One year of part-time or full-time study. A candidate who is taking the Diploma course in Durban must complete Advanced Auditing, Advanced Accounting I and Advanced Accounting II. A candidate who is taking the course in Pietermaritzburg must complete Accounting IV, Auditing II and Management Accounting or Law of Taxation.

A candidate may be permitted to present himself for a supplementary examination in those courses in which he failed at the previous examination.

Higher Diploma in Accountancy: H.Dip.Acc. (UW)

Admission requirements: A graduate who has been exempted from ten or more of the courses prescribed for the degree of B.Acc.

Curriculum: One year of full-time study or two years of part-time study. The student must obtain credit in the following courses: Accounting IV; Auditing II; Cost and Management Accounting; Taxation, Planning and Administration of Estates and Trusts; and one of the following: Business Data Processing I, Business Finance, Commercial Law.

Diploma in Theory of Accountancy: D.T.A. (UZ)

The D.T.A. may be issued to a student who has completed the degree of Hons.B.Com.(Accounting and Auditing) and who is registered as an articled clerk with the Public Accountants' and Auditors' Board or has completed his articled clerkship.

Diploma in Public Finance and Auditing (UZ)

Admission requirements: A Senior Certificate.

Curriculum: Three years. There are two curricula, viz General and Local Government. Both curricula include, inter alia, the following subjects: Public Finance, Accounting, Auditing, Business Economics, Cost and Management Accounting. This Diploma is offered by the University's Institute for Public Service and Vocational Training.

**VOCATIONAL SERVICE:** The accountancy profession plays an indispensable rôle in all types of business concerns. In the course of time, qualified persons in this field have moved from the position of ordinary bookkeeper to that of the specialized leader and financial adviser. For persons who have not been trained professionally but who hold a degree such as B.Com. or B. Admin. with Accounting as a major in combination

with subjects such as Cost Accounting, Auditing, Commercial Law, Income Tax, Business Economics and Economics, there is a particularly wide variety of opportunities in the occupational field. They can become teachers in commercial subjects or enter the business world as accountants, auditors, credit managers, secretary-accountants, cost accountants, et cetera, in the employ, for example, of commercial and industrial undertakings, municipalities, financial institutions, mines, companies, banks, building societies, insurance companies and many others. They are also employed by various government departments. Certain concerns experience a considerable demand for persons who have at least a B. Com. degree, as a result of the divergence of activities in their financial divisions. It has, for many years now, been impossible to satisfy this demand. By displaying exceptional initiative drive and capacity for work, persons can, in the course of time, progress to managerial posts and posts in an executive capacity. However, post-graduate study is essential for the accountant who wishes to reach the top.

More advanced study in Accounting can lead to admission to the qualifying examination of the Public Accountants' and Auditors' Board. Success in this examination, as well as the completion of a period of service as an articled clerk in the office of a public accountant and auditor, is a prerequisite for registration as a chartered accountant (C.A.). The title "C.A." is acknowledged throughout the world as a highly specialized professional qualification. This qualification opens the door to highly paid positions. The chartered accountant can operate on his own in a private practice or in partnership with other registered accountants. For example, in the Republic all public companies, banks and building societies must make use of the services of a public accountant and auditor. Otherwise, he can reach a position of prestige in a large company such as that of director, general manager, accountant, internal auditor, secretary or cost accountant. Those persons who also possess the other qualities for top leadership can rise to the position of managing director or chairman. More information concerning the C.A. qualification may be obtained directly from the Public Accountants' and Auditors' Board, P.O. Box 10119, Johannesburg 2000, or from any firm of public accountants and auditors.

As the business world becomes more complicated and many-sided, there is a corresponding increase in the demand for trained manpower with a proper grasp of commerce and industry. There are virtually unlimited opportunities for persons with analytical ability, the capacity to think logically, and sound judgement. They are also generally highly respected.

Apart from the opportunity to become a professional officer in a government department (as mentioned above), graduates are also given preference when candidates are considered for the following posts in the Public Service:

- Administrative assistant (General Administration): Graduates in possession of an appropriate B.A., B.Admin. or B.Com. degree are appointed in the entry grade.

Also see Administrative Assistant, p.67.

- Auditor: The main purpose of a government auditor is to ensure that public funds are appropriated with care, accuracy and efficiency. Auditing is done by the Auditor-General, the various provincial auditors and their staff. The Public Service recommends that persons who are interested in this field should take the same course as suggested for an accountant. After his appointment the newcomer is not left to himself, but is thoroughly instructed in the duties of an auditor.

With the ever increasing activities of the Public Service and the concomitant spending of public money, there are excellent promotional opportunities for an able auditor.

- Departmental Accountant (Financial Administration): Although the Treasury must ensure that financial obligations are fulfilled according to regulations, each government department also has its own financial branch which is responsible for disbursement and recoveries. The Public Service recommends that the accountant should have a suitable degree with the following subjects: Accounting as one major and one or more of the following as the other major(s): Business Economics, Economics, Commercial Law, Industrial Psychology, Cost Accounting, Roman-Dutch Law, Public Administration, Statistics, Mathematical Statistics. The remaining subjects can be included to advantage as subsidiary subjects. The uniform basis upon which government finances are



administered in the Public Service makes it possible for the accountant to compete for senior positions in other government departments.

- Stores Administrator (Stores Administration): The duties of the stores administrator in the Public Service are mainly concerned with the purchase and control of and the accounting for stores and equipment. After entering the service, the new official is trained in the work which he has to perform. The following subjects may be included in the degree course: Economics, Accounting, Cost Accounting, Statistics. Stores sections exist in various departments, with the result that an official's opportunities are not limited to one department only. As in other sections of the Public Service, meritorious work is adequately rewarded.

Also consult Tertiary Training for particulars on the National Diploma (State Accounts and Finance) and the National Diploma (Public Administration).

#### ADMINISTRATION/PUBLIC ADMINISTRATION (See p.79 for Business Administration)

Universities: Cape Town, Durban-Westville, Fort Hare, North, Orange Free State, Port Elizabeth, Pretoria, South Africa, Stellenbosch, Western Cape, Zululand

#### FIRST DEGREES

Baccalaureus Administrationis: B.Admin. (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. The curriculum comprises 12 courses. The major subjects are Political Science, Economics and Public Administration.

Bachelor of Administration: B.Admin. (UFH)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. The degree may be obtained in one of the following two options:

- Public Affairs: Major subjects are Public Administration III; Political Science III; Economics III or Constitutional and Administrative Law

- Personnel Management: Major subjects are Industrial Psychology III and Public Administration III.

Baccalaureus Administrationis: B.Admin. (UNorth)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. Public Administration is a compulsory major subject. The other two majors are selected from the following subjects: Industrial Psychology, International Politics, Government Institutions of Africa, Political Science.

Baccalaureus Administrationis: B.Admin. (UOFS)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: At least six semesters of full-time study (three years). Part-time students are strongly recommended to extend their degree study over four years (eight semesters).

The major subjects must be chosen from the following: State Administration and two of the following; Political Science, Economics, Applied Anthropology, Municipal Administration, Industrial Psychology, Business Economics, Transport Economics, Money and Banking.

Bachelor of Administration: B.Admin. (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A candidate must also obtain a pass in at least two of the following subjects on the Higher Grade, viz: Economics, History, Geography, Mathematics, Biblical Studies, Biology or Physiology, Physical Science and a third language: Provided that when a language is offered only on the Standard Grade, it will be recognised for this purpose.

Curriculum: Three years of full-time study or four years of extramural study. There are three curricula, viz

- (i) B.Admin. with Public Administration III as a compulsory major subject
- (ii) B.Admin. with Municipal Administration II as a compulsory major subject
- (iii) B.Admin. (International Relations) with three compulsory major subjects, viz Political Science III, Economics III and International Politics III.

The other two major subjects of curricula (i) and (ii) must be selected from subjects such as Business Economics, Economics, Personnel Management, Public Administration (for curriculum (ii)), Accounting, Political Science, Statistics, another third year course approved by the Dean.

Bachelor of Administration: B.Admin. (UNISA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: At least three years. The curriculum is compiled from a number of prescribed subjects. Three courses must be taken in either Development Administration or Public Administration. Other subjects are, inter alia, Business Economics, Industrial Psychology, Economics, Accounting, Transport Economics, Political Science.

Bachelor of Administration: B.Admin. (US)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study or four years of part-time study. The third year subjects are as follows: Public Administration (compulsory major subject) and one of the following: Economics, Business Economics, Industrial Psychology, Development Administration, Political Science or Transport Economics, Commercial Law (Commerce), Sociology, Financial Accounting.

Baccalaureus Administrationis: B.Admin. (UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A pass in Mathematics HG or SG is a prerequisite for Economics II.

Curriculum: Three years of full-time study. The curriculum contains at least two major subjects which must be selected from the following: Public Administration and ONE of the following: Political Science, Economics, Industrial Psychology.

Bachelor of Administration: B.Admin. (UZ)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass of 40 % in Mathematics HG or 50 % in Mathematics SG.

Curriculum: Three years. The major subjects are Public Administration; Political Science or Economics; Industrial Psychology or Development Studies.

Honours Bachelor of Public Administration: B. in Public Administration Hons. (US)

Admission requirements: A student must hold a Bachelor's degree. He must also have gained such practical experience in public administration to serve as adequate preparation for the Honours course. Students must apply for admission in writing.

Curriculum: Students must pursue an approved curriculum of advanced study for at least two years and pass in the prescribed examinations. The course is offered extramurally only.

Master of Public Administration: M.Pub.Ad. (UCT)

Admission requirements: An Honours graduate in the Faculty of Social Science of the University or an equivalent Honours degree of any university.

Curriculum: One year of full-time study or two years of part-time study. The degree is offered in the Faculty of Social Science.

Master of Public Administration: M.P.A. (UPE)

Admission requirements: A student must have obtained a Bachelor's degree and gained adequate administrative experience.

Curriculum: Two years.

Master of State and Urban Administration: M.S.A. (UP)

Admission requirements: A Bachelor's degree; at least three years' practical experience, preferably in the public sector; and credits for Public Administration III, Economics I and Political Science I.

Curriculum: At least two years and not more than four years.

#### POST-GRADUATE DEGREES

Honoris Baccalaureus Administrationis: B.Admin. Hons. (UDW)  
Bachelor of Administration (Honours): B.Admin. (Hons.) (UFH)  
Honours Bachelor of Administration: B.Admin.Hons. (UNorth,US) or Hons.B.Admin. (UZ)  
Honneursbaccalaureus Administrationis: B.Admin.Hons. (UOFS)  
Bachelor of Administration Honours: B.Admin.(Hons.) (UP)

Magister Administrationis: M.Admin. (UDW,UOFS)  
Master of Administration: M.Admin. (UFH,UNorth,UP,UNISA,US,UZ)  
Master of Public Administration: M.P.A. (UDW,UOFS,UPE,US) or M.Pub.Ad. (UCT)  
Master of State and Urban Administration: M.S.A. (UP)

Doctor Administrationis: D.Admin. (UDW,UOFS)  
Doctor of Administration: D.Admin. (UFH,UNorth,UP,UNISA,US,UZ)  
Doctor of Public Administration: D.P.A. (UDW,US)

#### DIPLOMAS

Diploma in Public Administration (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption)

Curriculum: Two years of full-time study. The curriculum contains ten courses. Two courses are taken in each of the following subjects: Public Administration, Accounting, Political Science, Economics.

Advanced Diploma in Public Administration (UDW)

Admission requirements: A Senior Certificate and administrative experience; or the Diploma in Public Administration.

Curriculum: One or two years.

Diploma in Public Administration: Dipl. Public Admin. (UNorth)

Admission requirements: A Senior Certificate. Selection in consultation with government services.

Curriculum: Three years. The curriculum comprises, inter alia, the following subjects: Public Policy, State Accountancy, Public Personnel Administration, Local Government Administration.

Certificate of Competency in Public Administration (UNorth)

Admission requirements: Persons above the rank of administrative officers who hold academic qualifications which are acceptable by the University.

Curriculum: One year of part-time study. The curriculum includes more or less the same subjects as those for the Dipl.Publ.Admin.

Diploma in State and Municipal Administration (UOFS)

Admission requirement: A Senior Certificate.

Curriculum: Three years. The major subjects are State Administration and Municipal Administration.

Advanced Diploma in State and Municipal Administration (UOFS)

Admission requirements: Diploma in State and Municipal Administration or extensive experience which may be regarded as adequate to undertake the study profitably.

Curriculum: At least two years.

Diploma in Advanced Public Administration: Dip.P.A. (UPE)

Admission requirements: A Senior Certificate or equivalent qualification and adequate administrative experience.

Curriculum: At least one year. The curriculum includes, inter alia, the following courses: Advanced Administrative Theories, Advanced Financial Administration, Advanced Personnel Administration.

Diploma in Public Administration: Dip.Admin. (UP)

Admission requirements: A Senior Certificate or equivalent qualification, and adequate experience.

Curriculum: Two years. The diploma consists of two parts. Part I includes Political Science, Economics, Public Administration, Administrative Techniques. Part II includes five courses.

Diploma in Advanced Public Administration (UNISA)

Admission requirements: A student must be a senior guiding officer with at least three years' appropriate experience in the public sector; hold a Matriculation Certificate or a Senior Certificate (Matriculation Exemption); and have completed a questionnaire\* for submission to and approval by the Senate.

\* The questionnaire is available on request from the Registrar (Academic).

Curriculum: At least two years. The curriculum consists of three courses in Public Administration.

Advanced Diploma in Public Administration (US)

Admission requirements: A Senior Certificate and practical experience in public administration.

Curriculum: Two years' extramural study. The curriculum includes, inter alia, Advanced Public Administration, Economic Politics, Public Personnel Administration, Public Financial Administration.

Diploma in Local Government and Administration: Dip.L.G.A.\* (UZ)

Admission requirements: A Senior Certificate.

Curriculum: Three years. Third-year subjects are Public Administration, Local Government and Administration, Public Finance, Economics.

Diploma in Organisation and Method Study: Dip.O.M.\* (UZ)

Admission requirements: A Senior Certificate.

Curriculum: Three years. Third-year subjects are Organisation and Method Study, Work Study, Interpretation of Statutes, Administrative Law.

Diploma in Public Administration: Dip.P.A.\* (UZ)

Admission requirements: A Senior Certificate.

Curriculum: Three years. Third-year subjects are Public Administration, Economics, Interpretation of Statutes, Administrative Law.

Diploma in Co-operative Management and Administration: Dip.C.M.A.\* (UZ)

Admission requirements: A Senior Certificate.

Curriculum: Two years. The curriculum comprises two courses in each of the following subjects: Co-operative Management and Administration, Business Economics, Accounting; and one course each in Commercial Law and Cost and Management Accounting.

Diploma in Advanced Public Administration: Dip.A.P.A.\* (UZ)

Admission requirements: A student must

- possess either a diploma in organisation and method study, a diploma in local government and administration, a diploma in state finance and auditing, a diploma in public administration or any equivalent qualification;
- have passed Public Administration III or Public Administration II and Organisation and Method Study III or Public Administration II and State Finance III.

Curriculum: Two years.

Proficiency Certificate in Leadership in Public Administration: P.C.L.A.\* (UZ)

Admission requirements: A student must be an official of a government institution with the rank of chief clerk or equivalent and higher.

Curriculum: One year.

\* These diplomas are offered by the University's Institute for Public Service and Vocational Training.

VOCATIONAL SERVICE: A wide classification of any government's functions is legislative (political body), executive (administrative body) and judicial (the courts). Viewed in broad outline, there are three subject fields involved here, viz Political Science for the political aspect, Public Administration for the executive aspect and Law for the constitutional aspect. As an academic discipline Public Administration therefore concentrates on the study of the administrative side of government action. It covers the composition and functioning of all government organizations concerned with putting public policy into practice, such as those of government departments, provincial administrations, municipalities, councils, commissions, corporations and research institutes.

In addition to the few diploma courses which can be taken in this field, Public Administration, as in the case of Economics, Mathematics, Psychology and many other subjects, is offered at most universities in more than one faculty, for example for the B.A. degree, where it can be combined with Political Science, Economics, languages (particularly foreign languages), Bantu Law and Administration, History, Sociology, law subjects and so on. As regards the B. Admin. degree, it can be combined effectively with subjects such as Economics, Political Science, Industrial Psychology, Accounting, et cetera.

Degrees and diplomas in this field make particular provision for the training of organizing and administrative officials who are employed by all government departments (as senior administrative assistants); the provincial administrations; municipalities and other public bodies such as the agricultural produce and research boards, the Railways, the Postal Services, the SABC, the IDC and Iscor. It is also an extremely useful subsidiary subject for a career in journalism or law.

Post-graduate qualifications are essential to provide for the demand for professional officials such as engineers, architects, medical practitioners and others who, besides their professional work, must fulfil administrative and supervisory functions such as those of chief engineer, chief architect, hospital superintendent etc.

Also consult Tertiary Training for particulars on the National Diploma (Public Administration).

## AGRICULTURE

Universities: Fort Hare, Natal, North, Orange Free State, Pretoria, Stellenbosch

### FIRST DEGREES

Bachelor of Science in Agriculture: B.Sc. Agric. (UFH, UN, UOFS)

Bachelor of Agriculture: B.Sc. (Agric.) (UP)

Bachelor of Science in Agriculture: B.Sc. in Agriculture (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Fort Hare: A pass in Mathematics SG.

Natal: A minimum pass of 40 % in Mathematics HG and in a natural science HG, or 50 % SG in the subjects mentioned.

Orange Free State: A pass in Mathematics SG. It is strongly recommended that prospective students take Physical Science as well for the Std 10 examination.

Pretoria: As for the B.Sc. degree. See p.218.

Stellenbosch: At least an E symbol in Mathematics SG as well as a pass in a natural science SG.

Curriculum: Four years of full-time study. First-year subjects include, inter alia, Chemistry, Physics, Mathematics, Biology or Botany or Zoology, or Biological Science, but the subjects may vary according to the choice of major subjects.

In the second year students select one (or two) of the following major subjects each with its own prescribed curriculum:

Agricultural Economics: UN,UOFS,UP,US

Agricultural Economics and Economics: UFH,UOFS

Agricultural Economics - Production: UFH

Agricultural Production: UFH,UN,US

Agrometeorology: UN,UOFS

Agronomy or Crop Science: UN,UOFS

Agronomy and Pasture Science: US

Animal Pasture: UFH  
 Animal Physiology: US  
 Animal Production Science: UFH,UP  
 Animal Science: UN,UOFS,US  
 Biochemistry: UN,UOFS,UP,US  
 Biometry: UN,UOFS,US  
 Botany: UOFS  
 Crop Science or Agronomy: UN,UOFS  
 Crop Science and Horticultural Science: UFH  
 Crop Science and Plant Improvement: UFH  
 Crop Science and Soil Science: UFH  
 Dairy Science: UOFS  
 Enology and Viticulture: US  
 Entomology: UN,UOFS,US  
 Food Science: UP,US (See also FOOD SCIENCE p.154.)  
 Genetics: UN,UOFS,UP,US  
 Horticultural Science: UN,UP  
 Hortology: US  
 Land and Water Use Development: UFH  
 Microbiology: UN,UOFS,UP,US  
 Pasture Science: UN,UOFS  
 Plant Pathology: UN,UOFS,UP,US  
 Plant Production: UFH,UP  
 Poultry Science: UN  
 Small Stock Science: UOFS  
 Soil Science: UFH,UN,UOFS,US  
 Soil Science and Plant Nutrition: UP

Candidates are usually required to devote a specified period during the university vacations in their third or fourth years to practical work at an approved institution or farm.

The Universities of Natal and Pretoria offer Agricultural Engineering under the Faculty of Engineering (see p.146).

Bachelor of Agriculture: B.Agric. (UFH)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years. The subjects fall under the field of Agricultural Production Sciences.

Baccalaureus Agriculturae: B.Agric. (UNorth)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years. The major subjects are Agricultural Economics, Plant Production and Animal Production.

Bachelor of Agriculture: B.Agric. (UOFS)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). It is strongly recommended that prospective students take Biology for the Std 10 examination.

Curriculum: Three years of full-time study. There are four different curricula:

- Plants/Animal field, which has been designed for the training of farmers, teachers and industrial advisers. The major subjects are Agronomy or Pasture Science and Small Stock Science or Animal Science.

- Major subjects: Dairy Science and Animal Science.

This field has been designed to provide for the needs of dairy technologists, industrial advisers, food inspectors and farmers.

- Major subjects: Agronomy and Soil Science (Irrigation Science).  
This curriculum provides for the needs of the prospective irrigation farmer.

- Major subjects: Agricultural Economics and Economics.

This curriculum has been designed for the training of agricultural economists for professional service in the Directorate of Agricultural Economics and Marketing under the Department of Agriculture and Fisheries, the agricultural industry and for farmers.

Bachelor of Agriculture (Education): B.(Agric.)(Ed.) (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with pass marks in Mathematics HG and in Physical Science HG, or 50 % SG in the subjects mentioned.

Curriculum: Four years of full-time study. First-year subjects comprise Chemistry, Physics, Biological Science and Pedagogics I. The subjects for the third year are, inter alia, Plant Production, Animal Production, Agricultural Economics, Biochemistry, Entomology. The fourth year includes only educational subjects with Pedagogics III as the major subject.

Bachelor of Agricultural Education: B. Agric. (Ed.) (US)

Admission requirement: As for B.Sc.Agric.

Curriculum: Four years of full-time study. The first three years are the same as for the course B.Sc.Agric. (Agricultural Production field). In the fourth year students take the H.D.E. (Post-graduate)(Secondary) course. See EDUCATION, p.139.

Bachelor of Agricultural Management: B.Agric.Mgt. (UN)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass of 40 % in Mathematics HG or 50 % in Mathematics SG and 33 % in a natural science HG or 40 % in a natural science SG.

Curriculum: Three years of full-time study. First-year subjects comprise Accounting, Agriculture, Economics and Mathematics. Second and third-year subjects include, inter alia, Agricultural Economics, Agricultural Production, Business Administration, Horticultural Science, Pasture Science, Soil Science.

A candidate must complete two months' practical work on an approved farm.

Bachelor of Agricultural Management: B.Agric.Admin. (US)

Admission requirement: As for the B.Sc. Agric.

Curriculum: Three years of full-time study. The two major subjects are Agricultural Economics and Business Economics. The other subjects are Mathematics, Statistics, Theory of Finance, Principles of Agricultural Science and optional subjects such as Grape and Wine Production, Soil Science, Animal Production, Agronomy - Pasture, Horticulture etc.

Students are required to do practical work for at least two months during the summer and/or winter vacations on an approved farm or at another institution before completion of the third year of the course.

Bachelor of Agricultural Extension (Honours): B.Agric.Ext. (Hons.) (UFH)

Admission requirements: B.Sc.Agric. degree or B.Agric. degree.

Curriculum: One year. The curriculum covers all aspects of Agricultural Extension.

Baccalaureus Honores Institutionis Agrariae: B.Inst.Agrar. (Hons.) (UP)

Admission requirements: A candidate must hold the B.Sc. (Agric.) degree or be admitted to the status thereof.



Curriculum: One or two academic years. The curriculum includes Agrarian Extension and specific attendance courses (or Capita Selecta) in any faculty or department which the candidate may lack.

Students are required to do practicals or research work or special study during university vacations.

#### POST-GRADUATE DEGREES

Bachelor of Science in Agriculture (Honours): B.Sc.Agric. (Hons.) (UFH)  
or B.Sc.Agric.Hons. (UOFS)

Bachelor of Agriculture with Honours: B.Agric. (Hons.) (UNorth)

Bachelor of Agriculture (Honours): B.Sc.(Agric.)(Hons.) (UP)

Honours Bachelor of Science in Agriculture: B.Sc.Agric.Hons. (US)

Bachelor of Agricultural Management (Honours): B.Agric.Mgt.Hons. (UN)

Honours Bachelor of Agricultural Management: B.Agric.Admin.Hons. (US)

Master of Science in Agriculture: M.Sc.Agric. (UFH,UN,UOFS,US)

Master of Agriculture: M.Agric. (UNorth)

Master of Agricultural Extension: M.Agric.Ext. (UFH)

Master of Agriculture: M.Sc.Agric. (UP)

Magister Institutionis Agrariae: M.Inst.Agrar. (UP)

Master of Agricultural Management: M.Agric.Mgt. (UN) or M.Agric.Admin. (US)

Doctor of Science in Agriculture: D.Sc.Agric. (UFH,UN,US)

Doctor of Agriculture: D.Agric. (UNorth)

Doctor of Philosophy: Ph.D. (UN,UOFS)

Doctor of Science: D.Sc. (UOFS)

Doctor of Agriculture: D.Sc. (Agric.) (UP)

Doctor Institutionis Agrariae: D.Inst.Agrar. (UP)

Doctor of Philosophy (Agriculture): Ph.D.(Agric.) (US)

Doctor of Philosophy (Agricultural Management): Ph.D. (Agric.Admin.) (US)

#### DIPLOMA

Advanced Diploma in Farm Management (US)

Admission requirements: A Senior Certificate and either a two-year diploma obtained at an agricultural college or other adequate post-school qualification. Students are selected. Candidates must apply for admission before 30 June of the preceding year.

Curriculum: One year. The course comprises a study of the following: Agricultural Economics, Tax (Agriculture), Accounting (Agriculture), Industrial Psychology (Agriculture) and Mercantile Law (Commerce).

Higher Diploma in Education (Secondary) (Agriculture): H.D.E. (Secondary) (Agriculture) (US) See EDUCATION p.139.

VOCATIONAL SERVICE: Research into improved, more productive and more economic methods of primary food production is one of the major fields of labour for graduates in Agriculture. This is why agriculture offers such a wide variety of possibilities, not only in farming itself, but in commerce, industry, research, teaching, conservation and other specialized services. Occupations are steadily becoming specialized and, in many cases, professional training at university level has become necessary, particularly as regards the non-farming aspect of agriculture. The courses offer a basis for research and its practical application. In industries, for example factories which manufacture agricultural requisites, agriculture graduates are placed in the posts of technical service officers, sales representatives, research officers, production guidance officers and many more. However, it should be stressed that the attainment of a bachelor's degree is merely the first step in the direction of professional training. Post-graduate study is particularly important in the field of research. It is of equal importance that candidates should consider well beforehand what subjects they want to study for a particular field or conversely, that they should have certainty about the job prospects if they have specific subjects in mind.

The following are some of the major fields of study or subjects and an indication of job opportunities:

Agricultural Economics: At present there is a great shortage of agricultural economists, mainly as a result of the emphasis on scientific farming techniques which continually brings the problem of production costs to the fore. The training is mainly intended for prospective researchers, extension officers, agricultural entrepreneurs, agricultural administrators, lecturers and teachers. Agricultural economists may, inter alia, be employed as: Teachers and researchers at agricultural colleges and universities; economists in the Government Departments of Agriculture and Fisheries; Industries, Commerce and Tourism; Environment Affairs; researchers and/or advisers in the employ of the CSIR, the IDC, agricultural control boards, agricultural organizations such as the SAAU, agricultural co-operatives and private bodies such as companies which supply fertilizer and agricultural requisites, chemical concerns, etc. An agricultural economist may also act as a private consultant.

Agricultural Education: Qualified teachers of agriculture are employed by the provincial education departments for appointment to secondary schools to which an agricultural field of study is attached. Teacher training, in addition to post-graduate qualifications is an ideal combination for posts at agricultural colleges, technikons and universities. Teachers of agriculture who have the necessary experience, may also be appointed by the Department of National Education as Land Service Officers. In this capacity they act as organizers for the Land Service Movement and they have to promote the interests of this movement.

Agricultural Engineering: See p.149.

Agricultural Management: See p.37.

Agricultural Meteorology: Agricultural meteorologists in the Department of Agriculture and Fisheries do research over a wide field and in a variety of specialized branches such as radiation, movement of air, heat, moisture and climatic conditions. They normally act in co-operation with researchers in other branches of agriculture. Consequently the entire field from basic research to practical application of knowledge is covered.

Although it is a new branch of study, Agricultural Meteorology has become one of the most vital branches of meteorology in South Africa. It offers interesting employment and research opportunities owing to the country's extremes of heat, cold, rain and droughts, as well as sunshine, frost, hail and even snow. Researchers therefore have the opportunity of making an important contribution in the field of agriculture. Furthermore, the faculties of agriculture of the two universities concerned offer positions as lecturers to qualified agricultural meteorologists. Also see Meteorology, p.178.

Agronomy/Crop Science: This supplies the necessary background for prospective farmers who are going to till the soil. The private sector offers good positions as sales agents or researchers in the employ of fertilizer companies, seed advisers, evaluators and controllers of crops, managers of large farming undertakings, etc. There is a demand for inspectors and technologists with the various Control Boards, while millers, bakers, malters and firms which manufacture and distribute sprays such as weed-killers also need people with Crop Science as a subject. Co-operatives also need an increasing number of produce managers who are trained in this field. The Department of Agriculture and Fisheries employs agronomists to do research in connection with new varieties, cultivation practices, harvesting methods etc., while others undertake guidance in this field. The Agricultural Advisory and Development Work Branches of the Department of Co-operation and Development employ agriculturists for the development of the Black states.

Animal Physiology: Physiologists can occupy posts as lecturers at training institutions where instruction in animal and human physiology is given; as teachers of subjects such as physiology, biology, biochemistry and agriculture; as consultants or researchers in the service of firms which produce feed, co-operatives, nutrition research institutes and laboratories; as professional officers attached to institutes where biological and/or biochemical research is done, such as in the Department of Agriculture and Fisheries.

Also see Physiology, p.234.

Animal Science/Animal Production: Students who are interested in animals and who have chosen this field of study, have a wide choice as regards careers. In addition to practical animal farming there are opportunities, for example, in the employ of the control boards, private marketing organizations, cattle-feed companies, large farming companies and co-operatives. The Departments of Agriculture and Fisheries and Co-operation and Development offer abundant opportunities for research in various ranches of Animal Science. Researchers may specialize in genetics, physiology, feeding, breeding and meat or wool technology. The most important centre for this purpose is the Animal and Dairy Science Research Institute near Pretoria. In addition, there are many professional officers who are responsible for the administration and control of national schemes.

Biochemistry: See p.226.

Biometry: The biometrician's major task is to assist researchers and managers in the planning of experiments and surveys and the analysis of findings. They usually occupy posts at agricultural, biological and medical research institutes; at universities as lecturers in Biometry as well as in Mathematical Statistics and in research departments of large commercial firms. They also enter the service of the CSIR, the SABS and the education departments. The Public Service offers various job opportunities and, particularly in the Department of Agriculture and Fisheries, there are opportunities of undertaking research in various fields on one's own.

Botany: See p.227.

Chemistry: See p.227.

Dairy Science: As a result of the shortage of qualified dairy experts and food experts in general, there are adequate job opportunities for those who have completed their studies, for example as researchers at the Research Institute for Animal and Dairy Science in the Department of Agriculture and Fisheries and the Food Research Institute of the CSIR; as technical control and development officers in the dairy industry and the food industry in general (private concerns); as standards officers at the SABS; as factory advisers and quality control officials in the employ of private concerns; as lecturers and researchers at universities and also at training institutions such as the agricultural colleges where technicians are trained for the dairy industry. Examples of other possible employers are municipalities, the Dairy Board and concerns which manufacture and sell dairy equipment.

Entomology: See p.228.

Food Science: See p.154.

Genetics: See p.228.

Horticulture (Hortology, Vegetable and Flower Production, Landscape Horticulture etc.): The study of Horticulture embraces the production of horticultural crops and of the way in which the normal behaviour of plants can be changed to satisfy the requirements of man. Landscape Horticulture and Flower Production are the fields of study concerned with plants which have such particularly ornamental characteristics that, commercially and economically, they are important or may become important. Job opportunities are available as owners of a farming concern; in the service of municipalities or commercial nurseries for ornamental plants, and producers of cut flowers and pot-plants; as managers of or technical advisers to large fruit, vegetable and flower farms; as extension officers employed by the Department of Agriculture and Fisheries, the Citrus Board and companies producing agricultural chemicals and fertilizers. Students are encouraged to undertake post-graduate study in order to be employed as researchers at the research institutes under the control of the Citrus Board, the Deciduous and Dried Fruit Boards, the large fruit-growing companies, commercial firms and the Department of Agriculture and Fisheries (for Horticulture in Pretoria, for Fruit and Food Technology in Stellenbosch, for Citrus and Subtropical Fruit in Nelspruit and for Viticulture and Enology in Stellenbosch).

As a subsection of Horticulture, Pomology (the science of fruit and fruitgrowing), is receiving a great deal of attention at the University of Stellenbosch. Career prospects are approximately the same as those mentioned above. The development of giant irrigation schemes in parts of the country will no doubt cause an increase in the demand for horticulturists and pomologists in the future.

Microbiology: See p.232.

Pasture Science: In many cases students of Pasture Science are prospective farmers. Since they must also have an intimate knowledge of related subjects such as Animal Science, Crop Science, Soil Science, Biochemistry, Microbiology and Genetics, career possibilities will, in this case, correspond to a large extent to those for the subjects mentioned. The syllabus makes provision for basic knowledge for research which can be undertaken at any agricultural research institute of, for example, the Department of Agriculture and Fisheries, a university or a scientific, agricultural or industrial organization. Pasture scientists can also be appointed as extension officers; as lecturers at agricultural colleges and in agricultural faculties; as technical salesmen for manufacturers of agricultural chemicals, seed or food and also as managers of large agricultural enterprises. There are also posts in the Department of Co-operation and Development.

Physics: See p.233.

Plant Pathology: This specialized field of study opens the door to interesting careers in agriculture, for example as extension officers or advisers in the Department of Agriculture and Fisheries, the various Control Boards such as the Deciduous Fruit, Citrus and Maize Boards, private concerns such as the Sugar Institute, canning enterprises and firms which deal in pest control preparations. The Department of Agriculture and Fisheries also offers particular opportunities for researchers in the various Research Institutes such as those for Fruit and Fruit Technology, Enology and Viticulture, Citrus and Subtropical Fruit, Horticulture and Tobacco. Apart from posts for lecturers, various universities also make ample provision for research. It is possible to teach biological subjects at schools and agricultural colleges. Graduates can also enter the private service of owners of large farms or plantations, nurseries and so forth.

Poultry Science: This field of study covers the entire field of management, feeding, breeding and the processing and preserving of poultry products. Most poultry scientists accept posts in the Government Department of Agriculture and Fisheries. There are posts for extension officers and researchers who have specialized in, for example, feeding, breeding, or physiology. Graduates are also employed as researchers or advisers by Onderstepoort, the cattle-feed manufacturing industry, commercial concerns which deal in medicines and related products, large breeding enterprises and concerns which produce eggs and table-fowl. There are posts for lecturers in Poultry Science at certain universities and most of the agricultural colleges.

Soil Science and Plant Nutrition: There are virtually unlimited job opportunities for soil scientists of which only a few are mentioned here. The Departments of Agriculture and Fisheries and Co-operation and Development employ soil scientists for research work and, for example, surveys and planning of irrigation schemes, catchment areas and farms. Experiments are done with fertilizers, while extension officers advise farmers on fertilization, irrigation, soil cultivation, etc.

Fertilizer firms also need soil scientists to carry out research projects or give advice to farmers, while large undertakings such as the sugar industry, large farming concerns, engineering firms and co-operatives need the services of soil scientists for various purposes. Outside the field of agriculture there is also scope for applying the specialized knowledge of soil scientists in town and regional planning, road-building, prospecting for minerals and soil surveys. Possibilities for lecturers and teachers exist at universities, technikons and secondary schools with an agricultural field of study. This field of study is invaluable for persons who choose farming as a career.

Viticulture and Enology: As a result of the close connection between cultivation factors and the quality of the final product, these two major subjects are combined. Job opportunities are obviously concentrated on the wine industry and can be found as

line expert extension, inspection or research officers in the Department of Agriculture and Fisheries as independent farmers or managers of vineyards; as winery managers, quality control officers, wine technologists, production managers, wine-cellar managers and so on in the wine industry.

ology: See p.235.

Further opportunities in the Public Service: As has already been indicated, the services of agriculturists are utilised in a variety of specialised fields in two departments in particular, viz those of Agriculture and Fisheries and of Co-operation and Development. In the former department the following opportunities also exist for professional officers:

- Agrarian Extension: The most important task of extension officers is, by means of a system of informal training of farmers, to promote effective scientific farming practices. Officers can serve in any of the extension offices, which are distributed throughout the country. The requirement for appointment is a recognised Bachelor's degree with one or more agricultural subjects as major(s).

- Plant and seed control: Officers in this Division supervise the quality of seed and other plant material which are imported, exported, cultivated and sold; take steps to eradicate plant pests and award rights to plant growers. The requirement for appointment is an appropriate Bachelor's degree with one or more agricultural subjects as major(s) or a B.Sc. degree with Botany and Genetics or Entomology as majors.

- Publications: The requirement is an appropriate recognized degree with majors and subsidiary subjects such as Afrikaans, English, Journalism (Communication), Psychology or Sociology. Aptitude for or experience of journalism will be a recommendation.

- Radio-isotopy: This is being used to an increasing extent by the Department of Agriculture and Fisheries for solving problems in agriculture. Opportunities are offered to physicists and physical chemists who specialise, inter alia, in soil and fertilization studies, plant nutrition, plant and animal physiology and the development of new research apparatus.

Also consult Tertiary Training for particulars on the National Diploma courses in various fields of agriculture.

## ANIMAL NURSING

University: Pretoria

## DIPLOMA

Diploma in Animal Nursing: Dip.Cur.Anim.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark of 40 % in Mathematics HG and Physical Science HG or Biology HG, or 50 % SG in the subjects mentioned. Only women students are admitted. Students are selected.

Curriculum: Two years of full-time study. The subjects are, inter alia, Anatomy, Physiology, General Nursing, Medical Nursing, Theatre Practice, Radiography.

Students are required to do clinical work at the Faculty and in approved private practices during the two years of study.

A candidate must have mastered both official languages sufficiently to be able to follow the lectures in English as well as in Afrikaans. A candidate may choose in which language she wishes to write the examinations.

VOCATIONAL SERVICE: The Diploma in Animal Nursing offers the only formal training of veterinary nurses in the RSA. The course is intended for women only and it is the task of qualified persons to assist veterinary surgeons in a large variety of ways. These

nurses always work under the supervision of a veterinary surgeon in a private practice, in any institution at which research is undertaken with or on animals and in animal hospitals or clinics. The work is rarely of a routine nature and is usually performed under pleasant circumstances. The prospects are good and women who can handle animals sympathetically and who are practical, patient, accurate and neat are offered the opportunity of an interesting career.

## APPLIED LINGUISTICS

University: Fort Hare

### DIPLOMA

#### Diploma in Applied Linguistics

Admission requirements: A B.A. degree with either three courses in at least one of the following subjects: Afrikaans-Nederlands, Sotho, Xhosa, English; or two courses in at least two of the aforementioned subjects; or two courses in Linguistics; or if the candidate has had at least three years' satisfactory high school teaching experience of one of the above-mentioned languages and has completed at least two courses in one of the said languages towards the degree of bachelor.

Curriculum: One year. The curriculum comprises a course in Applied Linguistics and the learning of a language of which the student has no previous knowledge.

VOCATIONAL SERVICE: See ARTS, Languages, p.67.

## ARCHITECTURE

Universities: Cape Town, Natal, Orange Free State, Port Elizabeth, Pretoria, Witwatersrand

### FIRST DEGREE

Bachelor of Architecture: B.Arch. (UCT,UN,UOFS,UPE,UP,UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town: A pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in a science subject SG.

Natal: A minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Orange Free State: A pass in Mathematics SG and preferably also in Physical Science SG.

Port Elizabeth: A minimum pass mark of 40 % in Mathematics SG.

A candidate may be required to pass a special entrance examination.

Pretoria: A pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in Physical Science HG or at least 40 % in Physical Science SG.

Witwatersrand: A pass in Mathematics HG or at least 60 % in Mathematics SG and in one of the following subjects: Biology, Physical Science, Physiology.

Curriculum: Five years of full-time study and one year of practical experience under the supervision of the university. The curriculum includes, inter alia, the following courses: Studiowork (UCT), Architectural Design (UN), Design (UOFS,UPE,UP), Architectural Theory and Design (UW), Building Construction or Building Technology or Building Science; History of Architecture; Theory of Architecture.

A dissertation or a practical design is required.

#### POST-GRADUATE DEGREES

Master of Architecture: M.Arch. (UCT,UN,UOFS,UPE,UP,UW)

Doctor of Architecture: D.Arch. (UN,UOFS,UPE,UP,UW)

Doctor of Science in Architecture: D.Sc. (Arch.) (UW)

Doctor of Philosophy: Ph.D. (UCT,UN,UOFS,UW)

**VOCATIONAL SERVICE:** The architect is responsible for the design, planning and ornamentation of buildings, with a view to utility, durability, beauty and convenience. His success is to a very large extent dependent on innate aptitude for and interest in both practical and artistic work. Under prevailing conditions in South Africa, the young architect's prospects are very promising. He usually commences working for an established firm until he has sufficient capital and experience to enter a partnership with other architects or to open a practice of his own.

In the Public Service architects are employed by the Departments of Co-operation and Development and Community Development, as well as the administrations and organizations such as Iscor, Escom, the Railways, mining companies and so on. With post-graduate training an architect can obtain a lecturing post at a university. Many architects work as town planners on the lay-out of new towns and cities or the redesigning of centres in existing towns and cities.

People wishing to make architecture their career in the hope of becoming rich without doing much work, are doomed to disappointment. Normally the larger financial rewards come later in life, and the newcomer must be prepared for many years of hard work. An architect's main reward lies in achieving and realizing his personal ambitions. However there are a large number of wealthy architects in the world.

There are also many female architects. The abilities demanded by architecture are by no means limited to men. If a woman has an inclination for this profession, there is no reason whatsoever why she should not be a successful architect.

Also see Landscape Architecture, p.161.

Also consult Tertiary Training for particulars on the National Diploma for Architectural Technicians.

#### ARTS

Universities: All the universities except Medunsa

#### UNIVERSITY OF CAPE TOWN

##### FIRST DEGREE

Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A pass on the Higher or Standard Grade in at least five of the following subjects: Afrikaans, Art, Bantu Languages, Biblical Studies, Biology, Economics, English, French, Geography, German, Greek, Hebrew, Hindi, History, Italian, Latin, Mathematics, Music, Nederlands, Physical Science, Physiology, Portuguese, Spanish.

- A pass on the Higher Grade or at least 50 % on the Standard Grade in either Mathematics or a language other than the official languages, or a pass of at least 50 % on the Higher Grade in one of the official languages.

Curriculum: Three years of full-time study. An approved curriculum must include at least nine qualifying courses comprising one major course, four senior courses and four courses given in departments established in the Faculty of Arts.

A senior course means a second or third qualifying course in a subject or any of the following courses of senior standing which may not be taken in the first year: African Economic History; African History I, II; African Literature; Comparative African Government and Law I; Computer Science II; History and Philosophy of Science I; Jewish Religion; Philosophy II; Physiology I; Public Administration Senior; Roman-Dutch Law I, II; Statistics II.

Students are encouraged to include two major courses in their curriculum thus enhancing the value of their degree.

Subjects recognised as qualifying courses towards the degree of B.A.

- Subjects in the Faculty of Arts with four qualifying courses: Economics, French\*, German\*, Hebrew\*, Latin\*, Philosophy.
- Subjects in the Faculty of Arts with three qualifying courses: African Languages (Shona, Sotho and Xhosa)\*, Afrikaans en Nederlands, Ancient History, Archaeology, Cultural History of Western Europe, Drama, Economic History, English, Greek, History, Italian\*, Political Science, Religious Studies, Social Anthropology.
- Subjects in the Faculty of Arts with two qualifying courses: African History, Comparative African Government and Law, Hebrew Culture, History and Philosophy of Science.
- Subjects in the Faculty of Arts with one qualifying course: African Economic History, African Literature, Afrikaans, Afrikaans en Nederlands Addisioneel, Archaeology Additional, English Additional, French Additional, German Additional, Greek and Roman Literature and Thought, History Additional, Jewish Religion, Social Anthropology Additional, Southern African Economic History, Xhosa (Service course).
- Subjects in other faculties with four qualifying courses: Public Administration.
- Subjects in other faculties with three qualifying courses: Geography, History of Art, Mathematics, Psychology, Sociology.
- Subjects in other faculties with two qualifying courses: History and Appreciation of Music, Roman Law and Jurisprudence, Roman-Dutch Law.
- Subjects in the Faculty of Science with three qualifying courses except where indicated: Applied Mathematics, Botany (including General and Plant Biology), Chemistry, Computer Science, Environmental Resource Management (half course), Geology, Physics, Physiology (one course), Statistics, Zoology (including General and Animal Biology).

Not more than four courses selected from the above-mentioned science subjects will be recognised for degree purposes. These subjects may not be counted as the compulsory major subject.

\* Denotes subjects which include intensive courses for students who have not attained the standard required for entrance to French I, German I, Hebrew I and Latin I. These courses will be allowed to count towards the degree of B.A. in addition to any other course completed in the same language. Intensive courses are also offered in African Languages and Italian. Completion of these courses qualifies a candidate for direct entry into course II of these languages.

Additional study courses are offered by certain departments for the benefit of students who have shown special competence in their subject. An additional course may be taken concurrently with the final course, or in a subsequent year. Students may not take more than one additional study course as a qualifying course. Additional courses count as senior courses.



## POST-GRADUATE DEGREES

### Bachelor of Arts (Honours): B.A. (Hons.)

Admission requirement: A B.A. degree. The subject for an Honours degree must be one which the student took as a major subject for the B.A. degree.

Curriculum: One year. The degree is conferred in one of the following subjects: African Languages, African Studies, Afrikaans en Nederlands, Archaeology, Classics, Comparative African Government and Law, Cultural History of Western Europe, Drama, Economics, Economic History, English Language and Literature, French, Geography, German, Greek, Hebrew, History, Latin, Mathematics, Philosophy, Political Science, Psychology, Religious Studies, Social Anthropology, Sociology.

The degree may also be conferred in a pair of language subjects:

e.g. Afrikaans en Nederlands - English  
Afrikaans en Nederlands - German  
English - French  
French - Latin

A candidate who fails in the Honours examination will not be allowed to present himself for the examination again.

Master of Arts: M.A.

Doctor of Philosophy: Ph.D.  
Doctor of Literature: D.Litt.

## UNIVERSITY OF DURBAN - WESTVILLE

### FIRST DEGREE

#### Baccalaureus Artium: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. A curriculum shall consist of not more than 15 courses and not less than 10 courses. It shall include at least two major subjects selected from the following:

(a) Major subjects in which three qualifying courses must be taken:

I. Afrikaans, Arabic, Classical Hebrew, English, French, German, Greek (Ancient), Gujarati, Hindi, Latin, Nederlands, Persian, Sanskrit, Tamil, Telugu, Urdu, Zulu.

II. Anthropology, Art, Biblical Studies, Classical Studies, Criminology, Dogmatics and Ethics, Economics, Education\*, General Church History, Geography, Hindu Studies, History, History of Art, History of Music, Indian Philosophy, Industrial Sociology, Islamic Studies, Mathematics, Music, Oriental Studies, Philosophy, Political Science, Psychology, Public Administration, Science of Religion, Sociology, Speech and Drama, Statistics.

\* Part-time students, who are qualified teachers, may offer three courses in Education. Other students may offer only two courses in Education.

(b) Subjects which can be taken over two years, but are not major subjects:

Education, Hellenistic Greek.

(c) Arts subjects which can be taken as a first-year course only:

African Government, Law and Administration; Ancient Greek Special; Ancient History; Art Appreciation; French Special; German Special; Gujarati Special; Hindi Special;

Industrial Psychology; Italian Special; Latin Special; Practical English; Praktiese Afrikaans; Tamil Special; Telugu Special; Communication; Economic History; Economics; Library Science; Logic and Methodology; Music Special.

(d) Science subjects which can be taken on a first-year basis only, and only one of which may be included in the curriculum for the B.A. degree:

Botany, Biology, Chemistry, Geology, Physics, Physiology, Zoology.

A degree curriculum must include at least two language courses of which one must be in one of the official languages.

For certain major subjects there are compulsory ancillary subjects, e.g. (i) Nederlands I is an ancillary subject of Afrikaans III; (ii) Sanskrit I is an ancillary subject of Hindi III.

#### POST-GRADUATE DEGREES

Honoris Baccalaureus Artium: B.A.Hons.

Admission requirements: A B.A. degree with a final mark of at least 60 % in the appropriate major subject.

Curriculum: One year of full-time study or two years of part-time study.

Magister Artium: M.A.

Doctor Philosophiae: D.Phil.

Doctor Litterarum: D.Litt.

#### UNIVERSITY OF FORT HARE

##### FIRST DEGREE

Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- Mathematics I: A minimum pass mark of 40 % (E symbol) in Mathematics HG or 50 % (D symbol) in Mathematics SG.

- Statistics I: A minimum pass mark of 40 % (E symbol) in Mathematics SG or Pre-differentiated.

Curriculum: Three years of full-time study. A curriculum consists of at least ten, but not more than twelve courses selected from the following subjects:

Group A Humanities: Three courses except where indicated.

(1) Afrikaans I, Afrikaans-Nederlands; English, Practical English; German (two courses only), German Special; Greek; Hebrew; Latin, Latin Special; Sotho; Special French; Xhosa.

(2) African Thought and Literature, Anthropology, Archaeology (two courses only), Biblical Studies, Criminology, Development Policy and Administration, Economics, Geography, History, Mathematics, Philosophy, Political Science, Psychology, Public Administration, Sociology, Statistical Methods (one course only).

(3) One course only in these subjects: Classical Culture, History of Art, Pedagogics, Statistics.

Group B Law: One course only except where indicated.

African Law, Constitutional and Administrative Law, Criminal Law (credit for this course is only given if Criminology III is passed), Private Law I, II, III; Roman Law.

Group C Theology:

Ecclesiastical History and Missiology I, II, III; Philosophy of Religion and Comparative Religion (one course only); Systematic Theology I, II, III.

Group D Science: One course only

Applied Computer Science, Botany, Chemistry, Geology, Physics, Zoology.

A student must include in his curriculum at least two subjects to be designated major subjects, in each of which he must complete three courses: Provided that a special course will not be recognised for this purpose; and a student who completes two courses in Archaeology will be deemed to have taken Archaeology as a major subject.

A student must select either both major subjects from Group A, or one major subject from Group A and the other from either Group B or Group C.

Some major subjects have ancillary courses which must be completed, e.g. a student will not be admitted to a third course in Psychology unless he has passed Statistical Methods or Statistics I.

#### POST-GRADUATE DEGREES

Bachelor of Arts (Honours): B.A.(Hons.)

Admission requirements: A B.A. degree.

Curriculum: One year of full-time study. The degree may be obtained in any one of the following subjects: Afrikaans-Nederlands, Anthropology, Archaeology, Biblical Studies, Criminology, Development Policy and Administration, Ecclesiastical History, Economics, English, Geography, Greek, History, History of Art, Latin, Mathematics, Philosophy, Political Science, Psychology, Public Administration, Sociology, Sotho, Xhosa.

Master of Arts: M.A.

Doctor of Literature and Philosophy: D.Litt. et Phil.

#### UNIVERSITY OF NATAL

##### FIRST DEGREE

Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements: Passes in both official languages on the Higher Grade together with a minimum of 40 % in at least three subjects on the Higher Grade, one of which must be the First Language.

Curriculum: Three years. A candidate must obtain credit for at least ten qualifying courses distributed amongst not fewer than four subjects chosen from the following list:

African Civil Law, Afrikaans I, Afrikaans en Nederlands, Applied Mathematics, Bantu Law, Basic Statistics A and Introduction to Computer Science, Biblical Studies, Biology, Biometry I, Biometry Ia and Introduction to Computer Science, Botany, Chemistry, Classical Civilization, Classical Hebrew, Comparative African Government and Administration, Computer Science, Constitutional Law, Criminal Law and Procedure\*, Economic History, Economics, Economics of Underdeveloped Regions, English, Fine Art,

French, Geography, Geology, German, Greek, Hebrew, History, History of Art, Industrial Sociology, Introduction to South African Law, Introductory French, Introductory German, Introductory Hebrew, Introductory Latin, Introductory Spanish, Jewish Studies, Latin, Mathematical Statistics, Mathematics, Music, Philosophy, Physics, The Political Economy of Southern Africa, Political Science, Population and Labour, Principles and Practice of Fine Art, Psychology, Public International Law, Roman Law, Social Anthropology, Sociology, Speech and Drama, Theology, Zoology, Zulu.

\* May only be taken on the recommendation of the Dean of the Faculty of Law and with the approval of the Dean of the Faculty of Arts.

Every approved curriculum must include at least two subjects known as major subjects, in each of which either two or three full qualifying courses must be taken. A candidate must select his major subjects from the following groups:

(a) Major subjects in which three qualifying courses must be taken:

Afrikaans en Nederlands, Computer Science, Economics, English, Fine Art, French, Geography, German, Greek, Hebrew, History, History of Art, Latin, Mathematics, Music, Philosophy, Political Science, Psychology, Social Anthropology, Sociology, Statistics, Speech and Drama, Zulu.

(b) Major subjects in which two qualifying courses must be taken:

Biblical Studies, Classical Civilization, Comparative African Government and Administration, Economic History, Jewish Studies, Mathematical Statistics, Theology.

A candidate whose home language is either French, German, Hebrew or Spanish, shall not be granted credit towards the degree for either Introductory French, Introductory German, Introductory Hebrew or Introductory Spanish, respectively.

Except with the special permission of the Senate, a candidate who has passed the matriculation or equivalent examination in either French, German, Hebrew, Spanish or Latin shall not be granted credit towards the degree for either Introductory French, Introductory German, Introductory Hebrew, Introductory Spanish or Introductory Latin/Latin Ib, respectively.

#### POST-GRADUATE DEGREES

Bachelor of Arts (Honours): B.A. Hons.

Admission requirement: A B.A. degree.

Curriculum: One academic year. A candidate must pursue a course of advanced study in one subject selected from the following list:

Afrikaans en Nederlands, Applied Linguistics, Biblical Studies, Classical Civilization, Classics, Comparative African Government and Administration, Divinity, Economic History, Economics, English, Fine Art, French, Geography, German, Greek, Hebrew, History, History and Economic History, History and Political Science, History of Art, Jewish Studies, Latin, Mathematical Statistics, Mathematics, Music, Music and Social Anthropology, Music and Speech and Drama, Philosophy, Political Science, Psychology, Social Anthropology, Sociology, Speech and Drama, Theology, Zulu Language and Literature.

A candidate who offers Language Honours must choose any two of the following subjects: Afrikaans en Nederlands, English, French, German, Greek, Hebrew, Latin, Zulu.

The subject for an Honours course must be one which the candidate has completed as a major subject for the B.A. degree. The Senate may refuse to admit a student to an Honours course in any subject if the standard of proficiency which he has previously attained in that subject is not sufficiently high.

A candidate is required to present himself for all parts of the final examination at one and the same time. No candidate for the degree may present himself for the final examination more than once.

Master of Arts: M.A.

Doctor of Philosophy: Ph.D.  
Doctor of Literature: D.Litt.

## UNIVERSITY OF THE NORTH

### FIRST DEGREE

Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years. A curriculum consists of at least 20 and not more than 22 semester courses. The courses are normally distributed over the three years of study as follows. First year: 8 semester courses (4 per semester); second year: 8 semester courses (4 per semester); third year: 4 semester courses (2 per semester).

Each curriculum contains at least two major subjects which may be selected from the following: Afrikaans en Nederlands, Agricultural Economics, Anthropology, Biblical Studies, Classical Hebrew, Criminology, Economics, English, Forms of Government of Africa, General Linguistics (only with a language as co-major subject), General Literary Theory (only with a language as co-major subject), Geography, German, Greek, History, International Politics, Latin, Mathematics, Northern Sotho, Philosophy, Physical Education, Political Development, Political Science, Private Law, Psychology, Public Administration, Sociology, Southern Sotho, Tsonga, Tswana, Venda.

Other courses may be selected from the following: Classical Culture, Education, French, Information Science, Library Science.

The curriculum may include ONE of the following subjects: Accounting, African Law, Biology, Botany, Chemistry, Constitutional and Administrative Law, Geology, Physics, Roman Law, Social Work, Statistical Methods, Zoology.

### POST-GRADUATE DEGREES

Bachelor of Arts Honours: B.A.Hons.

Admission requirements: A B.A. degree.

Curriculum: One year. The degree is awarded in the following subjects: Afrikaans en Nederlands, Agricultural Economics, Anthropology, Biblical Studies, Classical Hebrew, Classics, Criminology, Economics, English, Forms of Government of Africa, General Linguistics, General Literary Theory, Geography, German, Greek, History, International Politics, Latin, Mathematics, Northern Sotho, Philosophy, Political Science, Psychology, Public Administration, Sociology, Southern Sotho, Tsonga, Tswana, Venda.

Master of Arts: M.A.

Doctor of Literature: D.Litt.  
Doctor of Philosophy: D.Phil.

## UNIVERSITY OF THE ORANGE FREE STATE

### FIRST DEGREES

Bachelor of Arts: B.A.

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: At least six semesters of full-time study (three years). The curriculum for B.A. (General Field of Study) must include at least twenty semester courses of

1

which two must be major subjects consisting of at least six semester courses each and another two ancillary subjects each consisting of four semester courses, or two major subjects consisting of six semester courses each, one ancillary subject consisting of four semester courses and another two ancillary subjects each consisting of two semester courses.

The two major subjects must be selected from the following subjects:

(i) A first major subject from the following: Anthropology, Applied Anthropology<sup>ø</sup>, Biblical Studies, Criminology, Economics, Geography, History, History of Art, Mathematics, Philosophy, Political Science, Psychology, Psychology (Counselling)\*, Sociology.

ø Anthropology I and II must also be included.

\* Psychology I must also be included.

A second major subject may also be chosen from the above-mentioned group, provided that any two of the following subjects may not be offered together as major subjects: Criminology, Psychology, Psychology (Counselling), Sociology.

(ii) A second major subject from the following: Afrikaans en Nederlands, English, French, German, Greek, Hebrew, Latin, Southern Sotho, Zulu.

The required ancillary subjects may be selected from groups (i) and (ii), or from the following subjects which consist of only two consecutive semester courses: Classical Culture A or B, English Special, French IB, General Linguistics, General Literary Theory, German IB, Latin Special, Statistics (only recognised if Geography III has been passed.)

A student may offer a maximum of four additional semester courses.

General Philosophy of Science is a single semester course which may only be offered from the second academic year.

#### Bachelor of Arts (Languages): B.A. (Languages)

The same rules apply as for the B.A. (General Field of Study) except for certain subjects.

A student selects one of two fields:

Field A: Two major subjects from group (ii) (language subjects) and either General Linguistics or General Literary Theory as an ancillary subject.

Field B: A major subject from group (ii) (language subjects) and General Linguistics and/or General Literary Theory as a second major subject.

#### POST-GRADUATE DEGREES

##### Bachelor of Arts with Honours: B.A. (Hons.)

Admission requirements: A student must satisfy all the requirements of an ordinary Bachelor's degree, and may only offer a subject taken as a major subject. A student must satisfy the head of the department concerned that he has sufficient knowledge at his command to justify admission to the course of study.

Curriculum: One year. The degree may be obtained in the following subjects: Afrikaans en Nederlands, Anthropology, Bantu Languages, Biblical Studies, Classics, Criminology, Economics, English, French, Geography, German, Greek, History, History of Art, Latin, Mathematics, Philosophy, Political Science, Psychology, Semitic Languages, Sociology.

##### Bachelor of Arts with Honours (Languages): B.A.(Hons.) (Languages)

Admission requirements: As for B.A.(Hons.).

Curriculum: The degree may be obtained in the following subjects: Afrikaans en Nederlands, Bantu Languages, Classics, English, French, General Linguistics, General Literary Theory, German, Greek, Latin, Semitic Languages.

Master of Arts: M.A.

Doctor of Literature: D.Litt.

Doctor Philosophiae: D.Phil.

## UNIVERSITY OF PORT ELIZABETH

### FIRST DEGREE

Baccalaureus Artium: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements: For admission to the following courses a candidate must have attained the standard indicated in each case:

- French IB: A pass in French HG or SG
- German I: A pass in German (third language) HG or a pass in German HG (mother-tongue)
- Latin I: A pass in Latin HG or SG
- Mathematics I or Statistics I: A pass of at least 40 % in Mathematics SG.

Curriculum: Three years of full-time study or four years of part-time study. An approved curriculum consists of not less than ten and not more than twelve courses. Such a curriculum must include at least four courses taken at first-year level, at least three courses taken at second-year level and at least two courses, known as the major courses, taken at third-year level.

An approved curriculum consists of courses selected from the following:

#### GROUP I

Subjects which may be taken up to a third-year level: Afrikaans/Nederlands, English, French, General Linguistics, General Literary Theory, German, Greek, Latin, Semitica, Sesotho, isiXhosa

#### GROUP II

Subjects which may be taken up to a third-year level: Anthropology, Biblical Studies, Computer Science, Economics, Geography, History, Mathematics, Mathematical Statistics, Pedagogics, Philosophy, Political Science, Private Law, Psychology or Industrial and Organisational Psychology, Public Administration, Sociology

#### GROUP III

Subject which may be taken up to a second-year level: Social Work

#### GROUP IV

Subjects which may be taken as first-year courses: Business Economics, Classical Culture, Economic History, Professional Afrikaans, English Special, Principles of Interpretation of Statutes and Administrative Law, Statistics I.

A candidate selects his major subjects either from Group I or from Group II. A candidate may be permitted to combine a major subject selected from Group I with a major subject selected from Group II.

A candidate must also complete the semester course in Philosophy of Science. Admission students who desire admission to a Faculty of Theology of the Dutch Reformed Church must complete the semester course Theory of Theology. These courses are taken during the second semester of the candidate's penultimate year of study.

#### POST-GRADUATE DEGREES

##### Baccalaureus Artium Honores: B.A. Hons.

Admission requirement: A B.A. degree. A person may only be admitted as a candidate in a subject taken by him as a major subject for the Bachelor's degree.

Curriculum: At least two consecutive semesters. The examination consists of not less than four or more than six written papers as well as such practical and oral examinations as the Senate may prescribe.

The B.A. Hons. degree is conferred in one of the following subjects:

Afrikaans/Nederlands, Anthropology, Biblical Studies, Classical Languages, Economics, English, French, Geography, German, Greek, History, Industrial and Organisational Psychology, Latin, Mathematics, Mathematical Statistics, Philosophy, Political Science, Psychology, Public Administration, Semitica, Social Work, Sociology, Sesotho, isiXhosa.

Magister Artium: M.A.

Doctor Philosophiae: D.Phil.

Doctor Litterarum: D.Litt.

#### P O T C H E F S T R O O M   U N I V E R S I T Y   F O R   C H R I S T I A N   H I G H E R E D U C A T I O N

#### FIRST DEGREE

##### Bachelor of Arts: B.A.

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- German I: A pass in German in the Std 10 examination
- Latin I: A pass in Latin in the Std 10 examination or in Latin Special at the University
- Physical Education: A student must ascertain beforehand whether he is medically fit.
- History of Music: A student must satisfy the Head of the Department in a practical test that his standard of musical performance is equivalent to the requirements of the Intermediate Certificate of the University of South Africa.
- Mathematics: A pass in Mathematics HG or at least 50 % in Mathematics SG.

Curriculum: Three years of full-time study or four years of part-time study. A student compiles his curriculum with course units in the following subjects:

(i) Major and ancillary language subjects

Afrikaans-Nederlands, Dramatic Art, English, French, General Linguistics and Literary Theory, German, Greek, Latin, Northern Sotho, Semitic Languages, Speech and Interpretation, Tswana, Zulu



(ii) Supplementary language subjects

Afrikaans, English IB, German Special, Latin Special, French Special

(iii) Other major subjects or ancillary subjects

Anthropology, Biblical Studies, Criminology, Development Administration, Economics, Ethics, Geography, History, History of Art, History of Music, Industrial and Personnel Psychology, Industrial Sociology, International Politics, Mathematics, Philosophy, Physical Education, Political Science, Private Law, Psychology, Public Administration, Sociology, Statistics, Theatrical Art

(iv) Other ancillary subjects

Ancient Cultural History, Communication, Constitutional Law, Counterpoint, Cultural Leadership, Education, Harmony, History of Law, Indigenous Law, Interpretation of Statutes, Introduction to Legal Science, Library and Information Science, Library Science, Money and Banking, Physiology, Regional Planning, Roman Law, Town and Regional Planning, Town Planning.

Philosophy of Science A and Philosophy of Science B are compulsory course units which have to be included in the curriculum.

The curriculum must include at least two major subjects. International Politics is a two-year major subject.

A student must obtain at least 300 credits which must be distributed among course units from at least five different subjects.

The distribution of credits in the following two subjects serve as an example.

<u>Credits</u>	<u>Subject and descriptive name of the course unit</u>
	GERMAN
20	German Special
20	German I
24	German II
48	German III
	LIBRARY SCIENCE
10	Library and Information Services
12	Bibliographical control and specialised sources of information
24	Introduction to readership

#### POST-GRADUATE DEGREES

##### Honours Bachelor of Arts: Honns. B.A.

Admission requirements: A B.A. degree. The subject of an Honours degree course must be one which the student took as a major subject for the B.A. degree.

Curriculum: The student must attend an approved course at the University for at least one year. A student may present himself for the final examination once only.

The Honours degree may be obtained in one of the following divisions: Afrikaans-Nederlands Language and Literature, African Studies, Anthropology, Bantu Languages, Biblical Studies, Classics, Communication, Criminology, Cultural Science, Development Administration, Dramatic Art, Economics/Money and Banking, English Language and Literature, French Language and Literature, General Linguistics and Literary Theory, Geography, German Language and Literature, Greek, History, History of Art, Industrial and Personnel Psychology, Industrial Sociology, International Politics, Latin, Library and Information Science, Mathematics, Philosophy, Physical Education, Political Science, Psychology, Semitic Languages, Social Work, Sociology, Speech and Interpretation, Theatrical Art.

Bachelor of Philosophy: B.Phil.

Admission requirement: A Bachelor's degree: Provided that Philosophy is not one of the major subjects.

Curriculum: At least two academic years. Lectures are offered on a part-time basis at Potchefstroom.

Master of Arts: M.A.

Doctor Litterarum: D.Litt.

Doctor Philosophiae: D.Phil.

U N I V E R S I T Y   O F   P R E T O R I A

FIRST DEGREE

Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A candidate must have obtained a pass in at least two of the following subjects on the Higher Grade: History, Geography, Mathematics, Biblical Studies, Economics, Biology or Physiology, Physical Science, a third language: Provided that a pass in a third language on the Standard Grade may be accepted if offered on the Standard Grade only.
- A candidate may not be admitted to the German IA course unless he has obtained a pass in German in the Std 10 examination or has passed in German IB.
- A candidate may not be admitted to the French IA course unless he has obtained a pass in French in the Std 10 examination or has passed in French IB.
- A candidate may not be admitted to the English IA course unless he has obtained at least 50 % in English (Second Language on the Higher or Standard Grade or First Language on the Standard Grade) or a pass in English (First Language) on the Higher Grade.
- A candidate may not be admitted to the Latin IA course unless he has obtained a pass in Preliminary Latin or at least 40 % in Latin in the Std 10 examination.

Curriculum: Three years. The curriculum, which must include at least ten courses, is compiled from courses in the following subjects:

GROUP I

Afrikaans, English, French, German, Greek, Hebrew or another Semitic language, Latin, Sotho, Zulu

GROUP II

Afrikaans and Netherlands Cultural History, Anthropology, Applied Anthropology (Development Science), Archaeology, Biblical Studies, Criminology, Dramatic Art, Economic Analysis, Economics, Geography, Historical Pedagogics, History, History of Art, History of Music, International Politics, Linguistics, Mathematical Statistics, Mathematics, Pedagogics, Philosophy, Physical Education, Political Science, Psychology, Public Administration, Social Work, Sociology

GROUP III

Administrative Law, Bantu Law, Constitutional Law, Criminal Law, History of Law, Interpretation of Statutes, Philosophy of Law, Public International Law, Roman-Dutch Law, Roman Law

#### GROUP IV

Applied Mathematics, Biology, Botany, Chemistry, Geology, Physics, Physiology, Zoology.

At least one course must be selected from Groups I and II respectively; not more than seven courses may be selected from Group III, and not more than two courses from Group IV.

In addition to the two major subjects, each candidate must select at least one more subject with at least two courses.

A candidate who selects a third course in a language must offer at least two other language courses.

No candidate is allowed to select more than six courses in the first year, five in the second and four in the third year of study.

For certain courses there are compulsory ancillary subjects which must be taken, e.g. Applied Anthropology (Development Science) I must be included in the curriculum if Anthropology III is selected.

Note: In view of the fact that a reading knowledge of German and/or French is essential for post-graduate study, it is recommended that candidates who wish to continue their studies should include German I or French I.

#### POST-GRADUATE DEGREES

##### Bachelor of Arts (Honours): B.A. (Hons.)

Admission requirement: A Bachelor's degree. A candidate must satisfy the head of the department concerned that he has sufficient knowledge of the subject to be able to undertake the work for the degree.

Curriculum: One year. The degree may be awarded in the following subjects: Afrikaans, Afrikaans and Netherlands Cultural History, Anthropology, Applied Anthropology (Development Science), Archaeology, Bantu Languages, Biblical Studies, Criminology, Dramatic Art, Economics, English, French, Geography, German, Greek, History, History of Art, International Politics, Latin, Linguistics, Mathematical Statistics, Mathematics, Philosophy, Political Science, Psychology, Public Administration, Semitic Languages, Sociology.

A candidate may not present himself for the examination more than twice without the permission of the Senate.

Master of Arts: M.A.

Doctor of Literature: D.Litt.

Doctor of Philosophy: D.Phil.

#### R A N D A F R I K A A N S U N I V E R S I T Y

#### FIRST DEGREE

##### Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- German I, French I, Latin I: A pass (40 %) in the corresponding Standard 10 subject on the Higher Grade; or a pass in the special course in the language concerned at the University.

- Mathematics: A pass of at least 40 % in Mathematics HG. Candidates who have passed Mathematics SG will only in exceptional cases, be admitted to the course in Mathematics after a test set by the Department of Mathematics has been passed.

- Economics as a major subject: A minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Curriculum: Three years' full-time study or at least four years' part-time study. A curriculum comprises 20 or 22 semester courses, or the equivalent thereof in year courses.

The degree is offered in each of the following curriculum groups:

- Admission and Theological Studies: See THEOLOGY (p.247) for admission to theological studies at the Faculties of Theology of the Universities of the Orange Free State, Potchefstroom, Pretoria and Stellenbosch.

- African Studies: There is a choice of three curricula, but the two major subjects for each curriculum are chosen from the following: A Bantu language III (Northern Sotho, Southern Sotho or Zulu), Development Administration III, Anthropology III.

- Communication: See COMMUNICATION p.106.

- Development Studies: The two major subjects must be selected from the following subjects: Anthropology, Business Economics, Communication, Development Administration, Economics, Political Science, Sociology.

- Human Sciences:

Note: Industrial Psychology, Library Science and Social Work may not be included as major subjects in this curriculum group.

One year course is required in any one of the following: Afrikaans-Nederlands, English, French, German or another approved language. Two language courses may be taken. General Linguistics or General Literary Theory may be taken instead of a second language course if it has been approved as an ancillary subject for the major subject(s) concerned.

A maximum of two year courses or four semester courses from another faculty is permitted.

Major subjects are selected from the following: Anthropology, Biblical Studies, Communication, Development Administration, Economics, Education, Geography, History, History of Art, Mathematical Statistics, Mathematics, Philosophy, Political Science, Psychology, Sociology.

Various prerequisites and compulsory ancillary subjects apply to specific courses, e.g. Statistical Methods A is a prerequisite ancillary subject for Psychology III B.

- Law: See LAW p. 164.

- Library Science and Informatics: See LIBRARY SCIENCE p.169.

- Political Sciences: Political Science is a compulsory major subject. A further major subject is selected from: Public Law (i.e. Constitutional Law I, Public International Law and Administrative Law), History, Philosophy, Economics, Anthropology and Development Administration.

- Social Work: See SOCIAL WORK p.240.

- Teacher training: See EDUCATION p.134.

- B.A. (Languages): The curriculum with major subjects in languages only is compiled as follows:

- . Two (or three) languages or a language (or two languages) and General Linguistics as major subjects.
- . A year course in General Linguistics or General Literary Theory is compulsory.
- . At least two more year courses in languages must be taken on a one or two-year basis.
- . Further ancillary subjects are selected from language courses or from the following subjects: Anthropology, Biblical Studies, Classical Culture, Communication, Constitutional Law, Development Administration, Economics, Education, Ethics, Geography, History, History of Art, Library Science, Logic, Mathematics, Philosophy, Political Science, Psychology, Roman Law, Sociology, Statistical Methods as well as African History which may only be taken together with Afrikaans-Nederlands, French, Bantu languages and Semitic languages.
- . Two Bantu languages, namely Zulu and Southern Sotho or Northern Sotho, may be taken as major subjects.

- B.A. (General): Major subjects: One language or General Linguistics and one non-language.

A student registers for a Bachelor's degree in a certain curriculum group and his registration and course changes must be approved by the chairman of the curriculum group.

A curriculum consists of either two primary major subjects or one primary plus two secondary major subjects. One reinforced major subject may be taken instead of a primary major subject. A primary major subject consists of six semester courses of which at least two must be taken at each year level. A secondary major subject consists of at least three semester courses of which at least one semester course must be taken at each year level. A reinforced major subject consists of seven or eight semester courses of which at least two must be at the third-year level.

The semester course comprising Theory of Science A and Theory of Science B is a compulsory additional semester course to first degree curricula in the Faculties of Arts, Science, Economic and Management Sciences, Education and Law. Theory of Science A is a compulsory additional course to curricula for lower diplomas in the faculties concerned as well as for the H.D.E. course.

#### POST-GRADUATE DEGREES

Bachelor of Arts with Honours: B.A. Hons.

Admission requirements: A student must hold the Bachelor's degree and have passed in the subject concerned at the level of a primary major subject.

Curriculum: Two semesters of full-time study or four semesters of part-time study. The examination consists of at least four and not more than six three-hour papers. A student who fails an Honours examination may only present himself for re-examination with the special permission of the Faculty.

Master of Arts: M.A.

Doctor of Literature and Philosophy: D.Litt. et Phil.

#### R H O D E S U N I V E R S I T Y

##### FIRST DEGREE

Bachelor of Arts: B.A.

The degree of Bachelor of Arts may be awarded either as an ordinary degree or as an Honours degree.

## The ordinary degree

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- In Latin, Greek, Hellenistic Greek, French, German, Hebrew, Italian and the African languages, candidates who have not matriculated in these subjects may take an introductory course. If a sufficiently high standard is reached in the examination, the candidates may be permitted to proceed direct to the second course in that language.

- A candidate may not take any course in English, Afrikaans or Afrikaans/Nederlands unless he has obtained a matriculation pass in that subject in either First or Second Language Higher Grade.

Curriculum: Three years. A candidate for the ordinary degree must obtain credit in not less than ten courses; he may present himself for examination in not more than four of these in the first year of study, not more than four in the second year of study, and not more than two in the final year of study.

A candidate may present himself for examination in the following subjects:

### GROUP A

Afrikaans, Afrikaans/Nederlands, English, English in Africa, French, German, Greek, Hebrew, Italian, Latin, Shona, Southern Sotho, Translation\*, Xhosa, any other approved African language

### GROUP B

Customary Law, Legal Theory

### GROUP C

Anthropology, Economics, Economics of Agriculture, Industrial Sociology, Linguistics, Philosophy, Political Studies (African), Politics, Psychology, Social Work\*, Sociology

### GROUP D

African History, Economic Geography, Economic History, General History of Art, Geography, History, History and Appreciation of Music, Classical Civilization

### GROUP E

Biblical Studies, Ecclesiastical History, Systematic Theology

### GROUP F

Logic, Mathematical Statistics, Mathematics, Statistics

### GROUP G

Drama Practice, Fine Art Practice, Fine Art Studies, Journalism\*, Music, Musical Education, Physical Education\*, Speech and Drama, Visual Communication

### GROUP H

Biological Science, Chemistry, Computer Science, Geology, Physics.

\* Indicates subjects which may only be taken as first-year courses for the B.A. degree.

A candidate must obtain credit in all the required courses in at least two subjects, to be known as major subjects, which shall be selected from the following:

(a) Major subjects in which three courses are required:

Afrikaans/Nederlands, Anthropology, Biblical Studies, Economics, English, Fine Art Studies, French, Geography, German, Greek, Hebrew, History, Latin, Legal Theory, Mathematics, Music, Philosophy, Political Studies (African), Politics, Psychology, Sociology, Southern Sotho, Speech and Drama, Xhosa, another approved African language.

(b) Major subjects in which two courses are required:

African History, Classical Civilization, Ecclesiastical History, Economic History, Economics of Agriculture, Industrial Sociology, Linguistics, Mathematical Statistics, Systematic Theology.

Two African languages may not be offered as the only two major subjects; Politics and Political Studies (African) may not be offered as the two major subjects; and History and African History may not be offered as the two major subjects.

A candidate must select his course from at least two of the aforementioned groups: Provided that a candidate who selects one of his major subjects from Group E may, as an alternative to Sociology I, include in his curriculum one course in Pastoral Theology (taken in the Faculty of Divinity).

A candidate who takes a major subject from Group A must also obtain credit in at least one other course from that Group, or Classical Civilization or Linguistics, or Speech and Drama, except in the case of candidates majoring in an African language, who may take Anthropology instead of Classical Civilization.

#### POST-GRADUATE DEGREES

##### The Honours degree

Bachelor of Arts with Honours: B.A. (Hons.)

Admission requirement: A B.A. degree or the status thereof.

Curriculum: A candidate must attend the University for not less than one academic year and pursue a course of study in his chosen subject.

The Honours degree may be taken in any subject or combination of subjects approved by the Senate. The subjects are as follows: African Languages, Afrikaans/Nederlands, Anthropology, Biblical Studies (Old Testament or New Testament), Classical Civilization, Classics, Economics of Agriculture, Ecclesiastical History, Economic History, Economics, English, French, Geography, German, Greek, History, Journalism, Latin, Linguistics, Mathematical Statistics, Mathematics, Philosophy, Physical Education, Political Studies (African), Politics and Economics, Politics, Psychology, Sociology, Speech and Drama, Systematic Theology, a combination of any two approved languages, or a combination of English and History, or a combination of Linguistics and Anthropology, or any combination of two subjects in Group E.

As an alternative a candidate may be admitted to the course for the Honours degree from the beginning of the third year of study for the ordinary degree. A candidate attends the University for a further period of not less than two academic years and complies with such further requirements as may be prescribed by the Senate.

A candidate who has been awarded the ordinary degree may be admitted to a two-year course to take the Honours and the Master's degree concurrently. At the end of this period, he shall write the full Honours examination, and if successful may submit his Master's thesis at any subsequent date without further attendance requirements.

Master of Arts: M.A.

Doctor of Philosophy: Ph.D.

Doctor of Literature: D.Litt.

# UNIVERSITY OF SOUTH AFRICA

## FIRST DEGREE

### Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- Afrikaans, English, French, German, Latin, Modern Hebrew: A pass of at least 40 % on the Higher Grade in the corresponding language.
- African languages, Greek, Italian, Portuguese, Spanish: A pass of at least 40 % on the Standard Grade in the corresponding language.

A student may offer and pass a special course in a language for admission to a first degree course in that language. A special course is a one-year beginner's course which is recognised as a full degree course, but a student may not offer more than one special language course.

Curriculum: The curriculum extends over at least three years and consists of at least ten degree courses divided as follows:

First year : a maximum of five  
Second year : a maximum of four  
Third year : a maximum of three

The curriculum consists of courses in the following subjects:

#### GROUP A

Note: Subjects marked with an asterisk\* are either one-year courses or only course I may be taken.

(i) Afrikaans en Nederlands, Arabic, Classical Hebrew, English, French, German, Greek, Hellenistic Greek, Italian, Latin, Linguistics, Modern Hebrew, Ndonga, Northern Sotho, Portuguese, Practical Afrikaans\*, Practical English\*, Russian, Southern Sotho, Spanish, Tsonga, Tswana, Venda, Xhosa, Zulu.

(ii) African Politics, Ancient History, Anthropology, Applied Economics (Development Economics)\*, Biblical Archaeology, Communication, Computer Science\*, Criminology, Development Administration, Economic History\*, Economics, Education, Geography, Health Development Administration, History, History of Art, History of Music, Information Systems\*, International Politics, Judaica, Logic, Mathematics, Penology, Philosophy, Political Science, Principles of Greek Culture\*, Psychology, Public Administration, Sociology, South African Archaeology, Statistics.

#### GROUP B

Biblical Studies, Biology\*, Church History, Communication Law\*, Constitutional Law\*, Criminal Law\*, History of Law\*, Indigenous Law, Introduction to the Theory of Law\*, Private Law, Public International Law\*, Roman Law, Science of Religion, Systematic Theology.

Each curriculum must contain at least two major subjects. Major subjects must be chosen from the following:

(a) Major subjects with three courses:

Afrikaans en Nederlands, Anthropology, Arabic, Biblical Studies, Church History, Classical Hebrew, Communication, Criminology, Development Administration, Economics, Education, English, French, Geography, German, Greek, History, History of Art, History of Music, Italian, Latin, Linguistics, Logic, Mathematics, Modern Hebrew, Northern Sotho, Penology, Philosophy, Political Science, Portuguese, Private Law, Psychology,



Public Administration, Russian, Science of Religion, Sociology, Southern Sotho, Spanish, Statistics, Systematic Theology, Tsonga, Tswana, Venda, Xhosa, Zulu.

(b) Major subjects with two courses:

African Politics, Health Development Administration, International Politics, Judaica, Roman Law.

For certain subjects there are compulsory ancillary subjects and/or other requirements.

#### POST-GRADUATE DEGREES

Honours Bachelor of Arts: Hons. B.A.

Admission requirement: A B.A. degree. Some departments have specific admission and examination requirements.

Curriculum: No student is admitted to the examination unless he has followed an approved course for at least one year.

The degree may be conferred in the following departments: African Languages, Afrikaans en Nederlands Language and Literature, Anthropology, Arabic, Biblical Studies, Classics, Communication, Criminology, Development Administration and Politics, Economics, English Language and Literature, French Language and Literature, Geography, German Language and Literature, Greek, History, History of Art, International Politics, Italian Language and Literature, Judaica, Latin, Linguistics, Mathematics, Modern Hebrew, Penology, Philosophy, Police Science, Political Science, Psychology, Public Administration, Russian, Semitic Languages (follows on Classical Hebrew III), Sociology, Spanish, Strategic Studies.

Master of Arts: M.A.

Doctor of Literature and Philosophy: D.Litt. et Phil.

#### UNIVERSITY OF STELLENBOSCH

##### FIRST DEGREE

Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). In the case of a B.A. course which includes Statistics (half course) and Mathematics (half course), a pass in Mathematics on the Standard Grade is a requirement.

Curriculum: Three years of full-time study. During the first year of study the ordinary B.A. degree course comprises five subjects of which three must be selected in such a way that they form an appropriate introduction to the rest of the course. The second year of study is limited to the three subjects already taken in the first year. The third year of study is devoted to the major subjects, i.e. those two subjects also taken during the first and second years.

The subjects for the B.A. degree are divided into the following groups:

##### GROUP A

Languages: Afrikaans, Afrikaans en Nederlands, Bantu Languages (Xhosa and Southern Sotho), English, French, German, Greek, Italian, Latin, Semitic Languages.

##### GROUP B

African Studies, Afrikaans Cultural Science and Folklore, Anthropology, Archaeology, Biblical Studies, Classical Culture, Development Administration, Dramatic Art, Economics, General Linguistics, Geography A, History, Indigenous Law, Philosophy, Political Philosophy, Political Science, Private Law, Psychology, Public Administration, Sociology.

## GROUP C

(i) Drama, Fine Arts, Librarianship, Mathematics C, Music, Physical Education, Physiology B, Statistical Methods, Statistics.

(ii) Only for the degree of B.A. (with Law subjects): Business Economics, Financial Accounting, Roman Law.

## GROUP D

Only in exceptional cases approved by the Senate, and subject to time-table possibilities is it permissible to take a subject from the Faculty of Science (apart from Mathematics and Physiology mentioned under Group C above) for the B.A. degree. Physiology, Statistics and Mathematics may be taken as first-year subjects if the time-table allows it.

All the subjects must be selected from groups A and B, except in the case mentioned above and in the case of a B.A. degree in a special field of study, e.g. B.A. in Fine Arts.

The five first-year subjects must be selected from at least two of the above-mentioned groups. If the two major subjects are chosen from A, then at least one ancillary subject must be chosen from B. If the two major subjects are chosen from B or B and C, then at least one language must be selected, except in the case of B.A. in Fine Arts, B.A. with Physical Education and B.A. in Social Work. A major subject may not be chosen from Group D.

## POST-GRADUATE DEGREES

Honours Bachelor of Arts: B.A. Hons.

Admission requirements: A student must hold a Bachelor's degree and must lodge his application in writing with the Senate.

Curriculum: The prescribed course extends over at least one year after obtaining the Bachelor's degree. Students must pass in the required examination at the end of the year.

Master of Arts: M.A.

Doctor Litterarum: D.Litt.

Doctor Philosophiae: D.Phil.

## UNIVERSITY OF THE WESTERN CAPE

### FIRST DEGREE

Baccalaureus Artium: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- Afrikaans en Nederlands I and Afrikaans: A pass in Afrikaans First or Second Language HG
- English I and English Special: A pass in English First or Second Language HG
- German I: A pass of at least 40 % in German (Third Language) HG
- Latin I: A pass in Latin HG
- Music I: A Grade IV Certificate (practical and theory) of the University of South Africa or an equivalent qualification

- Mathematics: A minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG

- Economics II: A pass in Mathematics SG or HG.

Curriculum: Three years. The curriculum consists of at least ten qualifying courses in the following subjects:

#### Group A

Afrikaans, Afrikaans en Nederlands, Arabic, English, English Special, French, German, Hellenistic Greek, Hebrew, Latin, Xhosa

#### Group B

Beginners' German, Beginners' French, Beginners' Latin

#### Group C

Anthropology, Biblical Studies, Classical Culture, Constitutional Law, Economics, Geography, History, Industrial Psychology, Linguistics, Mathematics, Music, Philosophy, Political Science, Private Law, Psychology, Public Administration, Roman Law, Social Work, Sociology.

Each curriculum must contain at least two major subjects which must be selected from the following: Afrikaans en Nederlands, Anthropology, Biblical Studies, Economics, English, French, Geography, German, Hebrew, Hellenistic Greek, History, Industrial Psychology, Latin, Linguistics, Mathematics, Philosophy, Political Science, Private Law, Psychology, Public Administration, Social Work, Sociology, Xhosa.

A curriculum shall include a second course in a subject other than the major subject. Each curriculum shall include at least one course in a subject from Group A. A student may include only one course from Group B in his curriculum. Credit shall not be given for e.g. both Beginners' French and French I.

### POST-GRADUATE DEGREES

#### Honours Baccalaureus Artium: B.A. Hons.

Admission requirements: A B.A. degree. Unless the Senate decides differently, a student must have obtained a minimum of 60 % in the final examination for the B.A. degree in the subject concerned.

Curriculum: One year of full-time study or two years of part-time study. The degree may be taken in the following fields of study: Afrikaans en Nederlands, Anthropology, Bantu Languages, Biblical Studies, Development Studies, Economics, English, Geography, German, History, Industrial Psychology, Latin, Philosophy, Psychology, Sociology.

Magister Artium: M.A.

Doctor Litterarum: D.Litt.

Doctor Philosophiae: D.Phil.

### UNIVERSITY OF THE WITWATERSRAND

#### FIRST DEGREE

#### Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements: A pass on the Higher Grade in three of the following subjects: Afrikaans First Language, Art, Bantu Language, Biology, English First Language, French, Geography, German, Hebrew, History, Latin, Mathematics, Music, Physical Science, Physiology.

Curriculum: Three years of full-time study. A student must include in his curriculum at least ten qualifying courses. A student may not include in his curriculum more than four qualifying courses in any year of study.

A student must include in his curriculum courses in subjects selected from the following list: Provided that admission to any course is subject to the provisions of the syllabuses: African Political Studies I, II; Afrikaans; Afrikaans en Nederlands I, II, III; Applied Mathematics, Computer Science and Mathematical Statistics I; Archaeology I, II, III; Astronomy; Biblical and Religious Studies I, II, III; Botany I; Chemistry I; Classical Life and Thought I, II, III; Drama and Film I, II, III; Economic History I, II, III; Economics I, II, III; English I, II, III; Fine Art I, II, III; French Preliminary, I, II, III; General Biology; Genetics for Arts students; Geography I, II, III; German IB, IA, II, III, Additional; Geology I; Greek I, II, III; Hebrew IB, IA, II, III; History I, II, III; History and Appreciation of Music; History of Art I, II, III; History of Music I, II, III; Industrial Sociology I, II; International Relations I, II, III; Italian IB, IA, II, III; Latin Prelim., I, II, III; Legal Theory and Institutions I, IIA or B, IIIA, B, C or D; Linguistics I, II, III; Mathematical Statistics II, III; Mathematics I (Major), I (Special), II (Major), II (Auxiliary), III (Major), III (Teaching); Painting Techniques; Philosophy I, II, III; Physics I (Major), I (Biology Auxiliary), I (Mathematics Auxiliary); Political Studies I, II, III; Portuguese IB, IA, II, III; Psychology - Psychology I; Applied Psychology II, III; General Psychology II, III; Industrial Psychology II, III; Russian IB, IA, II, III; Social Anthropology I, II, III; Sociology I, II, III; Southern Sotho I, II, III; Zoology I; Zulu I, II, III.

A student must include in his curriculum either the third course in each of two subjects selected from the above, or the third course in one subject selected from the above list and the second course in each of two other subjects selected from that list.

A third course is one denoted by the numeral III and a second course is denoted by the numeral II.

There are special restrictions on admission and credit; e.g. a student shall not be admitted (i) to both Afrikaans and Afrikaans en Nederlands I, (ii) to Fine Art I, unless he has obtained credit in History of Art I, (iii) to a third course in more than one of the Bantu languages.

A candidate may not include in his curriculum more than one of the following qualifying courses: Astronomy, Botany, Chemistry, General Biology, Genetics for Arts students, Geology, Physics, Zoology.

#### POST-GRADUATE DEGREES

Bachelor of Arts with Honours: B.A. Hons.

Admission requirements: A candidate must have obtained credit in all the qualifying courses prescribed for the Bachelor's degree.

Curriculum: One academic year of full-time study or two academic years of part-time study. The degree may be obtained in one of the following subjects or an approved combination of such subjects: African Political Studies, African Languages and Linguistics, Afrikaans en Nederlands Language and Literature, Ancient History, Applied Linguistics, Archaeology, Biblical and Religious Studies (Scripture), Biblical and Religious Studies (History and Philosophy of Religions), Classics, Comparative Literature, Comparative Linguistics, Comparative Philology, Development Studies, Drama and Film, Economic History, Economics, English Language and Literature, French Language and Literature, Geography, German Language and Literature, Greek, Hebrew, History, History and Philosophy of Science, History of Art, History of Music, Industrial Sociology, International Relations, Italian Language and Literature, Latin, Linguistics, Mathematical Statistics, Mathematics, Philosophy, Philosophy of Science and History of Technology, Political Studies, Portuguese Language and Literature, Psychology, Russian Language and Literature, Social Anthropology, Social Theory, Sociology.

The examination at the end of the course is known as the Honours examination and no candidate may repeat an Honours examination.

Master of Arts: M.A.

Doctor of Philosophy: Ph.D.

Doctor of Literature: D.Litt.

## UNIVERSITY OF ZULULAND

### FIRST DEGREE

Bachelor of Arts: B.A.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Six semesters (three years). A curriculum must consist of at least twenty qualifying semester courses arranged as follows:

First year: a maximum of eight  
Second year: a maximum of eight  
Third year: a maximum of six.

Semester courses are chosen from the following subjects:

#### Group A: Basic subjects

1. Afrikaans, Classical Hebrew, English, French, German, Greek, Latin, Southern Sotho, Zulu
2. Anthropology, Biblical Studies, Communication Science, Development Studies, Economics, History of Philosophy, Mathematics, Political Science, Practical Music, Psychology, Public Administration, Sociology, Speech and Drama, Systematic Philosophy
3. Geography, History, Theory of Music

#### Group B: Other Arts subjects

1. General Linguistics and Theory of Literature, German IB\*, Latin Special\*\*, Practical Afrikaans\*, Practical English\*, Preliminary French\*, Southern Sotho Special\*
2. Criminology<sup>∅</sup>, History of Music<sup>∅</sup>, Library Science, Pedagogics<sup>∅</sup>
3. Applied Mathematics\*, Church History and Dogmatics\*, Principles of Greek Culture\*, Science of Mission and Science of Religion\*.

\* Two semester courses only

\*\* Two-year course

∅ Four semester courses.

Each curriculum must contain at least two major subjects chosen from the following:

Major subject with eight courses: Library Science

Major subjects with six courses:

Afrikaans, Anthropology, Biblical Studies, Classical Hebrew, Communication, Development Studies, Economics, English, General Linguistics and Literary Theory, Geography, German, Greek, History, History of Philosophy, Latin, Mathematics, Political Science, Practical Music, Psychology, Public Administration, Sociology, Southern Sotho, Speech and Drama, Systematic Philosophy, Theory of Music, Zulu.

Each curriculum must contain

- at least ten semester courses from Group A;

- at least four semester courses from Group A1 and/or B1, at least two of which must be chosen from English, Afrikaans and/or Zulu;
- at least two more qualifying semester courses from Group A2 or A3 or B2 or B3.

No curriculum may contain more than two special language semester courses.

Some major subjects have ancillary subjects which must also be taken.

#### POST-GRADUATE DEGREES

Honours Bachelor of Arts: Hons.B.A.

Admission requirements: A B.A. degree.

Curriculum: At least one year. The degree may be conferred in the following departments:

Afrikaans, Anthropology and Development Studies, Bantu Languages, Biblical Studies, Classics, Economics, English, Geography, German, History, Mathematics, Music, Philosophy, Political Science and Public Administration, Psychology, Sociology.

Master of Arts: M.A.

Doctor of Literature: D.Litt.

Doctor of Philosophy: D.Phil.

**VOCATIONAL SERVICE:** The ordinary B.A. degree does not normally comprise a vocationally oriented field of study. The main objective is to equip the student with a broad background in the human sciences but also, to some extent, to prepare him or her for an occupational field. Students should therefore determine their fields of interest beforehand and choose their subjects in such a way that specialisation in one or other subject field is possible and worth while. Furthermore, a carefully planned combination of major and subsidiary subjects, which are to a great extent determined by the student's interest and aptitude, is of great importance for the intended broad occupational field. With a view to purposeful planning, consultation with the student guidance officer of the university and possible employers in the field concerned, will definitely be worth while.

#### POSSIBLE OCCUPATIONAL VALUE OF SOME OF THE SUBJECTS

Languages (mainly English, Afrikaans, German, French, Italian, Portuguese, etc.)

Like some of the other human sciences subjects, a language does not prepare the student for any specific career. Its occupational value is more indirect, but therefore no less real. Apart from this fact, the spiritual and cultural moulding rendered by a language is invaluable, because literature is a particularly accessible treasure not only of beauty, but also of wisdom, and a more profound knowledge of a language reveals unsuspected wonders. Someone once said: "With every language acquired, one becomes reborn, obtains a new mind" (Translation).

Languages normally form a good combination with a variety of other subjects, and a course with one or more languages as a basis can usually be planned without difficulty to correspond to the occupation which the student has in mind.

The value of a study of Afrikaans and English is obvious. In occupational life, in particular, it is becoming increasingly important for people to be bilingual and it is understandable that the two official languages are of specific value in the occupational field. One or more courses in these languages are required for a variety of fields of study.

Administrative Assistant (Public Service) (Afrikaans, English, Economics, Roman-Dutch Law, Public Administration, Political Science)

Graduates who have an appropriate B.A., B.Admin. or B.Com. degree may be appointed in the Public Service as administrative assistants. When they fill the higher administrative posts, they will daily have to investigate matters, carry on negotiations, give orders, take decisions and write memoranda and reports. Newcomers are trained by experienced personnel. They attend an induction course and the more senior officers attend a course on the principles of supervision.

Because of the large variety of duties to be performed, there are administrative personnel scattered in offices all over the country as well as overseas. Thus there is the opportunity to appoint people with a diversity of interest fields and qualifications in such a way that they can find complete fulfilment in their occupations.

Administrative personnel have much scope for promotion. At an early stage in his career the able person is given a position of responsibility in which he can fully realise his personal aptitude and in which his potential may be used to the best advantage. Promotion to higher ranks is not limited to one department only, but candidates may compete for senior positions in other departments as well. A position of high responsibility may eventually be reached in the Public Service.

Also consult Tertiary Training for particulars on the National Diploma (Public Administration) and the National Diploma (State Accounts and Finance).

Announcer and programme compiler (Afrikaans, English, African and other languages, Speech and Drama, Music)

The SABC offers employment to graduates in a variety of divergent fields, for example in administration, the programme section, Springbok Radio and regional services, and the section for foreign services. It is expected, furthermore, that the SABC will employ still more graduate men and women to make provision for effective television programmes. However, intending B.A. candidates (male and female) who are interested in a career in broadcasting, must make sure of a suitable subject combination. More information about this may be obtained from the Regional Manager, SABC, at one of the following addresses: P.O. Box 962, Pretoria 0001; P.O. Box 2551, Cape Town 8000; P.O. Box 122, Grahamstown 6140; P.O. Box 321, Windhoek 9100; P.O. Box 563, Bloemfontein 9300; P.O. Box 1588, Durban 4000. Enquiries may also be directed to: The Head, Personnel Administration, SABC, P.O. Box 8606, Johannesburg 2000 OR The Deputy Director, General Services, P.O. Box 4559, Johannesburg 2000.

Also see p. 120.

Committee Clerk (Afrikaans, English, Communication, other B.A. subjects and, where possible, Typing)

Various bodies and firms mainly employ women as committee clerks. Although basically their duties are similar, there are particular differences owing to the nature and requirements of the body employing them. Consequently some employers are satisfied with a Senior Certificate as qualification for a committee clerk, although others, such as, for example, the SABS, require a B.A. degree. Normally this career demands that persons be completely bilingual, with a sound knowledge of English in particular in cases where employers have liaison with overseas countries. The work is interesting and varied, and has the advantage for a young woman that she may return to her occupation after marriage.

Drama work (Afrikaans, English, courses in Drama)

Also see p. 120.

Editorial work (Afrikaans, English, Communication, Psychology, Sociology, History)

Appropriate experience in journalistic and newspaper or magazine work (in addition to a degree) is normally required for appointment as an editor. Numerous opportunities for this exist in the private sector, publishing firms as well as the Government departments of Agriculture and Fisheries, National Education, and Foreign Affairs and Information. Apart from editorial work various government departments also make use of the services of publication officers. The following departments may thus be added: Health and Welfare; Environment Affairs; Industries, Commerce and Tourism and the Commission for Administration.

Education (Afrikaans, English, History, other languages, other school subjects)  
See p.144.

Foreign Service Officer (Diplomat) (Afrikaans, English, French or Spanish or Portuguese, Public International Law, Constitutional Law, Private Law or Roman-Dutch Law, Economics or Business Economics)

The South African diplomatic service is administered by the Department of Foreign Affairs and Information and is responsible for promoting good international relations.

Foreign missions can be embassies, legations, consulates-general or consulates with such functions as the following: Representation, political and economic duties, commercial functions, consular and shipping obligations, conference work, liaison, agreements and treaties, and administration. Approximately the same functions are covered in the head office at Pretoria, but the nature of the duties is somewhat different.

Since the responsibilities are obviously great, a high standard of personal qualities is required from each candidate. In addition, an aptitude for languages and the ability to negotiate, to explain and to persuade will be useful qualities. A recognized university degree with one or more of the subjects (apart from the two official languages) mentioned above is required for appointment to the diplomatic service. All diplomatic officers are also required to pass a prescribed departmental examination. Promotions are decided on the basis of merit, as vacancies occur.

Information Officer (Afrikaans, French, German, Spanish, Portuguese, Italian, a Bantu language, Journalism (Communication), Political Science, Economics, History, Sociology, Anthropology)

Graduates (male and female) who have a combination of the above-mentioned subjects at their command, are employed by the Department of Foreign Affairs and Information to be further trained as information officers in the foreign and home information services. A talent for personal liaison is one of the most important qualities which an information officer should have. Equally important are an aptitude for writing and for acquiring languages; an extensive knowledge of the country and its problems; an alert personality; enthusiasm, self-control and patience. The ability to explain national problems and government policy correctly and efficiently is essential. There are attractive opportunities of promotion for the information officer who performs meritorious work and who improves his/her qualifications by further study.

Journalistic work (Afrikaans, English, other languages, Communication, History, Speech and Drama)

Also see p.108.

Also consult Tertiary Training for particulars on the National Diploma (Journalism).

Language Officer/Translator (Afrikaans, English, African languages, other languages such as German, French, Italian, Portuguese)

The language service of the Public Service is rendered by the Language Services Bureau of the Department of National Education and the Language Service divisions of the provincial administrations.

The Language Services Bureau is responsible for translating and editing the language of official publications of all government departments; for translations from foreign languages into the official languages for government departments and for the development of the terminology required for publications in the different specialised fields of the work of these departments. In order to execute these functions, the Bureau is divided into three sections: Afrikaans, English and Foreign Languages.

A translator - or language officer, as he is known in the Language Services Bureau - renders a particular service to the inhabitants of the country. The occupation is suitable for men and women and post-graduate studies are always encouraged.

Bilingualism and the correct use of the two official languages are becoming an increasing requirement and the demand for qualified translators will consequently increase. Most organisations which serve the public, continuously require the services



of translators. These bodies and organisations are, for example, the HSRC, CSIR, Iscor, UNISA, the SA Railways, SABC, large municipalities, several control boards, publishing firms, insurance companies and many other private institutions.  
Also see p.254.

Library work (Afrikaans, English, Library Science, other languages)  
Also see p.173.

Organiser of Training/Training Officer (Public Service) (Afrikaans, English, Public Administration, Political Science, Anthropology and subjects covering the natural sciences, economic sciences and law)

When a person has been newly appointed to a post, he can hardly be expected to accomplish his task effectively from the very outset. The training of personnel has thus become a primary function of almost every organisation. For the effective functioning of the government machine, for instance, it was essential to appoint full-time organisers of training in the Office of the Commission for Administration and full-time training officers in all the larger departments and administrations.

The field of the organisers of training is exceptionally wide. Apart from numerous other duties, they are responsible for advising and rendering aid to departmental heads, other senior personnel, departmental training officers and instructors. They do liaison work on senior level with departments, organise training, develop new courses, train training officers, do research on aspects of training and so forth.

The departmental training officers in their turn do in broad outline for a department what the organisers of training do for the Public Service in general.

It is evident that these posts impose high demands as regards self-development. Furthermore, those interested should have a sound knowledge of the functioning of the government machine. Consequently preference is given to those with appropriate experience and academic qualifications and who have the necessary aptitude, as established by selection procedures. Although recent graduates can therefore not expect to be appointed to one of these posts, they nevertheless offer an ideal objective which may be achieved in time.

Good opportunities for promotion are available to organisers of training as well as training officers, since after a time they may be taken up in departments in positions where broad insight is of importance.

Personnel Officer (Public Service) (Afrikaans, English, Economics, Public Administration, Political Science, Sociology, Psychology/Industrial Psychology)

Looking after the interests of personnel in the Public Service (and utilising their services) is known as personnel administration. The Commission for Administration is the central body responsible for the personnel policy of the entire Public Service. Every government department in its turn has a personnel section which serves as liaison between that department and the Commission for Administration.

The majority of the personnel sections, which together with other sections usually form the head office of a department, are based in Pretoria, but are also found in Cape Town, Bloemfontein and Pietermaritzburg. For persons attached to personnel administration there are numerous opportunities for self-improvement and achievement. Junior personnel receive effective guidance, while induction and supervisor's training courses are offered to officers to equip themselves more suitably for their tasks.

Personnel officers have practically unlimited opportunities for promotion. They can compete for promotion in all departments and by doing efficient work may be appointed to posts of high responsibility in the Public Service.

Also consult Tertiary Training for particulars on the National Diploma (Public Administration).

Politician (Afrikaans, English, Political Science, History, Anthropology, Economics)

Private Secretary (Afrikaans, English, Speech and Drama, Communication, secretarial courses outside the university). See p.239.

Public Relations work (Afrikaans, English, Speech and Drama, Sociology, Psychology, Communication)

Also see p.108.

### African Languages

The African languages (excluding Afrikaans) which enjoy recognition in the RSA can be classified in four groups as follows:

Group:	<u>Nguni</u>	<u>Sotho</u>	<u>Tsonga</u>	<u>Venda</u>
Language:	Zulu Xhosa Swazi Ndebele	Northern Sotho Southern Sotho Western Sotho (Tswana)	Tsonga	Venda

Of all these languages, only Swazi and Ndebele are not offered at one of the universities. The languages in a particular group are closely related to one another. Consequently, a knowledge of Zulu in the Nguni Group will for instance make it possible to communicate with Xhosa, Swazi or Ndebele-speaking persons. Similarly, a person qualified in Southern Sotho will be able to communicate with people who speak Northern Sotho and Tswana. The Nguni and Sotho-speaking groups constitute approximately 94 per cent of all Bantu language speakers in the Republic.

There is no longer any doubt concerning the desirability of studying African languages at university level. In fact, such study has of late become a necessity. Knowledge of an African language has practical value in virtually all occupations, in that misunderstandings can be eliminated and mutual trust promoted. However, these languages can also be occupationally oriented to a considerable extent, as the following examples will show:

- Education: All the education departments and universities, including the Department of Education and Training, to which considerable numbers of White teachers are at present attached;
- The Administration: In various government departments such as those of Co-operation and Development; Agriculture and Fisheries and Justice; the HSRC, the SA Railways, the Transvaal Board for the Development of Peri-Urban Areas, the various Administration Boards, municipalities, mines and industries;
- Sport and recreation: As officials in the service of the Department of National Education, mines, municipalities and other institutions employing large numbers of Blacks;
- Personnel and training officers: Various large industries, mines, municipalities, the SA Railways, et cetera;
- Broadcasting: The SABC (radio and television) has regular vacancies for programme organisers, controllers of programmes, news compilers, et cetera;
- Advertising, publishing and printing industry, as well as Social Work, Mission and Library Services;
- Research: In addition to the opportunities which the universities offer graduates in African languages, there are other institutions which use such persons in a research capacity, for example the HSRC, the Department of Education and Training, and the section for Ethnography of the Department of Co-operation and Development.

Examples of the most important employers of graduates who majored in languages are most government departments and the provincial administrations, HSRC, CSIR, SABC, Iscor, Posts and Telecommunications, SA Railways, SA Defence Force, municipalities, universities, schools, colleges, aviation and other travel agencies, insurance companies, commerce and industry, libraries, publishing firms, advertising agencies, the film industry and international companies.

Note: Candidates should bear in mind that for some employers a first B. degree with Languages is not enough and that further study or training and/or suitable experience may be required.

#### Other subjects for B.A.

Anthropology/Ethnology: Ethnology and Anthropology are allied concepts. As the name implies, Ethnology is concerned with a study of ethnic groups, their ways of life and cultures, what these were like in the past, what they are like today and how they have changed, while Anthropology embraces the total study of man.

As in the case of most other subjects, Anthropology can be taken as a major or subsidiary together with other B.A. majors. It can usually be effectively combined with, for example, the following subjects: Applied Anthropology, Development Administration, Bantu Languages, Bantu Law and Administration, History, Geography, Sociology, Communication, Philosophy, Political Science, Economics, Psychology and Public Administration.

A few fields in which a student with academic qualifications in Anthropology and related subjects may hope to find a career, are, briefly, the following:

The Department of Co-operation and Development; research institutions such as the Human Sciences Research Council (HSRC); personnel sections of large organisations such as the Railways and mining companies; local government (senior officials); the SABC (with the accent on knowledge of Bantu languages); the Peri-Urban Areas Board; the Africa Institute (limited number of posts); on the staff of the commissioners-general and as researchers in the field of ethnology and anthropology. With the transfer of powers, duties, functions and responsibilities of municipalities in respect of the control and administration of urban Blacks to the statutory bodies e.g. the Administration Boards, it can be expected that a large number of highly salaried posts will gradually become available.

Graduates in this field of study must normally be deeply interested in research and should be prepared to continue studying.

Archaeology: Archaeology is concerned with a study of man of the past - since his earliest origin (two or three million years ago) up to the recent past. Amongst other things the archaeologist is interested in reconstructing human behaviour and the culture of the past by studying man-made objects which have remained intact on top of and under the surface of the earth.

Archaeology is related to other subjects which also study different aspects of human existence. Subjects such as Anthropology, History, Zoology, Botany, Geology and Geography are important in this connection, but Archaeology is also linked to subjects such as Sociology and Statistical Methods.

Since job prospects in this occupation are so limited, it is imperative that candidates who are interested in it should either equip themselves for another career as well or make a judicious choice of major and subsidiary subjects. Vacant posts are mainly limited to a number of museums and a few universities. Occupational archaeology is a new field and by being equipped for another occupation as well, the person who is trained in archaeology can hold himself in readiness for a possible post, should it become available.

Biblical Studies: Biblical Studies is the subject in which a scientific study of the Bible is made. This means that one book is singled out for independent study and, as a subject, is accessible to anyone who is interested in acquiring more knowledge, at the scientific level, of the Bible, its character and the implications of its message. The subject consequently does not imply a mere knowledge of the Bible but constitutes an attempt at scientific thought on the revelation of God in order to bridge any unaccountable gap between faith and knowledge, the Bible and science.

Biblical Studies as a major for a degree is suitable for Religious Instruction at primary and secondary school level and is essential for the teacher who has to teach the subject in the secondary school. Biblical Studies, which is a recognised subject for matriculation exemption, is currently being offered by an increasing number of

secondary schools and there will be a growing demand for teachers of this subject in the future. The subject is also of considerable importance for a career in library science or the book trade.

Criminology: In Criminology a study is made of certain aspects of crime manifestation. The most important of these are, for example, what constitutes crime, the causes of crime, the incidence of crime, the offender as a person, punishment and treatment of criminals and the prevention of crime. Criminology is consequently closely related to subjects such as Sociology, Psychology, Anthropology, Social Work and Criminal Law, and to a lesser extent to Philosophy (particularly Ethics), Education, Political Science, Economics, and so forth.

A knowledge of Criminology is to a larger or smaller extent of value in all occupations in which crime or the criminal is encountered, such as the legal professions (attorneys, advocates, prosecutors, magistrates, judges, the police and prison services) and in all welfare work performed by private organisations, the Departments of Health and Welfare and National Education (reform schools). This field of study offers particular scope for research at universities or in the service of the HSRC.

Development Administration: In a wider sense this field comprises the scientific study of the administration and development problems of developing nations in general. More specifically, Development Administration is concerned with the process of state forming and developing in Southern Africa. Universities make provision for the meaningful combination of Development Administration with subjects such as Economics, Anthropology, Sociology, Political Science, Bantu Law, Geography, Public Administration, Bantu Languages and History.

The demand for specialists in this field is still growing. Opportunities are available, for example, in the Government departments of Co-operation and Development, Education and Training, and Foreign Affairs and Information; the Administration Boards, the radio and press, universities and some research institutes.

History: Students who want to take History as a major, may, for example, choose a second major or subsidiaries from the following subjects: Afrikaans, English, German, (possibly other languages), Geography, Sociology, Psychology, Anthropology, Economics, Political Science and Philosophy. History is useful even as a subsidiary, because it functions as a bond-stone for the human and social sciences.

Although a study of History is not really an occupationally directed study, it is particularly valuable because of its moulding influence and the fact that it deals with man in his social context and institutions. It consequently provides a very necessary and sometimes indispensable background for several occupational fields such as broadcasting, foreign service, museums, libraries, journalism and the publishing industry, as well as politics. Knowledge of the past must continuously be handed down to each rising generation. Hence the urgent need of highly trained and well-equipped history teachers and lecturers, as well as writers on history at professional and popular levels. People may also be appointed as archivists or as professional officers (heraldry) in the Department of National Education or as researchers in the Institute for Historical Research of the HSRC.

Also consult Tertiary Training for particulars on the National Diploma in Archival Science.

History of Art: A work of art reflects a specific level and way of thinking and is distinguished from other human creations by virtue of its composition. The artist derives the forms which he creates from his own environment and time, and the appearance of art will therefore change with the changing times. The task of the student of History of Art and of the art historian is to explain the art forms of the past and to give them new life. For this purpose the art historian makes intensive use of the knowledge obtained from other subjects such as History, Philosophy, Sociology, Psychology, Biblical Studies, Literature and sometimes even from the natural sciences.

Career opportunities for art historians are found mainly in the field of research and/or lecturing in art museums, cultural-historical museums, universities, the HSRC and art schools. They may also be employed by the SABC as art critics, by art dealers as liaison officers between artists and the public, and by the diplomatic service as cultural attachés.

Linguistics: A language is used and spoken by all normal people and without it everything distinctly human in the personal and social behaviour of man would cease to exist. Despite this, however, people normally know very little or nothing about their language, what it is and how it functions.

Linguistics is the discipline which takes human language as the object of its investigation, posing the question 'What is language?' and seeking to provide an answer in terms of structural properties of human communication, from a description of the sounds of speech to the rules governing the way in which these sounds come to express the complexity of human thought. A linguist's training would therefore enable him to describe completely any language, irrespective of whether that language was previously known by him or not.

While language study is of interest in its own right and may lead to an academic career in Linguistics, there are a number of related fields in which application of Linguistics plays an important part. Some of the most obvious ones are Communication Studies, Psychology, Speech Therapy, Philosophy and first and second language studies. Any subject concerned with the teaching, learning and use of language, must presume an understanding at a general level of what language or a particular language is.

Philosophy: Every student is indeed a philosopher. But, even if every student should have a philosophy, Philosophy as such is not studied as a subject by everybody. There is therefore, a difference between philosophy as a view of life and Philosophy as a science compared with other sciences. Whereas subject sciences such as, for example, Botany and Anthropology make a study of the particular world of plants and ethnic groups, Philosophy tries to comprehend the world (cosmos) as an orderly whole (totality).

Philosophy offers a general occupational preparation; it does not supply a particular occupational training. A combination with, inter alia, Political Science, Psychology, Librarianship, Sociology, History, Anthropology, History of Art, Communication, modern and classic languages, is admirably suited for preparing a student for careers such as those of teacher, diplomat, law practitioner, minister, librarian, psychologist, journalist, et cetera.

Political Science: Political Science as a subject science offers opportunity for the study of constitutional affairs and political matters. As a social science it is closely related to some other disciplines and particularly to other social sciences. It is therefore a useful major to take together with subjects such as Industrial Psychology, Economics, Geography, History, Communication, Public Administration, Law subjects, Sociology, Anthropology, Philosophy, et cetera. The reverse is also true: Students who study the above-mentioned subjects, may to advantage include one or more courses in Political Science.

Political Science is mostly studied as a background for a large number of occupational fields in, for example, some government departments, the provincial administrations and local authorities; in education, law, journalism, private concerns, practical politics, broadcasting and librarianship.

Psychology: Psychology as a subject can briefly be described as the study of all aspects of human behaviour. In the practical situation psychologists study the normal and abnormal behaviour of individuals and groups in order to understand and explain their actions more fully. Various methods are employed to obtain as much information as possible.

Although a Bachelor's degree offers a good background, undergraduate training in Psychology is not occupationally directed. A candidate must therefore be prepared to undertake intensive post-graduate studies to qualify as a successful psychologist. The subject is exceedingly wide and candidates normally specialise in one or more fields. Often psychologists also combine different fields in practice. No person may, however, practise as a psychologist without being registered with the South African Medical and Dental Council. The requirement for registration is at least a Master's degree plus internship of one year at an approved institution.

Branches of Psychology include, for example:

- **Counselling Psychology:** In this field the psychologist renders assistance in respect of problems in connection with the choice of a field of study or the choice of an occupation, and with marital or family problems. Teacher or school psychologists employed by education departments work with pupils and deal with learning problems, the choice of subjects and occupations and behaviour problems. In their work use is made of various scholastic and psychological tests.
- **Clinical Psychology:** These psychologists chiefly work with adults and children displaying serious forms of disturbed or abnormal behaviour. They work in conjunction with a medical doctor or a psychiatrist and psychological testing constitutes an important aspect of their work as well.
- **Industrial and Personnel Psychology:** This important branch of Psychology is discussed separately on p.104.
- **Research and academic Psychology:** Psychologists in this field undertake full-time research in various fields of Psychology, while a limited number of them provide advanced training in the subject as lecturers.
- **Pastoral Psychology:** These psychologists are persons with theological training (clergymen) and who are also trained as clinical or counselling psychologists. In other words, they are capable of helping people in need of psychotherapy.
- **Other fields include Child Psychology or Development Psychology, Physiological Psychology, Social Psychology and Psychometrics.** Psychology can also be a useful subject for students who do not intend becoming psychologists, but who will mainly work with people.

Psychology can be taken as a major for B.A., B.Com. or B.Sc. Depending on the regulations of each university and the interest of the student. Psychology can usually be combined with subjects such as Sociology, Anthropology, Languages, Mathematics, Mathematical Statistics, Social Work, Philosophy, Economics, Physiology, Zoology, Physics and Computer Science.

Note: The psychiatrist is not mentioned above because, strictly speaking, he is a medical practitioner who, besides his ordinary medical training, has also received training in the treatment of the mentally ill and specialises in this field.

Psychologists normally find occupational opportunities with the following: The HSRC; the NIPR; the sections for psychological services of, for example, the Railways, the Defence Force, Iscor, Sasol, the mines and large municipalities; the provincial education departments and Government departments of Manpower; National Education; Health and Welfare; hospitals; church denominations; commerce and industry; large business concerns; private practice or clinics; institutions for the mentally ill and mentally deficient, and child guidance clinics.

Sociology: In the general sense it can be said that the problems of the world are related to the organisation of satisfactory and lasting human relations and to the handling of social and economic change and development. Sociology is therefore concerned with the study of human relations, the way in which individuals and groups of people react to one another, socio-economic development and change. This amounts to a factual, objective study of the social conditions under which specific patterns of behaviour and deviance are established, maintained and changed.

Sociology has particular significance in four broad fields:

- Academic sociologists (as lecturers at universities),
- research sociologists (persons doing full-time research at universities, university research institutes, private concerns, government departments and government-aided organisations. The largest concentration of research sociologists in South Africa is found in the Institute for Sociological and Demographic Research of the Human Sciences Research Council (HSRC) in Pretoria.),

- administrative and planning sociologists (persons employed in large organisations and industries in which a sound knowledge of human relations is essential, for example liaison officers and personnel managers and persons concerned with planning and development),

- various professional and labour situations (for which training in Sociology is advisable and even essential, for example for social workers, clergymen, teachers, medical doctors, psychiatrists, architects, nurses, jurists, artists and journalists).

Sociology fits in particularly well with various fields of study and can be combined with several major or subsidiary subjects. Graduates are employed by some government departments, the Defence Force, large municipalities, commerce and industry. Senior posts are not plentiful, but capable persons with post-graduate qualifications will always find employment.

## BIOPHYSICS

University : Pretoria

### FIRST DEGREE

Bachelor of Science in Biophysics (Honours): B.Sc. (Hons.)(Biophysics)

Admission requirements: A B.Sc. degree with Physics III or a B. Eng. degree with Physics 3FF and supplementary Physics.

Curriculum: One year. The curriculum comprises the following subjects: Theoretical Physics, Experimental Physics, Biophysics, Physiology.

Candidates who wish to qualify for registration with the SA Medical and Dental Council must, in addition to the B.Sc. (Hons.)(Biophysics) degree, gain practical experience in clinical hospital physics as prescribed by the said Council.

### POST-GRADUATE DEGREES

Master of Science in Biophysics: M.Sc. (Biophysics)

Doctor of Science in Biophysics: D.Sc. (Biophysics)

VOCATIONAL SERVICE: The medical physicist is the person who applies the principles of physics in medicine. In order to do this he has to make a thorough study of biophysics, particularly on a post-graduate level.

Biophysics can be divided into two fields, namely a physics-oriented field and a biologically oriented field. It is the latter which is of particular interest in medicine.

The following are examples of the work of a medical physicist:

- He is concerned with the irradiation apparatus.

In the case of irradiation he would, for example, programme the irradiation apparatus in such a way that the right dosage is given to a particular patient. He also controls the dosage.

- When radio-isotopes are used to treat cancer patients, the medical physicist is responsible for the dosage as well as for the safe handling of it.

- Medical physics for non-ionizing rays is a very interesting field where physics is applied in physiotherapy, lung-function studies, ophthalmology, etc.

- Medical physicists are also responsible for teaching biophysics in all the medical fields.

It is an interesting career and offers great research possibilities for the young scientist. Medical physicists are employed by the following organisations: the CSIR; hospitals (medical physicists); Department of Health and Welfare (inspector-physicists); the AEB and the Uranium Enrichment Corporation (biophysicists and health physicists); the universities (medical physicists). There is a great shortage of persons trained in biophysics.

#### B.Sc. WITH TECHNICAL SUBJECTS

University: Potchefstroom

FIRST DEGREE

Bachelor of Science with Technical Subjects: B.Sc.

Admission requirements: As for the B.Sc. degree. See p.217.

Curriculum: Three years of full-time study. The degree may be obtained in one of three subject fields, viz: Building, Electrotechnics or Mechanics. There is a fixed curriculum for each field which has to be passed. Compulsory vacation work must be completed at the end of each year of study.

VOCATIONAL SERVICE: A person with this degree may take the one-year course for the Higher Diploma in Education and is then eligible for appointment as a teacher at technical colleges and secondary schools with technical fields of study. See also EDUCATION p. 132.

#### BUILDING

Universities: Cape Town, Natal, Orange Free State, Port Elizabeth, Pretoria, Witwatersrand

FIRST DEGREES

Bachelor of Science (Building): B.Sc.(Building) (UCT)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in a science subject SG.

Curriculum: Four years of full-time study. Every student must obtain three periods each of not less than six weeks of experience during the vacations with an approved building contractor before admission to the 2nd, 3rd and 4th years respectively.

The curriculum includes, inter alia, the following courses: Building Construction, Building Management, Quantities, Mercantile Law, Building Law, Structural Design.

Bachelor of Science in Building: B.Sc.Bldg. (UN)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass of at least 40 % in Mathematics HG and in Physical Science HG, or at least 50 % in Mathematics SG and in Physical Science SG.

Curriculum: Four years of full-time study. All candidates must, before being permitted to enter upon the work of the subsequent year, obtain at least six weeks' continuous practical experience with a firm of general building contractors.

The curriculum includes, inter alia, the following courses: Building Administration, Building Technology, Theory and Design of Structures, Economics, Building Science, Construction Design and Practice, Mathematics, Building Law, Commercial Law.

Baccalaureus Scientiae in Building Administration: B.Sc.(Building Admin.) (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics SG and in Physical Science SG.



Curriculum: Four years' study comprising two years of full-time study followed by two years of part-time study, during which a candidate is required to be employed full-time in the office of a building contractor.

The curriculum includes, inter alia, the following courses: Builders' Quantities, Building Technology, Building Contracts and Procedures, Building Finance, Labour Law, Work Management.

Bachelor of Building Arts: B.Bdg.A. (UPE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass of at least 40 % in Mathematics SG.

Curriculum: Three years of full-time study.

After having successfully completed the curriculum for the degree of Bachelor of Building Arts, a candidate may continue with fourth and fifth years of full-time study. On completion of these two years he shall be awarded the B.Arch. degree.

The curriculum comprises, inter alia, the following courses: Design, Building Science, History of Art and Architecture, Property Economics for Architects, Theory of Architecture.

Baccalaureus Scientiae in Building Management: B.Sc.(Bdg.Man.) (UPE)

Admission requirements: As for B.Bdg.A.

Curriculum: Four years. A candidate is required to be in the employ of an approved employer for at least six weeks during the first, second and third years of study and for a period of four weeks during his fourth year.

The curriculum includes, inter alia, the following courses: Building Management, Building Science, Building Economics, Production Analysis, Labour Law, Professional Practice.

Bachelor of Building Management: B.Sc.(Building Management) (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in Physical Science HG or at least 40 % in Physical Science SG.

Curriculum: Five years' study comprising two years of full-time study and three years of part-time study, during which a candidate is required to be employed full-time by an approved registered employer in the building industry.

The curriculum comprises, inter alia, the following courses: Building Management, Building Contracts and Procedure, Occupational Safety, Building Finance, Builders' Quantities, Building Technology, Building Services, Theory of Structures, Analysis of Prices.

Bachelor of Building Technology: B.Sc.(Building Technology) (UP)

Admission requirements: As for B.Sc.(Building Management).

Curriculum: Four years of full-time study. Candidates are advised to gain practical experience in the office of an architect during university vacations.

The curriculum includes, inter alia, the following courses: Building Technology, Office Practice, Theory of Structures, Building Services, Industrial Psychology, Professional Practice, Quantities, Applied Mathematics, Computer Science, Climatology.

Bachelor of Science in Building: B.Sc.(Building) (UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 60 % in Mathematics SG and a pass on the Higher Grade or at least 60 % on the Standard Grade in one of the following subjects: Biology, Physical Science, Physiology, Geography.

Curriculum: Four years of full-time study. The curriculum includes, inter alia, the following courses: Building Science, Production Planning and Design, Industrial Organization and Management, Economics, Mathematics, Commercial Law, Structure, Physics and Chemistry.

#### POST-GRADUATE DEGREES

Master of Science (Building): M.Sc.(Building) (UCT)  
Master of Science in Building: M.Sc.Bldg. (UN) or M.Sc.(Building) (UW)  
Magister Scientiae in Building Administration: M.Sc.(Build. Admin.) (UOFS)  
Magister Scientiae in Building Management: M.Sc.(Bdg. Man.) (UPE)  
Master of Building Management: M.Sc.(Building Management) (UP)

Doctor of Philosophy: Ph.D. (UN,UW)  
Doctor of Science in Building: D.Sc.Bldg. (UN) or D.Sc.(Building) (UW)  
Philosophiae Doctor in Building Management: Ph.D. (UPE)  
Doctor of Building Management: D.Sc. (Building Management) (UP)

VOCATIONAL SERVICE: In the past the building industry depended to a large extent on the knowledge of architects, quantity surveyors and civil engineers. However, the rapid expansion of this industry, the replacement of the traditional by modern building materials (for example those of a synthetic nature), the application of sophisticated building techniques and the attendant organization to erect buildings quickly and efficiently, are all aspects of building technology which make specialized study indispensable. The larger construction companies, in particular, are to an increasing extent realising the value of the supplementary knowledge of graduates in building management and building science. Of the small group who already possess this qualification, there are various known examples of young men who have been placed in command of million-rand building projects and have carried these out successfully.

Work in the field of building management refers to the various types of building activities and can be of a divergent nature. There is consequently a great demand for building managers to occupy a variety of indoor and outdoor posts, from building project to personnel management, from the management of subcontractors to the purchase of equipment and materials, and a host of other functions. Building scientists, on the other hand, are involved mainly in the professional rather than the executive sphere of the building industry. However, it may happen that larger firms will also make use of the services of building scientists in an executive capacity. Most building scientists are however employed by architects as senior partners. Manufacturers of building material employ graduates in building science with a view to office and publicity work. A few are employed by research laboratories.

Also consult Tertiary Training for particulars on various courses in the building industry.

#### BUSINESS ADMINISTRATION

Universities: Cape Town, Durban-Westville, Potchefstroom, Pretoria, Stellenbosch, Witwatersrand

#### FIRST DEGREES

Master of Business Administration: M.B.A. (UCT)

Admission requirements: The qualification of M.B.A. is open to approved graduates who have obtained a degree in Arts, Commerce, Engineering, Law, Science or Social Science, and to Chartered Accountants.

Curriculum: One year of full-time study or two years of part-time study. Every candidate will be required to complete an MBA Programme which consists of closely co-ordinated courses in the following fields: Operating Management, Underlying Disciplines, Business Integration; and a Technical Report.

Master of Business Administration: M.B.A. (UDW)

Admission requirements: A student must hold a Bachelor's degree; hold a professional qualification; have passed Mathematics at Std 10 level or Mathematics I at university; evince a level of maturity sufficient to benefit from this course; and sit for a series of admission tests, should this be considered necessary.

Curriculum: Three years of part-time study. Students may be exempted from all or some of the first-year courses on the basis of subjects completed for degree purposes. The curriculum includes, inter alia, the following subjects: Production Management, Marketing Management, Financial Management, Business Statistics, and a dissertation.

Honours Business Administration: H.B.A. (PU for CHE)

Admission requirement: A Bachelor's degree.

Curriculum: Two academic years. The course is only offered extramurally at Potchefstroom and at the Vaal River Branch.

The degree will only be awarded to a student who has completed two years' approved practical experience.

Students who have not previously attended courses in Economics and Business Economics will be required to supplement their knowledge of these courses to the satisfaction of the departmental heads concerned.

The curriculum comprises, inter alia, the following courses: Management Economics I, Marketing II, Cost Estimation and Techniques, Industrial Law. A student has to pass in all the prescribed courses at the end of each year of study.

Master of Business Administration: M.B.A. (PU for CHE)

Admission requirement: The H.B.A. degree.

Curriculum: A student must complete the following courses: Management Economics II, Analysis and interpretation of financial accounts and statements, Personnel Control and Organization Theory and Interpersonal Relations II, Advanced Management Accounting and Inference, and a dissertation.

Master of Business Administration: M.B.A. (UP)

Admission requirements: A candidate must hold a Bachelor's degree, a pass mark in Mathematics on the Standard 10 level and have had adequate practical experience.

Curriculum: The part-time study extends over at least three years of 36 weeks each, but must be completed within four years. The curriculum comprises, inter alia, the following courses: Financial Management, Marketing Management, Production Management, Management Economics, Manpower Management and a dissertation.

Honours Bachelor of Business Management and Administration: B.(B. and A.)Hons. (US)

Admission requirements: Students must hold a Bachelor's degree and must lodge written applications for admission.

Curriculum: At least one year of full-time study or two years of part-time study. The fields of study offered are as follows: General Management and Planning; Marketing Management; Financial Management; Personnel Management and Administration; Human Relations and Organisational Behaviour; Production Management; Information Management and Data Processing; Management Accounting; Commercial and Company Law and Secretarial Practice; Management Economics; South African Business and Management Practice; Quantitative Methods; Investigation Methods and the writing of reports.

Master of Business Management and Administration: M.B.A. (US)

Admission requirements: A student must hold

(i) the B.(B. and A.)Hons. degree or other equivalent qualification; or

(ii) an approved Bachelor's degree; or the student must have achieved an adequate standard of proficiency in his specific field of study through other means, and have gained practical experience.

Curriculum for (i): A student must attend an approved curriculum of research and/or approved study for at least one year and submit a satisfactory dissertation, or specialise further in the Management Sciences by passing the prescribed examinations in three of the advanced fields of study, completing an interdisciplinary project and passing an oral examination.

Curriculum for (ii): A student must attend an approved curriculum of research and/or advanced study for at least two years in the case of full-time study or three years in the case of part-time study, pass the prescribed examinations and submit a satisfactory dissertation or submit satisfactory assignments and pass the prescribed written and oral examinations in the required number of fields of study.

Master of Business Administration: M.B.A. (UW)

Admission requirements: Any of the following may be admitted as a student:

- A graduate in any faculty
- a person who, not being a graduate, holds a professional qualification
- in an exceptional case the Senate may admit a person who has satisfied the Senate that his admission as a candidate is warranted by virtue of his experience, qualifications and abilities.

Curriculum: 64 weeks of full-time study (from January each year to May of the following year) or three years of part-time study. The curriculum includes core courses such as Financial Accounting, Personnel Management, Production Management; advanced courses such as Business Policy, Managerial Accounting, Operations Research; and elective courses.

#### DOCTOR'S DEGREES

Doctor of Philosophy: Ph.D. (UCT, UW)

Doctor of Business Administration: D.B.A. (UDW, PU for CHE, UP)

Doctor of Business Management and Administration: D.B.A. (US)

#### DIPLOMAS

Advanced Diploma in Business Administration: Adv. Dip. B.A. (UCT)

Admission requirements: The Diploma is open to approved non-graduates with acceptable professional qualifications and/or several years of business experience.

Curriculum: The MBA degree and Diploma courses are identical in content and standard.

Diploma in Business Management and Administration (UDW)

Admission requirements: A Senior Certificate; a pass in Std 10 Mathematics; evince a level of maturity sufficient to benefit from this management training programme; and preferably be at least 25 years old.

Curriculum: The MBA degree and diploma courses are identical in content and standard.

Diploma in Business Administration: Dip.B.A. (UP)

Admission requirements: A candidate who, at the discretion of the departmental head, holds appropriate qualifications and/or experience, may be admitted to the Diploma course.

The regulations for the M.B.A. degree is, otherwise, mutatis mutandis, applicable to the Diploma.

Diploma in Business Management and Administration: Dipl.(B. and A.) (US)

Admission requirements: At least a Senior Certificate. Students must be adequately mature. Applications for admission must be lodged in writing.

Curriculum: The particulars with regard to the course is the same as that for the B.(B. and A.)Hons. degree. See p.80.

Advanced Diploma in Business Management and Administration: Adv.Dipl.(B. and A.) (US)

Admission requirements: The Diploma in Business Management and Administration or a student must have achieved an adequate standard of proficiency in his specific field of study by other means. He must also have gained such practical experience to serve as adequate preparation for the course.

Curriculum: The particulars with regard to the course is the same as that for the M.B.A. Programme. See p.80.

**VOCATIONAL SERVICE:** This provides an outstanding opportunity for businessmen and businesswomen who are already practising or already have a bachelor's degree to expand and give academic substance to their knowledge, ability and background in respect of business affairs such as organization, planning, taking the lead, co-ordination and control.

The task of providing guidance and of controlling and co-ordinating the work of a large group of employees with a view to maximum economic results, demands the highest qualities of leadership. The managerial profession does not only include general managers but also specialists in the large number of managerial functions which are so characteristic of commerce and industry. In order to fulfil these functions, thorough training in modern principles and practice is absolutely essential.

The large variety of managerial fields provides persons with the opportunity of choosing a suitable field in accordance with their aptitude and personality characteristics. A few of these fields are, for example, those of the personnel manager, sales manager, executive manager, production or works manager, marketing manager, financial manager, credit manager and so forth.

However, students must not expect to step into a senior managerial post directly after leaving the university. Attractive posts go to those who are willing and able to work for them and who obtain them on merit. The training in commerce and industry, particularly at the post-graduate level, should, however, enable them to start higher up and to make more rapid progress. All managers cannot be experts in all fields and for this reason use is being made to an increasing extent of specialists to assist them. A B.Com. degree with post-graduate specialization is consequently also of great value.

BUSINESS LEADERSHIP

University: South Africa

FIRST DEGREE

Master of Business Leadership: M.B.L.

Admission requirements: A student must

- (i) hold a Bachelor's degree; or  
have obtained the Certificate in the Theory of Accountancy and have qualified for or be in possession of the C.A. (S.A.); and
- (ii) have had at least three years' appropriate experience in an approved undertaking; provided that with the special permission of the Senate a shorter period may be accepted;

(iii) join a study group. Should it be impossible to form a local group, a student must join an existing group elsewhere. A student's enrolment is accepted on these conditions.

Curriculum: Four years. The curriculum consists of Section A and Section B. Section A extends over three years and comprises 15 courses. Section B is taken in the fourth year. It consists of (a) a dissertation on an approved topic; or a departmental examination in a specialisation field of Business Leadership and a project on an approved subject; or a project on an approved subject; or a departmental examination in a specialised field of Business Leadership and a short dissertation of limited scope; or a departmental examination in Business Leadership; and (b) an assignment which shall take the form of a case study. A student attends six study schools. Attendance at the study schools is compulsory.

#### DOCTOR'S DEGREE

Doctor of Business Leadership: D.B.L.

VOCATIONAL SERVICE: See Business Administration p.82.

#### BUSINESS SCIENCE

Universities: Cape Town, Durban-Westville

#### FIRST DEGREES

Bachelor of Business Science: B.Bus.Sc. (UCT)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG.

Curriculum: Four years of full-time study. The curriculum consists of compulsory courses in Business Science and Economics, together with courses in subjects comprising fields of study designed to equip students for the careers in which they have special interest. Each special field consists of a group of related subjects; generally an Honours course and appropriate ancillary courses.

Each student must choose one special field from the following:  
Actuarial Science, Banking, Business Finance, Computing and Data Processing, Economics (General), Insurance, Marketing, Mathematical Economics, Personnel Management, Psychology, Public Administration, Sociology, Statistics and Operational Research. Each curriculum comprises 14½ courses.

Bachelor of Business Science: B.Bus.Sc. (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least a D symbol in Mathematics SG or a pass in Mathematics I at a university.

Curriculum: Four years of full-time study. The curriculum consists of 18 compulsory semester courses plus seven or eight special field courses which the candidate must select at the end of his first year of study, as well as an essay on an approved topic. The two principal subjects must be selected from the following:  
Accounting, Business Economics, Economics, Statistics, Industrial Psychology. One of the special fields is for example, Business Economics generally, or in special fields such as Marketing Research, Advertising, etc.

#### POST-GRADUATE DEGREES

Master of Business Science: M.Bus.Sc. (UCT)

Magister Commercii: M.Com. (UDW)

Master of Business Administration: M.B.A. (UDW)

Doctor of Philosophy: Ph.D. (UCT)  
Doctor Commercii: D.Com. (UDW)  
Doctor of Business Administration: D.B.A. (UDW)

#### DIPLOMA

Post-graduate Diploma in Human Resource Management: Adv.Dip.H.R.M. (UCT)

Admission requirements: A graduate whose curriculum of his Bachelor's degree is an adequate preparation for the course.

Curriculum: One year of full-time study or two years of part-time study. This Diploma developed from the B.Bus.Sc. degree in the special field of Personnel Management.

Advanced Diploma in Human Resource Management: Adv.Dip.H.R.M. (UCT)

Admission requirements: A non-graduate who has an approved professional qualification and/or several years of approved business experience.

Curriculum: The regulations for the Advanced Diploma are the same as that for the Post-graduate Diploma.

**VOCATIONAL SERVICE:** The degree is designed for students who plan to make a career in a business enterprise or other organisation. The degree course is not a substitute for practical business experience but rather the opportunity for

- a study of the structure and working of the business world including the economic and human problems which arise in business and other organisations;
- an inter-disciplinary study of economics, accounting, mathematics, sociology and psychology which concentrates on the application of appropriate concepts and techniques towards the understanding, analysis and solution of problems in business management;
- a study of the scientific approach to management problems and use of current quantitative and computer techniques in those areas in business management formerly considered to be largely matters of opinion and judgement.

#### CHEMICAL TECHNOLOGY

University: Natal

#### FIRST DEGREE

Bachelor of Science in Chemical Technology: B.Sc. Chem. Tech.

Admission requirements: The B.Sc. degree with 40 credits in Chemistry, 24 credits in Physics and 24 credits in Mathematics; or the degree of B.Sc. in Engineering with 40 approved credits in Chemistry, 24 approved credits in Physics and 24 approved credits in Mathematics. The 24 credits in Physics may be waived in the case of a candidate with appropriate experience.

Curriculum: One academic year for a candidate who holds a B.Sc. degree and two academic years for a candidate with a B.Sc. Eng. degree. A candidate must pursue a course of approved advanced study and he may be required to pass a test in a foreign language. He must present himself for all parts of the final examination at one and the same time and may not present himself for the final examination more than once.

#### POST- GRADUATE DEGREES

Master of Science in Chemical Technology: M.Sc. (Chemical Technology)

Doctor of Science: D.Sc.  
Doctor of Philosophy: Ph.D.

**VOCATIONAL SERVICE:** See Chemistry, p. 227.

## CLINICAL PSYCHOLOGY

Universities: Cape Town, Durban-Westville, Fort Hare, Natal, North, Orange Free State, Port Elizabeth, Potchefstroom, Pretoria, Rand Afrikaans University, Rhodes, South Africa, Stellenbosch, Witwatersrand

### DEGREES

Master of Science in Clinical Psychology: M.Sc. in Clinical Psychology (UCT)  
Magister Artium in Clinical Psychology: M.A. (Clinical Psychology) (UDW) or  
M.A. (Clin. Psych.) (UPE)  
Magister Scientiae in Clinical Psychology: M.Sc. (Clinical Psychology) (UDW)  
Master of Arts: M.A. (UFH, UN, UNorth, PU for CHE, RAU, RU)  
Master of Science: M.Sc. (UFH, UN, UNorth, PU for CHE, RU)  
Master of Arts (Clinical Psychology): M.A. (Clinical Psychology) (UOFS, US)  
Master of Science (Clinical Psychology): M.Sc. (Clinical Psychology) (UOFS, US)  
Magister Societatis Scientiae (Clinical Psychology): M.Soc.Sc. (Clinical Psychology) (UOFS)  
Master of Arts in Clinical Psychology: M.A. (Clinical Psychology) (UP, UNISA) or  
M.A. (Clin. Psych.) (UW)

Admission requirements: An Honours degree in Psychology.

Curriculum: Two years, comprising one year of full-time class attendance and practical work and one year of full-time internship at an institution approved for the purpose by the South African Medical and Dental Council, and the presentation of a dissertation.

This is a specialised degree leading to professional registration with the SA Medical and Dental Council.

Doctor's degrees: See ARTS p.44 and PURE SCIENCE p.209.

VOCATIONAL SERVICE: See Psychology, p.74.

COMMERCE (See also Accountancy p.24.)

Universities: All the universities except Medunsa

## U N I V E R S I T Y   O F   C A P E   T O W N

### FIRST DEGREE

Bachelor of Commerce: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG.

Curriculum: Three years of full-time study. The B.Com. degree caters for

- those wishing to qualify as chartered accountants
- those wishing to enter the business world with a background in accounting and other subjects
- those wishing to qualify as attorneys, advocates or legal advisers, and
- those wishing to qualify as teachers of commercial subjects.

There are seven basic first-year curricula, leading to several final-year streams. All the curricula have Accounting as a major.

Curricula are designed in such a way that the student acquires the background knowledge of his final year in his first and second years. For example a knowledge of Commercial Law and Company Law is essential for the final year courses in Accounting, Taxation and Auditing.



Each curriculum consists of eleven courses. All the curricula include courses or half-courses in the following subjects: Accounting, Auditing, Business Data Processing, Commercial Law, Company Law, Economics, Financial Management, Statistics, Taxation & Estate Duty.

The following half-courses (semester courses) are included in the various curricula: Environment & Structure of Business, Management Accounting, Management of Human Resources, Principles of Finance, Principles of Marketing, Statistical & Business Computing.

The seven curricula are

- |                                       |   |                                      |
|---------------------------------------|---|--------------------------------------|
| - Low Mathematics Content             | } | Leading to C.T.A.                    |
| - High Mathematics Content            |   |                                      |
| - High Mathematics/Statistics Content | } | Dual Major: Accounting and Economics |
| - Low Mathematics Content             |   |                                      |
| - With Business Science courses       |   |                                      |
| - Accounting and Statistics           | } | Dual Major                           |
| - Accounting and Mathematics          |   |                                      |

#### POST-GRADUATE DEGREES

Bachelor of Commerce (Honours): B.Com.(Hons.)

Admission requirements: Any one of the following may be admitted:

- A B.Com. or a B.Bus.Sc., special field Business Finance, of this University
- a graduate of any other university who has completed equivalent courses
- a person who has passed the final professional chartered accountancy examination of the Public Accountants' and Auditors' Board of South Africa or an equivalent examination
- an Associate or Fellow of the Institute of Cost and Management Accountants.

Curriculum: One year of full-time study or not less than two years of part-time study. A candidate must attend and complete an Honours course in one of the following fields of study: Accounting, Business Data Processing, Management Accounting, Taxation or any other field of study approved by the Senate provided that the candidate may be required to attend and complete courses which the Senate may prescribe.

The Honours examination consists of a formal written examination. In addition a technical report may be required. A candidate may also be required to present himself for an oral examination. Candidates who are not successful in the Honours examination will not be permitted to present themselves for a second time.

Master of Commerce: M.Com.  
Doctor of Philosophy: Ph.D.  
Doctor of Economic Science: D.Econ.Sc.

#### UNIVERSITY OF DURBAN - WESTVILLE

##### FIRST DEGREE

Baccalaureus Commercii : B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least a D symbol in Mathematics SG, except in the case of students who passed with an aggregate of 60 % or higher.

**Additional requirements:** A candidate shall not be permitted to register for the B.Com.(Law) degree unless he has obtained an aggregate of at least 45 % and a minimum pass mark of 40 % in Latin HG. Candidates who have not passed Latin in the Std 10 examination must pass Latin Special at the university.

**Curriculum:** Three years of full-time study. An extramural student will normally require a minimum of five years to complete the degree.

There are seven types of curricula for the B.Com. degree. Each curriculum consists of 14 courses. Five courses are taken in each of the first and second years and four in the third year.

The seven types together with their compulsory courses are as follows:

- (i) B.Com.(General)  
Economics III, Business Economics III, Accounting II, Commercial Law I, Mathematics I or Statistics I
- (ii) B.Com.(Personnel Management)  
Industrial Psychology III, Economics III or Business Economics III (both have to be taken up to second-year level), Commercial Law II, Accounting I, Statistics I
- (iii) B.Com.(Accounting)  
Accounting III, Economics III or Business Economics III (both have to be taken up to second-year level), Auditing II, Commercial Law I, Statistics I; one of: English I, Practical English, Afrikaans I, Nederlands I, Praktiese Afrikaans
- (iv) B.Com.(Statistics)  
Statistics III, Economics III or Business Economics III (both have to be taken up to second-year level), Computer Science I, Accounting I, Mathematics I
- (v) B.Com.(Law)  
Economics III or Business Economics III (both have to be taken up to second-year level), Private Law III, Constitutional Law I, Roman Law I, Accounting I, Latin I; one of: English I, Practical English, Afrikaans I, Praktiese Afrikaans, Nederlands I
- (vi) B.Com.(Economics)  
Economics III, Mathematics III or Public Administration III, Development Economics, Economic History, Accounting I, Business Data Processing and Mathematical Methods for Economics, Business Economics I
- (vii) B.Com.(Business Economics)  
Business Economics III, Accounting, Commercial Law, Economics, Industrial Psychology, Statistics.

#### POST-GRADUATE DEGREES

##### Honoris Baccalaureus Commercii : B.Com.(Hons.)

**Admission requirements:** A B.Com. degree with a final mark of at least 60 per cent in the respective principal subject; provided that, on the recommendation of the Head of the Department concerned, the Senate may grant exemption from this rule.

Curriculum: One year of full-time study or two years of part-time study. The degree may be conferred in the following departments: Accounting, Business Economics, Economics, Industrial Psychology, Statistics.

For admission to Industrial Psychology, a candidate must have completed Business Economics III and Statistics I.

Magister Commercii : M.Com.

Doctor Commercii : D.Com.

## UNIVERSITY OF FORT HARE

### FIRST DEGREE

Bachelor of Commerce : B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics.

Additional requirements: No person will be admitted to Statistics I unless he obtained a pass of at least 40 % in Mathematics SG or Pre-differentiated.

Curriculum: Three years of full-time study. The degree may be obtained in any of the following options: Accounting; Business Economics/Industrial Psychology; General. A curriculum consists of thirteen courses. The curriculum of each option is as follows:

#### Accounting

Compulsory courses: Accounting III, Business Economics II, Commercial Law II, Economics II, Statistics I, Management Accounting A and B, Auditing, Taxation

#### Business Economics/Industrial Psychology

Compulsory courses: Business Economics III, Industrial Psychology III, Accounting II, Economics II, Commercial Law I, Statistics I

#### General

Compulsory courses: Two of: Accounting III, Business Economics III, Economics III (all three subjects are taken up to second-year level), Statistics I.

### POST- GRADUATE DEGREES

Bachelor of Commerce (Honours): B.Com.(Hons.)

Admission requirements: A B.Com. degree.

Curriculum: One year of full-time study or two years of part-time study. The degree may be obtained in any one of the following subjects: Accounting, Business Economics, Economics, Industrial Psychology, Statistics.

Master of Commerce : M.Com.

Doctor of Commerce : D.Com.

### DIPLOMA

Diploma in Commerce : Dip.Com.

Admission requirements : A Senior Certificate with a pass in Mathematics.

Curriculum: Three years. The curriculum consists of 10 courses. The two major subjects are Economics III and Business Economics III. Statistics I is a compulsory ancillary for these subjects.

# UNIVERSITY OF NATAL

## FIRST DEGREE

### Bachelor of Commerce: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Curriculum: Three years of full-time study or at least four years of part-time study.

A candidate must obtain credit for the following courses offered in Durban:

#### First year

Accounting I; Economics I; Mathematics C and Statistics C or Mathematics I; Commercial Law I or Introduction to South African Law; one elective course.

#### Second year

Accounting II or Business Data Processing I or Computer Science IC or Statistics I; Economics II; Business Administration I; Commercial Law II; one elective course.

#### Third year

Accounting III or Business Administration II or Economics III or Public Administration; One of: Accounting III; Business Administration II; Business Data Processing II; Business Finance; Computer Science II; Economics III; Managerial Accounting and Finance; Marketing; Mathematics II; Philosophy III; Political Science III; Psychology III; Sociology III; Statistics II; one elective course.

#### Elective courses

Accounting II, III; Afrikaans I; Afrikaans en Nederlands I, II; Auditing; Business Administration II; Business Data Processing I, II; Business Finance; Business Policies and Agreements; Comparative African Government and Administration I, II; Constitutional Law, Economics III; Economic History I, II; Economics of Transport; Economics of Underdeveloped Regions; English I, II; French I; Geography I, II; German I; History I, II; International Economic Relationships and Organisations; Language and Communication; Latin IA or IB; Managerial Accounting and Finance; Marketing; Mathematics I, II, III; Mathematical Statistics I, II; Philosophy I, II, III; Political Economy of Southern Africa; Political Science I, II, III; Population and Labour; Psychology I, II, III; Public Sector Accounting; Roman Law; Social Anthropology I, II, III; Sociology I, II, III; Statistics I, II; Taxation; Zulu I.

There are various regulations which must be followed with regard to certain subjects, e.g. a candidate must have completed Economics I before proceeding to Business Administration I or The Political Economy of Southern Africa or International Economic Relationships and Organisations; or Accounting I before proceeding to Auditing I or Taxation.

Only a limited number of the courses are offered in Pietermaritzburg.

## POST-GRADUATE DEGREES

### Bachelor of Commerce (Honours): B.Com.Hons.

Admission requirements: A B.Com. or B.Econ. degree.

Curriculum: One year of full-time study or two years of part-time study.

A candidate must pursue advanced study in one of the following branches of study, provided that the courses shown in parenthesis have either been completed before admission to the Honours course, or are taken concurrently with the Honours courses: Accountancy; Business Administration; Economics (Economics III); Mathematics and Statistics (Mathematics II, Statistics II or Actuarial Mathematics).

A candidate may not present himself for the final examination more than once.

Master of Commerce: M.Com.  
Doctor of Philosophy: Ph.D.  
Doctor of Economics: D.Econ.

## UNIVERSITY OF THE NORTH

### FIRST DEGREE

Bachelor of Commerce: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years. A curriculum consists of at least 25 semester courses. A student selects a field of study from one of the following curricula:

- Economics field

Compulsory subjects: Economics III, Agricultural Economics III, Business Economics II, Accounting, Mathematics or Statistical Methods or Mathematical Methods

- Administrative field

Compulsory subjects: Business Economics III, Industrial Psychology III, Economics I, Statistical Methods, Afrikaans or Practical English, Accounting, Industrial Law

- Accounting field

Compulsory subjects: Accounting III, Auditing, Business Economics, Economics, Commercial Law, Statistical Methods

- Statistical field

Compulsory subjects: Mathematical Methods III, Economics II, Business Economics II, Accounting II, Commercial Law I

- Legal field

Compulsory subjects: Business Economics III, Private Law III, Roman Law, Accounting II, Economics I, Afrikaans or Practical English, Latin

- Business Economics field

Compulsory subjects: Business Economics III, Commercial Law III, Retailing or Co-operation, Cost Accounting, Accounting, Economics, Statistical Methods

- Cost and Management Accounting

Compulsory subjects: Financial Accounting III, Company Law and Income Tax, Marketing and Physical Distribution, Management Information Systems and Data Processing, Industrial Psychology, Management Accounting II, Economics, Statistical Methods, Business Law, Business Economics, Economic Analysis, Quantitative Techniques.

### POST-GRADUATE DEGREES

Bachelor of Commerce Honours: B.Com.Hons.

Admission requirements: A B.Com. degree.

Curriculum: One year. The degree is offered in the following subjects: Accounting, Agricultural Economics, Auditing, Business Economics, Cost and Management Accounting, Economics, Industrial Psychology, Operational Research.

Master of Commerce: M.Com.  
Doctor of Commerce: D.Com.

## DIPLOMA

Diploma in Commerce: Dipl.Com.

Admission requirements: A Senior Certificate or equivalent qualification.

Curriculum: Two years. The curriculum comprises 10 courses and includes, inter alia, Business Economics, Accounting, Commercial Law, Auditing, Economics.

## UNIVERSITY OF THE ORANGE FREE STATE

### FIRST DEGREE

Bachelor of Commerce: B.Com.

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics. A pass in Mathematics SG is not a requirement for the following fields: General, Business Administration, Money and Banking and Legal fields.

Curriculum: Three years of full-time study. The curriculum consists of 26 full semester courses and it must include at least two approved major subjects, in each of which the prescribed number of courses must be completed. A student selects his curriculum from one of the following fields:

- (i) General field  
Third year: At least two of the following: Economics, Business Economics, Accounting  
  
If, only two of the above-mentioned subjects are taken, another subject must be selected from the following: Business Data Processing, Business Economics, Economics, Income Tax, Industrial Psychology, Mathematical Statistics, Money and Banking, Statistics, Transport Economics
- (ii) Accounting field  
Third year: Accounting, Auditing, Income Tax (Auditing together with Income Tax as a major subject); and two of the following semester courses: Economics, Business Economics, Business Data Processing
- (iii) Business Administration field  
Third year: Industrial Psychology, Business Economics and one of the following: Accounting, Economics, Mercantile Law, Income Tax
- (iv) Business Economics field  
Third year: Business Economics and one of the following: Industrial Psychology, Statistics, Money and Banking, Accounting, Transport Economics, Economics
- (v) Statistical field  
Third year: Statistics and Mathematical Statistics and one of the following: Economics, Business Economics, Accounting, Business Data Processing, Transport Economics, Money and Banking
- (vi) Money and Banking field  
Third year: Money and Banking, Economics and one of the following: Business Economics, Accounting, Statistics
- (vii) Economics field  
Third year: Economics and one of the following: Money and Banking, Mathematics, Statistics, Business Economics, Accounting, Transport Economics
- (viii) Transport Economics field  
Third year: Transport Economics and two of the following including at least Economics or Business Economics: Economics, Business Economics, Statistics, Mathematics, Accounting

- (ix) Agricultural Economics and Co-operation field  
Third year: Agricultural Economics and two of the following: Economics, Business Economics, Money and Banking, Statistics, Business Data Processing, Income Tax, Transport Economics
- (x) Legal field  
Third year: Private Law, Roman Law and History of Law\* and one of the following: Economics, Business Economics, Accounting.

\* No candidate will be allowed to register for the course Roman Law and History of Law II unless he has already passed in Latin I.

#### POST-GRADUATE DEGREES

##### Honours Bachelor of Commerce: B.Com.(Hons.)

Admission requirements: A B.Com. degree. A student must satisfy the head of the department concerned that he has sufficient knowledge at his command to justify admission to the course of study.

Curriculum: Each candidate must pursue an approved course for at least one year. The B.Com.(Hons.) degree may be awarded in one of the following subjects: Accounting, Agricultural Economics, Business Data Processing, Business Economics, Economics, Industrial Psychology, Mathematical Statistics, Mathematics, Money and Banking, Statistics, Transport Economics.

Master of Commerce: M.Com.

Doctor of Commerce: D.Com.

#### UNIVERSITY OF PORT ELIZABETH

#### FIRST DEGREE

##### Baccalaureus Commercii: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements: For admission to the following courses a candidate must have obtained the standard indicated in each case:

- Mathematics I or Statistics I: A pass of at least 40 % in Mathematics SG.

- Economic Statistics I, Introduction to Computer Science and Data Processing IB, Mathematics for Economists: A pass in Mathematics SG.

Curriculum: Three years of full-time study or at least five years of part-time study.

The following curricula are specimen curricula which have been drawn up as guidelines and students are strongly recommended to take the recommended courses:

- (i) Business Economics as one major subject  
Other major subject: Economics or Accounting
- (ii) Economics as one major subject  
Other major subject: Business Economics
- (iii) Accountancy subjects  
Major subjects: Accounting, Auditing, Cost and Management Accounting, Income Tax. See also p.27.
- (iv) Industrial and Organizational Psychology as a major subject  
Other major subject: Business Economics

- (v) Approved school subjects as major subjects  
Major subjects: Accounting or Business Economics and one of: Geography for B.A. students, Psychology, Mathematics. See also p.130.
- (vi) Public Administration as one major subject  
Other major subject: Accounting or Industrial and Organizational Psychology
- (vii) Law courses  
Major subjects: Private Law; Mercantile Law; Business Economics or Accounting. See also p.162.
- (viii) Economic Statistics (Econometry) as one major subject  
Other major subjects: One of: Economics, Mathematics, Commercial Computer Science, Accounting, Business Economics, Industrial and Organizational Psychology.

#### POST-GRADUATE DEGREES

##### Baccalaureus Commercii Honores: B.Com.Hons.

Admission requirements: A B.Com. degree. A person will not be registered as a candidate except by permission of the Faculty of Economic Sciences.

Curriculum: One year of full-time study or not less than two years of part-time study.

A candidate may attend and complete an Honours course in one of the following subjects: Accountancy Subjects\*, Business Economics, Economics, Mathematical Statistics, Operations Research, Industrial and Organizational Psychology, Mathematics, Computer Science and other subjects which the Senate may approve. The Senate may require any candidate to attend and complete before being admitted to the Honours course, such course or courses of the curriculum for the degree of B.Com. as it may prescribe.

The examination consists of not less than four written papers and such practical or oral examinations, or both, as the Senate may prescribe.

\* A candidate who qualifies for the Honours degree in Accountancy Subjects obtains simultaneously the Certificate in the Theory of Accountancy (C.T.A.), provided that he has complied with all the requirements for obtaining the Certificate. See also p.27.

Magister Commercii: M.Com.  
Doctor Commercii: D.Com.

#### P O T C H E F S T R O O M   U N I V E R S I T Y   F O R   C H R I S T I A N H I G H E R   E D U C A T I O N

#### FIRST DEGREE

##### Bachelor of Commerce: B.Comm.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics on at least the Standard Grade.

A student who wishes to take any of the semester courses in Mathematics or who eventually wants to qualify as a Public Accountant must have passed Mathematics HG or obtained at least 50 % in Mathematics SG.

Curriculum: At least three years. The degree may be taken full-time or extramurally at both Potchefstroom and the Vaal River Branch.

The list of subjects in which course units may be taken, are as follows:



Major subjects:

GROUP A

Accounting, Business Economics, Economics, Industrial and Personnel Psychology, Industrial Sociology, Mathematics, Private Law, Statistics

GROUP B

Auditing, Mercantile Law, Cost Accounting, Money and Banking

Supplementary subjects: Agricultural Economics, Business Data Processing, Econometry, Income Tax, Insurance, Philosophy of Science.

Supplementary legal subjects: Constitutional Law, History of Law, Interpretation of Statutes, Introduction to Legal Science, Labour Law, Roman Law.

A curriculum must include at least three major subjects of which at least two must be selected from Group A of the above-mentioned list, with the exception of the B.Comm.: Accounting field in which case Accounting, Cost Accounting, Mercantile Law and Auditing may be the major subjects.

At least 300 credits must be obtained for a B.Comm. degree.

The distribution of credits in the following subject serve as an example:

<u>Credits</u>	<u>Subject and descriptive name of the course unit</u>
	ECONOMICS
8	Economic history
8	Descriptive economics
10	Price theory
10	Macro-theory
10	Public finance and economic thought
10	Developmental and labour economy

The B.Com. degree can only be obtained if a student has fulfilled the requirements of one of the curricula of the following B.Comm. fields: General; Business Economics; Industrial and Personnel Psychology; Cost Accounting; Industrial Sociology; Economics and Money and Banking; B.Comm. with Legal subjects; Accounting; Mathematics.

There are certain prerequisite course units which must be included in all the B.Comm. curricula with the exception of the Industrial and Personnel Psychology field and the Industrial Sociology field: Business Economics, Economics, Accounting and Statistics. The latter is also not included in the field B.Comm. with Legal subjects.

All students must also pass in Philosophy of Science A and Philosophy of Science B.

POST-GRADUATE DEGREES

Honours Bachelor of Commerce: Hons.B.Comm.

Admission requirement: A B.Comm. degree.

Curriculum: One year of full-time study or two years of part-time study. A combination of course units must be selected from the following departments: Accounting, Business Economics, Cost Accounting, Economics, Industrial and Personnel Psychology, Industrial Sociology, Statistics and any other approved department. A minimum of 100 credits must be obtained.

Master of Commerce: M.Comm.

Doctor of Commerce: D.Comm.

# UNIVERSITY OF PRETORIA

## FIRST DEGREE

### Bachelor of Commerce: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A candidate must have obtained a pass in at least two of the following subjects on the Higher Grade: Biblical Studies, Biology or Physiology, Economics, Geography, History, Mathematics, Physical Science, a third language: Provided that a pass in a third language on the Standard Grade may be accepted if offered on the Standard Grade only.

- A candidate may not be admitted to Business Economics II, Marketing II, Economics II, Accounting or Statistics unless he passed in Mathematics HG or obtained at least 40 % in Mathematics SG: Provided that a pass in an approved course in Econometric Methods instead of Mathematics may be accepted.

Curriculum: Three years of full-time study or four years of extramural study. A curriculum includes about 13 courses. A student chooses one of the following major fields:

- (i) Economic Sciences  
Third year: Economics III and two of the following: Business Economics III, Cost Accounting and Management, Economic Analysis, Accounting III, Statistics III, Commercial Law III
- (ii) Marketing  
Third year: Marketing IIIA, Marketing IIIB, Business Economics III
- (iii) Econometry  
Third year: Economics III, Mathematical Statistics III, Economic Analysis
- (iv) Personnel Management  
Third year: Personnel Management III, Business Economics III, Labour Law B
- (v) Accountancy  
Third year: Accounting III, Auditing II, Informatics, Income Tax (half course) and one of the following: Commercial Law III, Cost and Management Accounting.

## POST-GRADUATE DEGREES

### Bachelor of Commerce (Honours): B.Com.(Hons.)

Admission requirement: A B.Com. degree. A candidate must satisfy the head of the department concerned that he has sufficient knowledge of the subject to be able to undertake the work for the degree.

Curriculum: A candidate qualifies for the Honours degree after he has obtained at least eight credits in the courses offered.

The degree may be obtained in the following fields of study: Accountancy, Business Economics, Econometry, Economics, Marketing, Personnel Management, Statistics.

Master of Commerce: M.Com.

Doctor of Commerce: D.Com.

R A N D A F R I K A A N S U N I V E R S I T Y

FIRST DEGREE

Bachelor of Economic and Management Sciences: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Additional requirements:

- Mathematics: Candidates who have passed Mathematics on the Standard Grade will only in exceptional cases, be admitted to the course in Mathematics after a test set by the Department of Mathematics has been passed.

Curriculum: Three years of full-time study or four years of part-time study. A curriculum comprises 14 year courses or the equivalent in semester courses plus Theory of Science A and B. A curriculum must include three major subjects.

The degree is offered in the following fields:

- General

Compulsory courses: Business Economics II; Economics II; Accounting II; Commercial Law I; Analytical Techniques A, B

- Accounting

Compulsory courses: Accounting III; Income Tax I; Business Economics II; Managerial and Operational Accounting II; Auditing I; Commercial Law I; Analytical Techniques A, B  
Compulsory courses for later admission to B.Com.Hons.(Accounting): Commercial Law II; Business Data Processing A (semester course); Auditing II

- Accounting (for part-time students): Grants admission to B.Com.Hons. (Accounting) and is recommended for part-time students who intend to sit for the Qualifying Examination of the Public Accountants' and Auditors' Board.

Compulsory courses: Accounting III; Auditing II; Business Economics II; Income Tax I; Commercial Law II and Business Data Processing A (semester course); Managerial and Operational Accounting II; Business Economics I; Economics I; Analytical Techniques A, B

- Communication

Compulsory courses: Business Economics III; Communication III; Economics II; Analytical Techniques A, B; Industrial Psychology I; Accounting I; Sociology I

- Computer Science

Compulsory courses: Computer Science III; Mathematics II; Mathematical Statistics I; Business Economics I; Economics I; Accounting I

- Econometry

Compulsory courses: Economics III A, III B, III C; Mathematical Statistics III; Mathematics II; Business Economics I; Accounting I

- B.Com.(Ed.): See EDUCATION p.134.

- Industrial Psychology

Compulsory courses: Business Economics III; Industrial Psychology III; Economics II; Accounting I; Analytical Techniques A, B or Mathematical Statistics I

- Investment Management

Compulsory courses: Investment Management II; Economics III; Accounting III; Business Economics II; Analytical Techniques A, B; Income Tax I

- Law

Compulsory courses: Private Law III; Mercantile Law I; Business Economics II; Economics II; Roman Law I; Accounting I; Analytical Techniques A, B

Matriculation Latin (or Latin Special) is a prerequisite for Roman Law I. Roman Law I is a prerequisite for Private Law III. Roman Law I is a second-year course.

- Transport

Compulsory courses: Business Economics II; Economics II; Transport Economics II; Transport Administration and Management A, B; Accounting I; Analytical Techniques A, B.

#### POST-GRADUATE DEGREES

Honours Bachelor of Economic and Management Sciences: B.Com.Hons. See B.A.Hons. p.58.

B.Com.Hons.(Accounting): See ACCOUNTING p.26.

Master of Economic and Management Sciences: M.Com.

Master of Philosophy: M.Phil.

Doctor of Philosophy: D.Phil.

Doctor of Economic and Management Sciences: D.Com.

#### R H O D E S U N I V E R S I T Y

##### FIRST DEGREE

Bachelor of Commerce: B.Com.

The degree of Bachelor of Commerce may be awarded either as an ordinary degree or as an Honours degree.

##### The ordinary degree

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Mathematics, Computer Science, Physics or Statistics: A pass in Mathematics with at least an F symbol on the Higher Grade or at least an E symbol on the Standard Grade.

Curriculum: Three years. A candidate must obtain credit in all the courses contained in one of the following curricula. Each curriculum contains twelve courses.

Curriculum 1. (General) is designed for those who desire to obtain a broad general knowledge of commerce and industry, and those who intend to enter the teaching profession.

Compulsory courses: Accounting II, Business Administration II, Economics II, Mercantile Law I. The two major subjects are chosen from, inter alia, the following: Accounting, Business Administration, Economics, Computer Science, Mathematics, Mathematical Statistics.

Curriculum 2. (Business Administration) is designed to provide an appropriate theoretical foundation for those who intend to enter the managerial profession in either the private or public sectors of the national economy.

Compulsory courses are the same as for Curriculum 1. One major subject is Business Administration and the second one is chosen from, inter alia, the following: Accounting, Computer Science, Economics, Mathematics.

Curriculum 3. (Accounting): Students who wish to enter the profession of Accountancy should take this course which includes most of the subjects required for the Certificate in the Theory of Accountancy, which can be completed in one further year of study after completion of the degree course.

Compulsory courses: Accounting III, Business Administration II, Business Mathematics and Statistics, Economics II, Mercantile Law II, Auditing I, Cost and Management Accounting.

Curriculum 4. (Law): Students who wish to enter the legal profession should take this course. By doing so, they can obtain exemptions from LL.B. subjects, sufficient to enable them to complete this degree in a further period of two years, instead of the usual period of three years.

Compulsory courses: Accounting II, Economics II, Legal Theory III, Business Administration II and two of the follow: English I, Afrikaans I or Afrikaans/Nederlands I, Latin I. Students who have not obtained a pass in Latin in the senior certificate examination are not qualified to take Latin I and will thus be required to obtain credit in Preliminary Latin.

Curriculum 5. (Economics) is designed to enable students to include in their B.Com. degree as much knowledge of Economics and related subjects as possible.

Compulsory courses are the same as for Curriculum 1. The major subjects are Economics III and one of the following: Accounting, Computer Science, Economic History, Economics of Agriculture, Mathematics, Mathematical Statistics, Mathematics and Statistics.

Curriculum 6. (Psychology) allows students to include three courses in Psychology in their degree and it is particularly suitable for those who are interested in personnel management.

Compulsory courses: Psychology III, Business Administration II, Accounting II, Economics I, General Economics, Mercantile Law I.

Curriculum 7. (Statistics) enables students to combine in their degree the fundamental B.Com. subjects and a knowledge of mathematical and statistical techniques.

Compulsory courses: Mathematics and Statistics III, Accounting II, Economics II, Business Administration II, Mercantile Law I.

Candidates who have chosen Curriculum 1, 2, 5 or 7 have to take either Business Mathematics and Statistics or Elementary Theory of Finance and Statistics or Mathematics IA or IB in their first year of study.

#### POST-GRADUATE DEGREES

Bachelor of Commerce with Honours: B.Com.(Hons.)

Admission requirements: The B.Com. degree, and at least a second class pass in the final year in the subject in which the candidate wishes to take Honours.

Curriculum: One year of full-time study. The degree may be taken in Accounting, Business Administration, Economics, Economic History, Economics of Agriculture, Operations Research and Statistics, or in a combination of two of these subjects.

Master of Commerce: M.Com.

Doctor of Economics: D.Econ.

Doctor of Philosophy: Ph.D.

#### UNIVERSITY OF SOUTH AFRICA

##### FIRST DEGREE

Bachelor of Commerce: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics.

Curriculum: The curriculum extends over at least three years and consists of fourteen courses.

Students select one of the following fields:

- General

Compulsory courses: Economics III; Business Economics III; Accounting II; Commercial Law I; Statistics I or Mathematics I

- Administration

Compulsory courses: Economics III; Business Economics III; Industrial Psychology III; Commercial Law I; Accounting I; Statistics I

- Accounting

Compulsory courses: Economics III; Business Economics III; Accounting III or Accounting III (Local Government); Auditing I; Commercial Law I; Statistics I or Computer Science I or Information Systems

- Law

Compulsory courses: Economics III; Business Economics III; Private Law III; Roman Law I; Accounting II; one of the following languages\*: Afrikaans en Nederlands I or Praktiese Afrikaans; English I or Practical English; Latin I or Latin Special

\* A knowledge of Latin is essential for Roman Law I.

- Economics

Compulsory courses: Economics III; Applied Economics II; Business Economics II; Economic History; Commercial Law I; Accounting I; Statistics I or Mathematics I.

POST-GRADUATE DEGREES

Honours Bachelor of Commerce: Hons. B.Com.

Admission requirements: A student must hold a B.Com. degree and have passed the final course in the subject in which he wishes to proceed; or be in possession of another degree and have passed at least seven B.Com. courses, including at least Economics I and II, Business Economics I and II and Accounting I; and have passed the final course in the subject in which he wishes to proceed; or have obtained the Certificate in the Theory of Accountancy and have qualified for or be in possession of the CA(SA) and have passed Economics I and II and Business Economics I and II.

Curriculum: No candidate is admitted to the examination unless he has completed an approved curriculum during at least one year.

The degree may be conferred in the following subjects; Accounting, Auditing, Business Economics, Economics, Industrial Psychology, Statistics, Transport Economics.

A student may not take the degree in Auditing unless he has passed Accounting III; or in Accounting unless he has passed Cost Accounting or an equivalent course; or in Transport Economics unless he has passed Business Economics III.

Note: The degree will not be awarded to a student unless he has passed Statistics I (or an approved mathematical course), except in the case of the Honours degree in Accounting or in Auditing where Information Systems may be offered instead of Statistics I.

Master of Commerce: M.Com.

Doctor of Commerce: D.Com.

U N I V E R S I T Y   O F   S T E L L E N B O S C H

FIRST DEGREE

Bachelor of Commerce: B.Comm.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics SG.

For courses in which Mathematics I is offered as a subject: A pass in Mathematics HG or at least 60 % in Mathematics SG.

Curriculum: Three years of full-time study or four years of part-time study. The degree is offered in four fields, viz the Ordinary field, the Mathematical field, the Agricultural Economics field and with Law subjects.

For the degrees B.Comm.(Mathematical field) and B.Comm.(Ordinary field) two major subjects and at least 20 third-year credits are required, provided that one major subject will be required if the 20 third-year credits are obtained in the Departments of Accounting and Commercial Law.

For the degrees B.Comm.(Agricultural Economics field) and B.Comm.(Law) the prescribed courses must be taken and at least two major subjects in the case of B.Comm.(Agricultural Economics field) and the major subjects indicated in the case of B.Comm.(Law).

Note: Students are advised to take five first-year subjects (40 credits).

Students who take the Mathematical field, choose two of the following subjects as major subjects: Mathematics, Business Economics, Economics, Financial Accounting, Mathematical Statistics, Computer Science, Transport Economics.

For the degree of B.Comm.(Ordinary field) two of the following subjects must be chosen as major subjects: Business Economics, Economics, Financial Accounting, Industrial Psychology, Commercial Law (Commerce), Computer Science, Statistics, Sociology, Transport Economics.

For the degree B.Comm.(Agricultural Economics) Agricultural Economics is a compulsory major subject. Other major subjects are selected from Business Economics, Economics and Financial Accounting.

#### B.Comm. with Law subjects

Admission requirements: As for the B.Comm. degree, but Mathematics is not a requirement. Students are strongly advised to take, inter alia, Latin for the Standard 10 examination.

Curriculum: Three years of full-time study. First-year subjects are Private Law, Economics, Business Economics, Financial Accounting, Latin, Special English or English, Afrikaans or Afrikaans-Nederlands. The first four subjects mentioned are also taken in the second year and the third-year subjects are Private Law III, Roman Law and Introduction to Legislation.

#### POST-GRADUATE DEGREES

##### Honours Bachelor of Commerce: B.Comm.Hons.

Admission requirements: A B.Comm. or other approved Bachelor's degree.

Curriculum: One year of full-time study or at least two years of part-time study. The Honours degree is awarded in the following major fields: Business Economics, Industrial Psychology, Economics, Transport Economics, Mathematical Statistics and Statistics. Courses in the following major fields may also be taken for the B.Comm.Hons. degree: Sociology, Computer Science and Mathematics.

Master of Commerce: M.Comm.

Doctor of Commerce: D.Comm.

#### UNIVERSITY OF THE WESTERN CAPE

##### FIRST DEGREE

##### Baccalaureus Commercii: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or SG.

Curriculum: Three years of full-time study or four years of part-time study. The curriculum consists of at least 13 qualifying courses. Each curriculum includes at least two major subjects chosen from the following: Accounting, Business Economics, Business Statistics, Cost and Management Accounting, Economics, Industrial Psychology, Private Law.

Cost and Management Accounting I and Auditing I are compulsory courses for Accounting III.

Mercantile Law IA and IB or Private Law III are compulsory courses should either Business Economics III or Accounting III be offered as a major subject.

There are three types of curricula viz B.Com.(General), B.Com.(Accounting) and B.Com. (with Law subjects).

The following curricula are offered extramurally: (i) B.Com.(Accounting) and B.Com.-C.T.A.(Combined) which extends over six years and (ii) B.Com.(General) which extends over four years.

The curricula with their compulsory courses are as follows:

- B.Com.(General)

Economics II, Business Economics II, Accounting II, Business Statistics IA or IB, Industrial Psychology I or English I or English Special or Afrikaans en Nederlands I or Afrikaans.

Students choose two of the first five above-mentioned subjects as major subjects.

- B.Com.(Accounting)

Cost and Management Accounting II, Accounting III, Mercantile Law II, Economics II, Business Economics II, Auditing I (half course), Business Statistics IA or IB, English I or English Special or Afrikaans en Nederlands I or Afrikaans.

The first two of the above-mentioned subjects are the major subjects.

- B.Com.(with Law subjects)

Economics II; Business Economics II; Private Law III; Accounting II; Roman Law or Constitutional Law; one of the following language courses: English I, English Special, Afrikaans en Nederlands I, Afrikaans, Latin I, Beginners' Latin.

The major subjects are Private Law III and Economics III or Business Economics III or Industrial Psychology III.

#### POST-GRADUATE DEGREES

##### Honours Baccalaureus Commercii: B.Com.Hons.

Admission requirements: A B.Com. degree. Unless the Senate decides otherwise, a student must have obtained a minimum of 60 % in the subject concerned in the final examination for the B.Com. degree.

Curriculum: One year of full-time study or two years of part-time study. The degree may be conferred in the following departments: Business Economics, Business Statistics, Economics, Industrial Psychology.

Magister Commercii: M.Com.

Doctor Commercii: D.Com.



UNIVERSITY OF THE WITWATERSRAND

FIRST DEGREE

Bachelor of Commerce: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A pass in English First Language HG or a pass of at least 40 % in English Second Language HG

- a pass in Mathematics HG, or for curricula not including a course in Mathematics, at least 60 % in Mathematics SG.

- a pass on the Higher Grade in one of the following subjects if Mathematics is passed on the Higher Grade, or two of the following subjects if Mathematics is passed on the Standard Grade at 60 %: Bantu Language\*, Biology, Economics, French, Geography, German\*, Hebrew, History, Latin, Physical Science.

\* If not presented in fulfilment of Group A (Languages) requirement of the Joint Matriculation Board.

Curriculum: Three years of full-time study or five years of part-time study. The degree is offered in the General Group by either full-time or part-time study and in the Legal Group by full-time study.

General Group: The curriculum for the General Group consists of 14 courses. Every curriculum must include - Accounting I and II; Business Economics I and II; Commercial Law A, B; Communication Studies; Economics I and II; Mathematics and Statistics I or Mathematics I (Special) or Mathematics I; and one of the following courses: Accounting III, Applied Mathematics III, Business Data Processing II, Business Economics III, Commercial Law C, Computer Science III, Cost and Managerial Accounting B, Economics III, Economic History III, Mathematics and Statistics III; and three further courses from the following list:

Afrikaans, Applied Psychology, Business Finance, Constitutional and Administrative Law, English, French, General Psychology, Geography, German, Income Tax, Industrial Psychology, Industrial Sociology, International Relations, Latin, Marketing, Organisational Behaviour, Philosophy, Political Studies, Property Economics, Psychology, Sociology.

There are certain prerequisite courses, e.g. a candidate must obtain credit in Psychology I before proceeding to Applied Psychology II or General Psychology II.

Legal Group: Three years of full-time study. The curriculum consists of 16 courses. Compulsory courses are Accounting I and II; Business Economics I; Business Economics II or Economics II or Economics II (Special); Introduction to and History of South African Law; Law of Contract; Law of Corporations and Insolvency; Mathematics and Statistics IA or IB or Mathematics I (Special) or Mathematics I; Public International Law; Roman Law I.

Students major in one of the following subjects: Accounting, Business Economics or Economics.

POST-GRADUATE DEGREES

Bachelor of Commerce with Honours: B.Com.Hons.

Admission requirements: A B.Com. degree. A student must apply for admission as a candidate for the degree.

Curriculum: One year of full-time study or two years of part-time study. A candidate must attend and complete a course of study in one of the following subjects or a combination of such subjects: Accounting, Applied Mathematics, Business Data

Processing, Business Economics, Computer Science, Cost and Managerial Accounting, Economics, Economic History, Mathematics and Statistics.

Master of Commerce: M.Com.  
Doctor of Commerce: D.Com.  
Doctor of Philosophy: Ph.D.

## UNIVERSITY OF ZULULAND

### FIRST DEGREE

Bachelor of Commerce: B.Com.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Curriculum: At least three years. A student selects one of four curricula, each of which consists of 28 semester courses.

The curricula are as follows:

- General  
Compulsory courses: Economics, Business Economics, Accounting, Commercial Law, Statistics
- Administration  
Compulsory courses: Business Economics, Industrial Psychology, Economics, Commercial Law, Statistics, Industrial Law, Interpretation of Law
- Accounting  
Compulsory courses: Accounting, Auditing, Cost and Management Accounting, Commercial Law, Business Economics, Economics, Statistics, Management Information Systems
- Law  
Compulsory courses: Commercial Law, Criminal Law, Economics, Business Economics, Law of Obligations, Law of Things, Accounting, Statistics.

The following are the major subjects: Accounting, Auditing, Business Economics, Commercial Law, Cost and Management Accounting, Economics, Industrial Psychology.

### POST-GRADUATE DEGREES

Honours Bachelor of Commerce: Hons.B.Com.

Admission requirements: A B.Com. degree.

Curriculum: At least one year. The degree may be conferred in the following departments: Accounting and Auditing, Business Economics, Economics, Industrial Psychology.

Master of Commerce: M.Com.  
Doctor of Commerce: D.Com.

**VOCATIONAL SERVICE:** The choice of a suitable field of study and major subjects in the commercial and economic sciences is based largely on the knowledge of all the most important facets and the occupational value of that particular field. Gathering information in good time will thus contribute considerably towards preventing disappointment at a later stage.

The object of the curricula is generally of a twofold nature, viz a broad background study of the field of the economic sciences on the one hand, and study in a particular main field on the other. Post-graduate study for a degree or diploma provides for specialisation, which lays the foundation for promotion to high-level occupations. The various economic subject fields have, in addition, become more specialised so that

aspects of, for instance, Mathematics, Computer Science, Psychology, Communication, Law, Sociology, etc, have either been directly involved or are combined meaningfully with the economic subject fields. A qualification in one or other of the economic and related fields does not only give access to a wide variety of occupational fields in the public and private sector but also creates opportunities for advanced and interesting work.

Some examples of this are the following:

B.Com. (Law): The B.Com. degree which includes law subjects does not only provide basic training in economic as well as legal subjects, but can also be rounded off with an LL.B. It is therefore a preparation for business and legal practice with prospects of appointment to various executive posts in commerce and industry as well as financial bodies such as insurance companies. Also see Law, p.166.

Cost Accounting: The status of as well as the demand for trained cost accountants is very high in every undertaking as a result of the important work that they do. Data made available by the cost accountant constitute the barometer for the determination of the extent to which the concern is a paying proposition and a basis for important decisions.

His knowledge is utilised by virtually all undertakings, large or small, in divisions such as cost accounting, budget control, labour remuneration, fixing of prices, managerial guidance and many other spheres in which the analysis of and control over expenditure are necessary. He is thus a key figure in the determination of development and efficiency, particularly when an undertaking finds itself in a highly competitive position. The advice and scientific calculations of the cost accountant are of great importance to the management of an undertaking, and this accounts for his high salary.

The expansion of industry, trade and the economy and the necessity of trying to keep costs and prices at a realistic level, render the prospects most attractive for cost accountants in the Public Service; commerce and industry; provincial administrations; municipalities; factories (particularly where mass production and competition play a rôle); Sasol; the Railways; the Defence Force; Iscor; the CSIR; mining and other companies; and as consultants and lecturers at educational institutions. Further study and mature experience are imperative for advancement in this occupation.

Economics and Business Economics: See p.122.

Industrial and Personnel Psychology: This science is related to such subject fields as Psychology, Sociology, Economics and Business Economics. It concerns itself with the study of man in the job situation and the maximum utilisation of labour as a production factor. As a result of the vital rôle of the personnel (employees) in the attainment of success, any undertaking is constantly seeking methods to motivate employees and to guide them to their optimum achievement (highest productivity). Knowledge of human conduct (behaviour) in various industrial situations has consequently become indispensable to any business administrator.

Persons with this training are employed in commerce and industry, government departments and other large undertakings such as the Railways, Iscor, Sasol, the CSIR, the Department of Posts and Telecommunications, co-operative societies, the mines, insurance companies, building societies, municipalities and banks with a view to being trained as personnel, employment, training, personnel research, organisation development, organisation and methods or general personnel officers. They can advance from these posts to personnel managers, managerial advisers and even personnel directors.

Today there is increasing recognition of the value of the services of one or more personnel managers in an undertaking, particularly where optimum utilisation of available labour is concerned. The duties of a personnel manager, though diverse in nature, are extremely interesting. In a large concern, however, it is possible that a person may be responsible for only one specialised section, for example training.

Appointment as a personnel manager will be the fruit of years of hard work as well as a period of intensive in-service training. A university degree such as B.A., B.Com.,

B.Econ., B.Sc., B.P.L. or B.A (Soc. Sc.) with major subjects such as Industrial and Personnel Psychology, Psychology, Sociology, Social Work, Economics etc. would definitely be of inestimable value for accelerated promotion. It provides that extremely useful background and knowledge which are necessary when personnel managers have to deal with affairs such as the selection and placement of personnel, group relationships, motivation and morale, satisfaction derived from working conditions, planning and co-ordination, safety measures and the prevention of accidents, and so forth.

Secretarial field: The higher ranks in the secretarial profession are mainly accessible to those persons who possess recognised professional qualifications and who have acquired membership of the secretarial organisations. Every company, for example must appoint a secretary and this person occupies an extremely responsible position as chief administrative and executive officer. With his specialised knowledge of the Company Law he is an important member of the managerial team and it generally happens that he is also appointed as director.

Apart from his other duties, the secretary is an important link between the directors on the one hand, and for example, the shareholders, office personnel, bankers, auditors and the public on the other. This function ensures that his work is interesting and pleasant. He must be able to handle important matters intelligently and responsibly. His status is high and he is remunerated accordingly.

The growth of industrial organisations, the annual registration of a large number of new companies and the tendency towards the forming of groups on the part of companies result in the fact that the secretary, with his specialised training, has a dynamic function to fulfil in the business world of today.

Also consult Tertiary Training for particulars on various secretarial courses.

Statistics and Economics: These fields give the student basic training in a mathematical statistical approach to economic problems and theories. An increasing demand for persons trained in a combination of mathematical and economic sciences is arising on a wide front in South Africa, with a view to the collection, processing and interpretation of data.

The econometrist and statistician are in demand in research institutions and industries with research laboratories such as the CSIR, HSRC, SABS, Iscor, the Chamber of Mines, Sasol, factories, etc; transport and communication; various government departments especially the Department of Statistics; insurance companies; some universities; computer firms and firms rendering services such as management consultation and market research.

Also see Statistics, p.230.

### COMMUNICATION/JOURNALISM

Universities: Fort Hare, Orange Free State, Potchefstroom, Rand Afrikaans University, Rhodes, South Africa, Stellenbosch, Witwatersrand

#### FIRST DEGREES

Bachelor of Arts in Communication: B.A.(Communication) (UFH)

Admission requirements: As for the B.A. degree. See p.47.

Curriculum: Three years of full-time study. The curriculum consists of at least eleven courses, but not more than twelve courses. Students select one of the following three curricula:

- Choice A: The major subjects are Communication and one of the following: English, Sotho, Xhosa, Afrikaans-Nederlands. If students choose Xhosa or Sotho as a major subject they must take African Thought and Literature I as required ancillary.

- Choice B: The major subjects are Communication and one of the following: Political Science, Anthropology, Sociology, Philosophy. If students major in Anthropology they must include Archaeology I as required ancillary.

- Choice C: The major subjects are Communication and one of the following: Psychology, Economics.

The other subjects in the prescribed curricula are also ordinary B.A. subjects.

Bachelor of Arts (Communication): B.A. (Communication) (UOFS)

Admission requirement: As for the B.A. degree. See p.50.

Curriculum: Three years of full-time study. The degree consists of four specialised fields of study. A student selects one of the following:

- General field

The first major subject is Communication and the second major subject must be selected from the following: A modern language (including Bantu languages), Anthropology, Economics, Geography, History, Mathematics, Philosophy, Political Science, Psychology, Sociology.

- State Communication

The major subjects are Communication and one of the following: Political Science, Anthropology, History.

- Industrial field

The major subjects are Communication and one of the following: Industrial Psychology, Industrial Sociology, Economics, Psychology, Sociology.

- Language field

The major subjects are Communication and one of the following: Afrikaans en Nederlands, English, French, German, Southern Sotho, Zulu.

Four semester courses in Operational Communication are compulsory for each of the specialised fields of study.

Bachelor of Arts (Communication): B.A. (Communication) (PU for CHE)

Admission requirement: As for the B.A. degree. See p.53.

Curriculum: Four years of full-time study. A student compiles his curriculum with course units\* from the following subjects:

- Subjects from Communication: Communication, Publishing Science, Public Relations and Advertising.

- Other subjects: Course units from five ordinary B.A. subjects. (See p.54.)

Philosophy of Science A and Philosophy of Science B are compulsory course units.

The curriculum has three major subjects: Publishing Science, Public Relations and Advertising and an ordinary B.A. subject.

\*See B.A., p.54.

Bachelor of Arts: B.A. (Communication) (RAU)

Admission requirements: As for the B.A. degree. See p.56.

Curriculum: Three years of full-time study. The curriculum consists of eleven courses. Communication is a compulsory major subject. The second major subject must be selected from: A language, Sociology, Psychology, Education, Economics, History, History of Art, Biblical Science, General Linguistics, Philosophy, Anthropology, Political Science, Mathematical Statistics, Mathematics, Industrial Psychology.

Compulsory ancillary subjects:

- Two of the following: Journalism, Organisation Communication, Guidance Communication

- Two semester courses in a modern language

- Two semester courses in either Sociology or Psychology
- Statistical Methods, Communication Law.

Bachelor of Journalism: B. Journ. (RU)

Admission requirements: As for the B.A. degree. See p.59.

Curriculum: Three years of full-time study. The curriculum comprises ten courses, three of which must be in Journalism and three in the second major subject selected from Arts and Science subjects or in Physical Education. The other courses must also be in ordinary B.A. or B.Sc. subjects.

Bachelor of Arts: B.A. (UNISA)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: At least three years. Students follow the curriculum of the ordinary B.A. degree (see p.61) with Communication as one of the major subjects. The compulsory ancillary subject is Communication Law.

Honours Bachelor of Journalism: B.Journalism Hons. (US)

Admission requirement: A Bachelor's degree.

Curriculum: One year. The curriculum includes courses in technical skills such as Typing and Shorthand, Snelskrif, Reporting and Editing and other subjects such as Media Ethics and legal rules; History, structure and functions of the media; and practical vacation work.

#### POST-GRADUATE DEGREES

Bachelor of Arts in Communication (Honours): B.A.(Com.)(Hons.) (UFH)  
 Honours Bachelor of Arts: (Communication): B.A. (Hons.)(Communication) (UOFS)  
 Honours Bachelor of Arts: Honns. B.A. (PU for CHE) or Hons. B.A. (RAU, UNISA)  
 Bachelor of Arts with Honours: B.A. (Hons.) (RU)

Master of Arts in Communication: M.Com. (UFH)  
 Master of Arts (Communication): M.A. (Communication) (UOFS)  
 Master of Arts: M.A. (PU for CHE, RAU, RU, UNISA)  
 Master of Journalism: M.Journalism (US)

Doctor Philosophiae: D.Phil. (UOFS, PU for CHE, US)  
 Doctor of Philosophy: Ph.D. (RU)  
 Doctor of Literature and Philosophy: D.Litt. et Phil. (RAU, UNISA)

#### DIPLOMAS

University Diploma in Communication (PU for CHE)

Admission requirement: An approved Bachelor's degree.

Curriculum: One year.

Post-graduate Diploma in Communication (RAU)

Admission requirement: A Bachelor's degree.

Curriculum: Two years. The Diploma is offered to students who have not previously studied Communication. During the first year students must complete the compulsory minor subjects together with Communication I and take Communication II and III in their second year.

See B.A. (Communication) (RAU) for the compulsory minor subjects.

## Higher Diploma in Communication Studies: H.Dip.C.S. (UW)

Admission requirement: A Bachelor's degree.

Curriculum: One year of full-time study or two years of part-time study. The curriculum consists of five courses. A candidate takes Communication Theory and Language and its Use and selects the three other courses from subjects such as, for example, Communication in Education, Non-verbal Communication in Business and Industry, Oral Communication.

**VOCATIONAL SERVICE:** In years to come Communication will play an increasingly important part in respect of human and international relations. It opens up the new world of the twentieth century in which things occur at a staggeringly fast pace and in which motives and objectives of individuals and nations may easily be misinterpreted. Communication media such as newspapers, the radio, television, magazines and the cinema have made the world shrink, so that today little remains hidden in any part of the world.

In this changing world, man has an increasing need of reliable information about what is happening around him. Therefore more demands are made upon the person who relays information to others, and the emphasis is on what is relayed and how it is relayed. Thus the task of the communication scientist demands that the information which he/she relays, will be compiled in such a way that it will have the biggest impact and will lead to mutual understanding and trust between individuals and nations.

Some of the career possibilities for which a student is equipped by Communication, are journalism, liaison work, publicity and the foreign and information services.

- Journalism: The field of journalism as a career, with its many branches, is expanding and the adventure and fascination connected with it are increasing. Although most journalists start working for daily newspapers, journalism is not restricted to these media. The radio, for example, offers challenging career prospects. In addition, the newly instituted television service in South Africa offers various opportunities to graduates in Communication/Journalism.

Because of the high demands made upon television journalists, not one of them can be employed untrained; they must be thoroughly trained and equipped for their task. However, television does not imply the end of newspapers, journals or the radio. Nevertheless these media will be obliged to run their communication along even better and more effective lines. This will demand thoroughly trained personnel. Although a matriculant may be employed by an enterprise as apprentice journalist to receive in-service training, university training today has become virtually essential, since it provides an important academic background and contributes to the enrichment of knowledge about people and affairs. Normally a person in possession of a degree or diploma will enjoy preference when it comes to promotion.

- Liaison: In South Africa liaison is still in its infancy and the possibilities are virtually unlimited. In a dynamic society in which competition is increasing daily, establishing a public image is indispensable to a company or other large concern. Virtually no large organisation can afford to do without liaison officers. Everybody realises to an increasing extent the importance of sound public relations. Government departments which employ persons for liaison work are National Education; Co-operation and Development; Education and Training; Health and Welfare; Industries, Commerce and Tourism; Agriculture and Fisheries and the Office of the Commission for Administration.

Other employers are, for example, local authorities, statutory bodies, international organisations, universities and other educational institutions, welfare organisations, newspapers, the SABC, insurance companies, and so forth. An increasing number of women are employed in this field and the enterprising person with imagination and willingness to work hard, will find a rewarding career in the sphere of liaison.

- Advertising: The advertising industry is one of which the potential, particularly in South Africa, has by no means been developed to the full. As the economy expands, this industry will grow. The nature of this work is really dynamic and the publicity officers or advertising agents must regularly keep pace with new trends and

developments in their field. For a person interested in the skilful and creative handling of languages, there is tremendous scope as a writer of advertisements. However, advertising is not restricted to this. The advertising agent is to an increasing extent becoming a key figure in publicising a concern. For the person who has the necessary training and appropriate characteristics, there is scope to open up his own undertaking in time and to expand it into a lucrative advertising agency. This profession is also highly suitable for women.

- Information service in the RSA and abroad: Publicising a country, its people and aims - at home and abroad - demands much from the information officer. A person interested in this field will gain the necessary background knowledge from Communication, but other major and subsidiary subjects should be carefully considered for service in the Department of Foreign Affairs and Information. (Also see p.69.)

Communication can be combined to advantage for some occupations with other subjects, for example, with Industrial Psychology for the personnel officer; with Drama and Theatrical Art for the person who chooses the stage, television, cinema or microphone as a career; with Library Science for a career in librarianship; with Psychology or Sociology for a research post in, for example, the service of the HSRC.

Also consult Tertiary Training for particulars on the National Diploma (Journalism).

### COMPUTER SCIENCE

Universities: Most of the universities offer Computer Science as a subject for the B.Sc. degree. See PURE SCIENCE p.209. RAU offers Computer Science as one of the options for the B.Com. degree (see p.96).

### OTHER DEGREES

Bachelor of Science with Operations Research: B.Sc. (PU for CHE)

Admission requirements: As for the B.Sc. degree. See p.217.

Curriculum: Three years of full-time study or four years of extramural study. The course is offered only at the Vaal River Branch. A fixed number of course units\* must be taken in the following subjects: Operations Research, Computer Science and Mathematics. A number of course units may be selected from the following subjects: Accounting, Business Economics, Cost Accounting, Economics, Industrial and Personnel Psychology, Money and Banking. The major subjects are Mathematics and Operations Research.

\*See B.Sc. p.217.

Bachelor of Science (Information Processing): B.Sc. (Inf. Proc.) (RU)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with at least an F symbol in Mathematics HG or an E symbol in Mathematics SG.

Curriculum: Three years of full-time study. The curriculum comprises ten courses. The major subjects are Computer Science III and Cost and Management Accounting or Economics III or another approved major subject. The other courses are Accounting II, Economics I, Mathematics or Mathematical Statistics or Statistics plus an optional subject.

B.Sc.Hons. with Operations Analysis as the major field of study (US)

Admission requirements: A Bachelor's degree with at least one of the following subjects as a major subject: Mathematics, Computer Science, Applied Mathematics, Mathematical Statistics, Statistics or a Bachelor's degree in Engineering.

Curriculum: The curriculum comprises a study of compulsory topics such as Mathematical Programming, Stochastic Processes and Simulation as well as a selection of topics, for example, Inventory Control and Production Control, Numerical Methods and Multivariable Statistical Techniques.



## POST-GRADUATE DEGREE

M.Sc. (Operations Analysis) (US)

Master of Commerce in Business Data Processing: M.Com.(B.D.P.) (UCT)

## DIPLOMAS

Advanced Diploma in Business Data Processing: Adv.Dip.B.D.P. (UCT)

Admission requirements: A graduate or a person with approved professional qualifications and/or several years of approved business experience.

Curriculum: One year of full-time study or three semesters of part-time study. The examination consists of six papers. A technical report may also be required.

Diploma in Datametrics (UNISA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics SG.

Curriculum: The diploma must be obtained within five years of a student's first registration for the diploma. The curriculum consists of at least ten modules\*. The subjects in which modules may be taken are as follows: Accounting, Computer Science, Information Systems, Operations Research, Psychology, Statistics, Physics (Electronics).

\*See B.Sc. p.221.

Higher Diploma in Business Data Processing: H.Dip.B.D.P. (UW)

Admission requirements: A graduate of any faculty; or a person who has satisfied all the requirements of the Certificate in the Theory of Accountancy; or in an exceptional case a person may be admitted by virtue of his experience, qualifications and abilities.

Curriculum: Two years of part-time study. The curriculum includes compulsory topics such as Case Study, Data Management I and Systems Analysis and Design I and optional topics such as, for example, Business Mathematics; Computer Controls, Audit and Security; Data Management II; and Programming.

**VOCATIONAL SERVICE:** As in every technologically advanced country, the computer industry in the RSA has been growing very rapidly during the past fifteen years. The most important manufacturers of computers are all represented in the Republic and at least one thousand computers are already being used by, for example, universities, the public sector, scientific research bodies and commerce and industry. There is already a great shortage of qualified personnel and the demand is increasing in relation to the development of this industry.

Employers who offer careers in electronic data processing in South Africa can be divided into the following four main groups:

- Companies which manufacture computers;
- concerns in commerce and industry which use computers;
- the public sector which is already making extensive use of computers (quite a number of government departments, the provincial administrations, the SA Railways, the CSIR, the HSRC, and so forth);
- undertakings, known as service bureaux, which provide computer services and time to concerns which cannot justify their own computer.

Each of these groups offers careers in electronic data processing in a number of possible fields such as those of operators, programmers, systems analysts, technicians, data processing managers and marketing representatives. There is thus opportunity for students in commerce, the mathematically inclined, those with a natural science

background and persons with a primary interest in the computer itself. The choice of a particular field will be largely determined by the candidates's qualification, interest and aptitude. Completing one or more aptitude tests is a prerequisite.

A specialised knowledge of the activities of computers can be gained in practice or by means of intensive instruction courses by supply companies or other bodies. However, the computer scientist is one who is pre-eminently able to evaluate the wider implications of automation and to utilize the computer's potential to the utmost. University training equips students with the necessary background knowledge in a very wide field and the course consequently includes much more than mere programming.

Graduates who have a degree with Computer Science as a subject are subjected to aptitude tests in the Public Service and subsequently appointed as programmers. The existing stages of promotion in a programming section are: assistant programmer, programmer, senior and then chief programmer.

Also consult Tertiary Training for particulars on the National Diplomas (Electronic Data Processing and Computer Programming).

### COUNSELLING PSYCHOLOGY

Universities: Durban-Westville, Fort Hare, Orange Free State, Port Elizabeth, Potchefstroom, Pretoria, Rand Afrikaans University, Rhodes, South Africa, Stellenbosch

#### DEGREES

Magister Artium in Counselling Psychology: M.A. (Counselling Psychology) (UDW) or M.A. (Couns. Psych.) (UPE)  
Magister Scientiae in Counselling Psychology: M.A. (Counselling Psychology) (UDW)  
Master of Arts: M.A. (UFH, PU for CHE, RAU, RU)  
Master of Science: M.Sc. (UFH, PU for CHE, RU)  
Master of Arts (Counselling Psychology): M.A. (Counselling Psychology) (UOFS)  
Master of Science (Counselling Psychology): M.Sc. (Counselling Psychology) (UOFS, US)  
Master of Arts in Counselling Psychology: M.A. (Counselling Psychology) (UP, UNISA, US)

Admission requirements: An Honours degree in Psychology.

Curriculum: As for Clinical Psychology. See p.85.

Doctor's degrees: See ARTS p.44 and PURE SCIENCE p.212.

#### DIPLOMA

Post-graduate Diploma in Counselling Psychology (US)

Admission: Graduates with Counselling Psychology III who are employed as counselling psychologists.

Duration: Three years' part-time study. Candidates must attend intensive courses of four weeks each at the University each year.

VOCATIONAL SERVICE: See ARTS, Psychology, p.74.

### DENTAL TECHNOLOGY

University: Western Cape

#### DIPLOMA

Diploma in Dental Technology

Admission requirements: A Senior Certificate with at least one science subject. A total of five applicants will be accepted for the course, after they have successfully completed tests of manual dexterity and have shown an aptitude for the work.

Curriculum: Three years of full-time study and one year's practical experience in a recognised dental laboratory.

The scheme of training is laid down by the SA Dental Technicians Council and the examinations are conducted by the Council.

The major subjects are Dental Laboratory Technique (Theory and Practical) and Dental Materials and Metallurgy.

VOCATIONAL SERVICE: A dental technician must display a keen interest in his work. He must be thoroughly trained and be an expert in his field, since the work is extremely delicate and his product can sometimes affect the patient's appearance and health. The work involves, for example, the manufacture of artificial teeth as well as dentures of gold and steel. Gold fillings are also cast and completed dentures, bridge and crown work repaired or altered. The manufacture of orthodontic apparatus is an interesting aspect of the work.

A dental technician is usually employed by a dentist or another technician who works as a contractor. He can also procure his own laboratory and work as a contractor for various dentists. However, all work must be performed at the request of dentists and the dental technician may not serve the public directly.

Training of dental technicians is controlled by the SA Dental Technicians Council and this ensures that the occupation is not practised by poorly trained or untrained persons. Registration with the council is compulsory and South African qualifications are also recognised in other countries. The address of the Council is P.O. Box 995, Pretoria 0001.

#### DENTAL THERAPY

Universities: Durban-Westville, Medunsa

#### FIRST DEGREES

Bachelor of Dental Therapy (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics HG and Biology HG or Physical Science HG or 50 % SG in the subjects mentioned.

Curriculum: Three years of full-time study. Students must do vacation work in approved clinics. The major subjects are Anatomy (for Dental Therapy), Conservative Dentistry and Dental Materials, Radiology (for Dentistry) and Community Dentistry.

Bachelor of Dental Therapy: B.Dent.Ther. (MEDUNSA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics, Physical Science and/or Biology.

Curriculum: Three years. The major subjects are Community Dentistry, Conservative Dentistry and Oral Surgery.

#### POST-GRADUATE DEGREE

Honours Bachelor of Dental Therapy (UDW)

VOCATIONAL SERVICE: Persons work in dental clinics or with dentists. They undertake remedial and/or conservative dental work.

#### DENTISTRY

Universities: Pretoria, Stellenbosch, Western Cape, Witwatersrand

#### FIRST DEGREES

Bachelor of Dental Science: B.Ch.D. (UP)

or B.D.S. (UW)

Bachelor of Dentistry: B.Ch.D. (US)

Baccalaureus Chirurgiae Dentium: B.Ch.D. (UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Pretoria: As for the B.Sc. degree. See p.218.

Stellenbosch: A pass in Mathematics. Prospective students are strongly advised to take Physical Science and/or Biology and/or Physiology for the Std 10 examination.

Western Cape: A minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Witwatersrand: A pass in Mathematics HG or at least 60 % in Mathematics SG and a pass in one of the following subjects if Mathematics has been passed on the Higher Grade, or two of the following subjects if Mathematics has been passed on the Standard Grade: Bantu Language, Biology, French, Geography, German, Hebrew, History, Latin, Physical Science, Physiology.

Curriculum: 5½ years of full-time study. Students undertake practical and clinical work in the oral and dental hospital attached to the university concerned.

First-year subjects are as follows:

Pretoria: Anatomy, Biological Science, Chemistry, Physics

Stellenbosch: Biology, Chemistry, Mathematics (Bio.), Physics

Western Cape: Botany, Chemistry, Physics, Zoology

Witwatersrand: General Biology, Chemistry, Physics, Community Dentistry.

The major subjects are, inter alia, Oral Medicine and Periodontics, Oral Surgery, Roentgenology, Community Dentistry, Dental Prosthetics, Orthodontics.

Bachelor of Science in Oral Biology: B.Sc. (Oral Biology) (UW)

Admission requirements: As for the B.D.S. degree.

Curriculum: Four years of full-time study. The curriculum comprises Part I and Part II. The qualifying courses for Part I extend over three years and are the same as those prescribed for the first three years of the curriculum for the B.D.S. degree. The qualifying course for Part II is Oral Biology.

This degree is designed for students who wish to follow a career in biological research and teaching, particularly in the field of dental science.

#### POST-GRADUATE DEGREES

Bachelor of Dental Sciences Honours: B.Ch.D.(Hons.) (UP)

Honours Bachelor of Science in Dental Sciences: Hons.B.Sc.(Dent.Sc.) (US)

Honours Bachelor in Dentistry: Hons.B.Ch.D. (US)

Master of Dental Science: M.Ch.D. (UP) or M.D.S. (UW)

Master of Dentistry: M.Ch.D. (US) or M.Dent. (UW)

Master of Dental Sciences: M.Dent. (UP)

Master of Science in Dental Sciences: M.Sc. in Dental Sciences (US)

Master of Science in Dentistry: M.Sc. (Dent.) (UW)

Master of Science (Odontology): M.Sc.(Odont.) (US)

Magister Scientiae Dentium: M.Sc.(Dent.) (UWC)

Doctor of Dental Science: D.Ch.D. (UP)  
Doctor of Dentistry: D.Ch.D. (US)  
Doctor of Philosophy (Odontology): Ph.D.(Odont.) (US)  
Doctor of Philosophy in Dental Sciences: Ph.D.(Dent.Sc.) (US)  
Doctor of Science (Odontology): D.Sc.(Odont.) (US)  
Doctor of Philosophy in Dentistry: Ph.D.(Dent.) (UW)  
Doctor of Science in Dentistry: D.Sc.(Dent.) (UW)

#### DIPLOMA

##### Diploma in Dental Public Health (UP)

Admission requirements: Candidates must have held the degree of B.Ch.D. for at least two years and must be registered with the SA Medical and Dental Council as a dentist.

Curriculum: One year of full-time study or two years of part-time study.

**VOCATIONAL SERVICE:** Most dentists in the country end up in private practices. These offer perhaps the ideal working conditions, although the high cost of equipment and running expenses should be borne in mind. There are opportunities of going into partnership and the income will vary according to the size of the practice. Dentists can also enter the service of the Department of Health and Welfare, or other organisations at an established rate of remuneration. Examples are the education departments of the four provinces who use dental officers to visit schools; the hospitals; large municipalities; certain major industries such as Iscor and the mines, and so forth. Certain universities employ a small number of dentists as dental professors and lecturers. Some of them also undertake research. At present there is a great shortage of dentists in South Africa.

Dental services comprise two components, viz corrective and preventive treatment. While the work of dentists is concentrated to a greater extent on corrective treatment, they do not always have the time to apply preventive measures or provide guidance. As a result, increasing use is made of oral hygienists to render this valuable supplementary professional service. In addition to job opportunities with practising dentists, oral hygienists are also employed by the Department of Health and Welfare for clinical, guidance and preventive services.

#### DEVELOPMENT STUDIES/BANTU STUDIES

Universities: Potchefstroom, South Africa

#### DIPLOMAS

##### University Diploma in Bantuistics (PU for CHE)

Admission requirement: An approved Bachelor's degree.

Curriculum: One year of full-time study or two years of part-time study. A student compiles his curriculum in consultation with the Director of the Institute for African and Bantu Studies. Five course units must be selected from course units such as Material culture, technology and economics; Clothing, diet and housekeeping; Music; Contact with the Western Culture; Administration and political modernisation.

##### Diploma in Development Studies (UNISA)

Admission requirements: A Senior Certificate.

Curriculum: At least two years. The curriculum consists of eight courses which must be selected as follows: 1. Four courses, viz two of the following groups: (a) Development Administration I and either Development Administration IIB or IIA or African Politics I; (b) Anthropology I and II; (c) Public Administration I and II. 2. One course in one of the aforementioned subjects if not already taken. 3. Three courses are chosen from subjects such as Economics I, Private Law, Sociology, Constitutional Law, Commercial Law, Communication.

VOCATIONAL SERVICE: The Diploma is of special value to missionaries, officials in government departments, agricultural officers, journalists, etc. See also Development Administration p.73.

## DIETETICS

Universities: Cape Town, Medunsa, Natal, Orange Free State, Potchefstroom, Pretoria, Stellenbosch

### FIRST DEGREES

Bachelor of Science in Dietetics: B.Sc.(Diet.) (MEDUNSA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics and at least one science subject.

Curriculum: Three years. First-year subjects comprise, inter alia, Biology, Chemistry, Physics. Third-year subjects are Applied Nutrition, Catering and Institutional Management, Community Nutrition, Therapeutic Nutrition.

Students are required to do one month's practical vacation work.

Bachelor of Science in Dietetics: B.Sc. Diet. (UN)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass of 40 % in Mathematics HG and in a natural science subject HG, or 50 % in Mathematics SG and in a natural science subject SG.

Curriculum: Three years of full-time study. First-year subjects comprise, inter alia, Chemistry, Nutrition, Zoology or Biology. Third-year subjects are Dietetics, Nutrition and Home Management.

Bachelor of Science with Dietetics: B.Sc. (PU for CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or in a natural science subject SG and in Mathematics SG. Prospective students are strongly recommended to take Physical Science for the Std 10 examination.

Curriculum: Three years. Course units must be taken in the following subjects:

(i) Home Economics and Dietetics subjects: Clothing, Therapeutic Nutrition, Nutritional Science, Food Service Management, Food Science, Nutritional Extension.

(ii) Other subjects are, inter alia: Industrial and Personnel Psychology, Biochemistry, Physiology, Microbiology, Philosophy of Science.

Students are, however, required to obtain a Diploma in Hospital Dietetics or an Hons. B.Sc. (Diet.) degree after obtaining the above-mentioned degree in order to register as a dietician with the Medical and Dental Council.

Bachelor of Dietetics: B.Sc. (Dietetics) (UP)

Admission requirements: As for the B.Sc. degree. See p.218.

Curriculum: Three years of full-time study. Subjects for the first year include, inter alia, Chemistry, Physics, Food Science, Home Management and Diet Patterns. Third-year subjects comprise, inter alia, Nutritional Science, Therapeutic Nutrition, Food Service Management, Agrarian Extension, Extension in Home Economics.

Candidates are required to work in the food department of a hospital for at least three weeks during a university vacation.

Bachelor of Science with Dietetics and Physiology as major subjects: B.Sc. (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics and Physical Science, at least one on the Higher Grade.

Curriculum: Three years of full-time study. First-year subjects include Chemistry, Zoology, Dietetics, Physics (Bio.) and Mathematics (Bio.). Major subjects are Dietetics and Physiology.

Students are required to do practical work in various fields of Dietetics during university vacations.

#### POST-GRADUATE DEGREES

Bachelor of Science in Dietetics (Honours): B.Sc. Diet. Hons. (MEDUNSA, UN)

Honours Bachelor of Science: Hons.B.Sc. (PU for CHE, US)

Bachelor of Dietetics (Honours): B.Sc.(Dietetics)(Hons.) (UP)

Master of Science in Dietetics: M.Sc.Diet. (MEDUNSA, UN)

Master of Science: M.Sc. (PU for CHE, US)

Master of Dietetics: M.Sc. (Dietetics) (UP)

Doctor of Science in Dietetics: Ph.D. (MEDUNSA)

Doctor of Philosophy: Ph.D. (UN, US)

Doctor Scientiae: D.Sc. (PU for CHE, US)

Doctor of Science in Dietetics: D.Sc. in Dietetics (UP)

#### DIPLOMAS

Diploma in Therapeutic Dietetics (UCT)

Admission requirements: A B.Sc. degree with Physiology, Microbiology, Chemistry or other approved major subjects or a degree in Home Economics or Dietetics.

Curriculum: One and a half years of full-time study. The following are the principal subjects: Dietetics, Nutrition, Selected Medical and Surgical topics for dieticians, Institutional Management and Catering, Cookery, Food Technology, Public Health, Social Anthropology.

Diploma in Hospital Dietetics (UOFS, US)

Post-graduate Diploma in Hospital Dietetics (UN)

Admission requirements: B.Sc. with Dietetics and Physiology as major subjects or B.Sc. (Dietetics) or B.Sc. in Home Economics (dietetic field) or B.Sc. in Dietetics.

Curriculum: The Diploma will be awarded to those students who have satisfactorily completed 12 months' service and instruction in an approved hospital and have passed an examination.

Post-graduate Diploma in Hospital Dietetics (UP)

Admission requirements: B.Sc.(Dietetics) or B.Sc. (Home Economics) (major field: Food and Nutrition) or an equivalent qualification. Candidates are selected.

Curriculum: One year. Theoretical instruction takes place at the H.F. Verwoerd Complex in the Clinical buildings during January. Practical training is undertaken at approved institutions.

**VOCATIONAL SERVICE:** Dietetics is one of the ideal courses for a girl who is orientated towards the natural sciences. Although the work is related to that of a home economist, the dietician is a person who interprets the science of nutrition in terms of food for healthy as well as sick people. The ultimate aim of the dietician is therefore the advancement of good health by means of correct nourishment. Job opportunities on the grounds of basic, or in some cases post-graduate qualifications, are, inter alia, the following:

- The hospital dietician with the following avenues of specialisation:
  - . An administrative dietician responsible for the work and training of supervisors and others who prepare meals,
  - . a therapeutic dietician who plans the meals of patients according to a doctor's prescription,
  - . a clinical dietician who plans diets for patients who are not admitted to hospitals,
  - . an educational dietician for the planning of courses and for the supervision and instruction of dietetic assistants, nurses and medical and dental students,
  - . a hospital research dietician who leads and plans research projects pertaining to food and nutrition,
  - . in a smaller hospital with fewer opportunities for specialisation, the dietician will function in all the above-mentioned areas;
- a dietician for the provision of professional advice to industries, orphanages, school and university hostels, nursery schools, homes for the aged, hotels and other institutions where food is prepared in large quantities;
- dieticians as researchers in the employ of the Medical Research Council, the SABS, the CSIR, fruit and vegetable canning factories, food supply industries; the various control boards such as the Meat, Dairy and Citrus Boards, universities and so forth;
- a teaching post under the auspices of the provincial education departments or a lecturer at a training college or university with particular opportunity for research and specialisation;
- a consulting dietician in private practice. (This branch is a relatively new one in South Africa);
- a journalist who writes women's columns in periodicals and newspapers and for the radio, television and advertising companies or who acts as a travelling representative;
- dieticians attached to the Subdivision of Nutrition Services of the Department of Health and Welfare. Here she is an important member of a team responsible for guidance services on the matters of health. She manages her task of guidance of nutrition by means of lectures, radio talks, films and film strips, short courses, replies to enquiries, etc.

A dietician consequently has the opportunity, in accordance with her training, to choose from among fields such as guidance, hospital work, large company catering, research, education or a private practice. The field which she chooses will determine the nature of her work.

## DRAMA

Universities: Cape Town, Durban-Westville, Natal, Orange Free State, Potchefstroom, Pretoria, Rhodes, Stellenbosch, Witwatersrand, Zululand

### FIRST DEGREES

Bachelor of Arts with three courses in Drama: B.A. (UCT)

Admission requirements: See B.A. degree.

Curriculum: Three years. To ensure that a career in teaching will remain open to them, students should take either English I, II, and III or Afrikaans en Nederlands I, II and III together with Drama I, II, III as major subjects as well as a further school subject for a minimum of one year.



See ARTS, University of Cape Town (p.44) for further particulars regarding the B.A. degree course.

Bachelor of Arts with three courses in Speech and Drama: B.A. (UDW, UN, RU)

Admission requirements: See B.A. degree.

Curriculum: See ARTS for particulars regarding the B.A. degree course of each of the above-mentioned universities.

Bachelor of Arts (Dramatic Art and Theatrical Art): B.A. (Dramatic Art and Theatrical Art) (UOFS)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. The curriculum consists of Dramatic Art and Theatrical Art III, Afrikaans en Nederlands III or English III and a further school subject. Dramatic Art and Theatrical Art are regarded as two subjects.

Bachelor of Arts with Speech and Interpretation or Theatrical Art or Dramatic Art as major subjects: B.A. (PU for CHE)

Admission requirements: See B.A. degree, p.53.

Curriculum: See ARTS, PU for CHE (p.54) for particulars regarding the B.A. degree course.

During vacations students must be available for rehearsals of public productions at the discretion of the producer.

During their course students are required to attend theatres, productions, etc. arranged by the Department of Speech and Drama.

Bachelor of Arts in Drama: B.A.(Drama) (UP)

Admission requirements: As for the B.A. degree, p.55.

Curriculum: Three years of full-time study. The curriculum is composed as follows: Three courses in each of the following: Dramatic Art, Theatrical Art and Speech and Movement and one course in one of the following subjects: Afrikaans, English, German, French, History of Art, History of Music, Afrikaans and Netherlands Cultural History.

Bachelor of Drama: B.Drama (US)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. During the third year students take Drama and three of the following subjects of which the two official languages must be taken on a one-year basis at least: Afrikaans, Afrikaans-Nederlands, German, English, Special English, French, History, Classical Culture, Psychology. The major subjects are Drama and one of Afrikaans-Nederlands, English, French, German.

At the beginning of the third year of study students must select either Drama (with Acting and Afrikaans Speech and Elocution) or Drama (with Drama (Education) and Speech (Education)).

Bachelor of Arts in Dramatic Art: B.A. (Dramatic Art) (UW)

Admission requirements: As for the B.A. degree, p.64.

Curriculum: Four years of full-time study. The major subjects are Dramatic Theory III, Theatre Practice III and either Drama and Film III or a major subject selected from the ordinary B.A. degree courses (see p.65). In their fourth year students take four courses selected from subjects such as the following: Drama in Education, Theatre History, Film, Television, Design.

The University of the Witwatersrand also offers the degree of B.A. with three qualifying courses in Drama and Film.

Bachelor of Arts with Speech and Drama as a major subject: B.A. (UZ)

Admission requirements: See B.A. degree, p.66.

Curriculum: Three years. Students must take English or Practical English as a compulsory ancillary subject.

See ARTS, University of Zululand (p.66) for particulars regarding the B.A. degree course.

#### POST-GRADUATE DEGREES

Honoris Baccalaureus Artium: B.A. Hons. (UDW)

Bachelor of Arts Honours: B.A. Hons. or Hons. B.A. (UCT, UN, PU for CHE)

Honours Bachelor of Arts (Dramatic Art and Theatrical Art): B.A.(Hons.)(Dramatic Art and Theatrical Art) (UOFS)

Bachelor of Arts Honours in Drama: B.A. (Drama)(Hons.) (UP)

Bachelor of Arts with Honours: B.A. (Hons.) (RU)

Honours Bachelor of Drama: Hons. B.Drama (US)

Master of Arts: M.A. (UCT, UN, PU for CHE, RU)

Magister Artium: M.A. (UDW)

Master of Arts (Dramatic Art and Theatrical Art): M.A. (Dramatic Art and Theatrical Art) (UOFS)

Master of Arts in Drama: M.A. (Drama) (UP)

Master of Drama: M.Drama (US)

Master of Arts in Dramatic Art: M.A. (Dramatic Art) (UW)

Doctor of Philosophy: Ph.D. (UCT, UN, RU, UW)

Doctor Philosophiae: D.Phil. (UDW, UP, US)

Doctor Philosophiae (Dramatic Art and Theatrical Art): D.Phil. (Dramatic Art and Theatrical Art) (UOFS)

Doctor of Literature: D.Litt. (UN, PU for CHE, UP, RU, UW)

#### DIPLOMAS

Performer's Diploma in Speech and Drama: P.D.S. & D. (UCT)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Candidates who hold a Senior Certificate may, with the permission of the Head of the Department, be accepted. A student must have shown marked talent as a performer. An audition with a member of the Speech and Drama Department is necessary.

Curriculum: Three years of full-time study. The curriculum includes Drama, I, II and III as for the B.A. degree, Practical Speech III, Practical Acting III besides other subjects.

Diploma in Play Production (UN)

Admission requirement: A Bachelor's degree including Speech and Drama as a major subject.

Curriculum: One year of full-time study or two years of part time-study.

Diploma in Dramatic Art and Theatrical Art (UOFS)

Admission requirement: A Senior Certificate with passes in an official First Language HG, in an official Second Language HG and in one further subject, with the exception of the official languages, on the Higher Grade.

Curriculum: Three years of full-time study. The curriculum is the same as that for the degree of B.A. (Dramatic Art and Theatrical Art).

### University Diploma in Speech and Drama (PU for CHE)

Admission requirement: A Senior Certificate.

Curriculum: Three years of full-time study. A student composes his curriculum with course units in the following subjects: Dramatic Art, Speech and Interpretation, Theatrical Art; Afrikaans or English; an ordinary B.A. subject (see p.53).

### University Diploma in Theatrical Art (PU for CHO)

Admission requirements: An approved Bachelor's degree with Theatrical Art as a major subject or the University Diploma in Speech and Drama or an equivalent qualification.

Curriculum: One academic year.

### Diploma for Stage Managers (US)

Admission requirements: A Senior Certificate with an aggregate of at least 50 %.

Curriculum: Two years of full-time study. The curriculum includes the following courses: Stage Management, Afrikaans, Special English, Classical Culture or Afrikaans Cultural Science and Folklore.

See EDUCATION p.129 for teachers' courses with specialisation in Drama.

VOCATIONAL SERVICE: Dramatic Art as a subject is purely literary, that is a theoretical course which, just like other courses, requires interest but no particular talent for acting. Speech and Theatrical Art are theoretical-practical courses for which students should, in addition to interest, possess a suitable voice and a high degree of acting talent. (Many students have slumbering talents and should not be discouraged in advance.)

Generally speaking, it is the aim of these fields of study to equip language teachers (provided they satisfy the correct subject combination requirements), actors, journalists, radio announcers and radio and television actors for their task. The theatre, for instance, offers various fields such as those of actor, director, designer, stage director, etc. In this regard, the Performing Arts Councils of the four provinces offer particular opportunities. However, training in drama does not guarantee a graduate a post in the drama world. The Councils are extremely selective and only the best can hope to be considered.

At the SABC trained persons receive further training in the art of radio work and announcing, after which they can, for example, act as announcers, programme organisers and producers, depending on their training, personality, voice, creative ability, powers of organisation and general competence. Interested and talented persons are given the opportunity of taking part in radio and television dramas. As in the case of stage artists, the successful completion of the course does not guarantee a post with the SABC. Some of these fields require specialisation and universities make adequate provision for this.

Also consult Tertiary Training for particulars on the National Diploma in Performing Art.

### ECONOMICS

Economics is one of the options for the B.Com. degree (see p.85) and the B.Bus.Sc. degree (see p.83) as well as a subject for the B.A. and B.Com. degrees and even a B.Sc. subject at some universities.

Universities: Cape Town, Natal, Potchefstroom, Rhodes, Stellenbosch, Western Cape, Witwatersrand

## FIRST DEGREES

### Bachelor of Science with Economic subjects: B.Sc. (PU for CHE)

Admission requirements: As for the ordinary B.Sc. degree. See p.217.

Curriculum: Three years of full-time study. The first major subject must be chosen from the following subjects: Computer Science, Statistics, Operations Research or Mathematics. Two additional major subjects may be selected from the list of Economic subjects as follows: At least one must be selected from the subjects Business Economics, Economics or Accounting; the other subjects are Cost Accounting, Money and Banking, Mercantile Law, Auditing.

The degree grants admission to Hons. B.Sc., M.Sc. and D.Sc. degree study in the B.Sc. subjects taken up to third-year level.

### Bachelor of Economics: B.Econ. (RU)

Admission requirements: As for the B.Com. degree. See p.97.

Curriculum: Three years of full-time study. The curriculum comprises eleven courses. A candidate must obtain credit in all the courses. The courses for the first year are as follows: Accounting, Economics, Mathematics and a course selected from courses offered in this Faculty. The major subjects are Economics III and one of the following: Accounting III, Computer Science III, Economics of Agriculture III, Economic History II, Mathematics III or Mathematical Statistics III or Mathematics and Statistics III.

### Bachelor of Economic Sciences: B.Econ. (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). In cases where the choice of subjects includes Statistics (half course) and Mathematics (half course) a pass in Mathematics SG is a requirement.

Curriculum: Three years of full-time study or four years of extramural study. A student must obtain at least 88 credits. Students are recommended to take at least five first-year subjects (40 credits). At least one major subject is required for this degree and it must be chosen from the following subjects: Business Economics, Economics, Financial Accounting, Industrial Psychology or Geography, Mercantile Law (Commerce), Public Administration or Shorthand and Typing, Sociology, Statistics or Development Administration, Transport Economics or Political Science. A minimum of 32 credits must be obtained in Business Economics and Economics during the three years of the course.

### Baccalaureus Economicae: B.Econ. (UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or SG.

Curriculum: Three years of full-time study. The curriculum consists of 11 courses. The two major subjects must be chosen from the following: Economics, Business Economics, Industrial Psychology, Sociology, Business Statistics. Economics III or Business Economics III is compulsory.

### Bachelor of Economic Science: B.Econ.Sc. (UW)

Admission requirement: As for the B.Com. degree except that Mathematics has to be passed on the Higher Grade. See p.102.

Curriculum: Three years of full-time study. The curriculum consists of eleven courses selected from the following subjects: Accounting I, II; Applied Mathematics, Computer Science and Mathematical Statistics I; Applied Mathematics II, III; Business Data Processing I, II; Business Economics I, II, III; Computer Science II, III; Economic History I, II, III; Economics I, II, III; Mathematics I, II, III; Mathematics and Statistics I, II; Mathematical Statistics II, III. At least one of the two major subjects must be Economics. The major subjects are selected from the following:

Applied Mathematics, Business Data Processing, Business Economics, Computer Science, Economic History, Economics, Mathematical Statistics, Mathematics, Mathematics and Statistics.

#### POST-GRADUATE DEGREES

Bachelor of Economics with Honours: B.Econ.(Hons.) (RU)  
Honours Bachelor of Economic Sciences: B.Econ.Hons. (US)  
Honours Baccalaureus Economicae: B.Econ.Hons. (UWC)  
Bachelor of Economic Science with Honours: B.Econ.Sc.Hons. (UW)

Master of Commerce: M.Com. (RU)  
Master of Economic Sciences: M.Econ. (US)  
Magister Economicae: M.Econ. (UWC)  
Master of Economic Science: M.Econ.Sc. (UW)

Doctor of Economic Science: D.Econ.Sc. (UCT, UW)  
Doctor of Economics: D. Econ. (UN, RU)  
Doctor of Philosophy: Ph.D. (UCT, UN, RU UW)  
Doctor of Economic Sciences: D.Econ. (US)  
Doctor Economicae: D.Econ. (UWC)

#### DIPLOMA

Higher Diploma in Property Economics: H.Dip.Prop.Econ. (UW)

Admission requirement: Any Bachelor's degree or approved professional qualification.

Curriculum: Not less than three years of part-time study. The curriculum includes the following subjects: Accounting, Economics, Mathematics and Statistics, Law for the Property Economist, Property Economics, Commercial Law, Marketing, Business Finance, Building Practice and Procedure, Business Data Processing.

**VOCATIONAL SERVICE:** Various subjects such as Business Economics have developed from Economics, the mother of all economic sciences. Economics is an analytical-theoretical science and the principles underlying all economic activities and phenomena are examined. These principles are used to explain how the national economy operates in all its micro and macro-economic facets, to identify problems and to formulate corrective measures. Problems such as pricing, inflation, unemployment, poverty, taxation, monetary aspects, international trade and economic relations are studied. Business Economics, in its turn, concentrates on the undertaking and how it should be guided to ensure the greatest possible remunerativeness, that is profit in proportion to capital investment, over the long term. Functions of the undertaking which are involved are those of general management, marketing management, financial management, the personnel function, administrative function and public relations. Business Economics consequently has a strong practical bias.

Although an increasing number of persons tend to specialise in a particular field, economists are not restricted by specialisation. A degree in economic and related sciences offers an excellent preparation for a wide range of careers in the Public Service and commerce and industry. Economics is also one of the subjects offered by all the universities as a major or subsidiary subject for a B.A. degree.

In the following Government departments, the activities of economists vary according to the functions of each department and so do the requirements for appointment as professional officers: Agriculture and Fisheries; Finance; Industries, Commerce and Tourism; Manpower; Environment Affairs. Mineral economists in the employ of the Minerals Bureau must be qualified as follows: For assistant mineral economist: One or more majors from Economics, Business Economics, Geology, Metallurgy, Mining Engineering, Mathematical Statistics. For mineral economist: A four-year university degree or two appropriate bachelor's degrees or an honours degree with one or more of the above-mentioned subjects, and five years' appropriate experience. (Further information on the mineral economist can be obtained from the Department of Mineral and Energy Affairs.)

Other bodies employ persons who are qualified in Economics and related fields as economic advisers, financial consultants, researchers and so on to interpret general economic trends for the concern; to forecast production, markets and prices and to assist in the planning of the concern as a whole. Such employers are, inter alia, the IDC, the HSRC, Iscor, Sasol, the Railways, the Federated Chamber of Industry, the Association of Chambers of Commerce, commercial banks, building societies, insurance companies, market agents and other undertakings in commerce and industry.

Since transport is essentially an integral part of the production process, Transport Economics is an important subject or specialised field of study for the B.Com. degree. The universities which offer it regard it as an opportunity to provide students with the basic background knowledge of transport within the framework of their knowledge as gleaned, in particular, in the subject fields of Economics and Business Economics. Employment opportunities in this field will be found, for example, in the Department of Transport (various branches), the Railways, the various shipping and other companies which are concerned with the delivery of goods.

No intelligent young person who is in possession of a degree with the appropriate subject combination and who tackles his task with dedication and a true sense of duty need fear that he will not make any progress. However, the labour market gives preference to post-graduate students. The demand for these persons to occupy executive posts will increase still further in future as a result of South Africa's large-scale industrial development and considerable resources. Post-graduate study is also a prerequisite for appointment as a lecturer at a university. When planning his or her course, a prospective teacher of Economics and other commercial subjects should bear in mind the requirements of the educational authority concerned.

## EDUCATION

Universities: All the universities except Medunsa

### UNIVERSITY OF CAPE TOWN

#### (a) Secondary teachers' courses

Higher Diploma in Education (Post-Graduate): Secondary: One year after an approved Bachelor's degree with at least two teaching subjects. In one of the teaching subjects three courses must have been completed and in the other, at least two courses.

Higher Diploma in Education (Technical): Secondary: One year of full-time study after one of the following:

- A degree in Engineering, Pure Science or Applied Science
- Higher National Diploma for Technicians (four-year course)
- National Diploma for Technicians (three-year course)
- a recognised equivalent of any one of the above.

This Diploma is intended for prospective teachers in technical high schools.

Higher Diploma in Education (Commerce): Secondary: Four years of full-time study after a Senior Certificate or an equivalent certificate. The course, which is given in collaboration with the Cape Technikon, provides training for secondary school teachers of commercial subjects.

Higher Diploma in Education (Home Economics): Secondary: Four years of full-time study after a Senior Certificate or an equivalent certificate. The course, which is given in collaboration with the Cape Technikon, provides training for secondary school teachers of Home Economics.

Bachelor of Arts (Art) - B.A. (Art): Four years of full-time study after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). In their fourth year students are admitted to the course for the Higher Diploma in Education (Post-Graduate): Secondary. See FINE ARTS p.151.

Bachelor of Music - B.Mus. (Music Education): Four years of full-time study after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). In their fourth year students are admitted to the course for the Higher Diploma in Education (Post-Graduate): Secondary. See MUSIC p.182.

(b) Primary teachers' courses

Bachelor's degree in Primary Education - B.Prim. Ed.: Four years of full-time study after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements as for the B.A. degree, p.44.

Higher Diploma in Education (Post-Graduate): Primary: One academic year after an approved degree including prescribed school subjects. This Diploma is intended for Arts or Science graduates who wish to teach in the primary school.

(c) Primary and/or secondary teachers' courses

Teacher's Licentiate Diploma in Music: Four years after a Senior Certificate. Additional admission requirements as for B.Mus. p.181

Special Endorsement in Music for holders of the Primary Teacher's Certificate: One year after a Senior Certificate and a Primary Teacher's Certificate.

Higher Diploma (Speech and Drama) in Education: One year after an approved three-year education diploma.

(d) Other teachers' courses

Diploma in Specialised Education: Clinical Remedial Teaching: One academic year after an approved three-year teacher's certificate and at least two years' teaching experience in schools.

Diploma in Specialised Education: The Deaf and the Partially Hearing: One academic year after a Senior Certificate and an approved three-year teacher's certificate.

Diploma in Specialised Education: The Handicapped in Speech and Hearing: One academic year after an approved three-year teacher's certificate.

Diploma in Specialised Education: The Mentally Handicapped: One academic year after an approved three-year teacher's certificate.

Diploma in Teaching Physiotherapy: See PHYSIOTHERAPY p.207.

Diploma in Teaching Radiography: See RADIOGRAPHY p.238.

Bachelor of Nursing (Education and Advanced Nursing Science) - B.Nurs. (Ed. & Adv.Nurs.Sc.): To be offered for the first time in 1982.

Diploma for Educators of Adults: Two years of part-time study after a university degree or a full-time, two-year post-matriculation qualification approved by the Senate or any other qualification of a standard accepted by the Senate as the equivalent of either of the aforementioned requirements.

This course is geared to the needs of those professionally engaged in the education of adults within formal or non-formal settings. The diploma is not intended for those seeking employment in provincial education department schools.

UNIVERSITY OF DURBAN-WESTVILLE

(a) Secondary teachers' courses

Baccalaureus Paedagogiae in Arts - B.Paed.(Arts)

Baccalaureus Paedagogiae in Commerce - B.Paed.(Commerce)

Baccalaureus Paedagogiae in Science - B.Paed.(Science)

Baccalaureus Paedagogiae in Home Economics - B.Paed.(Home Econ.)

Each of the curricula of the above-mentioned four degrees is a four-year integrated academic and professional degree curriculum which fulfils all the requirements for the degree concerned as well as the requirements for the training of teachers for secondary schools.

The admission requirement for a B.Paed. degree is a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A candidate must also have obtained at least 40 per cent in at least four subjects which must include a language subject on the higher grade, a second language subject on the higher or lower grade, Mathematics or a science subject or a third language subject.

A student may be required to undergo a medical examination.

Baccalaureus Musicae in Education - B.Mus.(Ed.): See MUSIC p.182.

University Higher Diploma in Education: One year of full-time study after an approved degree which includes the prescribed courses in the required school subjects.

University Diploma in Education (Junior Secondary): Three years of full-time study after a Matriculation Exemption Certificate or a Senior Certificate with English or Afrikaans as first language passed on the Higher Grade, and English or Afrikaans as second language passed on the Higher or Standard Grade; and two other subjects passed on the Higher Grade OR any other qualification deemed equivalent by the Senate.

The first year is devoted to the study of academic subjects in one of the following fields: General, Home Economics or Science; and the second and third years to professional subjects.

Further Diploma in Home Economics: One year of full-time study after an approved three-year education diploma in Home Economics and at least two years' teaching experience in a secondary school.

(b) Primary teachers' courses

Baccalaureus Paedagogiae in Primary Education - B.Paed.(Prim.Ed.): Four years of full-time study after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See aforementioned B.Paed. degrees for additional admission requirements.

University Diploma in Education (Senior Primary): Three years of full-time study after a Matriculation Exemption Certificate or a Senior Certificate with English or Afrikaans as first language passed on the Higher Grade and English or Afrikaans as second language passed on the Higher or Standard Grade; and two other subjects passed on the Higher Grade OR any other qualification deemed equivalent by the Senate.

(c) Other teachers' courses

Diploma for Teachers of the Deaf and Hard of Hearing: One year of full-time study or two years of part-time study after an approved three-year teacher's diploma obtained after full-time study at a recognised institution and at least two years' teaching experience at an ordinary school or one year's experience at a school for special education.

Diploma in Remedial Education: One year of full-time study or two years of part-time study after an approved three-year education diploma, or a degree and an education diploma, or a combined education degree; and at least two years' teaching experience at a school for special education.

Diploma in Special Education: See Diploma in Remedial Education.

Diploma in School Counselling: One year of full-time study or two years of part-time study. A candidate must hold the B.Paed. degree or a Bachelor's degree with Education III or Psychology III and an approved teacher's diploma. In addition candidates must have had at least four years' teaching experience.



University Education Diploma for Resource Centre Management - U.E.D.(R.C.M.): Two years of part-time study after an approved three-year teaching qualification, or a post-graduate teacher's diploma; and three years' approved classroom experience. Students will be attached to a Resource Centre in a school throughout the two years of the course.

Diploma in the Teaching of Physiotherapy: See PHYSIOTHERAPY p.207.

## UNIVERSITY OF FORT HARE

### (a) Secondary teachers' courses

Bachelor of Pedagogics - B.Ped.: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). This is an integrated professional degree which may be obtained in any of the following options:

- Arts (major subjects - Afrikaans-Nederlands, Xhosa/Sotho, Biblical Studies, English, Geography, History)
- Science (major subjects - Chemistry or Physics, Botany or Zoology, Mathematics, Geography)
- Economic Sciences
- Music
- Agriculture
- Physical Education.

Higher Secondary Teachers' Diploma - H.S.T.D.: Three years after a Senior Certificate. The Diploma may be obtained in any of the following options: Arts, Science, Economic Sciences, Fine Arts, Physical Education, Music, Agriculture.

Secondary Teachers' Diploma - S.T.D.: Two years after a Senior Certificate. The Diploma may be obtained in any of the following options: Arts, Science, Economic Sciences, Fine Arts, Physical Education, Music.

University Education Diploma (Graduate) - U.E.D.: One year after an approved degree which includes the prescribed courses in school subjects.

University Education Diploma (Non-graduate) - U.E.D.: One year after a student has completed courses of study towards an approved degree; in such a manner that all the requirements of the degree may be fulfilled by one further year of study.

## UNIVERSITY OF NATAL

### (a) Secondary teachers' courses

Higher Diploma in Education (Post-graduate) and the University Education Diploma (Post-graduate): One year after an approved degree containing the requisite number of school subjects.

University Education Diploma (Non-Graduate): One year after a student has completed courses of study towards an approved degree, in such a manner that all the requirements of the degree may be fulfilled by one further year of study.

The University Education Diploma (Non-graduate) may be converted into the Higher Diploma in Education (Post-graduate) or the University Education Diploma (Post-graduate) on completion by the candidate of the remaining requirements for such diplomas.

Higher Diploma in Education: Four years of full-time study after a Senior Certificate and a pass in both official languages with at least a pass in the first language on the

Higher Grade; and a pass in one further subject, excepting the official languages, on the Higher Grade. The curriculum must be completed in one of the following fields of study: Art, Commerce, Industrial Arts, Home Economics, Technical.

This Diploma is offered by the University in conjunction with the Technikon Natal, Durban.

Higher Diploma in Education: Four years of full-time study after a Senior Certificate with a pass in the first language on the Higher Grade and a pass in the second language either on the Higher Grade with an F symbol or on the Standard Grade with an E symbol; and another subject passed on the Higher Grade. The curriculum must be completed in one of the following fields of study: Arts, Science.

This Diploma is offered in conjunction with the Edgewood College of Education, Pinetown.

Higher Diploma in Education (Technical): Two years of part-time study after

- a Senior Certificate including both official languages with at least one passed on the Higher Grade, or at least four subjects at NTC III level plus the two official languages with at least one passed on the Higher Grade, and
- a National Diploma in a specialist direction or equivalent.

This Diploma is offered in conjunction with the Technikon Natal.

Higher Diploma in Education (Post-School): Two years of part-time study after

- a Senior Certificate including both official languages, with at least one passed on the Higher Grade, or other equivalent qualifications, and
- an approved three-year education diploma that includes at least two school subjects of at least second-year degree level, or a National Diploma in a specialist direction or equivalent.

This Diploma is offered in conjunction with the Technikon Natal.

Further Diploma in Education: One year of full-time study or two years of part-time study after

- a Matriculation Certificate or a Senior Certificate or equivalent, and
- an approved three-year teachers' diploma or certificate in Home Economics or Commercial Subjects or Industrial Arts.

Applicants must be selected teachers-in-service.

(b) Other teachers' courses

Diploma in Specialised Education (Remedial Education): One year of full-time study or two years of part-time study after

- a degree plus an approved education diploma; or
- an approved education diploma requiring at least three years of training and in addition two years of approved teaching experience.

University Diploma in Nursing Education: See NURSING p.195.

U N I V E R S I T Y   O F   T H E   N O R T H

(a) Secondary teachers' courses

Bachelor of Arts in Pedagogy - B.A.Paed.  
or

Bachelor of Commerce in Pedagogy - B.Com.Paed.

Four years after a Matriculation Certificate or Matriculation Exemption Certificate.

Bachelor of Science in Pedagogy - B.Sc.Paed.: Four years after a Matriculation Certificate or a Matriculation Exemption Certificate. The admission requirements are the same as for the B.Sc. degree. See p.214.

Higher Secondary Teachers' Diploma - H.S.T.D.: Three years after a Matriculation Exemption Certificate.

Diploma in Pedagogy - Dipl.Paed.: Two years after a Senior Certificate.

University Education Diploma - U.E.D.: One year after an approved Bachelor's degree including courses in approved school subjects.

University Education Diploma (Non-graduate) - U.E.D. (Non-graduate): One year. A candidate may fall short of only one course towards obtaining his degree and must hold the Matriculation Exemption Certificate and five approved degree courses.

Any holder of the U.E.D. (Non-graduate) may convert it to a full U.E.D. by completing the outstanding academic requirements for the degree.

U N I V E R S I T Y O F T H E O R A N G E F R E E S T A T E

(a) Secondary teachers' courses

Bachelor of Arts (Education) - B.A.(Ed.): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See also ARTS p.50.

Bachelor of Arts (Education) with Dramatic Art and Theatrical Art - B.A.(Ed.) with Dramatic Art and Theatrical Art: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See also DRAMA p.118.

Bachelor of Arts (Education) with Fine Arts - B.A.(Ed.) with Fine Arts: Five years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Students who did not have Art as a Std 10 subject, must take a practical test before admission, in order to determine their artistic ability. See also FINE ARTS p.151.

Bachelor of Arts (Education) with Languages - B.A.(Ed.) with Languages: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See also ARTS p.50.

Bachelor of Arts (Education) with Music subjects - B.A.(Ed.) with Music subjects: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark of 50 % in Music HG or 60 % in Music SG or a standard in Music equivalent to the Grade VII Examination of the University of South Africa. A student must satisfy the head of the department that his proficiency in the performing art as well as his musicality and general knowledge of music justifies admission. See also MUSIC p.182.

Bachelor of Arts (Education) with Physical Education - B.A.(Ed.) with Physical Education: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Students have to be medically examined locally by the Director of Health Services, UOFS, before the commencement of the course. See also PHYSICAL EDUCATION p.204.

Bachelor of Agriculture (Education) - B.Agric.(Ed.): Four years after a Matriculation or a Senior Certificate (Matriculation Exemption) with a pass in Biology. See also AGRICULTURE p.36.

Bachelor of Agriculture - B.Agric.: Three years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Biology. This degree grants admission to the H.D.E. post-graduate course for the professional training of prospective teachers. See also AGRICULTURE p.36.

Bachelor of Commerce (Education) - B.Com.(Ed.): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See also COMMERCE p.91.

Bachelor of Science in Home Economics Education - B.Sc. in Home Economics Ed.: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 40 % in Mathematics SG and a pass in Physical Science SG and/or Biology SG. Prospective students are strongly recommended to take Physical Science for the Std 10 examination. See also HOME ECONOMICS p.157.

Bachelor of Library Science (Education) - B.Bibl.(Ed.): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See also LIBRARIANSHIP p.168.

Bachelor of Music (Education) - B.Mus.(Ed.): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements are the same as for the B.A.(Ed.) with Music subjects. See also MUSIC p.182.

Bachelor of Science (Education) - B.Sc.(Ed.): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements are the same as for the B.Sc. degree. See p.215.

Each of the curricula of all the aforementioned degrees, except for the B.Agric. degree, is an integrated academic and professional degree course which fulfils all the requirements for the degree concerned as well as the requirements for the training of teachers for secondary schools.

Higher Diploma in Education (Post-graduate) - H.D.E. (Post-graduate): One year of full time study or 18 months (3 semesters) of part-time study after a recognised degree which must also include approved subjects.

Higher Diploma in Education (Non-graduate)-H.D.E. (Non-graduate): Four years of full-time study after a Senior Certificate or equivalent, with or without Matriculation exemption, with passes in an official First Language HG and in an official Second Language HG and in a further subject, apart from the official languages, on the Higher Grade. This Diploma is offered in the following fields: General; Science; Physical Education; Industrial Arts and/or Graphics (Education); Home Economics; Art Education; Commercial subjects; Dramatic Art and Theatrical Art.

For some of these fields there are additional admission requirements, mainly concerning school subjects passed.

UOFS Teacher's Diploma in Music: Four years after a Senior Certificate. The curriculum is the same as for the B.Mus.(Ed.) degree. Additional requirements are the same as for the B.A.(Ed.) with Music subjects. See also MUSIC p.181.

(b) Other teachers' courses

Diploma in Clinical Remedial Education: One year after one of the following:

- An approved three or four-year diploma in education
- an approved degree and an approved diploma in education
- an approved integrated teaching degree.

Post-basic Diplomas in Nursing include, inter alia, Post-Basic Diploma in Nursing Education: See NURSING p.194.

Tertiary Education Diploma in Physiotherapy: See PHYSIOTHERAPY p.207.

# UNIVERSITY OF PORT ELIZABETH

## (a) Secondary teachers' courses

Baccalaureus Artium (Educationis) - B.A. (Ed.)  
Baccalaureus Scientiae (Educationis) - B.Sc. (Ed.)  
Baccalaureus Commercii (Educationis) B.Com. (Ed.)

Each of the curricula of the above-mentioned degrees is a four-year integrated academic and professional degree course which fulfils all the requirements for the degree concerned as well as the requirements for the training of teachers for secondary schools.

The admission qualifications for the above-mentioned degrees are the same as for the degree concerned. See B.A. p.52, B.Sc. p.216 and B.Com. p.92.

Baccalaureus Artium (Educationis) (Woodwork and Metalwork) - B.A. (Ed.) (Woodwork and Metalwork): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Woodwork or Metalwork or Technical Drawing on the Standard Grade.

Candidates attend lectures during the first and second years of study at the Graaff-Reinet Teachers' College. During the third and fourth years of study they attend lectures at the University of Port Elizabeth.

Baccalaureus Musicae (Music Education) - B.Mus. (Music Education): Four years of full-time study. See MUSIC p.182.

Higher Diploma in Education (Post-graduate) - H.D.E. (Post-graduate): One year after an approved Bachelor's degree of a recognised university which includes the minimum number of approved school subjects.

Higher Diploma in Education - H.D.E.: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) or a Senior Certificate with passes in both official languages on the Higher Grade; and a pass in one further subject, apart from the official languages, on the Higher Grade. This Diploma may be obtained with the following endorsements: Human Sciences; Natural Sciences (in the field of Physical and Mathematical Sciences or in the field of Biological Sciences); Economic Sciences; Physical Education; Woodwork and Metalwork; School Music; Typing, Snelsskrif and Shorthand.

Higher Diploma in Education (Technical) - H.D.E. (Technical): One year of full-time study after one of the following:

- An approved degree; or

- a Senior Certificate or equivalent qualification\* and a qualification equivalent to Std 10 + 3 which includes two school subjects on a second-year degree level. (Technical subjects relating to the candidate's specialist post may be included.)

Provisional admission may be granted by the Senate to immigrants who have resided in the Republic for less than four years and who have not yet fulfilled the language requirements.

\* A four-subject NTC III plus the two official languages of which one must be passed on the Higher Grade, and English Language (excluding English Literature) must be one; Abitur, etc. shall be regarded as equivalent.

## (b) Primary teachers' courses

Baccalaureus Primae Educationis - B.Prim.Ed. Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). There are two curricula, namely Junior Primary and Senior Primary.

Higher Diploma in Education - H.D.E.: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) or a Senior Certificate with passes in

both official languages on the Higher Grade; passes in two of the following subjects, at least one of which must be on the Higher Grade: Accountancy, Agricultural Science or Agriculture, Art, Biblical Studies, Biology or Physiology, Commercial Mathematics or Mathematics, Domestic Science, Economics, Functional Mathematics, Functional Science, Geography, History, Literature, Metalwork and/or Woodwork, Music, Needlework, Science, Technical Drawing, Xhosa; and passes in two other subjects in the final examination.

There are two curricula, namely Junior Primary and Senior Primary.

If, at the end of the third year of the curriculum, a candidate does not wish to continue with the prescribed courses in the fourth year, he nevertheless qualifies for the three-year Diploma in Education (D.E.)

(c) Other teachers' courses

Diploma in Specialised Education (Mentally Handicapped Pupils) - D.S.E.: Two years of part-time study or one year of full-time study. A candidate should have at least one year's teaching experience and be in possession of one of the following:

- A degree and a post-graduate secondary teacher's diploma
- a degree and a lower secondary teacher's diploma
- a lower secondary teachers' diploma
- a three-year primary teacher's certificate
- any three-year teaching qualification which the Senate recognises for the purpose.

Diploma in Specialised Education (Remedial Education) - D.S.E.(R.E.): Two years of part-time study or one year of full-time study. A candidate must have had at least three years' teaching experience, preferably in a primary school and be in possession of one of the following:

- An approved three or four-year diploma in education
- an approved degree and an approved diploma in education
- an approved composite or integrated degree in education
- any three or four-year teacher's diploma which the Senate recognises for the purpose.

Baccalaurues Curationis (Institutionis et Administrationis) - B.Cur.(I. et A):  
See NURSING p.192.

Diploma in Nursing Education and Community Health Nursing - Dip. N.E.: See NURSING p.195.

P O T C H E F S T R O O M   U N I V E R S I T Y   F O R   C H R I S T I A N  
H I G H E R   E D U C A T I O N

(a) Secondary teachers' courses

Bachelor of Arts (Education) - B.A.(Ed.)

Bachelor of Commerce (Education) - B.Comm.(Ed.)

Bachelor of Science (Education) - B.Sc.(Ed.)

Baccalaureus Bibliothecologiae (Educationis) - B.Bibl.(Ed.)

Each of the curricula of the above-mentioned degrees is a four-year integrated academic and professional curriculum which fulfils all the requirements for the degree concerned as well as the requirements laid down by the Committee of Heads of Education for the training of teachers for secondary schools.

The admission requirements are the same as for the degree concerned. For B.A. see p.53, B.Comm. p.93, B.Sc. p.217 and for B.Bibl. p.169.

Bachelor of Science (Domestic Science)(Education) - B.Sc. (Dom.Sc)(Ed.): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics on the Higher Grade, or alternatively, a pass in Mathematics and in a science subject, preferably Physical Science, on the Standard Grade. Prospective students are strongly recommended to take Physical Science for the Std 10 examinations. See also HOME ECONOMICS/ DOMESTIC SCIENCE p.158.

Higher Diploma in Education (post-graduate) - H.D.E. (post-graduate): One year after an approved degree of a recognised university which includes the minimum number of prescribed school subjects.

Higher Diploma in Education (post-graduate)(Guidance) - H.D.E. (post-graduate)(Guidance): One year after an approved degree with Psychology as a three-year major subject.

Higher Diploma in Education (post-graduate)(School Librarianship): One year after an approved degree with at least 44 credits in Library Science and Information Science which were obtained as part of the degree study.

Higher Diploma in Education (Secondary) - H.D.E. (Sec.): Four years after a Senior Certificate with passes in both official languages with at least a pass in the first language on the Higher Grade; and a pass in one further subject, excepting the official languages, on the Higher Grade. This diploma is offered in the following specialised fields: Human Sciences, Pure Sciences, Economic Sciences, Domestic Science, Industrial Arts, School Librarianship. For some of these fields there are additional admission requirements, mainly concerning school subjects passed.

Potchefstroom University Teacher's Licentiate in Music: Three years after a Matriculation Certificate or a Senior Certificate.

A student must satisfy the Head of the Department of Music in a practical and theoretical test that his standard is high enough to attend the course with profit. He must have passed Music as a subject for the Std 10 examination or have obtained the advanced standard of the University of South Africa in the chosen practical subject.

(b) Primary teachers' course

Baccalaureus Primariae Educationis - B.Prim.Ed.: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements are the same as for the B.A. or B.Sc. degree according to the choice of subjects.

This degree is an integrated teaching degree which is designed for teaching in the primary school.

(c) Other teachers' courses

Diploma in Nursing Education (graduate): One year after a degree in Nursing.

Diploma in Nursing Education: See NURSING p.196.

U N I V E R S I T Y   O F   P R E T O R I A

(a) Secondary teachers' courses

Bachelor of Arts (Education) - B.A. (Ed.)

Bachelor of Commerce (Education) B.Com. (Ed.)

Bachelor of Science (Education) - B.Sc. (Ed.)

Each of the curricula of the above-mentioned three degrees is a four-year integrated academic and professional degree course which fulfils all the requirements for the degree concerned as well as the requirements for the training of teachers for the secondary school.

The admission requirements for all three of the above-mentioned degrees are the same as for the degree concerned. See B.A. p.55 , B.Com. p.95 and B.Sc. p.218.

Bachelor of Agriculture (Education) - B.Sc. (Agric.)(Ed.): See AGRICULTURE p.37.

Bachelor of Science in Domestic Science (Education) - B.Sc. (Dom.Sc.)(Ed.): See HOME ECONOMICS/DOMESTIC SCIENCE p.158.

Bachelor of Arts (Education)(Art) - B.A. (Ed.)(Art): See FINE ARTS p.152.

Bachelor of Arts (Education)(Music) - B.A. (Ed.)(Music): See MUSIC p.183.

Higher Diploma in Education (Post-graduate): One year of full-time study after a Bachelor's degree which either includes the minimum number of courses in approved school subjects or is recognised for teaching purposes irrespective of the subject combination.

Higher Diploma in Education (Post-graduate)(Extramural): An extramural course extending over three semesters. Only candidates who are employed in a permanent capacity and who have fulfilled the admission requirements for the one-year full-time post-graduate course for secondary teaching will be admitted to the extramural course.

Higher Diploma in Education: Four years of full-time study after a Matriculation Certificate or a Senior Certificate with Afrikaans and English as subjects passed: Provided that one of the official languages must be passed on the Higher Grade and one further subject, excepting the official languages, must be passed on the Higher Grade. This Diploma is offered with the following endorsements: General, Commercial subjects, Commercial subjects Secretarial, Home Economics, Music, Physical Education.

With the exception of two cases, there are additional admission requirements for each endorsement (specialised fields) mainly concerning subjects passed in the Senior Certificate examinations.

(b) Secondary and/or primary teachers' course

Diploma in Music (Individual Teaching): Three years of full-time study after a Senior Certificate. See MUSIC p.186.

(c) Primary teachers' courses

Bachelor of Primary Education (Junior Primary) - B.Prim.Ed. (Junior Primary) and  
Bachelor of Primary Education (Senior Primary) - B.Prim.Ed. (Senior Primary)

Each of the curricula of the above-mentioned two degrees is a four-year integrated academic and professional degree course which fulfils all the requirements for the B.A. degree as well as the requirements for the training of teachers for primary schools. The admission requirements are the same as for the ordinary B.A. degree, p.55.

(d) Pre-Primary teachers' course

Bachelor of Primary Education (Pre-Primary - B.Prim.Ed. (Pre-Primary): The curriculum is a four-year integrated academic and professional degree course which fulfils all the requirements for the B.A. degree as well as the requirements for the training of pre-primary teachers. The admission requirements are the same as for the ordinary B.A. degree, p.55.

At the beginning of her first year of study a candidate must do a practical test in the Faculty of Education in order to assess whether her instrumental proficiency (piano) justifies her admission to the course in Infant Music: Provided that a candidate who does not have such a skill at her disposal, must on her own responsibility receive music tuition (piano) to the satisfaction of the Faculty of Education, to enable her to take the course in Infant Music.



(e) Other teachers' courses

Diploma in Orthopedagogics: One extended year after

- a Bachelor's degree with Psychology or Sociology or Social Work or Occupational Therapy as a major subject; or
- the B.Log. degree of this University; or
- a recognised diploma in Occupational Therapy; or
- other qualifications which the Faculty Council may regard as adequate for admission.

Note: This Diploma is not recognised for teaching purposes.

Teachers' Diploma in Occupational Therapy: See OCCUPATIONAL THERAPY p.198.

Diploma in Nursing Education: See NURSING p.195.

Bachelor of Nursing (Instruction and Administration) - B.Cur. (I. et A.): See p.192.

(f) Tertiary teachers' course

Tertiary Diploma in Education (Extramural): Two semesters of part-time study after

- a Bachelor's degree; or
- a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) plus another qualification which together with the appropriate experience justifies, in the discretion of the Senate, admission to the course.

R A N D A F R I K A A N S U N I V E R S I T Y

(a) Secondary teachers' courses

B.A. (Education) - B.A. (Ed.)

B.Bibl. (Education) - B.Bibl. (Ed.)

B.Com. (Education) - B.Com. (Ed.)

B.Sc. (Education) - B.Sc. (Ed.)

Each of the curricula of the above-mentioned four degrees is a four-year integrated academic and professional degree curriculum which fulfils all the requirements for the degree concerned as well as the requirements laid down by the Committee of Heads of Education for the training of teachers for secondary schools.

The admission requirements are the same as for the ordinary degree concerned. For B.A. see p.56, B.Bibl. p.169, B.Com. p.96 and B.Sc. p.219.

Post-graduate Higher Diploma in Education - H.D.E. (Post-graduate): Two semesters of full-time study after an approved Bachelor's degree which includes the minimum number of subjects for teaching purposes as stipulated by the Committee of Heads of Education.

Post-graduate Higher Diploma in Education (Technical): As for the H.D.E. (Post-graduate) provided that at least one of the subject didactics must be in a technical field.

Four-year Higher Diploma in Education - H.D.E.: Four years of full-time study after a Matriculation Certificate or a Senior Certificate with Afrikaans and English as subjects passed. Besides the first language which must be passed on the Higher Grade, one further subject, excepting the official languages, must also be passed on the Higher Grade. This Diploma may be obtained in the following fields: Languages and Human Sciences; Commercial field (academic subjects); Commercial field (subjects requiring dexterity); Physical Education; Librarianship.

For each of these fields there are additional admission qualifications, mainly concerning pass marks in particular subjects in the matriculation or senior certificate examinations.

One-year Higher Diploma in Education (Technical) - H.D.E.(Technical): One year of full-time study after a Senior Certificate or equivalent qualification (e.g. a four-subject NTC III plus the two official languages of which at least one must be passed on the Higher Grade) and a three-year diploma which includes at least two school subjects (technical subjects) on second-year level, e.g. motor mechanics, electricity, radio mechanics, woodworking, plumbing, and welding and metal work.

(b) Primary and Pre-Primary teachers' courses

B.Prim.Ed. (Senior Primary): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A good pass in Afrikaans and English; and Mathematics as a school subject will be a strong recommendation.

B.Prim.Ed. (Pre- and Junior Primary): As for the above-mentioned degree.

Each of the curricula of these two degrees is a four-year integrated academic and professional degree curriculum. The courses are offered in co-operation with the Teachers' College Goudstad.

(c) Other teachers' courses

Bachelor of Nursing Instruction and Administration - B.Cur. (Ed.et Adm.): See p.192.

Diploma in Nursing Instruction: See p.195.

R H O D E S   U N I V E R S I T Y

(a) Secondary teachers' courses

Higher Diploma in Education (Post-Graduate): One year after an approved degree with certain specified courses included in the curriculum for that degree.

Higher Diploma in Education - H.D.E.: Four years after a Senior Certificate with a pass in the first official language on the Higher Grade; passes in at least four further subjects, one of which, other than the second official language, must be on the Higher Grade; and at least an E symbol in each of the aforementioned subjects. The curriculum for the Diploma shall be arranged in accordance with certain provisions with regard to the courses to be followed.

Rhodes University Licentiate Diploma in Music - R.U.L.M.: Three years after a Senior Certificate, or the Board of the Faculty must be satisfied as to the candidate's suitability to take the course. The latter is considered only on the grounds of mature age and/or exceptional ability.

The Diploma may be awarded as a diploma for performers, or for teachers, or for choirmasters, or for church organists.

(b) Primary teachers' courses

Diploma in Education: Three years after a Senior Certificate with a pass in the official languages on the Higher Grade. There are two curricula, namely for Senior Primary teachers and Junior Primary teachers.

Higher Diploma in Education (Senior Primary and Junior Primary): One year of full-time study after the Diploma in Education. There are three curricula, namely for Academic Specialisation, Physical Education Specialisation and Music Specialisation.

Higher Diploma in Education (Post-Graduate) (For senior primary teachers): One year after a Bachelor's or higher degree which includes courses in certain prescribed school subjects.

(c) Other courses

The University offers the following courses to students who do not fulfil the admission requirements of the Higher Diplomas in Education and Diplomas in Education because they have passed only one of the official languages at the senior certificate level. These courses are therefore not recognised as approved teaching qualifications in the Republic of South Africa:

University Education Diploma (Post-graduate)(Secondary): The curriculum is the same as that of the Higher Diploma in Education (Post-graduate) (Secondary).

University Education Diploma (Secondary): The curriculum is the same as that of the Higher Diploma in Education (Secondary).

University Education Diploma (Post-graduate) (Senior primary): The curriculum is the same as that of the Higher Diploma in Education (Post-graduate)(Senior Primary) except that Afrikaans may be replaced by another course or by English II.

Higher Primary Teacher's Certificate: The curriculum is the same as that of the Diploma in Education (Senior Primary) except that Afrikaans may be replaced by a first-year subject applicable to primary school teaching.

Lower Primary Teacher's Certificate: The curriculum is the same as that of the Diploma in Education (Junior Primary) except that Afrikaans language may be replaced by a first-year subject applicable to primary school teaching.

U N I V E R S I T Y   O F   S O U T H   A F R I C A

(a) Secondary teachers' courses

Higher Diploma in Education (Post-graduate) - H.D.E. (Post-graduate): At least two years after a Matriculation Certificate or equivalent with passes in both official languages, at least one of which as First Language Higher Grade; and a further subject on the Higher Grade (excluding the official languages); and an approved degree which includes the required number of courses in the approved school subjects. Except with the special approval of the Senate, the completion of the Diploma is subject to the submission of original evidence of at least ten weeks' satisfactory experience as a teacher in a secondary school.

Further Diploma in Education - F.D.E.

Note: This Diploma may be taken only by teachers employed and selected by the Transvaal Education Department.

The curriculum extends over at least two years after an approved teaching qualification.

Higher Diploma in Education (Technical)-H.D.E. (Technical): A student shall

- hold a Senior Certificate or an equivalent qualification;
- have passed the two official languages at Std 10 level and at least one on the Higher Grade; provided that an immigrant who has been resident in the Republic for less than four years and has not yet complied with this requirement, may be admitted provisionally;
- hold a qualification(s) evaluated by the Committee of Heads of Education as M + 3 (Category C) and which include two recognised school subjects.

Except with the special approval of the Senate, the completion of the Diploma is subject to the submission of original evidence of at least ten weeks' satisfactory experience as a teacher in a secondary school.

The curriculum extends over at least two years.

(b) Tertiary teachers' course

Diploma in Tertiary Education - D.T.E.: A student must hold at least a Bachelor's degree. The Diploma will not, however, be issued until a student has completed at least two years' appropriate experience in an institution providing training at tertiary level.

The examination consists of six papers which may be written separately or simultaneously.

Note: The D.T.E. is not a general education diploma. It comprises advanced study in tertiary education and may grant admission to M.Ed. study in Andragogics.

(c) Secondary and/or primary teachers' courses

Diploma in Special Education (School Library Science): At least one academic year after

- an approved three-year or four-year education diploma; or
- an approved degree and an approved education diploma; or
- an approved combined education degree.

(d) Pre-primary teachers' courses

Higher Diploma in Education (Pre-Primary) - H.D.E. (Pre-Primary) and Higher Diploma in Education (Post-graduate Pre-Primary) - H.D.E. (Post-graduate Pre-Primary): At least two years after

- A recognised education diploma issued after a three-year teacher's training course; or
- a degree which includes the required number of courses in the approved school subjects, and at least one course in each of the official languages and at least one course in Education or at least one course in each of two of the following: Sociology, Psychology, Logopedics, Social Work; or
- the Higher Diploma in Education (Post-graduate).

Diploma in Nursery Education - D.N.E.

(Note: This Diploma does not comply with the criteria for the evaluation of South African qualifications for purposes of employment in Provincial Education Departments.)

The curriculum extends over at least two years after

- a recognised two-year teacher's diploma for admission to which a Senior Certificate was required; or
- a degree with three courses in one and at least one course in another of the following subjects: Psychology, Sociology, Social Work, Education, Philosophy; or
- a degree, or a diploma for which a Senior Certificate was a prerequisite, in nursing, speech therapy, physiotherapy, occupational therapy, radiography or Social Work; or another acceptable qualification.

(e) Other teachers' courses

Diploma in Specialised Education - D.S.E.

A. Special Education

Special education for the aurally handicapped, or visually handicapped, or neurally handicapped, or mentally severely handicapped.

Note: A student must select one of these fields.

The curriculum extends over at least two years after

- an approved education diploma issued after a three-year teacher's training course; or
- an approved degree and an approved education diploma; or
- an approved four-year education diploma; or
- an approved combined education degree.

#### B. Remedial Education

The curriculum extends over at least two years after

- an approved education diploma issued after a three-year teacher's training course; or
- an approved degree and an approved education diploma; or
- an approved four-year education diploma; or
- an approved combined education degree,

and

- at least three years' teaching experience.

#### Certificate in Special Education - C.S.E.

(Note: This Certificate is not recognised for salary purposes by the Department of National Education or the Provincial Education Departments. Teachers in the employment of, or who intend seeking employment with the Coloured or Indian Education Department or the Department of Education and Training should enquire from these Departments about the recognition for salary purposes which they will receive for the possession of the C.S.E.)

Special education for the aurally handicapped, the visually handicapped or the neurally handicapped.

The curriculum extends over at least two years after a recognised teacher's diploma issued after a two-year teacher's training course for admission to which a Senior Certificate was required.

Bachelor of Arts in Nursing - B.A.(Cur.): See p.191.

### U N I V E R S I T Y   O F   S T E L L E N B O S C H

#### (a) Secondary teachers' courses

Bachelor of Agricultural Education - B.Agric.(Ed.): See AGRICULTURE p.37.

Bachelor of Arts in Fine Arts (Educationis) - B.A. in Fine Arts (Ed.): See FINE ARTS p.152.

Bachelor of Home Economics (Educationis) - B. Home Economics (Ed.): See HOME ECONOMICS/DOMESTIC SCIENCE p.158.

Bachelor of Science in Home Economics (Educationis) - B.Sc. Home Economics (Ed.): See HOME ECONOMICS/DOMESTIC SCIENCE p.158.

Bachelor of Music (Educationis) - B.Mus. (Ed.): See MUSIC p.183.

Teachers' Licentiate in Music: Three years after a Matriculation Certificate or a Senior Certificate, provided that the candidate has obtained

- a pass mark in Music of at least 50 per cent on the Higher Grade or 60 per cent on the Standard Grade in the Standard 10 examination, or
- a pass in the Grade VII Examination (University of South Africa) in the practical major subject, with a standard in Harmony equivalent to Grade VI (University of South Africa), or
- a pass mark in the entrance examination, equivalent to the above-mentioned examinations in the practical major subject and in Harmony.

Higher Diploma in Education (Secondary)(Post-graduate) - H.D.E.: One year after a Bachelor's degree of a recognised university which includes the minimum number of prescribed school subjects.

Higher Diploma in Education (Secondary)(Commerce)(C.T.): Four years of full-time study after a Matriculation Certificate or a Senior Certificate with passes in both official languages on the Higher Grade; a pass in one other subject, with the exception of the official languages, on the Higher Grade; and an aggregate of at least 900 marks in the final examination.

The course is offered in co-operation with the Cape Technikon. Students attend the Technikon in Cape Town for the first three years and in the fourth year they follow the course in the Faculty of Education at the University.

Particulars of the syllabi for the first three years of study are obtainable from the Head, Department of Teacher Training, Cape Technikon, P.O. Box 652, Cape Town 8000.

Higher Diploma in Education (Secondary)(Woodwork-Metalwork): Four years of full-time study after a Matriculation Certificate or a Senior Certificate with a pass in a science subject or Mathematics on the Standard Grade at least; passes in both official languages on the Higher Grade; a pass in one other subject, with the exception of the official languages, on the Higher Grade; and an aggregate of at least 900 marks in the final examination.

The course is offered in co-operation with the Teachers' College Paarl. All four years of study are followed at the College.

Particulars of the course are obtainable from the Rector, Teachers' College, P.O. Box 311, Paarl 7620.

Higher Diploma of Education (Secondary)(Agriculture): Four years of full-time study after a Matriculation Certificate or a Senior Certificate with a pass in a science subject on the Standard Grade at least; passes in both official languages on the Higher Grade; a pass in one other subject, with the exception of the official languages, on the Higher Grade; and an aggregate of at least 900 marks in the final examination.

The course is offered in co-operation with the Teachers' College Oudtshoorn. All four years of study are followed at the College.

Particulars of the course are obtainable from the Rector, Teachers' College, Private Bag X649, Oudtshoorn 6620.

#### (b) Primary teachers' courses

Bachelor's degree course in Primary Education (General Field): Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with at least one of Mathematics or Commercial Mathematics or Functional Mathematics (Mathematics Practical); and a satisfactory standard in both the official languages in the final examination in Std 9 and the June examination in Std 10.

Students who follow the field of study, School Music, are exempted from the Mathematics requirement.

A pass in Mathematics and a science subject on the Standard Grade in the Matriculation examination is required for admission to Mathematics III (Ed.) and Natural Science III (Ed.), respectively.

Bachelor's degree course in Primary Education with specialisation in Physical Education: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Also see Bachelor's degree course in Primary Education (General Field).

Bachelor's degree course in Primary Education with specialisation in School Music: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption), provided that the candidate

- obtained at least a 60 per cent pass mark in Music (Examination subject) in Std 8; or
- passed the Grade VI (Intermediate) Examination in piano of the University of South Africa; or
- sat for an entrance examination in piano equivalent to the above-mentioned examinations;
- obtained a satisfactory standard in both the official languages in the final examination in Std 9 and in the June examination in Std 10;
- must on admittance to the course furnish proof of a basic ability in the use of the singing voice.

Bachelor's degree course in Primary Education with specialisation in School Guidance: Four years. The following are admitted.

- Students who have passed the second year of study for the Bachelor's degree course in Primary Education (General Field); or in the case of students from other training institutions who qualify for admission to the third year of study for the B. degree course in Primary Education (General Field); and
- on written application are admitted to the course by the Senate, or by the Executive Committee acting for the Senate.

Not more than 15 students are admitted to this course annually.

Higher Diploma in Education (Primary) (Speech and Drama) - H.D.E. (Primary) (Speech and Drama): One year after an approved Primary Teachers' Diploma. Persons who have already studied Speech and Drama as an intensive specialised field for the Primary Teachers' Diploma are not admitted.

Higher Diploma in Education (Primary)(School Music) - H.D.E. (Prim.)(School Music): One year after

- an approved three-year Primary Teachers' Diploma; or
- a B.Mus. (Ed.) degree; or
- a Bachelor's degree and a recognised teachers' diploma.

Persons who have already studied School Music as an intensive specialised field are not admitted.

Students must pass an entrance examination in either Piano, Singing or Recorder in which the standard of Grade VII of UNISA is required. Candidates who obtained a pass during the preceding two years in the Grade VII or higher examination in the music study concerned of UNISA or other comparable bodies are exempted from the aforementioned entrance examination.

Diploma in Specialised Education (School Librarianship): One year after

- an approved three-year or four-year teachers' diploma; or
- an approved degree followed by an approved teachers' diploma; or
- an approved integrated teaching degree.

Students who have already specialised in School Librarianship are not admitted.

(c) Other teachers' courses

Diploma in Specialised Education (Clinical Education): One year of full-time study after an approved three-year teachers' diploma or a teaching degree or a degree plus a teachers' diploma.

Not more than 25 students altogether are admitted to the courses annually. Preference will be given to candidates with teaching experience.

The Diploma includes three fields of study, viz Learning Disabilities, Aurally Handicapped and Autism.

Diploma in Specialised Education (Mentally Retarded): One year after

- the Higher Primary Teachers' Diploma of this University or another three-year teachers' diploma or certificate which can be regarded as equivalent thereto; or

- a degree and the Higher Diploma in Education (H.D.E.) of this University or equivalent qualifications.

Diploma in Specialised Education (Mentally Retarded)(Post-graduate): Three years after a recognised degree with Psychology as a major subject as well as a teachers' certificate, or other qualifications approved by the Senate for this purpose. Candidates must already be employed as school psychologists and/or teachers of retarded children.

Candidates must attend intensive courses of two weeks each at the University of Stellenbosch twice a year.

Teachers' Diploma in Occupational Therapy: See p.198.

Diploma in Nursing Education: See p.195.

U N I V E R S I T Y   O F   T H E   W E S T E R N   C A P E

(a) Secondary teachers' courses

Secondary Teacher's Diploma - S.T.D.: One year after a degree with at least one school subject at second-year level and one other school subject at third-year level.

Secondary Teacher's Diploma (Non-graduate) - S.T.D.(N/G): A student who has completed a full two-year course of study for the Bachelor's degree in such a way that all the requirements for a degree will be satisfied by one further year of study, shall be admitted to the final year of professional training for the S.T.D.(N/G).

Any person in possession of the S.T.D. (N/G) can have it changed into a full S.T.D. immediately on completion of the academic requirements for the Bachelor's degree.

Lower Secondary Teacher's Diploma - L.S.T.D.: Three years after a Senior Certificate with a pass of at least 40 per cent in one of the official languages as First Language Higher Grade or at least 50 per cent on the Standard Grade; at least 33 $\frac{1}{3}$  per cent in the other official language as Second Language Higher Grade; and at least 40 per cent in each of two other subjects on the Standard Grade.

The first two years are devoted to the study of academic subjects in one of the following fields: B.A., B.Sc. and Human Ecology; and the third year to professional subjects.

Diploma in Music Teaching - D.M.T. Three years after

(i) a Matriculation Certificate or a Senior Certificate (Matriculation Exemption) and



(ii) Grade VI Certificate (practical and theoretical) of the University of South Africa or any other equivalent qualification.

Students not in possession of (ii) are expected to do an entrance examination of the required standard in the principal practical subject and in theoretical work.

Diploma in School Librarianship: One year of full-time study or two years of part-time study. The following may be admitted:

- Qualified teachers in possession of a school-leaving certificate and who have had at least two years' undergraduate or one year's post-graduate teacher training
- Candidates who need one course to complete the S.T.D. or the L.S.T.D.

No persons who have already received comprehensive training in Librarianship will be admitted.

(b) Other teachers' courses

Adaptation Classes Teacher's Diploma - A.C.T.D.: One year of full-time study or at least two years of part-time study. Any student in possession of at least a Senior Certificate as well as an approved teacher's certificate, who has had teaching experience and who has been recommended by the Department of Education as a suitable candidate, may be admitted.

Diploma in Clinical Remedial Education - D.C.R.E.: One year of full-time study. A student must be in possession of

- at least a two-year teacher's certificate obtained after a Senior Certificate; or
- a degree or a diploma requiring three or more years of study after matric.

Preference will be given to candidates with kindergarten training/experience. At least two years' teaching experience is required.

Diploma in Child and Youth Guidance - D.C.Y.G.: One year of full-time study. A student must be in possession of

- at least a two-year teacher's certificate obtained after a Senior Certificate; or
- a degree or diploma requiring three or more years of study after matric.

Sufficient appropriate experience may be required.

Diploma in Nursing Education - D.N.E.: See NURSING p.195.

U N I V E R S I T Y   O F   T H E   W I T W A T E R S R A N D

(a) Secondary teachers' courses

Bachelor of Arts in Education - B.A. (Education)

Bachelor of Science in Education - B.Sc. (Education)

Each of the curricula of the above-mentioned degrees is a four-year integrated academic and professional degree curriculum which fulfils all the requirements for the degree concerned as well as the requirements laid down by the Committee of Heads of Education for the training of teachers. The admission requirements are the same as for the ordinary degree concerned. For B.A. see p.64 and for B.Sc. see p.223.

Higher Diploma in Education (Post-graduate) - H.Dip. Ed. (P.G.): One year of full-time study or two years of part-time study after an approved degree which includes a suitable combination of school teaching subjects.

Higher Diploma in Education - H.Dip. Ed.: Four years of full-time study after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption): Provided that the Senate may, until further notice, grant admission to a person who is not so qualified but who holds an approved Senior Certificate.

Candidates who select Curriculum (iii) must have passed both Mathematics and Physical Science with at least a D symbol on either the Standard or Higher Grade.

Every curriculum shall include, either

(i) four courses in one of the following practical subjects, one course in each year of the curriculum: Home Economics Industrial Arts, Instrumental Music Performance, Physical Education, Typewriting;

or

(ii) four or three courses, as the case may be, in two of the following academic subjects: Accounting, Business Economics, Mercantile Law; or

(iii) the following courses: Biology, Chemistry, Mathematics, Physics.

A candidate shall not be admitted to the first course in a practical subject unless he has passed an initial practical test in that subject.

University Education Diploma - U.E.D. (P.G.): A person who has not passed in Afrikaans at the matriculation standard as laid down by the entry requirements for the H.Dip.Ed. (P.G.), but who in all other respects has satisfied the requirements may be admitted as a candidate for the U.E.D. (P.G.). The rules applicable to the H.Dip.Ed. (P.G.) are applicable to the U.E.D. (P.G.).

University Education Diploma - U.E.D. A person who has not passed in Afrikaans at the matriculation standard, but who in all other respects has satisfied the requirements for admission to the H.Dip.Ed. may be admitted as a candidate for the U.E.D. The rules applicable to the H.Dip. Ed. are applicable to the U.E.D.

A person to whom either the U.E.D.(P.G.) or U.E.D. has been awarded and who subsequently passes in Afrikaans at the matriculation standard shall be entitled to be granted either the H.D.E.(P.G.) or the H.D.E. respectively.

(b) Primary teachers' courses

Bachelor of Primary Education - B.Primary Ed.: Four years of full-time study after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption), with a pass on the Higher Grade in three of the following subjects: Afrikaans First Language, Art, Bantu Language, Biology, Biblical Studies, English First Language, French, Geography, German, Hebrew, History, Latin, Mathematics, Music, Physical Science.

(c) Secondary and/or primary teachers' courses

Licentiate in Music - L.M.: Three years of full-time study after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See also MUSIC p.187.

(d) Other teachers' courses

Diploma in Remedial Education - Dip. Rem. Ed.: Two years of part-time study after a degree and at least three years' experience in teaching.

Diploma in Specialised Education - Dip. Spec. Ed.: Two years of part-time study after

- a degree and a recognised teacher's diploma and at least two years' experience in teaching; or
- a recognised teacher's diploma and a Senior Certificate (Matriculation Exemption) and at least five years' experience in teaching.

Diploma in Nursing Education - D.N.Ed.: See p.195.

Diploma in Physiotherapy Education - D.P.E.: See p.207.

## UNIVERSITY OF ZULULAND

### (a) Secondary teachers' courses

Baccalaureus Paedagogiae - B.Paed.: Four years after a Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A student shall satisfy the requirements of one of the following three options: Arts, Commerce or Science. Six successive semester courses in Pedagogics as first major subject are compulsory.

Senior Secondary Teacher's Diploma - S.S.T.D.: After having satisfied all the requirements for the first, second and third years in any one option of the B.Paed. degree a student shall obtain the S.S.T.D.

Secondary Teacher's Diploma - S.T.D.: One year after a student has satisfied the requirements for any one option in the first year B.Paed.

University Education Diploma - U.E.D.: One year after a Bachelor's degree which includes the prescribed number of courses in school subjects.

University Education Diploma (Non-graduate) - U.E.D.(Non-graduate): One year. A student who has completed two full years of study towards a Bachelor's degree in such a manner that all the requirements for the degree may be fulfilled by one further year of study, may be admitted.

Any holder of the U.E.D.(Non-graduate) may have it converted into a full U.E.D. by completing the Bachelor's degree concerned.

### POST-GRADUATE DEGREES

Bachelor of Education: B.Ed. (UCT,UFH,UN,UNorth,UP,RAU,RU,UNISA,US,UW)  
Baccalaureus Educationis: B.Ed. (UDW,UOFS,UPE,PU for CHE,UWC,UZ)

Master of Education: M.Ed. (UCT,UFH,UN,UNorth,UP,RAU,RU,UNISA,US,UW)  
Magister Educationis: M.Ed. (UDW,UOFS,UPE,PU for CHE,UWC,UZ)

Doctor of Philosophy: Ph.D. (UCT,UN,RU,UW)  
Doctor of Education: D.Ed. (UFH,UNorth,UP,RAU,UNISA,US,UW)  
Doctor Educationis: D.Ed. (UDW,UOFS,UPE,PU for CHE,UWC,UZ)  
Doctor of Literature: D.Litt (UN,RU)

VOCATIONAL SERVICE: Teachers usually start off as assistants. Those who are competent and conscientious, who have initiative and the capacity for organisation and leadership can, in the course of time, progress to positions such as those of head of department, deputy principal and principal. Other professional posts in the various education departments, such as those of subject inspectors, inspectors, planners, researchers, personnel attached to the psychological and guidance services and so forth, are also filled from the ranks of the teachers' corps.

The conscientious and successful teacher always remains a student who immerses himself in his work, keeps abreast of changes and reforms, particularly in his own subject, and always tries to let the child share in his own wealth of knowledge and wisdom. For this reason, further study is strongly emphasised. Not only is the deepening of subject knowledge desirable, but also the attainment of advanced educational qualifications such as the B.Ed. degree and other degrees and diplomas.

In this era of frenetic scientific and technical development, both formal and formative education are undergoing a reformation, growth and change as regards learning content, methods, procedures and approach. The profession offers bright and dynamic young people manifold and exciting challenges.

Also consult Tertiary Training for the training of teachers outside universities.

## ENGINEERING

Universities: Cape Town, Durban-Westville, Natal, Potchefstroom, Pretoria, Rand Afrikaans University, Stellenbosch, Witwatersrand

The Universities of the Orange Free State and Port Elizabeth offer training in Engineering up to second-year level.

### FIRST DEGREES

Bachelor of Science in Engineering:

B.Sc.(Eng.) (UCT, UW) or

B.Sc.Eng. (UN)

Bachelor of Engineering: B.Eng. (UDW, UP, US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town: Passes of at least 50 % in Mathematics HG and in Physical Science HG. Candidates who have passed these subjects with at least 50 % SG, may be considered for admission.

Durban-Westville: Passes in Mathematics HG and in Physical Science HG or at least 50 % SG in these subjects.

Natal: Passes of at least 40 % in Mathematics HG and in Physical Science HG.

Pretoria: Candidates must obtain passes in Mathematics and Physical Science  
- at least 50 % in the one on the Higher Grade and at least 40 % in the other on the Higher Grade; or  
- at least 50 % in the one on the Higher Grade and at least 50 % in the other on the Standard Grade; or  
- at least 40 % in the one on the Higher Grade and at least 60 % in the other on the Standard Grade; or  
- at least 60 % in the one on the Standard Grade and at least 50 % in the other on the Standard Grade.

Stellenbosch: At least a D symbol in Mathematics HG and at least an E symbol in Physical Science HG or at least a C symbol in Physical Science SG.

Witwatersrand: Passes in Mathematics HG and in Physical Science HG: Provided that the Senate may, in exceptional circumstances, accept a pass of at least 60 % on the Standard Grade in either or both of these subjects.

Curriculum: Four years of full-time study. The Universities of Durban-Westville and Pretoria advise some students to do the course over five years.

At the University of Pretoria the degree course can be taken partly extra-murally and partly full-time:

- Five years if only the first academic year is taken extra-murally over two years; or
- six years if the second academic year is also taken extra-murally over two years.

In general engineering students study the basic sciences, Mathematics, Applied Mathematics, Physics and Chemistry during the first year and then branch off into their selected field in their second year.

The following branches/options are offered by the universities mentioned:

Aeronautical Engineering: US, UW

Agricultural Engineering: UN, UP (See AGRICULTURE p.35.)

Applied Geophysics: UW

Automobile Option: US

Chemical Engineering: UCT, UDW, UN, PU for CHE, UP, US, UW

Civil Engineering: UCT, UDW, UN, UP, US, UW

Electrical Engineering: UCT, UDW, UN, PU for CHE, UP, RAU, US, UW

Electronic Engineering: UN, PU for CHE, UP, US

Electronics Marine Option: US

Engineering Geology: UW

Extractive Metallurgy: US

Geological Engineering: UW

Industrial or Production Engineering: UP, US, UW

Land Surveying or Surveying: UCT, UW (See LAND SURVEYING p.161.)

Machine Construction: US

Marine Option: US

Mechanical Engineering: UCT, UDW, UN, UP, US, UW

Metallurgical Engineering: UP, US

Metallurgy: UW

Metallurgy and Materials Science: UCT

Minerals Process Engineering: UW

Mining Engineering: UP, UW

Mining Geology: UW

Physical Metallurgy: UW

Production Management: US

Refrigeration Engineering: US

Students do practical work during the long vacations.

Bachelor of Science (Electrotechnics): B.Sc (Electrotechnics) (PU for CHE)

Admission requirements: As for the B.Sc. degree. See p.217.

Curriculum: Four years of full-time study. The curriculum comprises course units\* from various subjects such as General Chemistry, Organic Chemistry, Machine Drawing, Electronics, Telecommunication.

This degree is recognised as an engineering degree in Electrical and Electronic Engineering.

Bachelor of Science (Engineering Chemistry): B.Sc. (Engineering Chemistry) (PU for CHE)

Admission requirements: As for the B.Sc degree. See p.217.

Curriculum: Four years of full-time study. The curriculum consists of course units\* from various subjects such as General Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Chemical Plant Design.

This degree is recognised as an engineering degree in Chemical Engineering.

The Potchefstroom University for CHE offers training in Agricultural, Industrial, Mechanical, Metallurgical, Mining and Civil Engineering up to second-year level.

\*See B.Sc. degree.

Honours Bachelor of Science including Honours Bachelor Electrotechnics: B.Sc.Hons. (RAU)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass of 40 % in Mathematics HG or 50 % in Mathematics SG.

Curriculum: Four years of full-time study. The subjects for the first year are Mathematics, Theoretical Physics, Physics, Chemistry, Engineering. The degree is equivalent to a B.Sc. degree in Electrical Engineering.

The Rand Afrikaans University offers training up to second-year level in the following fields: Industrial, Mechanical, Metallurgical, Mining and Civil Engineering.

Five-year Integrated Honours Bachelor of Engineering: B.Eng.Hons. (US)

Admission requirements: A student who is taking the B.Eng. degree course may apply to change over to this course at the end of his fourth year of study.

Curriculum: The degree may be awarded in any of the following fields: Chemical Engineering, Extractive Metallurgical Engineering, Electrical Engineering, Electronic Engineering (including Electronic Marine Option), Mechanical Engineering (options: Machine Construction, Production Management, Refrigeration and Air-conditioning, Aeronautical Science, Marine and Automobile Option) and Civil Engineering.

#### POST-GRADUATE DEGREES

Honours Bachelor of Science in Electrotechnics: Honns. B.Sc. in Electrotechnics (PU for CHE)

Bachelor of Engineering (Honours): B.Eng.(Hons.) (UP)

Honours Bachelor of Engineering: B.Eng.Hons. (US)

Master of Science in Engineering: M.Sc.(Eng.) (UCT, UW) or M.Sc.Eng. (UN)

Master of Engineering: M.Eng. (UDW, UP, US)

Master of Science in Electrotechnics: M.Sc. in Electrotechnics (PU for CHE, RAU)

Master of Science in Applied Science: M.Sc. (Appl.Sc.) (UCT)

Master of Industrial Administration: M.Ind.Admin. (UCT)

Doctor of Philosophy: Ph.D. (UCT, UN, UW)

Doctor of Philosophy in Engineering: Ph.D.(Eng.) (UDW, US)

Doctor of Engineering: D.Eng. (UDW, UP, US, UW)

Doctor of Science in Engineering: D.Sc.(Eng.) (UCT, UW) or D.Sc.Eng. (UN)

Doctor of Science in Electrotechnics: D.Sc. in Electrotechnics (PU for CHE)

Doctor of Science in Electrotechnics: Ph.D. (RAU)

#### DIPLOMAS

(a) Diploma in Engineering or

(b) Diploma in Industrial Administration (UCT)

Admission requirements: Admission to the Diploma will, except with the special permission of the Senate, only be open to:

- (i) A graduate of the University of Cape Town, or any other recognised university;  
or
- (ii) non-graduates who hold suitable professional qualifications.

A Graduate Diploma in Engineering (G.D.E.) or a Graduate Diploma in Industrial Administration (Grad.Dip.Ind.Admin.) will be awarded to successful candidates admitted under (i) and a Diploma in Engineering (D.E.) or a Diploma in Industrial Administration (Dip.Ind.Admin.) to those admitted under (ii).

Curriculum: (a) The curriculum consists of courses chosen from special courses offered by the Faculty of Engineering and from other faculties.

(b) A candidate for this Diploma may qualify by completing course work as prescribed by the Co-ordinator, Industrial Administration Programme, Department of Mechanical Engineering.

#### Diploma in Engineering (UN)

Admission requirement: A candidate must hold the degree of B.Sc. (Eng.) or have been admitted to the status thereof.

Curriculum: At least one semester of study. A candidate may convert his candidature to that for the M.Sc. (Eng.), in which case he will be required to submit a dissertation in addition to completing the courses prescribed for the Diploma.

#### Diploma in Mining (UP)

Admission requirements: A candidate must hold a Bachelor's degree in any branch of Engineering or a Bachelor's degree in Mining Geology or have been admitted to the status thereof.

Curriculum: A minimum of one year of full-time study. Before enrolment for the diploma a candidate must gain at least six months of practical experience in underground mining.

#### Graduate Diploma in Engineering (UW)

Admission requirements: A candidate must hold one of the following degrees: B.Sc.(Eng.), B.Sc.Hons., B.Sc. in Town and Regional Planning, B.Sc. in Building, or have been admitted to the status thereof.

Curriculum: One year of full-time study or three years of part-time study. A candidate must complete at least nine courses.

A candidate for the M.Sc. Eng. degree who fails in the courses prescribed for the degree may be admitted as a candidate for the Diploma and his candidature shall be regarded as having commenced on the date on which he was admitted as a candidate for the M.Sc.Eng. degree.

**VOCATIONAL SERVICE:** Engineering is a vital branch of the Applied Sciences. Scientists are, for instance seeking basic knowledge. Their objective is to discover new principles or combinations of known principles in order to explain natural phenomena and for this they make use of Mathematics, Physics, Chemistry and so forth. Engineers, in their turn, ensure that the knowledge which the scientists give to man is applied. Although engineers are also thinkers, they are, by virtue of their profession, men and women of action.

There are various branches of engineering, but they cannot be demarcated in watertight compartments, so that activities in different fields often overlap. The rapid increase in the expertise of engineers has also given rise to many subdivisions in engineering such as aviation, shipping and nuclear engineering, as well as fields such as machine construction, refrigeration and air-conditioning and so on. More information on

specific fields may be obtained from the universities concerned or from the SA Council for Professional Engineers, P.O. Box 61019, Marshalltown 2107, Transvaal.

Agricultural Engineering: The mechanization of agriculture is developing very rapidly and the demand for agricultural engineers is continually on the increase.

In modern agricultural industry, the engineer is responsible for agricultural machinery; engineering aspects of soil conservation; handling, storage and processing of material; design of farm structures and the lay-out of farmyards and matters pertaining to irrigation and drainage. Most engineers usually specialise in one or more of these fields.

The major employers in this sphere are the Government Departments of Agriculture and Fisheries; Co-operation and Development; and Environment Affairs; various agricultural co-operatives such as those for citrus and deciduous fruit, sugar and tobacco; commerce and industry dealing with agricultural products; Phoscor; concerns which manufacture agricultural implements; universities and colleges which offer tuition in this field. In the government departments, in particular, there are remarkable opportunities for the post-graduate student who wishes to tackle interesting research projects.

Chemical Engineering: The rapid industrial growth of the Republic creates opportunities for an increasing number of engineers in the chemical industry. There are job prospects for chemical engineers wherever chemical changes are carried out. Atomic installations, the manufacture of ferrous and non-ferrous metals, oil refineries and the by-product plants attached to them, the manufacture of paint, rubber, rayon, paper, acids, fertilizers, explosives, glass, soap, cement, polish, timber, plastics, pharmaceutical products and the processing of minerals - all these are encompassed in the field of the chemical engineer who deals mainly with the designing, operation and maintenance of installations. Some of the employers in this field are firstly, all the industries concerned, but also bodies such as Iscor, Sasol, the Atomic Energy Board, CSIR, Phoscor, SABS and the Government Departments of Health and Welfare; and Environment Affairs.

Civil Engineering: These engineers, who form the largest group in the country, generally speaking, deal with the planning, design, layout, construction and maintenance of projects concerned with the control and adaptation of man's physical environment in the interest of his comfort and benefit. In practice such projects deal with bridges, roads, docks, airport runways, railways, tunnels, dams, canals, sewerage and drainage systems, gas and water supplies, mine headgears and other large structures. There are many specialised sub-branches of civil engineering such as those of the structural engineer, municipal engineer, road or railway engineer, water engineer, etc. Thus there are many opportunities for specialisation, insight, initiative and research.

As the Government is responsible for some of the largest projects, the largest variety of career opportunities is found in the Departments of Environment Affairs; Community Development; Agriculture and Fisheries; Co-operation and Development; Transport; and the administrations of the four provinces. Civil engineers are also employed by the Railways, municipalities of large cities, the CSIR, construction companies and other private concerns, universities and technikons.

In addition, the Consulting Engineers are important as employers of in particular civil, but also of other engineers. In conjunction with this, there are the opportunities of a private consulting practice as an ultimate career for graduates. Consulting Engineers are self-employed and they or their firms receive commissions from Government, provincial or municipal bodies and, to a very large extent, from industrial and other undertakings to carry out the design and to supervise the construction of projects. (More information can be obtained from the SA Association of Consulting Engineers, P.O. Box 61019, Marshalltown 2107.)

Electrical Engineering: This field is mainly concerned with aspects such as power supply, distribution of power, control systems and computers, telecommunication, electronics and instrumentation. Normally the work comprises subdivisions such as planning, research, design, production, testing, construction and distribution, and maintenance.



Bodies which make use of the services of an electrical engineer are for example the Railways, Escom, municipalities, Posts and Telecommunications, industries, factories, the radio, private concerns, the SABS and mines. Lecturing posts can also be obtained at universities or colleges which provide training for engineering technicians. Electrical engineers are also employed by various government departments and the nature of their duties vary from one department to another. The Departments are those of Community Development; Mineral and Energy Affairs; Manpower; Agriculture and Fisheries; Transport; Co-operation and Development and the administrations of the four provinces.

Industrial/Production Engineering: This is a comparatively new branch and the function of the industrial engineer is basically that of ensuring the maximal utilisation of the production factors by planning, arrangement of equipment, scheduling of work, control over labour, production, material, quality and cost. He combines knowledge of engineering (mainly mechanical) with the principles of management and business economics.

His occupational field lies mainly in industries such as the Railways, mines, Iscor, Sasol, Phoscor, the IDC; large factories; municipalities; lecturing at a university and research.

Mechanical Engineering: This field of study includes the design, construction, marketing, installation and maintenance of mechanical equipment such as machine tools, equipment for handling material, automatic production line machinery for factories, mining plants, road and agricultural machinery, refrigeration and air conditioning plants, boilers, pumps, air compressors, turbines, oil and gas engines, automobiles, aircraft, ships and railway locomotives. These engineers also plan new factory layouts.

The mechanical engineer therefore renders a particular service to the community which can justly be considered as the cornerstone of modern technology. The processing, handling and distribution of a product is directly dependent upon the application of the principles of mechanical engineering science.

The best career possibilities are consequently found with the Railways; factories and other large industrial undertakings such as the mines, Iscor, Sasol etc.; the CSIR; marine and aviation companies; and large municipalities. Private practice as a consulting engineer or a lecturing post at a university or technikon is also possible. The Public Service offers very attractive careers in this field in the Departments of Community Development; Co-operation and Development; Agriculture and Fisheries; Manpower; Mineral and Energy Affairs; Environment Affairs and the administrations of the four provinces. The very wide scope for research constitutes a definite challenge.

Metallurgical Engineering: This type of engineer has a two-fold field, to wit the extraction or recovery of a metal from its original ore and complex compounds, and the study of the physical properties thereof with a view to processing into useful products. The functions of the metallurgist embrace all aspects of metal and alloy technology - from the stage the metalliferous minerals have been mined and made available for treatment to the finished product used by mankind.

The metal manufacturing industry is showing tremendous progress and consequently offers opportunities to an increasing number of engineers, particularly as far as research is concerned. The following are only a few of the bodies with whom job opportunities exist: Iscor, the CSIR, the SABS, all mines engaged in the extraction of metals, the iron and steel industry, lecturing posts at universities and technikons.

Also see Metallurgy, p.232.

Mining Engineering: Although mining in this country is usually connected with gold, diamonds and coal, many other minerals such as iron, chrome, manganese, copper and asbestos ores are mined here. The mining engineer is concerned with all the different types of mining - from the stage when he and the geologists are looking for new deposits right through to the time when a new mine has been established and is producing metals or other minerals for sale. He is concerned with both the scientific and the practical side of the mineral industry from the exploration stage to the marketable product and may even find himself concerned with problems of the

establishment of towns, roads, railway junctions, power and water supplies. Many mining engineers hold executive and managerial posts, particularly where supervision and safety are concerned. A qualified mining engineer can be appointed in the Department of Mineral and Energy Affairs as an inspector of mines.

Also consult Tertiary Training for particulars on the training of engineering technicians.

## FINE ARTS

Universities: Cape Town, Durban-Westville, Fort Hare, Natal, Orange Free State, Potchefstroom, Pretoria, Rhodes, South Africa, Stellenbosch, Witwatersrand

### FIRST DEGREES

Bachelor of Arts in Art: B.A.(Art) (UCT)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years of full-time study. The degree course is primarily for candidates intending to become teachers of art in secondary schools. The curriculum includes first and second year courses in a B.A. subject taught in schools. On completion of the fourth year courses the B.A.(Art) degree and the Higher Diploma in Education (Post-graduate): Secondary will be awarded.

Bachelor of Arts in Fine Art: B.A.(F.A.) (UCT)

Admission requirements: As for B.A.(Art).

Curriculum: Four years of full-time study. Three consecutive courses in one of the following subjects constitute the major subject: Painting, Sculpture, Interdisciplinary studies, Photography, Printmaking. History of Art I, II and III are compulsory.

Baccalaureus Artium in Fine Arts: B.A.(F.A.) (UDW)

Bachelor of Arts in Fine Arts: B.A.(F.A.) or B.A. Fine Arts (UN, UOFS, UNISA, UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Some universities require proof of practical ability in art.

Additional requirements:

Natal and Witwatersrand: As for the B.A. degree.

Curriculum: Four years of full-time study. The curriculum includes art subjects as well as one, two or three ordinary B.A. courses. The major subjects are History of Art and one or two of the following courses: Painting (UDW, UN, UOFS, UNISA, UW), Sculpture (UN, UOFS, UNISA, UW), Ceramics (UN), Ceramic Design (UDW), Graphics (UN), Graphic Art (UOFS), Drawing (UOFS), Jewellery Design (UDW), Printmaking (UDW).

Bachelor of Arts in Fine Arts: B.A.(F.A.) (UFH)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. The curriculum includes two ordinary B.A. courses and the following Fine Art courses: History of Art I, II, III; Painting I, II, III or Sculpture I, II, III; Graphic Art I, II, III; Aesthetics.

Bachelor of Arts (Fine Arts): B.A. (F.A.) (PU for CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A candidate must take a practical test in order to

determine his artistic ability. Students who did not take Art as a Std 10 subject may also be admitted.

Curriculum: Four years of full-time study. A student selects course units\* in the following subjects: Anatomy for Artists, Ceramics, Design, Drawing, Graphic Art, Painting, Sculpture, History of Art. At least 20 credits must be obtained in an ordinary B.A. subject. Philosophy of Science A and Philosophy of Science B are compulsory course units.

\*See B.A. p.54.

#### Bachelor in Fine Arts: B.A.(F.A.) (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass on the Higher Grade in at least two of the following subjects: Art, Biblical Studies, Biology or Physiology, Economics, Geography, History, Mathematics, Physical Science, a third language.

Art as a Std 10 subject is not a requirement. A candidate must, however, take a practical test, before admission to the course, in order to determine his artistic ability.

Curriculum: Four years of full-time study. During the first year students take basic art subjects, an ordinary B.A. course and History of Art I. At the beginning of their second year they choose one of the following fields and complete the prescribed courses: Information Design, Painting, Sculpture. The second major subject is History of Art IV.

#### Bachelor of Fine Art: B.Fine Art (RU)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years. Candidates complete two courses in ordinary B.A. subjects and all the courses in one of the following four groups: Painting, Graphic Design, Sculpture and Photographic Arts.

#### Bachelor of Arts in Fine Arts: B.A. in Fine Arts (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A pass in Mathematics or Physical Science, HG or SG, is required for the field Jewelry Design and Metal Industry Design.

Curriculum: The curriculum, which extends over four years of full-time study, comprises a selection of three fields of study, viz

- Education (Secondary)
- Graphic Design, with subjects such as Photography, History of Art and Applied Graphics
- Jewelry Design and Metal Industry Design.

The curriculum also includes courses in ordinary B.A. subjects.

#### POST-GRADUATE DEGREES

Honoris Baccalaureus Artium in Fine Arts: B.A.(F.A.)Hons. (UDW)  
Bachelor of Arts in Fine Arts (Honours): B.A.(F.A.)(Hons.) (UFH)  
Honours Bachelor of Arts in Fine Arts: B.A. in Fine Arts Hons. (US)

Master of Fine Art: M.F.A. (UCT)  
Master of Arts in Fine Art: M.A.(F.A.) (UCT)  
Magister Artium in Fine Arts: M.A.(F.A.) (UDW)  
Master of Arts in Fine Arts: M.A.(F.A.) (UFH)  
Master of Arts in Fine Arts: M.A. Fine Arts (UN, UOFS, UNISA, US, UW)  
Master of Arts: M.A. (PU for CHE)  
Master in Fine Arts: (M.A.)(F.A.) (UP)

Master of Fine Art: M. Fine Art (RU)

Doctor of Philosophy: Ph.D. (UCT, UN, RU, UW)

Doctor Philosophiae: D.Phil. (UDW, UOFS, PU for CHE, UP, US)

Doctor of Literature: D.Litt. (UN, UW)

Doctor of Literature and Philosophy: D.Litt. et Phil. (UNISA)

Most of the universities offer History of Art as a major subject for the ordinary B.A. degree. The Universities of Natal and the Witwatersrand offer Fine Art as a major subject for the ordinary B.A. degree.

Rhodes University offers Fine Art Studies as a major subject for the B.A. degree and two courses in Fine Art Practice.

#### DIPLOMAS

Diploma in Fine Art (UCT, RU)

Admission requirement: A Senior Certificate.

Curriculum: Four years of full-time study. The courses are similar in content to that for the Bachelor's degree in Fine Art.

Diploma in Fine Arts (UOFS)

Admission requirements: A Senior Certificate. Students who did not have Art as a Std 10 subject, must take a practical test before admission, in order to determine whether they have the necessary artistic ability.

Curriculum: Three years of full-time study. The curriculum is more or less similar to that for the first three years of study for the B.A. (F.A.).

Diploma in Graphic Design (UCT)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Candidates who hold a Senior Certificate or who show special aptitude for art, may with the permission of the Director of the Michaelis School of Fine Art be accepted for this course.

Curriculum: Four years of full-time study. Fourth-year courses are Typographic Design and Layout (major subject) and Illustration.

Advanced Diploma in Fine Art (UCT)

Admission requirements: B.A. in Fine Art or B.A. (Art) or a Diploma in Fine Art or a Diploma in Graphic Design.

Curriculum: One year of full-time study. The purpose of this course is to allow practical research to be conducted by persons who wish to pursue investigations into the practical creative aspects of Fine Art.

Advanced Diploma in Fine Arts (UN)

Admission requirements: An approved degree or the status of such a degree.

Curriculum: One year of full-time study or two years of part-time study. A candidate must pursue an approved course of study and present a portfolio of work for assessment on completion of his studies.

See EDUCATION p.123 for teachers' courses with specialisation in Art.

VOCATIONAL SERVICE: Academic qualifications in fine arts can be obtained in one of two ways. Firstly, History of Art can be taken as one major for a B.A. degree, or it can be taken in a meaningful combination with other subjects, as subsidiary subject at first or second-year level. Such a course offers preparation for careers in, for example, research or lecturing or in art and cultural historical museums (as curator or

educational officer), at universities, the HSRC, art schools; in the press as art critic or journalist responsible for an art column; the SABC for radio and television broadcasts (one of the many programmes on art); in commercial art as liaison officer between the artist and the public and in the foreign service as cultural attaché. This subject is also extremely valuable for the spiritual and cultural development of every person.

Secondly, the student may apply himself to more practical and specialised fields by taking a B.A.(F.A.) degree. In this case History of Art can also be taken as a major together with other art subjects. The field of specialisation will largely determine the career to be pursued. There are many opportunities for art historians, painters, sculptors and designers, inter alia, as free-lance professional artists, as teachers of art or lecturers, and as museum scientists, as designers in industry (graphic, textile, metal, etc.), in advertising or press companies and government bodies, and as illustrators or typographers with publishers. The four provincial Performing Arts Councils employ artists as designers and manufacturers of various requisites.

Art is communication and new fields of labour are being opened up for academically trained creative and designing artists (men as well as women) in a changing world. The largest employers are merchants and industrialists who have become aware of the value of artists in industry. Because of the rapid industrial growth in our country, the demand for trained artists will increase steadily. The Design Institute of the SABS attempts to make modern society aware in as broad a field as possible of the roles of design and of the designer and to ensure understanding of these roles. The aim with this is not only to promote good design, but also to draw attention to the creative designing abilities of South African artists.

Also consult Tertiary Training for particulars on the National Diplomas in Art and Design.

## FOOD SCIENCE

University: Stellenbosch

At the University of Pretoria Food Science is one of the major subjects for the B.Sc.(Agric.) degree. See p.35.

### FIRST DEGREE

Bachelor of Science in Food Science: B.Sc. in Food Science

Admission requirements: As for the B.Sc.Agric. degree. See p.35.

Curriculum: Four years of full-time study. The following subjects are taken in the first year: Chemistry, Physics, Mathematics, Biology or Botany or Zoology. Subjects taken during the other three years are, inter alia, the following: Food Science, Chemistry, Biochemistry, Food Factory Machines, Microbiology.

Students are required to devote at least two months during the summer and/or winter vacations to practical work in approved food processing factories or nutritional research institutions.

### POST-GRADUATE DEGREES

Honours Bachelor of Science in Food Science: B.Sc. in Food Science Hons.

Master of Science in Food Science: M.Sc. in Food Science

Doctor of Philosophy (Food Science): Ph.D. (Food Science)

Doctor of Science in Food Science: D.Sc. in Food Science

**VOCATIONAL SERVICE:** Although the food industry is the largest and most stable industry in the world, it must constantly keep pace with the rapid growth in the world's population. Furthermore, it is one of the industries with the greatest demand for scientists and technologists, since the supply of suitable and healthy food is a necessity for existence. South Africa also urgently needs food scientists and

technologists. They play a key role in the modern food industry and are indispensable to the industry of the future and for the development and welfare of the entire country. The many different manufactured food products which are sold today and which save the consumer so much time and trouble with regard to their preparation is the achievement of food science.

In some government departments, the SABS, the CSIR and the various Control Boards, there is an exceptional demand for properly trained persons to undertake basic and applied research on food, to investigate problems of the industry, to conduct food analysis and to engage in quality control and inspection work in order to ensure that only products of the highest quality are marketed. There are numerous opportunities in industry itself. Fruit and vegetable factories, bakeries, millers, manufacturers of cereals, dairy and canning factories, meat and fish factories, manufacturers of sweets and cold drinks, the manufacturers and distributors of machinery for food factories, packaging material and chemicals for the food industry, et cetera, all require the services of food scientists and technologists and offer them a variety of interesting and challenging opportunities in quality control, product development, manufacturing and production, technical sales and management. The Department of Agriculture and Fisheries undertakes research work in connection with the preserving of foodstuffs at the Research Institute for Fruit and Food Technology in Stellenbosch, while cold storage studies on citrus and subtropical fruits are carried out at Nelspruit.

Also consult Tertiary Training for particulars on the National Diploma in Food Technology.

## FORESTRY

University: Stellenbosch

### FIRST DEGREE

Bachelor of Science in Forestry: B.Sc. in Forestry

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with an E symbol in Mathematics SG and a pass in a science subject SG. Prospective students who wish to take a course which includes Chemistry and/or Physics are strongly advised to take Physical Science for the Std 10 examination. Should a student wish to take Botany and/or Zoology at the University he is advised, besides Physical Science, to take Biology as well for the Std 10 examination.

Curriculum: Four years of full-time study. Subjects for the first year include Biology, Mathematics (Bio.), Chemistry, Physics (Bio.), Introduction to Forestry (a due performance course).

In their third year of study students can select one of two fields, viz Silviculture or Silviculture - Nature Conservation.

The major subjects for the Silviculture field are Forest Management, Forest Culture and Forest Mensuration. The major subjects for the Silviculture - Nature Conservation field are Forest Management, Forest Culture, Nature Conservation and Forest Mensuration.

In their fourth year of study students may enrol for the Forest Exploitation field. The first three years are the same as that for the B.Sc. in Forestry (Silviculture). The fourth-year subjects are, inter alia, Forest Management, Forest Exploitation, Forest Mensuration, Forest Development and Road Construction.

Students are required to do practical work during vacations and to undertake study tours.

### POST-GRADUATE DEGREES

Honours Bachelor of Science in Forestry: B.Sc.Hons. in Forestry

Master of Science in Forestry: M.Sc. in Forestry

Doctor of Philosophy (Forestry): Ph.D. (Forestry)  
Doctor of Science in Forestry: D.Sc. in Forestry

**VOCATIONAL SERVICE:** It is important that a distinction be made between a forester and a professional forestry officer. The first-mentioned does not take a degree course, but is trained for the Diploma in Forestry at the College for Foresters at Saasveld near George in the Cape Province. A forestry officer, on the other hand, is someone who has obtained the four-year B.Sc. degree in Forestry from the University of Stellenbosch. His functions in the Department of Environment Affairs are, inter alia, the management of State plantations and nurseries, indigenous forests, nature reserves, State timber-conversion plants, research, guidance to the public and so forth.

The various divisions into which the Department is divided, give an indication of the nature of the work which must be done by professional forestry officers:

- The Division of Forest Management is in charge of yield regulation, extraction and transportation of sawlogs and poles, silvicultural operations, the marketing of timber, nature conservation, outdoor recreation and other matters relating to the management of the nine forestry regions;
- the Division of Forest Utilisation is in charge of all matters relating to the sawmilling industry and the utilisation and marketing of converted timber;
- the Division of Forest Research which controls and co-ordinates all departmental research in the field of forestry. Research is mainly undertaken in the fields such as silviculture, conservation forestry, wood technology, tree improvement, forest mensuration, forest entomology and forest pathology and so forth;
- the Divisions of Economics, Works and Information.

Professional officers can rise to the highest posts in the Department. As executives they are involved in duties related to economic as well as forestry requirements. A few forestry officers are employed by large municipalities, mines, forestry and timber companies and the CSIR.

Also consult Tertiary Training for particulars on the Diploma in Forestry.

#### GEOHYDROLOGY

University: Orange Free State

#### DIPLOMA

Post-graduate Diploma in Geohydrology

Admission requirements: A B.Sc. or B.Sc.(Eng.) degree or equivalent qualification with one of the following subjects at third-year level: Applied Mathematics, Chemistry, Computer Science, Geology, Mathematical Statistics, Mathematics, Physics.

Curriculum: Two semesters.

**VOCATIONAL SERVICE:** See Hydrology, p.230.

#### GEOTECHNOLOGY

University: Potchefstroom

#### FIRST DEGREE

Bachelor of Science in Geotechnology: B.Sc. in Geotechnology

Admission requirements: As for the B.Sc. degree. See p.217.

Curriculum: Four years of full-time study. The major subjects are Geology and Pedology. This degree is recognised by the Association of Engineering Geologists.

VOCATIONAL SERVICE: See Geology, p.229.

#### HOME ECONOMICS/DOMESTIC SCIENCE

Universities: Durban-Westville, Natal, Orange Free State, Potchefstroom, Pretoria, Stellenbosch, Western Cape

#### FIRST DEGREES

Baccalaureus Paedagogiae in Home Economics: B.Paed.Home Econ. (UDW)

Admission requirements: See EDUCATION p.124.

Curriculum: Four years. The curriculum consists of 19 courses and includes, inter alia the following: Food, Nutrition and Home Management III; Clothing, Textiles and Interior III; Education III, Teaching Practice III; Physiology I and Communication I.

A student must obtain a valid first aid certificate issued by a recognised body.

Bachelor of Science in Home Economics: B.Sc. Home Econ. (UN)

Admission requirements: As for the B.Sc. Diet. degree. See p.115.

Curriculum: Three years of full-time study. The subjects for the first year are the same as for the B.Sc.Diet. degree. Third year subjects are Clothing and Textiles, Nutrition, Home Management.

Bachelor of Science in Home Economics: B.Sc. Home Econ. (UOFS)

Admission requirements: As for the B.Sc. degree. See p.215.

It is strongly recommended that prospective students take Physical Science for the Std 10 examination.

Curriculum: Four years of full-time study. First year subjects are Food Science, Clothing, Biology, Chemistry and Physics. Fourth year subjects are Food Science, Clothing, Interior and Nutritional Science.

During a university vacation students are required to work under the supervision of a trained home economist at an approved institution for at least three weeks.

A student must obtain a first aid certificate from a recognised first aid organisation.

Bachelor of Science in Home Economics Education: B.Sc. Home Economics Ed. (UOFS)

Admission requirements: As for the B.Sc. Home Econ. degree.

Curriculum: Four years of full-time study. The curriculum for the first three years is similar to that of the degree B.Sc. Home Economics. Students take the H.D.E. course in their fourth year with Method of Teaching in Food Science and in Clothing. See p.129.

Bachelor of Science (Domestic Science): B.Sc. (Dom.Sc.) (PU for CHE)

Admission requirements: As for the B.Sc. degree. See p.217. It is strongly recommended that students take Physical Science for the Std 10 examination.

Curriculum: Four years of full-time study. Course units\* must be taken from the following subjects:

- Domestic Science and Dietetics subjects: Home Management, Clothing, Guidance in Clothing, Therapeutic Nutrition, Nutrition, Catering Management, Nutritional Science, Guidance in Nutrition.

- Other subjects such as, for example, Biochemistry, Physics, Physiology, Economics.

There are no specific major subjects for this degree.



Students must obtain the First Aid Certificate offered by the South African First Aid Association before completion of their final year of study.

Post-graduate study may be taken in either Clothing or Food Science.

Bachelor of Science (Domestic Science)(Education): B.Sc. (Dom.Sc.Ed.) (PU for CHE)

Admission requirement: As for the degree of B.Sc. (Dom.Sc.).

Curriculum: Four years of full-time study. The subjects from which course units\* must be taken for the first three years of study are the same as for the B.Sc. (Dom.Sc.) degree. In addition course units have to be taken from Education and a number of other educational subjects.

\* See B.Sc. p.217.

Bachelor of Domestic Science: B.Sc. (Dom.Sc.) (UP)

Admission requirement: As for the B.Sc. degree. See p.218.

Curriculum: Four years of full-time study. The curriculum provides for a selection between two major fields, viz (i) Clothing and Interior and (ii) Food and Nutrition.

The course in the field of Food and Nutrition is for professional purposes equivalent to the degree of B.Sc. (Dietetics).

The prescribed curriculum for the first year of study is as follows for both fields: Chemistry, Physics, Clothing and Food Science.

A candidate must obtain a first aid certificate from a recognised organisation before completion of the course.

Bachelor of Science in Domestic Science (Education): B.Sc. (Dom.Sc.)(Ed.) (UP)

Admission requirement: As for the B.Sc. degree. See p.218.

Curriculum: Four years of full-time study. The subjects for the first year of study are as for the degree of B.Sc. (Dom.Sc.). The curriculum provides for a selection between two major fields, viz (i) Clothing and (ii) Cooking - Nutritional Science. The curriculum also includes educational subjects such as Pedagogics III and School Organisation and Administration which are taken during the fourth year of study.

Bachelor of Home Economics: B.Home Economics (General) (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics SG or a science subject SG.

Curriculum: Four years of full-time study. The curriculum comprises, inter alia, the following subjects: Sociology, Home Economics, Home Management, Interior, Clothing, Food, Nutrition.

Bachelor of Home Economics (Educationis): B.Home Economics (Ed.) (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics SG or Physical Science SG.

Curriculum: Four years of full-time study. The curriculum includes more or less the same subjects as for the degree of B. Home Economics, but also includes prescribed H.D.E. subjects, (see p.139) e.g. Psychology of Education, Fundamental Education, Didactics.

Bachelor of Science in Home Economics (Educationis): B.Sc. Home Economics (Ed.) (US)

Admission requirements: As for the B.Sc. degree. See p.222.

Curriculum: Four years of full-time study. The subjects for the first year are Chemistry, Physics (Bio.), Physiology, Home Economics, Mathematics (Bio). The curriculum comprises prescribed H.D.E. subjects (see p.139) as well as subjects such as Clothing, Food, Home Economics and Home Management.

Baccalaureus Artium in Human Ecology: B.A. (H/E) (UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark of 40 % HG or 50 % SG in one of the following subjects: Biology, Physical Science or Mathematics.

Curriculum: Four years. There are two curricula:

- General Course

The curriculum comprises, inter alia, the following courses: Family Studies III, Clothing/Home Interior III, Sociology III, Psychology I, Environmental Care.

- Educational Course

The first two years are the same as for the General Course. The courses are, inter alia, Nutrition III, Clothing/Home Interior III, Environmental Care, and educational subjects such as Sociopedagogy, Method of Home Economics and Method of Needlework.

#### POST-GRADUATE DEGREES

Bachelor of Science in Home Economics (Honours): B.Sc. Home Econ. (Hons.) (UN)

Honours Bachelor of Science (Home Economics): B.Sc. (Home Econ.)(Hons.) (UOFS)

Honours Bachelor of Science: Hons. B.Sc. (PU for CHE)

Bachelor of Domestic Science (Honours): B.Sc. (Dom.Sc.)(Hons.) (UP)

Honours Bachelor of Home Economics: B.Home Economics Hons. (US)

Honours Bachelor of Science in Home Economics: B.Sc. Home Economics Hons. (US)

Master of Science in Home Economics: M.Sc. Home Econ. (UN)

Master of Science: M.Sc. (PU for CHE)

Master of Domestic Science: M.Sc. (Dom.Sc.) (UP)

Master of Home Economics: M.Home Economics (US)

Master of Science in Home Economics: M.Sc. Home Economics (US)

Doctor of Philosophy: Ph.D. (UN)

Doctor of Science: (PU for CHE)

Doctor of Science in Domestic Science: D.Sc.(Dom.Sc.) (UP)

Doctor of Philosophy (Home Economics): Ph.D. (Home Economics) (US)

Doctor of Science in Home Economics: D.Sc. in Home Economics (US)

See EDUCATION p.123 for teachers' diploma courses with specialisation in Home Economics.

**VOCATIONAL SERVICE:** The domestic scientist is concerned with home-making and her aim is to create a physical and social environment in which proper human relationships can be established. Consequently it is the ideal course for the girl who is orientated towards the natural as well as the social sciences and who has a wide field of interest. The training amounts to a preparation for a pleasant and promising career and at the same time it equips the future housewife with scientific knowledge. In addition, the married woman always has the opportunity of utilising her training to the benefit of the community. The teacher of domestic science, who herself is a professional person, will also be able to render valuable service and information outside the school context. As a result of the various branches which are available, men can also enter this profession today.

The following are some of the career possibilities open to the person trained in domestic science:

- A teacher of domestic science at secondary schools or schools under the jurisdiction of the Department of National Education; a lecturer at a training institution or university;

- a link between manufacturer and consumer in respect of domestic requirements; in the employ of an architect or a firm concerned with manufacturing clothes, food, furniture, interior decorating or fashion and designing; in the service, mainly for information, of control boards such as the Meat, Wool, Milk, Wheat, Maize, Dairy, Egg, Dry Bean and Citrus Boards;

- journalist for women's columns in periodicals, newspapers, radio, television and advertising companies or as a travelling representative;

- a research officer employed by, for example, the CSIR, SABS and the Atomic Energy Board for research into textiles, clothing, food, etc.;

- a private practice to act as fashion, interior and food consultant.

The Department of National Education employs professional officers (domestic science) mainly with a view to guidance to the public. The work comprises lectures, demonstrations, courses, exhibitions, group discussions, radio talks, articles for newspapers and journals, personal interviews, and so forth. Experimental cookery and palatability tests are also undertaken. As in many other fields, ambition and experience must be combined with further training and even post-graduate study in order to be able to advance to the highest posts.

Also consult Tertiary Training for particulars on courses in Food and Clothing Technology.

## INDUSTRIAL CHEMISTRY

Universities: Durban-Westville, Potchefstroom

### FIRST DEGREES

Baccalaureus Scientiae in Industrial Chemistry: B.Sc.(Ind.Chem.) (UDW)

Admission requirements: As for the B.Sc. degree. See p.211.

Curriculum: Four years of full-time study. First-year courses are Chemistry I, Physics I, Engineering Mathematics I and II (half courses), Applied Mathematics I. Other courses are, inter alia, Chemistry II, III; Chemical Engineering I, II; Physics II; Environmental Engineering (half course).

Bachelor of Science with Chemistry and Industrial Chemistry: B.Sc. (PU for CHE)

Admission requirements: As for the B.Sc. degree. See p.217.

Curriculum: Three years of full-time study. Course units must be taken from the following subjects: Chemistry (major), Industrial Chemistry (major), Mathematics, Applied Mathematics, Statistics, Physics, Computer Science, Electrotechnics, Biochemistry, Business Economics and Philosophy of Science.

Students must work for at least eight weeks in an approved chemical laboratory at a chemical factory during the vacations at the end of their first and second years of study.

After completion of this degree students may study further for a Hons.B.Sc. degree in Chemistry and Industrial Chemistry. After further study of at least two years the degree of B.Sc. (Engineering Chemistry) may be obtained.

**VOCATIONAL SERVICE:** While the work of the chemical engineer is concentrated mainly on the design and construction of chemical equipment and factories, the industrial chemist devotes most of his attention to chemical materials, the chemical processes themselves, control of production and the development of new processes.

There is currently a considerable demand for industrial chemists and one can expect that the development in the field of industry will increase this demand. Graduates are employed, for instance, for laboratory work, control of production units, technical services, marketing, et cetera. Persons with suitable personality characteristics can

even advance to senior managerial posts. Some of the potential employers are the CSIR, the SABS, the-National Institute for Metallurgy, the Atomic Energy Board, the Railways, mines and industries involved in the manufacture of paint, petroleum products, beauty preparations, paper, ceramics, artificial soap, fertilizers, plastic materials, food products and cement.

### LANDSCAPE ARCHITECTURE

University: Pretoria

#### FIRST DEGREE

Bachelor of Landscape Architecture: B.L.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in Physical Science HG or at least 40 % in Physical Science SG.

Curriculum: The curriculum extends over four years. A candidate must devote himself full-time to the study for the degree during the first three years, while he must be employed full-time with a landscape architect or related industry during his fourth year of study.

Candidates are advised to gain practical experience in the employment of a landscape architect or related industry during the university vacations of the first three years of study.

The curriculum comprises, inter alia, the following courses: Landscape Architecture IV, History of Environment IV, Horticulture II, Parks and Recreational Planning, Town Planning, Botany I.

#### POST-GRADUATE DEGREES

Master of Landscape Architecture: M.L.

Doctor of Landscape Architecture: D.L.

VOCATIONAL SERVICE: Landscape Architecture includes planning and making recommendations in respect of regions or areas in order to render these as effective and attractive as possible. The work implies close co-operation with engineers, municipal officials, horticulturists and others. It also offers opportunities for specialisation in the planning and laying out of, for example, parks and playgrounds, school and university grounds, business centres, roads and so forth.

The largest employers are the provincial administrations, municipalities and the Department of Environment Affairs. Private practice offers remarkable opportunities, since many bodies which require these services do not employ an architect on a full-time basis.

### LAND SURVEYING

Universities: Cape Town, Fort Hare, Natal, Pretoria, Witwatersrand

#### FIRST DEGREES

Bachelor of Science in Surveying: B.Sc.(Survey.) (UCT)

Bachelor of Science (Land Surveying): B.Sc.(Land Surveying) (UFH)

Bachelor of Science in Land Surveying: B.Sc.Sur. (UN)

Bachelor of Land Surveying: B.Land Surveying (UP)

Bachelor of Science in Engineering: B.Sc.(Eng.) (UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town, Natal, Pretoria, Witwatersrand: As for the Engineering degree. See p.145.

Fort Hare: As for the B.Sc. degree. See p.212.

Curriculum: Four years of full-time study. The curriculum includes, inter alia, the following subjects: Land Surveying or Surveying, Town Planning, Physics, Mathematics, Cartography and/or Map Projections, Photogrammetry, Astronomy.

Students are required to do practical surveying under the supervision of a land surveyor during the university vacations.

#### POST-GRADUATE DEGREES

Master of Science in Engineering: M.Sc.(Eng.) (UCT,UW)

Master of Science in Land Surveying: M.Sc.Sur. (UN)

Master of Land Surveying: M.(Land Surveying) (UP)

Doctor of Philosophy: Ph.D. (UCT,UN,UW)

Doctor of Science in Engineering: D.Sc. (Eng.) (UCT,UW)

Doctor of Science in Land Surveying: D.Sc.Sur. (UN)

Doctor of Land Surveying: D.(Land Surveying) (UP)

Doctor of Engineering: D.Eng. (UW)

#### DIPLOMA

Diploma in Aerial Surveying: Dipl.Aer. Surv. (UN)

Admission requirements: A degree.

Curriculum: One year of full-time study or two years of part-time study.

**VOCATIONAL SERVICE:** The notion that a land surveyor is someone one sees on the side of a road peering through an instrument or riding in a vehicle loaded with coloured poles is definitely no longer representative of the activities this profession entails. Although he is compelled to spend much of his time in the open, today, with the aid of aerial photographs and electronic or optical surveying techniques his work is transferred to an office, there to be completed by means of modern methods.

In the Public Service the duties of land surveyors differ from one department to another. These departments are those of Agriculture and Fisheries (divisions cadastral surveys, control surveys and national mapping); Community Development; Co-operation and Development; Transport; and Environment Affairs. There are also job opportunities for land surveyors in the Railways, municipalities of large cities, Escom, the Rand Water Board, the mines, the CSIR and universities. After gaining wide experience, a land surveyor can go into private practice, usually in partnership with others.

In the Republic, where the process of division and subdivision, the planning of new cities, the building of roads etc., will be in progress for a long time to come, the occupational prospects for land surveyors are virtually unlimited.

#### LAW

Universities: All the universities except Medunsa

#### FIRST DEGREES

Baccalaureus Procuratoris: B.Proc. (All the universities except Stellenbosch)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Most of the universities require either a pass in Latin HG or a pass in a special course in Latin at the university concerned.

**Other additional requirements:**

**Pretoria:** A pass on the Higher Grade in at least two of the following subjects: Accountancy, Biblical Studies, Biology or Physiology, Economics, Geography, History, Mathematics, Physical Science, a third language.

**South Africa:** - To be able to offer Afrikaans en Nederlands I, a candidate must have obtained at least 40 % in Afrikaans (First or Second Language) HG.

- To be able to offer English I, a candidate must have obtained at least 40 % in English (First or Second Language) HG.

**Witwatersrand:** Passes on the Higher Grade in two of the following subjects: Afrikaans, Bantu Languages, Biology, English, French, Geography, German, Hebrew, History, Latin, Mathematics, Physical Science, Physiology, Art, Music.

**Curriculum:** Four years of full-time study or four or five years of part-time study. Candidates who passed Afrikaans on the Higher Grade are required to take either English I or English Special and those who passed English on the Higher Grade must take Afrikaans or Afrikaans en Nederlands I.

Third and fourth-year subjects are, inter alia, Mercantile Law or Commercial Law, Interpretation of Statutes, Constitutional and Administrative Law, Civil Procedure, Private Law, Roman Law or Roman-Dutch Law. At UZ students also take Zulu Law.

Bachelor of Law: B.Juris (UFH)

Baccalaureus Iuris: B.Iuris (UDW, RAU)

or B.Iur. (UNorth,UOFS,UP,UNISA)

Baccalaureus Juris: B.Juris (UPE)

or B.Jur. (PU for CHE,UZ)

Baccalaureus Iurisprudentiae: B.Iuris (UWC)

Admission requirements: As for the B.Proc. degree.

Curriculum: Three years of full-time study or four years of part-time study.

The University of the Orange Free State offers three fields of study, viz: Academic field; Public Service field for which Latin is not compulsory; Commercial field.

The Universities of Port Elizabeth and Potchefstroom offer two curricula.

All the curricula include, inter alia, Private Law, Criminal Law, Criminal Procedure, Law of Evidence, Civil Procedure, Roman Law.

No student will be allowed to take Roman Law I unless he has passed Standard 10 Latin or is exempted from this requirement by virtue of another examination.

B.A.,LL.B. (UCT)

Admission requirements: As for the B.A. degree. See p.44.

Curriculum: Five years. Students must include the following subjects in their B.A. curriculum: Latin I; Latin Intensive for students who did not take Latin for the Std 10 examination; Roman Law and Jurisprudence I, II; Roman-Dutch Law I, II.

After completion of the B.A. degree students are admitted to the Intermediate year of the LL.B. degree course.

UCT also offers a B.Bus.Sc., LL.B. degree curriculum. See BUSINESS SCIENCE p.83.

Baccalaureus Artium in Law: B.A.(Law) (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with an aggregate of at least 45 % and a minimum pass mark of 40 % in Latin HG or have passed Latin Special at the University.

Curriculum: Three years. The curriculum includes Private Law I, II, III; a second major subject in an ordinary B.A. subject (see p.46), Roman Law I, Constitutional Law I, Afrikaans; English; Latin I.

B.A. with Law subjects (PU for CHE,RAU,US)

Admission requirements: As for the B.A. degree. See ARTS.

Curriculum: Three years. Students take the ordinary B.A. curriculum as follows:

PU for CHE: A student compiles his curriculum with course units\* from the following subjects:

- Law subjects: Introduction to Legal Science, Private Law (Major subject), History of Law, Roman Law

- Other subjects: At least three ordinary B.A. subjects (see p.54) of which one subject must be taken up to second-year level and another up to third-year level.

RAU: The curriculum consists of at least 5 law courses and at least 5 non-law courses. The major subjects are Private Law III (Contracts) and Private Law III (Law of Delict) and a non-law subject selected from ordinary B.A. subjects. (See p.57.)

US: Third-year subjects are Private Law, Roman Law and Introduction to Legislation. Two ordinary B.A. subjects must be taken up to second-year level.

Students are strongly advised to take Latin for the Std 10 examination.

\* See B.A. degree, p.54.

Most of the other universities also offer law subjects in their B.A. curricula. See ARTS p. 44.

Baccalaureus Legum Civilium: B.L.C. (UP)

Admission requirements: As for the B.A. degree. See p.55.

Curriculum: Three years of full-time study. Third-year subjects are Roman-Dutch Law III, Mercantile Law II, History of Law, Interpretation of Statutes, Philosophy of Law.

Candidates who have not passed Standard 10 Latin must take Preliminary Latin in their first year and Latin IA in their second year.

Baccalaureus Legum: LL.B. (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements are similar to that for the B.A. degree. See p.55.

Curriculum: Five years. May be shortened by a maximum period of three years if a candidate holds a Bachelor's degree which includes the prescribed LL.B. courses. The curriculum includes, inter alia, the following courses: Roman-Dutch Law V, Mercantile Law IV, Civil Procedure, Criminal Law II, Constitutional Law, Bantu Law, Law of Evidence.

The curriculum for the first three years of study for the LL.B. degree is similar to that for the B.L.C. degree.

#### POST-GRADUATE DEGREES

Bachelor of Laws: LL.B. (UCT,UFH,UN,RU,UW)

Baccalaureus Legum: LL.B. (UDW,UNorth,UOFS,UPE,PU for CHE,RAU,UNISA,UWC,UZ)

Legum Baccalaureus: LL.B. (US)

Admission requirements: A Bachelor's degree, or a B.Proc. or B.Iur. degree.

Curriculum: Three years of full-time study or two years of full-time study after a Bachelor's degree which included the required Law subjects in the curriculum.

At the Universities of Cape Town and the Western Cape the course extends over three years and is divided into three parts, viz Preliminary year, Intermediate year and Final year.

At the University of South Africa the degree course extends over at least four years. By virtue of previous study a student may be exempted from twelve courses.

Master of Laws: LL.M. (UCT,UFH,UN,RU,UW)  
Magister Legum: LL.M. (UDW,UNorth,UPE,PU for CHE,UP,RAU,UNISA,UWC,UZ)  
Legum Magister: LL.M. (US)

Doctor of Laws: LL.D. (UCT,UFH,UN,RU,UW)  
Doctor Legum: LL.D. (UDW,UNorth,UOFS,UPE,PU for CHE,UP,RAU,UNISA,UWC,UZ)  
Legum Doctor: LL.D. (US)  
Doctor of Philosophy: Ph.D. (UCT,UN,RU,UW)

#### DIPLOMAS

Diploma Juris (UFH,UPE,UZ)  
Diploma Iuris: Dipl. Iur. (UN,UOFS,UNorth)  
Diploma Juris: Dip. Jur. (PU for CHE)  
Diploma Iuris (UP,UNISA)  
Diploma Iurisprudentiae: Dip. Iuris (UWC)

Admission requirements: A Senior Certificate. Some universities require a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study or four years of part-time study. The Diploma may be taken by members of the Civil Service, and has been recognised by the Commission for Administration as equivalent to the Public Service Law Examination.

Diploma Legum: Dip. Legum (PU for CHE,UP,UNISA,UZ)

Admission requirements: A Diploma Iuris or the degree of B.Juris for Civil Servants or a degree or diploma which has been certified by the Board for the Recognition of Examinations in Law as equivalent.

Curriculum: Two years.

The Diploma has been recognised by the Board for the Recognition of Examinations in Law as equivalent to or higher than the Public Service Senior Law Examination.

Higher Diploma in Tax Law (UW)

Admission requirements:

- The LL.B., B.Proc., B.Com. or B.Acc. degree; or
- an attorney; or
- an accountant and auditor; or
- any other approved academic or professional qualification.

Curriculum: Two years of part-time study.

Higher Diploma in Company Law (UW)

Admission requirements: As for the Higher Diploma in Tax Law.

Curriculum: At least sixty weeks of part-time study extending over a period of one and a half years.



VOCATIONAL SERVICE: Broadly speaking, the legal profession in the RSA covers the professions of advocates, attorneys, legal advisers and various fields in the Public Service. However, it would be to a candidate's advantage to determine the usefulness of specific legal qualifications.

- Advocates have two main functions: to conduct criminal and civil cases in the Supreme Court or magistrates' courts; and to give opinions on legal problems. Their professional work comes to them from attorneys who 'brief' them, for no member of the public can go direct to an advocate. Normally judges are appointed from the ranks of senior advocates. Prospective advocates do not serve articles nor have they any other professional examination to pass. They have only to obtain an LL.B. degree after having taken a first degree which included the prescribed LL.B. courses. (For the LL.B. degree at least one course in English, Afrikaans and Latin is a requirement.)

- Attorneys deal with members of the public, represent and act for clients, appear in magistrates' courts, but not in the Supreme Court. Although they may concern themselves with various matters, there is a tendency among attorneys to specialise in some direction or other. Most of them practise in private or in partnership with others. By additional examinations they can also qualify as notaries and conveyancers. Thus a person need not necessarily be a good public speaker or like to appear in court in order to be a successful attorney. Many attorneys who have advanced to the top of their profession rarely appear in court.

In contrast with the advocate, a prospective attorney must, in addition to the legal qualification (B.Proc. or LL.B.), also article for 2 years with a practising attorney and subsequently pass a professional practical examination. The aforementioned two degrees are the only degrees acknowledged for admission as attorneys. (Std 10 Latin or a special course in Latin at a university is a requirement for B.Proc.)

Nobody can practise simultaneously as an advocate and as an attorney. However, it is possible for a person with appropriate qualifications to switch from one branch to the other.

- Law adviser: A person who does not wish to practise as an advocate or attorney or does not want to appear in court can possibly occupy one of the large number of posts open to legal advisers. In addition to those in Public Service, legal advisers are usually attached to large undertakings. All these institutions will, however, insist on the best possible qualifications and persons interested in this field must accept the fact that an LL.B. degree will be a minimum requirement. A double qualification, of which one component is a degree in law, will be of great value.

- In the Public Service: In the RSA, as elsewhere in the world, the constitutional authority is divided into the legislative (the Parliament), executive (the public service) and the judicial authority (the courts). The Department of Justice is responsible for exercising the judicial authority and for this purpose there are magistrates' courts, regional courts and the various divisions of the Supreme Court.

In the latter case a judge presides as judicial officer and in the other two cases a magistrate or regional magistrate is the judicial officer.

. Magistrates and Legal Assistants (Public Prosecutors): Magistrates have two main functions, viz the judicial function which is performed in court, and that of district administration which is performed in an office. The magistrate's court must prosecute as well as try, thus the magistrate is assisted by a prosecutor (legal assistant). The primary functions of the public prosecutor are to act on behalf of the attorney-general in all criminal cases. His complex duties provide the required background and training for subsequent appointment to the bench (as magistrate). Magistrates and legal assistants must have legal qualifications. The minimum requirement for a legal assistant is the Public Service Law Examination and this is also the minimum requirement for promotion to magistrate.

Other higher qualifications that are accepted are the Senior Public Service Law Examination and the B.Iuris, B.Proc. and LL.B. degrees. Candidates can, after leaving school, first obtain an appropriate qualification in law and then enter the Public Service, where they are immediately appointed as legal assistants. In the second place they can, directly after leaving school, be appointed in a magistrate's office, in

which case they perform general clerical duties while they continue their studies part-time.

. State Law Adviser: Law advisers are appointed from the ranks of state advocates attached to the Attorneys-General Division with duties such as the framing of laws for parliament, the provision of legal advice to all government departments, the checking of regulations, ordinances etc. Some are attached to the different provincial administrations. The holder of a bachelor's degree plus an LL.B. degree can be considered for appointment and can attain the rank of chief state law adviser.

. State Advocate: The Department of Justice offers an interesting and challenging career as state advocate to persons who have obtained an LL.B. degree. These officers must look after the interests of the State in the statutory field and are attached to the Division of the Attorneys-General. There is an attorney-general attached to each Provincial Division of the Supreme Court. The state advocate who renders meritorious work can attain the position of senior state advocate, deputy attorney-general and attorney-general.

. State Attorney: The State Attorney's Division of the Department of Justice functions like an ordinary firm of attorneys, except that its clients are government bodies and not private individuals. The main function of the state attorney is to protect the interests of the State by acting on behalf of all government departments and administrations in civil cases and on behalf of officials arraigned in their official capacity. State attorneys may obtain their legal qualifications in the same way as attorneys in private practice. However, posts for serving articles are limited in the Department and sometimes candidates have to await their turn.

. Commissioner: This is the person who must explain government policy to the Black population groups, settle their legal disputes, hear complaints and give advice. In this capacity the commissioner is in a position of particular trust and heavy responsibilities rest on him. The minimum requirement for appointment as an assistant commissioner is the B.Iuris degree or the Public Service Examination in Law. The Department of Co-operation and Development provides ample opportunities for employees to obtain these qualifications on a part-time or full-time basis of study. For some more senior positions an LL.B. degree or the Senior Public Service Examination in Law is required.

. Master of the Supreme Court: The task of the Master's section of the Department of Justice or, indeed, the Master of the Supreme Court, is to guard against malpractices which aim at depriving legatees, heirs and creditors of their just dues. The work is highly specialised, responsible and of a confidential nature. Special training courses for officers are offered by the Department. However, legal qualifications are a requirement for advancement to higher ranks such as assistant master, deputy master and master of the supreme court.

For more information in connection with training, conditions of service and so forth, prospective jurists are referred to the Association of Law Societies of the Republic of South Africa, P.O. Box 1428, Pretoria 0001; the Department of Justice or the Office of the Commission for Administration.

## LEATHER SCIENCE

University: Rhodes

DIPLOMA

Diploma in Leather Science (Post-graduate)

Admission requirements: The B.Sc. degree with Chemistry as a major subject. A candidate must obtain the permission of the Board of the Faculty, on the recommendation of the Director of the Leather Industries Research Institute.

Curriculum: One year of full-time study. A candidate must obtain credit in all the following courses: Principles of Leather Manufacture, Methods of Leather Manufacture, Analytical Chemistry (Leather), Physical Chemistry (Leather), Practical Chemistry (Leather). A candidate must take examinations in each of the prescribed courses and prepare an original thesis.

**VOCATIONAL SERVICE:** Students gain practical training and experience in the Leather Industries Research Institute which is recognised by Rhodes University as an Associated Research Institution. There are also employment opportunities with manufacturers of leather goods.

### LIBRARIANSHIP/LIBRARY SCIENCE

**Universities:** All the universities except the University of Port Elizabeth and Medunsa.

**Note:** Candidates are required to work for a prescribed period in an approved library during the period of study to gain practical experience.

#### FIRST DEGREES

Baccalaureus Bibliothecologiae: B.Bibl. (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

**Additional requirements:** As for the field concerned.

**Curriculum:** Four years. The degree may be obtained in one of the following fields: Arts, Commerce and Administration, Pure Science.

Students take an ordinary B.A., B.Com. or B.Sc. degree course in addition to four courses in Library Science.

Bachelor in Library Science: B.Bibl. (UFH)

Baccalaureus Bibliothecologiae: B.Bibl. (UNorth,UOFS,UWC)

Bachelor of Library and Information Science: B.Bibl. (UP)

Bachelor of Librarianship: B.Librarianship (US)

Bachelor of Library Science: B.Bibl. (UZ)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

**Additional requirements:** As for the B.A. degree. See ARTS.

**Curriculum:** Four years of full-time study. The curriculum for each university is as follows:

**Fort Hare:** 15 courses of which 10 courses must be selected according to the rules for the B.A. degree; Library Science I, II, III and IV; Applied Computer Science I.

**North:** At least 28 semester courses (14 courses): Library Science and Information Science are major subjects; two B.A. subjects on third-year level plus two semester courses in an additional B.A. subject.

**Orange Free State:** 14 courses: Library Science and Information Science are major subjects; an ordinary B.A. subject as an additional major subject plus two courses in another B.A. subject plus one course in Business Data Processing or Computer Science.

**Pretoria:** 13 courses: Library Science and Information Science are major subjects; an ordinary B.A. subject as a major subject plus two courses in another B.A. subject.

**Stellenbosch:** 13 courses: Library Science is a major subject plus an ordinary B.A. subject as a major subject plus one B.A. subject on second-year level and three first-year subjects plus one of the following subject courses: Africana Literature; Literature for children and the youth; Audio-visual Materials; Computer Techniques as applicable to library procedure.

**Western Cape:** 14 courses: 4 courses in Library Science and 2 courses in Bibliography are compulsory. The remaining 8 courses of which two must be taken on third-year level may be selected from either the B.A., B.Com. or B.Sc. curriculum.

Zululand: 28 semester courses (14 courses): 8 semester courses in Library Science (major subject) plus 20 semester courses in subjects for an approved B.A. curriculum including six semester courses in each of at least two subjects.

The University of Pretoria also offers an extramural course to graduates in any other field than Library Science and/or Information Science. The course extends over two years and consists of Library Science I, II, III and IV and Information Science I, II, III and IV.

Baccalaureus Bibliothecologiae: B.Bibl. (PU for CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years. A student compiles his curriculum from course units in the following subjects: Library and Information Science; Library and Information Systems; Library Science; Information Science; an additional four subjects for the ordinary B.A. degree. A student may include course units in Computer Science. Philosophy of Science A and Philosophy of Science B are compulsory course units.

Bachelor of Library and Information Science: B.Bibl. (RAU)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years. The curriculum is compiled as follows:  
With the accent on social librarianship:

- Four courses in Library Science (major)
- two courses in Information Science
- three courses in two other subjects taken as major subjects
- any other course
- courses to satisfy the language requirements.

With the accent on information science:

- Three courses in Information Science
- three courses in Library Science
- three courses in two other subjects taken as major subjects
- any other course
- courses to satisfy the language requirements.

Bachelor of Library Science: B.Bibl. (UNISA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: At least four years. The curriculum consists of fifteen courses compiled as follows:

- Library Science IV
- One of the following:
  - . Bibliology III, Information Science II, Readership I
  - . Information Science III, Readership II, Bibliology I
  - . Readership III, Information Science II, Bibliology I
- Computer Science I or Information Systems (two modules)
- three courses in a subject which may be taken as a major subject for the B.A., B.Com. or B.Sc. degree
- at least one or two courses in a subject or subjects from the curricula of first Bachelor's degrees of any faculty.

Bachelor of Music in Library and Information Science: B.Mus.(Library and Information Science) (UCT)

Admission requirements: See B.Mus. p.181.

Curriculum: Four years of full-time study. Students specialise in Music Librarianship for the B.Mus. degree. After completion of the first three years they are admitted in the fourth year to the course for the Higher Diploma in Librarianship. On completing the courses students will be awarded the above-mentioned degree.

Bachelor of Library and Information Science (Honours): B.Bibl.Hons. (UN)

Admission requirements: A Bachelor's degree and a Higher Diploma in Library Science.

Curriculum: One year of full-time study or two years of part-time study.

#### POST-GRADUATE DEGREES

Honoris Baccalaureus Bibliothecologiae: B.Bibl.Hons. (UDW)  
Bachelor in Library Science (Honours): B.Bibl.(Hons.) (UFH)  
Baccalaureus Bibliothecologiae cum Honoribus: B.Bibl.Hons. (UNorth)  
Honneursbaccalaureus Bibliothecologiae: B.Bibl.Hons. (UOFS)  
Honours Baccalaureus Bibliothecologiae: Honns.B.Bibl. (PU for CHE) or  
B.Bibl.Hons. (UWC)  
Bachelor of Library and Information Science (Honours): B.Bibl.(Hons.) (UP)  
Honours Bachelor of Librarianship: B.Bibl. (Hons.) (RAU) or  
B.Librarianship (Hons.) (US)  
Honours Bachelor of Library Science: Hons.B.Bibl. (UNISA,UZ)  
  
Magister Bibliothecologiae: M.Bibl. (UDW,UNorth,UOFS,PU for CHE,UWC)  
Master of Library and Information Science: M.Bibl. (UN,UP)  
Master of Librarianship: M.Bibl. (RAU) or  
M.Librarianship (US)

Doctor of Philosophy: Ph.D. (UN,UP)  
Doctor Bibliothecologiae: D.Bibl. (UNorth,UOFS,PU for CHE,UWC)  
Doctor of Library Science: D.Bibl. (UNISA)  
Doctor Philosophiae: D.Phil. (UDW,US)

#### DIPLOMAS

Lower Diploma in Library and Information Science: L.D.L.I.S. (UCT)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). See also B.A. p.44.

Curriculum: Two years of full-time study. The curriculum consists of four ordinary B.A. degree courses in the first year. The second year consists of six professional courses which fall under two sections, viz Library Science and Information Science.

Lower Diploma in Library Science: L.Dip.Bibl. (UDW,UZ)

Lower Diploma in Librarianship: L.Dip.Lib. (RU)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Two years of full-time study. The curriculum consists of four or five ordinary B.A. degree courses and professional subjects such as Historical Library Science (UDW,UZ), Catalography (UDW) or Cataloguing (RU), Documentation (UDW,UZ), Library Organisation and Management, Book Selection, Classification and Information Retrieval (RU).

Lower Diploma in Library Science (UFH)

Admission requirements: A Senior Certificate.

Curriculum: Two years of full-time study. The curriculum comprises Library Science I and II and five B.A. degree courses.

Lower Diploma in Library and Information Science (UNorth)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Two years. The Diploma is offered in two fields:

- Arts
- Economics and Administration

The first year includes eight semester courses in B.A. or B.Com. or B.Admin. subjects. The second year comprises five professional subjects such as Library Organisation and Management, Information Analysis and Retrieval, Readership, Bibliocultural Studies.

Lower Diploma in Librarianship (UOFS)

Admission requirements: At least a Senior Certificate with passes in an official First Language HG, an official Second Language HG, and in any other subject, with the exception of the official languages, on the Higher Grade.

Curriculum: Two years. The curriculum includes Library Science I and II, Information Science I and II and four B.A. subjects of which one must be on second-year level.

Note: The last students for the above-mentioned Diploma will be enrolled in 1983.

Lower Diploma in Librarianship (PU for CHE)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Students who hold a diploma issued by the PU for CHE or another approved institution may be exempted from the first-year course of the Lower Diploma in Librarianship.

Curriculum: Two years of full-time study. A student compiles his curriculum from course units in the following subjects:

- Subjects in Library and Information Science: Library Organisation and Administration, Information Sources and Services, Cataloguing and Classification, Readership and Book Selection.
- Five B.A., B.Com. or B.Sc. subjects.

Philosophy of Science A is a compulsory course unit.

Lower Diploma in Library Science (UNISA)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: At least two years. The curriculum consists of the following eight courses: Bibliology I, Library Science I, Information Science I and II, Readership I, Computer Science I or Information Systems I and at least two courses in a subject or subjects from the curricula of first Bachelor's degrees of any faculty.

Lower Diploma in Librarianship (US)

Admission requirements: A Senior Certificate. A student who holds a teacher's diploma or teacher's certificate or an approved teaching qualification may be exempted from the B.A. subjects.

Curriculum: Two years. In the first year the curriculum includes four B.A. subjects. The second year includes professional subjects such as Library Science, Information Science; one B.A. subject on a first-year basis; and one of the following subject courses: Africana Literature, Books for children and the youth, Classical Works from the World Literature.

Lower Diploma in Library and Information Science (UWC)

Admission requirements: A Senior Certificate with at least 40 % in an official First Language HG or 50 % in an official First Language SG. Candidates who have matriculation exemption must enrol for the B.Bibl. degree.

Curriculum: Two years. The curriculum comprises Library Science I and II, Bibliography I plus 5 courses from either the B.A., or the B.Com. or the B.Sc. curriculum.

Higher Diploma in Library and Information Science: H.D.L.I.S. (UCT,UNorth)

Higher Diploma in Library Science: H.Dip.Bibl. (UDW,UN,UNISA,UZ)

Higher Diploma in Librarianship: H.Dip.Lib (UOFS, PU for CHE,RU,US)

Admission requirements: A Bachelor's degree.

Curriculum: One year of full-time study or two years of part-time study (UN,UNISA). The universities of Cape Town, Durban-Westville, North, Rhodes, Stellenbosch, South Africa and Zululand offer more or less the same professional subjects as that for the Lower Diploma in Librarianship.

The curricula of the other universities comprise, inter alia, the following subjects: Catalography, Library Practice, Readership, Historical Librarianship (UN,UOFS), Information Retrieval (UN, PU for CHE).

Higher Diploma in Library Science (UFH)

Admission requirements: A Bachelor's degree.

Curriculum: Two years of full-time study. The curriculum comprises Library Science I, II, III and IV and Applied Computer Science I.

Higher Diploma in Library and Information Science (UWC)

Admission requirements: A Bachelor's degree.

Curriculum: One year of full-time study or two years of part-time study. The curriculum comprises Library Science I, II, III and IV and Bibliography I and II.

Higher Diploma in Librarianship: H.Dip.Lib. (UW)

Admission requirements: A Bachelor's degree.

Curriculum: One year of full-time study or two years of part-time study. The curriculum consists of eight courses and comprises, inter alia, Management and Administration; Information Sources; Cataloguing, Classification and Indexing; and optional subjects such as Computer and Data Processing, Readership and Book Selection.

Final Diploma in Library and Information Science: F.D.L.I.S. (UCT)

Admission requirements: A Higher Diploma in Library Science.

Curriculum: The Diploma may be issued to candidates who have compiled a special bibliography and have submitted evidence of two years' satisfactory library services as a full-time member of a library staff.

Post-graduate Diploma in Information Science (RAU)

Admission requirements: A Bachelor's degree in Library Science or a post-graduate diploma in Library Science.

Curriculum: Two semesters of extramural study. The contents of Information Science I and II are spread over the period of study.

See EDUCATION p.123 for teachers' courses with specialisation in Library Science.

**VOCATIONAL SERVICE:** Society is dependent on knowledge for its continued existence and progress. It is therefore the task of the librarian to collect this knowledge and to make it accessible for use by means of a well-organised library. The informational function of libraries is increasing daily and this aspect is progressively accentuated in training.

Since 1930 an almost revolutionary development has taken place in the field of library science and library services in South Africa. As a result, a virtually insatiable need for trained librarians, both men and women, has arisen. The many new libraries and library services necessitate trained and even specialised labour. The shortage of trained men is relatively greater than the shortage of women.

Various types of libraries as well as the sections of a library make it possible for library officers to perform work that is suited to their aptitude or particular training. Thus a librarian can as it were visit distant towns with his library if he has a post in the Provincial Library Service. There is also the possibility of a post as organiser of school libraries for an education department. The function of such a person is to advise school libraries. There are also opportunities for work or study abroad, for example on an exchange basis to the USA. Large libraries sometimes send librarians with degrees or diplomas overseas for specialised study. Further prospects are the different ranks which a librarian can obtain in the way of promotion, particularly with bodies such as the following: Education departments as a teacher-librarian; government and provincial libraries; municipalities; the CSIR; HSRC; the Railways; Iscor; Sasol; some mines; universities (librarian or lecturing post); archives.

There is no doubt about the continued existence of these favourable circumstances and attractive posts are continually being created. Further information on library and information science as a career can be obtained from the Honorary Public Relations Officer, South African Library Association, c/o Ferdinand Postma Library, Potchefstroom University for CHE, Potchefstroom 2520.

#### MARKETING

University: South Africa

The Universities of Cape Town and Durban-Westville offer Marketing as one of the special fields in the B.Bus.Sc. degree (see p.83). The University of Pretoria offers Marketing as one of the options for the B.Com. degree (see p.95).

#### DIPLOMA

Diploma in Market Research and Advertising

Admission requirement: A student must possess a degree.

Curriculum: The curriculum extends over two years and consists of eight courses. The courses are as follows: Economics I; Business Economics I and II; Consumer Behaviour; Statistics I; Market Research A and B; Advertising.

**VOCATIONAL SERVICE:** The tempo of economic development in a country can only be properly maintained if the business world is orientated towards marketing. The rise of marketing as one of the managerial functions is also attributed to a new and more scientific approach to all aspects of selling (marketing).

The acceptance by the business world of the value of increased turnover as a result of effective marketing creates more and more opportunities for employment in various specialised fields such as those of sales, advertising, public liaison, marketing research, commercial art, price determination, distribution, promotion of sales, after-sales service, product development and efficient administration. For graduates who have gradually gained the necessary experience and who possess ambition, insight, initiative, a capacity for work and other essential characteristics, a career in this field can lead to the highest posts in management. Many business enterprises have adopted the policy of appointing their top men from the ranks of marketing officials.



## MEDICAL LABORATORY SCIENCE

University: North

FIRST DEGREE

Bachelor of Science in Medical Laboratory Science: B.Sc. (Med.Lab.Sc.)

Admission requirements: As for the B.Sc. degree. See p.214.

Curriculum: Four years of full-time study. First-year subjects are Chemistry, Physics and Botany and Zoology or Biological Science and Mathematical Methods. Other subjects are, inter alia, Physiology, Physiological Chemistry and Biochemistry. In their fourth year students select ONE of the following: Medical Biochemistry, Haematology, Microbiology, Immunology, Cytology, Pathology.

On completion of the course and after a candidate has worked in a registered laboratory for one year, such a candidate is registered as a medical laboratory scientist with the SA Medical and Dental Council.

VOCATIONAL SERVICE: The activities of the medical technologist fall into three main categories, viz the investigation and analysis of specimens for diagnosis of disease, research work and the preparation of serums and vaccines. In practice the medical technologist is responsible for, inter alia, microscopic investigations, preparation of cultures and the culture of micro-organisms, performing chemical and serological tests, blood counts and other haematological examinations, the care of laboratory animals and the production of vaccines.

Medical technologists are employed by government and provincial hospital laboratories, the South African Institute for Medical Research with branches practically throughout the country and which functions in conjunction with the South African Medical Research Council and various universities, pathological institutes of universities and private pathologists. There is a great demand for qualified medical technologists and men as well as women can pursue the occupation. They need not necessarily work in a medical laboratory after completing their training but can, for instance, be employed by the Institute for Veterinary Research, Onderstepoort or other veterinary laboratories, where the work is basically the same. Industrial concerns, for example the pharmaceutical companies, are making increasing use of medical technologists.

Also see Tertiary Training for particulars on the National Diploma in Medical Technology.

## MEDICAL SCIENCE

Universities: Cape Town, Durban-Westville, Medunsa, Natal, Orange Free State, Pretoria, Stellenbosch, Witwatersrand

FIRST DEGREES

Bachelor of Science (Medicine): B.Sc.(Med.) (UCT)

Admission requirements: This degree is intended for

(i) students registered for the degree of M.B., Ch.B. who have shown an above average academic achievement in the second or subsequent years; and

(ii) students who wish to major in the following areas of Radiation Medicine: Medical Physics, Nuclear Medicine, Radiobiology, Therapeutic Radiography.

This degree will only be offered from 1982. Those interested should contact the University for further particulars.

Bachelor of Medical Science: B.Med.Sc. (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics HG and in Biology HG (or Physical Science HG), or at least 50 % SG in the subjects mentioned.

Curriculum: Four years. The curriculum consists of at least 12 courses. Candidates must offer two or three major subjects selected from the following:

- Major subjects with three courses (six semester courses): Anatomy, Chemistry, Pharmacology
- Major subjects with two courses (four semester courses): Biochemistry, Microbiology, Physiology.

The final courses of at least two major courses must be taken simultaneously.

Bachelor of Medical Sciences: B.Med.Sci. (MEDUNSA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with Mathematics and a science subject.

Curriculum: Three years. First-year subjects are the same as for the M.B., Ch.B. degree. In the third year students select any three of the following: Anatomy II, Histology II, Physiology II, Physiological Chemistry II, Pharmacology I, Microbiology I, Chemical Pathology I.

Bachelor of Science (Medical Science): B.Sc. (Med.Sci.) (UN)

Admission requirement: As for the M.B., Ch.B. degree, p.176.

Curriculum: Four years of full-time study. The first three years of the curriculum are as for the degree of M.B., Ch.B. In the fourth year students select two courses from the following: Anatomy, Biochemistry, Experimental Pathology, Experimental Physiology, Experimental Psychology, Histology, Pharmacology.

Bachelor of Medical Science: B.Med.Sc. (UOFS)

Admission requirements: As for the B.M. degree, p.176.

Curriculum: Three years of full-time study. The curriculum comprises nine courses and is offered in one of the following two fields:

- Curriculum A with third-year subjects such as Biophysics and Physiology or Physiology and Pharmacology or Chemistry and Pharmacology.
- Curriculum B with Anatomy and Physiology as major subjects.

Bachelor of Medical Science: B.Med.Sci. (UP)

Admission requirements: As for the M.B., Ch.B. degree, p.176. Students are selected.

Curriculum: Three years of full-time study. The curriculum includes 13 courses. First-year subjects are the same as for the degree of M.B., Ch.B. Third-year courses are Anatomy III, Physiology II, Microbiology II or Pharmacology.

Bachelor of Science (Honours) in Medical Science: Hons. B.Sc. in Medical Science (US)

This degree course is offered in nine different fields to candidates who hold an M.B., Ch.B. degree or a Bachelor's degree with a major subject in the related field concerned.

Bachelor of Science in Laboratory Medicine: B.Sc.(Lab.Med.) (UW)

Admission requirements: As for the M.B., B.Ch. degree, p.176.

Curriculum: Four years of full-time study. Students take one of the following courses in the fourth year of study: Haematology II, Immunology II, Medical Biochemistry II, Microbiology II, Oral Pathology II, Pathology II.

## POST-GRADUATE DEGREES

Bachelor of Science (Medicine)(Honours): B.Sc. (Med.)(Hons.) (UCT)  
Honours Bachelor of Medical Science: B.Med.Sc.(Hons.) (UDW,UOFS)  
Bachelor of Medical Sciences (Honours): B.Med.Sci.(Hons.) (MEDUNSA)

Master of Science (Medicine): M.Sc.(Med.) (UCT)  
Master of Medical Science: M.Med.Sc. (UDW,UOFS)  
Master of Medical Sciences: M.Med.Sci. (MEDUNSA, UP)

Doctor of Philosophy: Ph.D. (UCT,UDW)  
Doctor of Medical Science: D.Med.Sc. (UDW)  
Doctor of Medical Sciences: Ph.D. (MEDUNSA)  
Philosophiae Doctor: Ph.D. (UOFS)  
Doctor of Medical Sciences: D.Med.Sci. (UP)

VOCATIONAL SERVICE: See Medicine p.178.

## MEDICINE

Universities: Cape Town, Medunsa, Natal (Non-Whites only), Orange Free State, Pretoria, Stellenbosch, Witwatersrand

## FIRST DEGREES

Bachelor of Medicine and Bachelor of Surgery: M.B., Ch.B. (UCT, MEDUNSA, UN, UP, US)  
or M.B., B.Ch. (UW)

Bachelor of Medicine: B.M. (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town: Passes in Mathematics HG and in Physical Science HG, or at least 50 % SG in the subjects mentioned.

Medunsa: A pass in Mathematics equivalent to that of the Standard Grade at least. The following subject combinations passed at a recognised university are acceptable for admission to M.B., Ch.B.II:

- Physics I, Chemistry I, Biology (Biological Science) I

OR

- Physics I, Chemistry I, Botany (minimum one semester), Zoology (minimum one semester).

Natal: A pass in Mathematics and either a sufficiently high standard in overall performance and in English and Mathematics; or a sufficiently high standard in the work of an approved preliminary year of study at another university or university college.

Orange Free State: A pass in Mathematics SG. Prospective students are advised to offer Physical Science and, if possible, Biology as well for the Std 10 examination.

Pretoria: Passes in Mathematics HG and in Physical Science HG, or at least 50 % SG in the subjects mentioned.

Stellenbosch: A pass in Mathematics. Students are strongly advised to take Physical Science and/or Biology and/or Physiology for the Std 10 examination.

Witwatersrand: A pass in Mathematics HG or at least 60 % in Mathematics SG and a pass on the Higher Grade in one of the following subjects if Mathematics has been passed on the Higher Grade or two of the following subjects if Mathematics has been passed on the Standard Grade: Bantu Language, Biology, French, Geography, German, Hebrew, History, Latin, Physical Science, Physiology.

Most of the universities advise students to apply for admission early in the preceding year.

Curriculum: Six years of full-time study. The sixth year at most of the universities is a student-intern year.

All undergraduates who propose to undertake to study for the degree must register with the South African Medical and Dental Council at the beginning of the first year of study for the degree.

First-year subjects are as follows:

Cape Town: Animal and General Biology, Human Biology, Chemistry, Physics.

Medunsa: Biology, Chemistry, Physics, Human Sciences

Natal: Chemistry, Physics, Community Health, Botany or Zoology or an approved course in Biological Sciences

Orange Free State: Anatomy, Biology, Chemistry, Physics, Physiology

Pretoria: Anatomy, Biological Sciences, Chemistry, Physics

Stellenbosch: Biology, Chemistry, Physics, Mathematics (Bio.)

Witwatersrand: Chemistry, Physics, Human and General Biology, Bio-mathematics (half course), Human behavioural sciences (half course).

In their second year students take Anatomy and Physiology. Subjects for the senior years are, inter alia, Community Health, Medicine, Obstetrics and Gynaecology, Psychiatry, Surgery. At UOFS the senior subjects are Clinical Medicine, Community Health and Forensic Medicine and at US, Anatomical Pathology, Clinical Medicine and Pharmacology.

After obtaining the degree, candidates are required to serve one year's internship in a recognised and approved institution before they can be registered by the South African Medical and Dental Council as medical practitioners.

#### POST-GRADUATE DEGREES

Master of Medicine: M.Med. (All the above-mentioned universities)

Admission requirements: The degree of M.B., Ch.B. must have been held for at least two years. Candidates must have been registered as medical practitioners for at least one year.

Curriculum: 3,4 or 5 years according to the requirements of the department concerned. The degree is offered in various branches.

Master of Surgery: Ch.M. (UCT, UW)

Master of Community Health: M.Med.(C.H.) (UOFS)

Master of Family Doctor Medicine: M.Fam.Med. (UOFS)

Master of Medical Administration: M.Med.(M.A.) (UOFS)

Master of Pharmacological Medicine: M.Pharm.Med. (UP)

Master of Family Doctor Medical Practice: M.Prax.Med. (UP)

Master of Military Medicine: M.Mil.Med. (UP)

Master of Science in Medical Science: M.Sc. in Medical Science (US)

Master of Orthopaedic Surgery: Ch.M.(Orth.) (UW)

Master of Science in Medicine: M.Sc.(Med.) (UW)

Master of Medicine in Forensic Pathology: M.Med.(Path.Forens.) (UW)

Doctor of Medicine: M.D. (UCT, MEDUNSA, UN, UP, US, UW) or D.M. (UOFS)

Doctor of Philosophy: Ph.D. (UCT, UN, UOFS, UW)

Doctor Scientiae: D.Sc. (UOFS)

Doctor of Medical Science: D.Med.Sci. (UP)

Doctor of Philosophy in Medicine: Ph.D.(Med.) (US, UW)

Doctor of Philosophy in Medical Science: Ph.D. in Medical Science (US)  
Doctor of Science in Medical Science: D.Sc. in Medical Science (US)  
Doctor of Science (Medicine): D.Sc.(Med.) (US)  
Doctor of Science in Medicine: D.Sc.(Med.) (UW)

#### POST-GRADUATE DIPLOMAS

Diploma in Cardiac Surgery (UCT)  
Diploma in Community Health (US)  
Diploma in Community Medicine (UOFS)  
Diploma in General Practice (UCT)  
Diploma in Industrial Medicine (UOFS, UP)  
Diploma in Medical Administration (UOFS, UP)  
Diploma in Medical Physics (post-M.Sc. in Physics) (UP)  
Diploma in Occupational Health (UW)  
Diploma in Occupational Medicine (US)  
Diploma in Public Health (UP, UW)  
Diploma in Tropical Medicine and Hygiene (UW)

**VOCATIONAL SERVICE:** A doctor may work as a general practitioner on his own or in partnership with one or more colleagues in a private practice. In this case his work will mainly consist in diagnosing diseases and treating patients. However, most general practitioners also perform smaller operations. Often a general practitioner may find it necessary to refer a patient to a specialist for diagnosis, operation or treatment.

As a specialist in some field or other, the doctor possibly has more responsibility but then his hours of work are normally fixed and he does no visiting of patients at home. The fields of specialisation offer a wide choice to the doctor. During his period of training as a specialist, the doctor works in a hospital as a clinical assistant.

The wide field of national health in general and the particular work of the specialised state institutions, hospitals and state-controlled laboratories, offer the doctor and the medical researcher extremely interesting and promising opportunities of a career in Government service. Government medical officers work in the Departments of Manpower; Mineral and Energy Affairs; National Education; and Health and Welfare. In the latter Department activities are divided into different sections, viz psychiatry, district surgeons, pathological and laboratory services, tuberculosis service, public health administration and hospital services in the self-governing Black states. Many doctors and specialists are also employed by the provincial departments of hospital services.

In South Africa there is room for many more doctors and specialists. Furthermore, medical science, including the care of the diseased, is faced in the eighties with a challenge which tests skill and ingenuity as never before. For every young man and woman in medicine who is prepared to undertake post-graduate study and research there are wonderful opportunities in this occupation.

Also consult Tertiary Training for the various paramedical fields.

#### METEOROLOGY

University: Pretoria

#### FIRST DEGREE

Bachelor of Science in Meteorology: B.Sc.(Meteorology)

Admission requirements: As for the B.Sc. degree. See p.218.

Curriculum: Four years of full-time study. The curriculum consists of the following subjects: Meteorology II, Mathematics III, Applied Mathematics III, Physics III and one of the following first-year courses: Chemistry, Computer Science, Geography, Mathematical Statistics.

Candidates are required to undertake compulsory vacation work for periods of three weeks at the Weather Bureau in Pretoria after their second and third years of study.

## POST-GRADUATE DEGREES

Bachelor of Science (Honours): B.Sc.(Hons.)  
Master of Science: M.Sc.  
Doctor of Science: D.Sc.

**VOCATIONAL SERVICE:** Candidates who wish to make a success of this career should be interested in the weather and atmospheric phenomena and the causal relationship between large-scale natural phenomena. They are employed by the Department of Transport for service in the Weather Bureau. Here the meteorologist (man or woman) carries out his tasks in well equipped offices. A limited amount of research is undertaken in laboratories, while interesting practical work is done in connection with weather predictions. Meteorologists have the opportunity of choosing from eight specialised fields.

For appointment as an assistant meteorologist an appropriate bachelor's degree is a requirement, while for meteorologists a four-year B.Sc. degree in Meteorology or a B.Sc.(Hons.) degree in Meteorology is required. In-service training in weather observation, the operation of meteorological instruments and weather forecasting take place under the guidance of senior officers in the Weather Bureau.

Also see Agricultural Meteorology p.39.

Also consult Tertiary Training for particulars on the National Diploma in Meteorology.

## MILITARY SCIENCE

University: Stellenbosch

### FIRST DEGREE

Bachelor of Military Science: B.Mil.

Admission requirements: Students must

- hold a Matriculation or a Senior Certificate (Matriculation Exemption);
- for the Science field, have passed Mathematics HG and Physical Science HG or obtained at least a D symbol in Mathematics SG and Physical Science SG;
- for the Commerce field as well as for a course with Computer Systems and Statistics as subjects, have obtained at least an E symbol in Mathematics SG; and
- have been accepted by the military selection board for degree study.

Curriculum: Three years of full-time study. The B.Mil. degree can be followed in one of the following fields: Human Sciences, Pure Sciences, Commercial Sciences.

All the courses are followed at the Military Academy at Saldanha. The Military Academy is the seat of the Faculty of Military Science.

All first and second year courses in academic subjects are recognised in the place of first and second year subject courses of the corresponding subjects in other faculties of the University which are offered for the B.A., B.Com. and B.Sc. degrees, and all academic subjects which are offered on a third-year basis for the B.Mil. degree may lead to a B.A.Hons., B.Com.Hons. or a B.Sc.Hons. course in the subject concerned.

The B.Mil. subjects are the same as those offered by the University. The syllabuses have been adapted to meet the requirements of the South African Defence Force and Aeronautics, Naval Navigation, Military Law, Military History and Military Geography have been added.

## POST-GRADUATE DEGREES

Honours Bachelor of Military Science: Hons.B.Mil.  
Master of Military Science: M.Mil.  
Doctor of Military Science: D.Mil.

**VOCATIONAL SERVICE:** A career as an officer in the South African Defence Force is attractive, interesting and varied. Among other things, the functions of the officers' corps include organisation, administration, planning as well as training of the Citizen Force and the Commandos. The large number of posts for officers for which provision is made, offers extremely attractive prospects to any young man. Because of the many fringe benefits to personnel, it is further evident that the Permanent Force caters well for the material, physical and spiritual welfare of its members.

After successful completion of the training course, the candidate officers are appointed with the rank of lieutenant. Provided that they pass the subsequent required promotion courses, they can normally be promoted to the highest ranks. In addition the B.Mil. degree is quite acceptable in civilian life and it can lead to post-graduate study at any South African university.

Also consult Tertiary Training for particulars on officer training outside the university.

### MINING GEOLOGY\*

University: Pretoria

#### FIRST DEGREE

Bachelor of Science in Mining Geology: B.Sc.(Mining Geology)

Admission requirements: As for the B.Sc. degree. See p.218.

Curriculum: Four years of full-time study. First-year subjects are Geology, Chemistry, Physics, Mathematics and Descriptive Geometry. The curriculum also includes, inter alia, the following subjects: Geology IV, Applied Geophysics, Mining, Extractive Metallurgy, Mine Surveying, Geo-Statistics.

Students are required to undertake at least 20 weeks' vacation work of which 5 weeks must be devoted to Applied Geophysics and at least 10 weeks must be spent in a mine.

\* At the University of the Witwatersrand Mining Geology is one of the options in the branch of Geological Engineering.

**VOCATIONAL SERVICE:** These graduates are in the direct employ of the mining sector in the country. The most important employers are consequently the Geological Survey Branch and the Minerals Bureau of the Department of Mineral and Energy Affairs. However, the largest number enter the service of the various mining companies. Also see Geology, p. 229.

### MUSEOLOGY

Universities: Pretoria, Stellenbosch

#### DIPLOMAS

Diploma in Museology (UP)

Admission requirements: A Bachelor's degree with a pass in one of the following courses: Afrikaans and Netherlands Cultural History III, History III, History of Art III, Anthropology III, Archaeology II, Botany III, Zoology III, Entomology III, Geology III; or such knowledge of another appropriate subject which in the opinion of the head of the Department of Afrikaans and Netherlands Cultural History justifies admission to the course.

Curriculum: One year of full-time study or eighteen months of part-time study. The curriculum comprises: Museology with specialisation in one of the following endorsements: Cultural-historical, Natural Science, Art; and a written assignment.

Students are required to undertake practical work in approved museums for a prescribed period.

## Post-graduate Professional Diploma in Museology (US)

Admission requirement: A Bachelor's degree with at least one of the following subjects as a major subject: Afrikaans Cultural Science and Folklore, Archaeology, Fine Arts, Library Science, History, Classical Culture, Anthropology, Botany, Geology, Entomology or Zoology.

Curriculum: One year of full-time study. The curriculum comprises the following courses: Introduction to Museology; The establishment, organisation and task of museums; Collection, documentation and related activities.

Students have to gain six weeks' practical experience during the winter vacation under the supervision of an approved museum. Two separate reports thereon must be submitted by the students and by the head of the institution.

VOCATIONAL SERVICE: Persons are appointed as museum service officers in museums of the Department of National Education, the provincial administrations and other authorities. They undertake, inter alia, research in the disciplines in which the museum specialises; are responsible for the exhibitions, restoration, preservation and maintenance of the material in its possession; and may also serve as information officers.

## MUSIC

Universities: Cape Town, Durban-Westville, Fort Hare, Natal, Orange Free State, Port Elizabeth, Potchefstroom, Pretoria, Rhodes, South Africa, Stellenbosch, Western Cape, Witwatersrand, Zululand

### FIRST DEGREES

Bachelor of Music: B.Mus. (UCT, UN, UP, RU, US, UW)

Baccalaureus Musicae: B.Mus. (UDW, UOFS, UPE, PU for CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town: Candidates should have attained the following:

- Practical: The level required to pass the Grade VI examination laid down by the University of South Africa, the Associated Board of the Royal Schools of Music or the Trinity College of Music.

Note: Grade VII level is required for entrance to the B.Mus. (Performance) degree course.

- Theoretical: Candidates should have acquired a standard equivalent to:  
UNISA ... Harmony Grade V  
Royal Schools ... Theory Grade VII  
Trinity College ... Theory Grade VI

A candidate who has not passed any of the above-mentioned examinations must undertake an examination/audition at the beginning of the academic year to ascertain his/her ability to take the course.

Durban-Westville: A student must satisfy the head of the department in an entrance examination as to his practical and theoretical competence for the course. This will require a minimum practical standard equivalent to either Grade VII of UNISA or at least 60 % in Music in the Std 10 examination and a comparable theoretical standard.

Natal: As for Cape Town with the exception of B.Mus.(Performance).

Orange Free State: Each candidate must satisfy the head of the department that his proficiency in the performing art as well as his musicality and general knowledge of



music justifies admission. He must have obtained at least 50 % in Music HG or 60 % in Music SG in the Std 10 examination or attained a standard in practical music equivalent to the Grade VII Examination of the University of South Africa.

Port Elizabeth: A candidate must have obtained the standard indicated below:

- Systematic Music Theory I, Main Instrument I: A standard of 60 % in Music SG or 50 % in Music HG; or a standard in both theory and practical work regarded as equivalent thereto by the Head of the Music Department.
- School Music I: A Grade V Certificate of the University of South Africa or equivalent qualifications.

Potchefstroom: A candidate must satisfy the lecturers concerned in a practical test of his proficiency in the performing art and of his musicality and general knowledge of music, and he must have obtained a standard equivalent to the Advanced Certificate (Grade VII) of the University of South Africa.

Pretoria: (i) A pass in at least two of the following subjects on the Higher Grade: Geography, Biology or Physiology, Biblical Studies, Economics, History, Art, Physical Science, Mathematics, a third language: Provided that a pass mark in a third language on the Standard Grade may be accepted if it was offered on the Standard Grade only.

(ii) A candidate must satisfy the lecturers concerned in a practical test at the beginning of the year that his proficiency in the performing art as well as his musicality and general knowledge of music justifies admission.

Stellenbosch: A pass of at least 50 % in Music HG or 60 % in Music SG, or a pass in the practical major subject in the Grade VII Examination (University of South Africa), or other equivalent examination, and a standard in Harmony equivalent to that of Grade VI (University of South Africa); or a pass in an admission examination, equivalent to the aforementioned examination in the practical major subject and in Harmony.

Witwatersrand: A pass in Music HG. See also p.64.

Curriculum: Four years of full-time study. Each of the universities has one or more curricula, one of which the student must select:

Cape Town: Students may choose the B.Mus.(General) course or one of the following specialisations: Musicology, Music Education, Performance, Composition, Music Librarianship.

Students who have successfully completed the first three years of the specialised Music Education course are admitted in the fourth year on the course for the Higher Diploma in Education (Post-Graduate): Secondary (see p.123). On completion both the degree and diploma are awarded.

Students specialising in Music Librarianship are admitted to the course for the Higher Diploma in Librarianship (see p.172) after completion of the first three years. Successful students are awarded both the degree and the diploma.

Durban-Westville: Students select either General (B.Mus.) or Music Education (B.Mus.(Ed.)).

Natal: A candidate must obtain credit for the two Common Courses viz Music III and Practical Study III, and the Specialist Courses in one of the five specialist fields offered viz: Music Education; Composition; Performance Instrumental; Musicology; Ethnomusicology.

Ethnomusicology includes, inter alia, Social Anthropology I, II and III.

Orange Free State: Candidates select one of four fields for the third and fourth years of study viz: Musicology, Theory of Music, Music Education and the Practical field.

Port Elizabeth: Candidates select one of the following three curricula: Musicology, Music Education or Performers.

Potchefstroom: A student compiles his curriculum with course units\* in one of the following curricula. The major subjects are given in each case:

- A. History of Music, Practical Music, Practical Music Study
- B. Harmony, Counterpoint, Practical Music, Practical Music Study
- C. Harmony, Counterpoint, History of Music, Practical Music, Practical Music Study.

\* See B.A., p.54.

Pretoria: Candidates select one of four fields at the beginning of their third year of study: Musicology, Composition, Performing Art, Church Music.

Rhodes: Candidates have to complete the prescribed courses. The major subjects are History of Music IV, Theory of Music IV and Ensemble IV, Orchestration and Instrumentation III and Practical subject III.

Stellenbosch: Candidates select one of five fields at the beginning of their third year of study: Education - B.Mus.(Ed.), Practical field, Musicology, Church Music, Composition.

In addition the B.Mus.(Ed.) course offers two possible specialisations, namely (i) Teaching of an Instrument or Vocal Teaching and (ii) School Music.

Witwatersrand: The degree may be awarded in one of the following branches: Composition, Musicology, Performance and Individual Teaching, School Music.

Bachelor of Pedagogics: B.Ped.(Music option) (UFH)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years. This is an integrated professional degree. See p.126. The major subjects are: Theory and Harmony, History of Music and Musical Form, Music Education, Pedagogics.

Bachelor of Arts (Music): B.A.(Music) (UOFS)

Admission requirement: As for B.Mus.

Curriculum: Three years of full-time study. The major subjects are Musicology, Harmony and Counterpoint and a B.A. subject. Students do practical music study of an instrument for the three years of the degree course as well as two courses in another B.A. subject.

Bachelor of Arts with Music subjects: B.A. (PU for CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A candidate must satisfy the Head of the Department of Music in a practical test that his standard of music performance is equivalent to the requirements of the Advanced Certificate of the University of South Africa.

Curriculum: Three years of full-time study. The major subjects are History of Music, Practical Music and a B.A. subject.

Bachelor of Arts (Education)(Music): B.A.(Ed.)(Music) (UP)

Admission requirements: As for the degree B.Mus.

Curriculum: Four years of full-time study. The major subjects are History of Music III, Practical Music Study III, School Music III and Pedagogics III. Students take teaching subjects in the fourth year of study.

Bachelor of Musicology: B.Mus. (UNISA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A student must have reached a standard in practical music equivalent to that of Grade VII of the Music Certificate Examination of the University of South Africa or that required for Music at the matriculation or equivalent examination.

Curriculum: Four years. The curriculum consists of 12 courses. History of Music IV and Harmony and Counterpoint IV are the major subjects.

The degree shall not be awarded until the student has also obtained one of the following Licentiates at the practical musical examinations of the University: Teachers', Performers', Accompanists', Church Organists', Military Bandmasters'.

B.A. with Music: B.A. (US)

Admission requirements: As for the degree B.Mus.

Curriculum: The major subjects are music and an ordinary B.A. subject. Under Music a candidate chooses one of two specialised fields viz Practical Music Study and School Music.

Students with this degree may be admitted to the H.D.E.(Post-graduate) course. See p.139.

Baccalaureus Artium in Music: B.A.(Mus.) (UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) plus Grade V Certificate (practical and theoretical) of the University of South Africa or its equivalent. Students who do not hold this certificate are required to take an entrance examination of the required standard in the principal practical subject and in theoretical work.

Curriculum: Three years. The major subjects are Music and an ordinary B.A. subject.

Students who have obtained this degree may be admitted to the S.T.D. course with Music as one of the secondary school subjects. See p.141.

Bachelor of Arts in Music: B.A.(Mus.) (UZ)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A candidate must have passed Grade V (Theory) of the University of South Africa music examination or hold an approved qualification.

Curriculum: Three years. The curriculum consists of Practical Music, Music Theory, History of Music and four semester courses in an ordinary B.A. subject.

In Practical Music a student may offer any one of the following: Choral Technique, Pianoforte, Violin.

The Universities of Durban-Westville, Natal and Rhodes also offer Music as a major subject for the B.A. degree.

POST-GRADUATE DEGREES

Honoris Baccalaureus Artium: B.A.Hons. (UDW)

Bachelor of Arts (Honours): B.A.Hons. (UN)

Honneursbaccalaureus Musicae: B.Mus.Hons. (UOFS)

Honneursbaccalaureus Artium in Musicology: B.A.Hons.(Musicology) (UOFS)

Honneurs Baccalaureus Musicae: Honns.B.Mus. (PU for CHE)

Honours Bachelor of Music: B.Mus.(Hons.) (UP) or Hons.B.Music (US)

Honours Bachelor of Musicology: Hons.B.Mus. (UNISA)

Honours Bachelor of Arts: B.A.Hons. (US, UZ)

Master of Music: M.Mus. (UCT, UN, UP, RU, US, UW)  
Magister Musicae: M.Mus. (UDW, UOFS, UPE, PU for CHE)  
Master of Musicology: M.Mus. (UNISA)  
Master of Arts: M.A. (UN, US, UZ)  
Magister Artium: M.A. (UDW)  
Magister Artium in Musicology: M.A.(Musicology) (UOFS)

Doctor of Music: D.Mus. (UCT, UN, UP, RU, US, UW)  
Doctor Musicae: D.Mus. (UDW, UOFS, UPE, PU for CHE)  
Doctor of Musicology: D.Mus. (UNISA)  
Doctor of Philosophy: Ph.D. (UCT, UN, RU)  
Doctor Philosophiae in Musicology: D.Phil.(Musicology) (UOFS)

## DIPLOMAS

### Cape Town

#### Teacher's Licentiate Diploma in Music

#### Performer's Diploma in Music (Solo or Accompanying)

#### Performer's Diploma in Orchestral Playing

#### Performer's Diploma in Opera

Admission requirements: At least a Senior Certificate. Additional requirements are similar to those for the B.Mus. (Music Education).

Curriculum: The curriculum of the Teacher's Licentiate Diploma in Music extends over four years and that of the other diplomas each three years.

#### Diploma in Ballet

Admission requirement: A Senior Certificate.

Curriculum: Three years.

Students who do not hold a Senior Certificate may take the above-mentioned courses, but they will be awarded certificates instead.

### Natal

#### Performer's Diploma

A one-year post-graduate course for either instrument or voice.

### Orange Free State

#### Diploma for Church Organists

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements are the same as for the B.Mus degree.

Curriculum: Two years. Students who hold a degree in Music may complete the course in one year.

### Port Elizabeth

#### Diploma in Music

Admission requirements: A Senior Certificate. Additional requirements are similar to those for the B.Mus. degree.

Curriculum: Three years of full-time study. The curriculum includes, inter alia, History of Music, Counterpoint, School Music, Harmony, Main Instrument and Method of the Main Instrument.

### Diploma in Orchestral Playing

Admission requirements: The degree of B.Mus. or the Diploma in Music. A candidate must satisfy the head of the Music Department that he has attained a sufficient standard in an approved musical instrument to attend the course with profit.

Curriculum: One year of full-time study.

### Soloist's Diploma in Music

Admission requirements: As for the Diploma in Orchestral Playing.

Curriculum: Two years of full-time study.

### Potchefstroom

#### Diploma for Church Organists

Admission requirements: A Senior Certificate and the certificate for the Advanced piano and organ examination of the University of South Africa or an equivalent standard.

Curriculum: Three years of full-time study. A student may take the Diploma for Church Organists concurrently with the course for the B.Mus. degree.

#### Diploma in Musical Performance

Admission requirements: A Senior Certificate. A student must satisfy the head of the Department of Music that his proficiency justifies admission.

Curriculum: One year. The examination includes the recital of a complete concert programme.

### Pretoria

#### Diploma in Music (Individual Teaching)

Admission requirements: A Senior Certificate. At the beginning of his first year a candidate must satisfy the lecturers concerned in a practical test that his proficiency in the performing art as well as his musicality and general knowledge of music justifies admission.

Curriculum: Three years of full-time study. The curriculum includes, inter alia, Harmony, Counterpoint, Practical Music Study, School Music, Methodology and History of Music.

#### Diploma in Music (Church Music)

Admission requirements: As for the Diploma in Music (Individual Teaching).

Curriculum: Three years of full-time study.

### Rhodes

#### Rhodes University Licentiate Diploma in Music: R.U.L.M.

Admission requirements: A Senior Certificate, or the Board of the Faculty must be satisfied as to the candidate's suitability to take the course. The latter is considered only on the grounds of mature age and/or exceptional ability.

Curriculum: Three years of full-time study.

The Diploma may be awarded as a diploma for performers, or for teachers, or for choirmasters, or for church organists.

### Certificate in Choral Work

Admission requirements: A student must have been admitted as a candidate for another degree, diploma or certificate of the University other than the degree of music or the diploma in music.

Curriculum: Two years' part-time study.

### Stellenbosch

#### Performer's Licentiate in Music

Admission requirements: A Senior Certificate. Students must give evidence in an entrance examination of sufficient ability as performers. The minimum standard required is equivalent to the Grade VIII Examination of the University of South Africa.

Students must also give evidence in an entrance examination of sufficient knowledge of Harmony to be able to take the course. Exemption from this examination may be granted to students who obtained a pass in Music of at least 60 % in the Std 10 examination, or who have passed an examination in Harmony equivalent to the Grade VI Examination of the University of South Africa.

Curriculum: Three years.

#### Performer's Higher Licentiate in Music

Admission requirements: The degree of B.Mus. or the B.A. degree with Music as one of the major subjects, or the Higher Diploma in Education (Secondary - Music), or the Teacher's Licentiate in Music, or the Performer's Licentiate in Music, or another qualification which the Senate regards as adequate.

Students must give evidence in an entrance examination of sufficient ability as performers.

Curriculum: One year.

#### Diploma for Church Organists

Admission requirements: A Senior Certificate. Candidates must give evidence in an entrance examination of their proficiency in playing the organ as well as of sufficient musicality and general knowledge of music to be able to follow the course.

Curriculum: Two years.

### Witwatersrand

#### Licentiate in Music: L.M.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. Third year courses include Applied Music II, Music Education I, Performance III, Repertoire and Teaching Methods II.

#### Performer's Diploma in Music: P.Dip.Mus.

Admission requirements: Diploma in Music or a Licentiate in Music or a B.Mus. degree or a teacher's or performer's diploma or licentiate in music from a recognised institute and four years' experience in education or in public performances.

Curriculum: One year of full-time study or two years of part-time study.

See EDUCATION p.123 for specialised courses in the teaching of Music.

VOCATIONAL SERVICE: As in many other fields, the development of the RSA causes a great demand for persons trained in music as a profession. There is a wide choice of fields

of specialisation for the student who began intensive training in music at an early age, who has a love for it, interest in it and the particular musical perception and aptitude as well as musical talent needed, and who is prepared to devote much time to practising. The most important of the avenues for which a university degree or diploma qualifies a man or woman, is teaching in a studio or a school (primary and secondary), broadcasting, the provincial councils for the performing arts, the press, churches and certain library services.

On the strength of experience, reputation and post-graduate qualifications, competent musicians are continually singled out for various responsible positions, for example at training colleges, universities, conservatoires, symphony orchestras, technikons, etc.

For a person who is not employed by an official institution, there is the opportunity of giving private lessons in almost any place, and to practise his profession during periods suitable to him. A member of an orchestra, for example, may also be a teacher of music.

## NATURE CONSERVATION

University: Stellenbosch

### FIRST DEGREES

#### Hons. B.Sc. in Nature Conservation

Admission requirements: A B.Sc. degree with Zoology, Botany or Biology as one of the major subjects, or another approved Bachelor's degree.

Curriculum: Students must pursue an approved curriculum of advanced study, prescribed individually for each student by the lecturer concerned, for at least one year and pass the examinations.

#### M.Sc. in Nature Conservation

Admission requirements: The degree of B.Sc. in Forestry or another approved Bachelor's degree or an approved Hons. B.Sc. degree.

Curriculum: Students must pursue an approved curriculum of research and/or advanced study for at least two years (after obtaining the Bachelor's degree) or at least one year (after obtaining the Honours degree) which may include a period of study or research at another recognised place. Students are required to submit a satisfactory thesis.

### POST-GRADUATE DEGREES

Ph.D. (Nature Conservation)  
D.Sc. in Nature Conservation

**VOCATIONAL SERVICE:** Organised institutions in the RSA employ qualified persons to render professional services in connection with the conservation of the country's fauna and flora. Some of these organisations concentrate on protection and research in respect of fauna, others more exclusively as regards flora. Graduates are employed as professional officers. They must be in possession of a B.Sc. degree and must be prepared to continue with appropriate post-graduate studies and research.

These bodies are some government departments; the departments of nature conservation of the provincial administrations; the National Parks Board; the Oceanographic Research Institute, Durban; the CSIR; the Natal Herbarium, Durban; The Moss Herbarium, University of the Witwatersrand; the Compton Herbarium, Newlands, Cape; the Bolus Herbarium, University of Cape Town and a number of museums scattered throughout the country.

Also consult Tertiary Training for particulars on the National Diploma in Nature Conservation.

## NURSING

Universities: Cape Town, Medunsa, Natal, North, Orange Free State, Port Elizabeth, Potchefstroom, Pretoria, Rand Afrikaans University, South Africa, Stellenbosch, Western Cape, Witwatersrand

### FIRST DEGREES

Bachelor of Science (Nursing): B.Sc. (Nurs.) (UCT)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG. It is recommended that any one of the following subjects be a subject for the Std 10 examination: Biology, Chemistry, Physics, Physical Science. Every candidate must submit a certificate of medical fitness and be at least 17 years of age.

Successful applicants will assume full-time duty as student nurses at the Groote Schuur Hospital for a probationary period of two months commencing in January. At the end of the probationary period the final selection will be made for admission.

Curriculum: Four years. On successful completion of the course, the student may be registered with the SA Nursing Council as a General Nurse. The course is organised on a modular system with each module encompassing both the theoretical and clinical aspects of nursing. The major subject is Community Health IV.

The University of Cape Town will offer the following two courses for the first time in 1982:

- Bachelor of Nursing (Education and Advanced Nursing Science): B.Nurs. (Ed. & Adv.Nurs.Sc.)
- Bachelor of Nursing (Administration and Community Nursing Science): B.Nurs. (Admin. & Comm. Nurs.Sc.)

Bachelor of Nursing Arts and Science: B.Cur. (MEDUNSA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics and a science subject.

Curriculum: Four and a half years' study while students hold a trainee post as a student nurse at an approved hospital. First-year subjects are Biology, Chemistry, Human Sciences, Physics.

Further information is obtainable from Medunsa.

Medunsa will also offer the following courses in the near future:

- Bachelor of Nursing Education and Nursing Administration: B.Cur.I et A.
- Diploma in Nursing Education: Dip. N.Ed.
- Diploma in Nursing Administration: Dip.N.A.

Bachelor of Social Science (qualified as a nurse): B.Soc.Sc. (UN)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A candidate must, for purposes of practical training, be a registered student member of the nursing personnel of a hospital recognised as a training school by the SA Nursing Council.

Curriculum: Four years. The curriculum includes the following courses: Anatomy, Physiology, Special Science (Physics and Chemistry), Psychology I, Sociology I, Midwifery, Nursing I, II, III and IV plus Psychology II and III and Sociology II or Social Anthropology I OR Sociology II and III and Psychology II or Social Anthropology I OR Social Anthropology I, II and III.



Baccalaureus Curationis (Instructionis et Administrationis: B.Cur. (I.et A.) (UNorth)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption); proof of registration with the SA Nursing Council as a general nurse and midwife or as a general nurse/male nurse and psychiatric nurse/male nurse; and at least 18 months' experience as a registered nurse/male nurse in a hospital or in extra-institutional health services.

Curriculum: Three years of full-time study. The major subjects are Nursing Education, Nursing Administration, Sociology or Psychology.

Baccalaureus Societatis Scientiae in Nursing: B.Soc.Sc. (Nursing) (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) and proof of enrolment as a student nurse at an approved training hospital.

Curriculum: Three years of full-time study. The major subjects are Nursing (Theory) and Nursing (Practical). There are two curricula: one for men and women students and one for men students only.

Students who hold this degree can only be registered as a nurse with the SA Nursing Council after obtaining the degree of B.Soc.Sc. Hons. (Nursing).

B.Soc.Sc.Hons. (Nursing) (UOFS)

Admission requirements: B.Soc.Sc. (Nursing)

Curriculum: Three semesters of full-time study.

Baccalaureus Curationis: B.Cur. (UPE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption); proof of registration as a student nurse with the SA Nursing Council; and proof of holding a post as a student nurse at an approved training hospital. It is recommended that Mathematics and/or Physical Science be taken as a Std 10 subject.

Curriculum: Nine semesters (four and a half years). The curriculum comprises, inter alia, the following courses: Anatomy, Histology and Physiology II; Ethos of Nursing I; Sociology III; General Nursing Science IV; Psychiatric Nursing, Midwifery or Orthopaedic Nursing (for male students).

Baccalaureus Artium et Scientiae (Nursing): B.Art. et Scien.(Nursing) (PU for CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A student must have either Mathematics, Science and Biology or Mathematics and Science or Science and Biology or Mathematics and Biology or Mathematics as Std 10 subjects. Students are selected. All students must apply to the Superintendent, Kallie de Haas Hospital, Private Bag X938, Potchefstroom 2520, for admission.

Curriculum: Four years. A student compiles his curriculum with course units\* from the following subjects:

- Nursing subjects: Community Nursing, Psychiatric Nursing, Midwifery, Nursing.
- Other subjects are, inter alia: Anatomy, Clinical Biochemistry, Physiology, Psychology, Nutritional Science.

The two major subjects are Nursing and Psychology or Sociology.

After completion of the degree course students may be trained in Psychiatric Nursing and Practical Work for a further semester.

Bachelor of Nursing: B.Cur. (UP,RAU)  
Bachelor of Science in Nursing: B.Sc. (Nursing) (UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) and proof of enrolment as a student nurse at a training hospital, approved by the SA Nursing Council, where all practical training will be undertaken for the duration of the course.

Additional requirements:

Pretoria, Rand Afrikaans University: Mathematics or Physical Science will be a recommendation.

Witwatersrand: A pass in Mathematics HG or at least 50 % in Mathematics SG and a pass on the Higher Grade in one of the following subjects if Mathematics has been passed on the Higher Grade or two of the following subjects if Mathematics has been passed on the Standard Grade: Bantu Language, Biology, French, German, Geography, Hebrew, History, Latin, Physical Science, Physiology.

Curriculum: Four years (UW); four and a half years (UP,RAU). The curriculum comprises, inter alia, the following courses: Nursing, Psychiatric Nursing, Community Health Nursing, Psychology or Applied Psychology (UW), Midwifery, Sociology.

After completion of the degree course, students of the University of the Witwatersrand may take an additional six-month course in Psychiatric Nursing. It includes practical training in the wards.

Bachelor of Arts in Nursing Science: B.A.(Cur.) (UNISA)

Admission requirements: Proof of registration with the SA Nursing Council either as a general nurse and as a midwife in the case of a female student or as a general nurse in the case of a male student.

Curriculum: At least three years. A student selects one of the following six curricula each of which consists of eleven courses:

- A. Major subjects: Community Health Nursing and Nursing Administration
- B. Major subjects: Community Health Nursing and Nursing Education
- C. Major subjects: Nursing Administration and Nursing Education (12 courses in this curriculum)
- D. Major subjects: Advanced Nursing Science and Nursing Administration
- E. Major subjects: Advanced Nursing Science and Nursing Education
- F. Major subjects: Advanced Nursing Science and Community Health Nursing.

Bachelor of Nursing: B.Nursing (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Only a limited number of students are admitted to the course each year. Students are selected in September of the preceding year. Applications must reach the Registrar before 30 June.

Curriculum: A student remains on the establishment of the Tygerberg Hospital as a student nurse for the four years of the degree course. Application must also be made to the Superintendent of the Tygerberg Hospital. The curriculum includes, inter alia, the following courses: Nursing (major subject), Psychology (major subject), Physiology, Anatomy, Social Care in Nursing.

Bachelor of Nursing (General and Psychiatry): B.Nursing(Gen. and Psych.) (US)

Admission requirements: As for the degree of B.Nursing.

Curriculum: Four and a half years. The curriculum consists of the same courses as that of B.Nursing except for the one major subject Nursing (General and Psychiatry) which must be taken in the fourth and fifth years of study. The second major subject is Psychology.

Baccalaureus Curationis: B.Cur. (UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Only a limited number of candidates will be admitted. Applications must reach the Chief Matron, Tygerberg Hospital, Parow Valley 7503, before 31 October of the preceding year.

Curriculum: During the four and a half years of study the student remains on the establishment of the Tygerberg Hospital as a student nurse. The curriculum includes, inter alia, the following courses: Nursing IV, Psychology III or Sociology III, Preventive and Promotive Health, Physiology Special, Anatomy Special.

Baccalaureus Curationis (Institutionis et Administrationis): B.Cur. (I. et A.) (UPE)

Bachelor of Nursing (Instruction and Administration): B.Cur. (I. et A.) (UP)

Bachelor of Nursing Education and Administration: B.Cur. (Ed. et Adm.) (RAU)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) and proof of registration as a nurse with the SA Nursing Council.

Additional requirements:

Port Elizabeth: A female candidate who wishes to take Community Health Nursing II, must also be registered as a midwife, or in the case of a male student, as a general nurse and, if possible, a psychiatric nurse.

Pretoria: A candidate who wishes to take Public Health Nursing II must also be registered as a midwife, or as a general nurse and psychiatric nurse.

Rand Afrikaans University: A candidate who wishes to take Community Health Nursing II must also be registered as a midwife or in the case of a male candidate as a psychiatric nurse.

Curriculum: Three years of full-time study or four years of part-time study. The major subjects are as follows:

Port Elizabeth: Nursing Education III, Nursing Administration III, Sociology III or Community Health Nursing II

Pretoria: Nursing Education III, Nursing Administration III, Sociology II. Public Health Nursing II is an optional subject.

Rand Afrikaans University: Education III, Nursing Management III. Should Community Health Nursing II be taken, then Sociology III must also be taken.

POST-GRADUATE DEGREES

Bachelor of Social Science (Honours): B.Soc.Sc.Hons. (UN)

Honneursbaccalaureus Societatis Scientiae in Nursing: B.Soc.Sc.Hons. (Nursing) (UOFS)

Bachelor of Nursing (Honours): B.Cur.(Hons.) (UP)

Honours Bachelor of Nursing: B.Nursing Hons. (US)

Honours Bachelor of Arts in Nursing Science: Hons.B.A. (Cur.) (UNISA)

Honours Baccalaureus Curationis: B.Cur.Hons. (UWC)

Master of Social Science: M.Soc.Sc. (UN)

Magister Societatis Scientiae in Nursing: M.Soc.Sc.(Nursing) (UOFS)

Magister Curationis: M.Cur. (UPE,UWC)

Magister Artium et Scientiae (Nursing): M.Art. et Scien. (Nursing) (PU for CHE)

Master of Nursing: M.Cur. (UP,RAU) or M.Nursing (US)

Master of Arts in Nursing Science: M.A. (Cur.) (UNISA)

Master of Science in Nursing: M.Sc. (Nursing) (UW)

Doctor of Philosophy: Ph.D. (UN,UW)  
Doctor of Social Science: D.Soc.Sc. (UN)  
Doctor Societatis Scientiae in Nursing: D.Soc.Sc. (Nursing) (UOFS)  
Doctor Curationis: D.Cur. (UPE,UWC)  
Doctor Philosophiae: D.Phil. (PU for CHE)  
Doctor of Nursing: D.Cur. (UP,RAU)  
Doctor of Literature and Philosophy: D.Litt. et Phil. (UNISA)  
Doctor of Nursing: D.Nursing (US)

## DIPLOMAS

### Diploma in Nursing (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Students who do not fulfil these requirements, but who have passed in three subjects on the Higher Grade will be selected on merit. Candidates must also give proof of enrolment as student nurses at an approved training hospital.

Curriculum: Four years of full-time study. The major subjects are Nursing (Theory) and Nursing (Practice). Other subjects are, inter alia, Nursing (Midwifery), Physiology, Sociology, Anatomy.

### Diploma in Advanced General Nursing: Dip.A.G.N. (UPE)

Admission requirements: A Senior Certificate; proof of registration with the SA Nursing Council as a general nurse and as a midwife, or in the case of a male student as a general nurse with one post-basic registration; and at least two years' experience in general nursing.

Curriculum: Four semesters with planned practical training in specific units of hospitals.

### Diploma in Advanced Nursing Science (UNISA)

Admission requirements: A Senior Certificate and proof of registration as a nurse. A female student who wishes to take Community Health Nursing Science II and/or Nursing Education II must be registered both as a general nurse and as a midwife.

Curriculum: At least two years. A student selects either Curriculum A with Nursing Administration or Curriculum B with Nursing Education. Each curriculum consists of eight courses.

### Diploma in Advanced Clinical Nursing (US)

Admission requirements: A Senior Certificate; a certificate of registration as a general nurse and as a midwife or as a psychiatric nurse with the SA Nursing Council; two years' experience as a registered nurse; and have passed an entrance examination which has to be taken during September before commencement of the course.

Curriculum: 18 months' study and practical training in hospital divisions.

### Diploma in Oncotherapy Nursing (UP)

Admission requirements: Proof of registration as a general nurse/male nurse and an approved degree in Nursing or the Diploma in General Nursing.

Curriculum: One year. A candidate must hold a post in an approved hospital for the purpose of practical training.

### Diploma in Operating Theatre Technique (UWC)

Admission requirements: A Senior Certificate; a certificate of current registration with the SA Nursing Council as a general nurse; proof of current membership of the SA Nursing Association; and at least six months' clinical experience in an approved operating theatre.

Curriculum: 18 months of full-time study.

Diploma in Nursing Administration (UNorth,UP,RAU,UW)

Admission requirements

North: A Senior Certificate with Mathematics and/or Physical Science or General Science; proof of registration with the SA Nursing Council as a general nurse and midwife or general nurse and psychiatric nurse; and 18 months' experience as a registered nurse in a hospital or in extra-institutional health services.

Pretoria, Rand Afrikaans University: A Senior Certificate and the candidate must submit proof that he/she is registered as a general nurse/male nurse or a psychiatric nurse/male nurse with the SA Nursing Council.

Witwatersrand: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). The candidate must be registered as a general nurse or general nurse (male) or psychiatric nurse who has been engaged in the practice of nursing for at least two years, of which period one year must have been in an approved training institution for nurses.

Curriculum: One year of full-time study.

Diploma in Nursing Administration and Community Health Nursing (RAU)

Admission requirements: A Senior Certificate and the candidate must submit proof of registration with the SA Nursing Council as a midwife in the case of women or a psychiatric nurse in the case of men.

Curriculum: Three semesters of full-time study.

Post-Basic Diplomas in Nursing (UOFS)

The following diplomas may be obtained:

- Post-Basic Diploma in Nursing Administration
- Post-Basic Diploma in Nursing Education
- Post-Basic Diploma in Community Health Care.

Admission requirements: A Senior Certificate and proof of registration as a general nurse/general nurse (male) or a psychiatric nurse and two years' appropriate experience or five years in the case of specialisation in Nursing Administration.

Curriculum: At least one year of full-time study.

Diploma in Nursing Administration and Community Health Nursing: Dip. N.A. (UPE)

Admission requirements: A Senior Certificate and proof of registration as a general nurse and as a midwife, or in the case of a male student as a general nurse plus any other post-basic registration.

Curriculum: Three semesters. A candidate who is registered as a Community Health Nurse may complete the diploma course within a shorter period and will be exempted from certain courses. A candidate who is also registered as a tutor may be exempted from certain courses.

Diploma in Nursing Administration (US)

Admission requirements: A Senior Certificate; and a certificate of registration as a general nurse and as either a midwife or a psychiatric nurse with the SA Nursing Council.

Curriculum: Two years.

Diploma in Nursing Administration and Community Health Nursing (UWC)

Admission requirements: A Senior Certificate; a certificate of current registration as a general nurse or psychiatric nurse with the SA Nursing Council; proof of current membership with the SA Nursing Association; and five years' approved experience as a registered nurse.

Curriculum: 18 months' full-time study.

University Diploma in Nursing Education (UN)

Admission requirements: A Senior Certificate; proof of registration as a general nurse or a general nurse (male) with the SA Nursing Council; and two years' experience in nursing.

Curriculum: One and a half years of full-time study. The Diploma course is offered in the Faculty of Medicine.

Diploma in Nursing Education (UNorth)

Admission requirements: As for the Diploma in Administration.

Curriculum: Two years of full-time study.

Diploma in Nursing Education and Community Health Nursing: Dip. N.E. (UPE)

Diploma in Nursing Education (UP,RAU,US,UW)

Admission requirements:

Port Elizabeth: A Senior Certificate and proof of registration with the SA Nursing Council as a general nurse and a midwife, or in the case of a male candidate, as a general nurse plus any other post-basic registration. A candidate who wishes to take Psychiatric Nursing as a teaching subject, must produce proof of registration as a psychiatric nurse.

Pretoria: A Senior Certificate and proof of registration as a general nurse or a psychiatric nurse. A candidate who wishes to undertake special study in Midwifery or Psychiatric Nursing must be registered as a midwife or as a psychiatric nurse.

Rand Afrikaans University: A Senior Certificate and proof of registration as a nurse. A candidate who wishes to take Midwifery or Psychiatric Nursing as a teaching subject, must submit proof of registration with the SA Nursing Council in the specific field.

Stellenbosch: A Senior Certificate; a certificate of registration with the SA Nursing Council as a general nurse; and two years' experience as a registered nurse, of which one year must be practical nursing experience in the clinical sections of a training hospital for nurses.

Witwatersrand: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). The candidate must be registered with the SA Nursing Council as a general nurse or psychiatric nurse who has been engaged in the practice of nursing for 18 months, of which period one year must have been in an approved training institution for nurses: Provided that a graduate who holds a Bachelor's degree in Nursing will be required to have been engaged in the practice of nursing for one year in a training institution.

Curriculum: One and a half years of full-time study (UP,RAU,UW); two years of full-time study (UPE,US). At UPE and RAU the course extends over one year only for candidates who hold a Bachelor's degree in Nursing. At UPE the course is 3 semesters for candidates with a degree in Nursing and two semesters for candidates who are registered as Community Health Nurses and hold a B. degree in Nursing.

### Diploma in Nursing Education (PU for CHE)

Admission requirements: A Senior Certificate and proof of registration as a general nurse and a psychiatric nurse or a general nurse or a psychiatric nurse.

Curriculum: Two years of full-time study.

### Diploma in Nursing Education (graduated) (PU for CHE)

Admission requirements: A B.Art. et Scien.(Nursing) degree or an equivalent degree in Nursing.

Curriculum: One year of full-time study.

**VOCATIONAL SERVICE:** The young prospective nurse who presents herself for training and employment generally cherishes a fine ideal. This ideal is achieved when she has successfully completed her training. As a student she has the opportunity of becoming acquainted with all aspects of the occupation; when she becomes a registered nurse, the acquired knowledge is fully utilised and extended so that she renders a service to her fellow human beings which is in keeping with the nature of all women.

Although the basic needs of patients have remained unchanged, nursing has today become a highly specialised occupation as a result of the phenomenal scientific progress in the field of medicine. The duties and responsibilities of the registered nurse require an extremely high level of training and skill. However, as a result of her comprehensive but intensive training, which also involves the moulding of personality, the nurse acquires the ability to make decisions, to display sound judgement and to think scientifically. She is consequently able to satisfy the stringent demands which a dynamic society imposes upon her as a nurse and an individual.

Wherever the nurse works - in hospitals, private nursing homes, industrial concerns, clinics, schools, consulting rooms, in the country - there she is concerned with the welfare and health of the individual and of the community in general. These duties do not end with the easing of pain or the particular physical illness of the patient. She must also be able to listen and to attempt to understand the troubled mind; to inspire the patient who has lost hope and to lead him to acceptance and resignation if there is no hope of recovery. She must thus have an intense desire to assist and serve her fellow men. This requires intelligence, patience, tact, unselfishness and a sympathetic attitude, but she must still be emotionally stable and able to act firmly if necessary. There is no doubt about the employment possibilities for nurses. The service which qualified nurses have to render is still expanding as a result of an increase in the number of hospitals and the growth of the population. There are consequently adequate opportunities for promotion. In addition, the nurse has a choice between one or more of several basic and post-basic fields in which she can qualify and realise her potential. Nurses generally work in hospitals but there are many other fields of employment. Provincial and other hospitals, education departments, government departments such as those of Health and Welfare and the South African Defence Force, municipalities, medical practitioners and specialists, industrial organisations, etc., all employ nurses. It is nevertheless better and more economical to nurse people at home than to admit them to hospital and for this reason the demand for private nurses will still increase.

Further information on training and aspects such as salaries, conditions of service, promotion, etc. can be obtained on request from: The Executive Director, SA Nursing Association, Private Bag X105, Pretoria 0001.

Also consult Tertiary Training for particulars on the training of nurses outside the universities.

### OCCUPATIONAL THERAPY

Universities: Cape Town, Durban-Westville, Medunsa, Orange Free State, Stellenbosch, Witwatersrand

## FIRST DEGREES

Bachelor of Science (Occupational Therapy): B.Sc.(Occ.Ther.) (UCT)

Bachelor of Occupational Therapy (UDW)

Bachelor of Occupational Therapy: B.Occ.Ther. (MEDUNSA)

Bachelor of Occupational Therapy: B.Occupational Therapy (UOFS,US)

Bachelor of Science in Occupational Therapy: B.Sc.(O.T.) (UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town: A pass in Mathematics SG. It is recommended that Physical Science, Physics, Chemistry or Biology be a subject for the Std 10 examination. From 1983 a pass in Physical Science SG, or in Physics SG, or in Chemistry SG will be a requirement.

Durban-Westville: A pass in Mathematics HG or in a science subject HG or at least 50 % in Mathematics SG or in a science subject SG.

Medunsa: A pass in Mathematics or in Physical Science.

Stellenbosch: A pass in Mathematics HG or SG. Prospective students are strongly advised to take Mathematics, Physical Science and/or Biology and/or Physiology for the Std 10 examination.

Enrolment at the University of Stellenbosch is limited and students are selected during September of the preceding year. Applications for admission to the course should reach the Registrar before 30 June.

Witwatersrand: A pass in Mathematics HG or at least 50 % in Mathematics SG and a pass on the Higher Grade in one of the following subjects if Mathematics has been passed on the Higher Grade; or two of the following subjects if Mathematics has been passed on the Standard Grade: Bantu Language, Biology, French, Geography, German, Hebrew, History, Latin, Physical Science, Physiology.

Curriculum: Four years of full-time study. Besides the study of medical, surgical and psychiatric conditions treated by Occupational Therapy and the theory and practice of Occupational Therapy, the curriculum includes, inter alia, the following subjects: Sociology, Psychiatry, Anatomy and Physiology.

The Universities of Durban-Westville, Orange Free State and Stellenbosch prescribe compulsory practical vacation work during the short vacations.

## POST-GRADUATE DEGREES

Master of Occupational Therapy (UDW)

Master of Science in Occupational Therapy: M.Sc.(O.T.) (UW)

Doctor of Philosophy: Ph.D. (UW)

## DIPLOMAS

Diploma in Advanced Occupational Therapy (UW)

Admission requirements: A B.Sc.(O.T.) degree or equivalent degree; registration with the SA Medical and Dental Council; and at least one year's experience as an occupational therapist. In an exceptional case, a person who is registered with the SA Medical and Dental Council as an occupational therapist may be admitted by virtue of his holding a recognised diploma in occupational therapy and who has had at least two years' experience as an occupational therapist in a recognised institution.



Curriculum: Two years of part-time study.

Teachers' Diploma in Occupational Therapy (UP)

Admission requirements: A qualification in Occupational Therapy which is accepted by the SA Medical and Dental Council for registration and recognised by the College for Occupational Therapy as sufficient basic training for admission, and at least two years' experience as a registered occupational therapist in an approved hospital.

Curriculum: One year of full-time study.

Diploma in Occupational Therapy Education (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption); a qualification in Occupational Therapy which is accepted by the SA Medical and Dental Council for registration and approved by the South African Association of Occupational Therapists; and at least two years' uninterrupted experience as an occupational therapist in an approved hospital.

Curriculum: Two years of full-time study.

VOCATIONAL SERVICE: Occupational therapy is one of the paramedical occupations which can be practised by women as well as men. They are instructed to treat and/or train physically and mentally handicapped persons; to prevent incapacity; to promote adaptation to incapacity, and to improve or preserve function. The treatment is therefore directed towards the patient's life outside the hospital and towards his future; the recovery of his independence, creative ability and particularly his ability to work. As a member of a medical team, under the guidance of a doctor and with the co-operation of other team members, the occupational therapist endeavours to rehabilitate the patient mentally and physically.

Occupational therapists have a choice of employment at, for example, general, psychiatric, orthopaedic and children's hospitals, rehabilitation centres, special schools, homes for the aged, divisions for plastic surgery and private nursing homes. Up to the present not much use has been made in South Africa of private practices, although they also offer worth-while possibilities. The additional qualification (the teacher's diploma in occupational therapy) also enables occupational therapists to give full-time or part-time instruction in the profession.

All occupational therapists must register with the SA Medical and Dental Council. The South African qualifications are accredited internationally and experience abroad is therefore a possibility.

Also see Tertiary Training for particulars on the National Diploma in Occupational Therapy.

OPTOMETRY

Universities: Durban-Westville, North

FIRST DEGREES

Bachelor of Optometry: B.Optom. (UDW, UNorth)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Durban-Westville: Passes in Mathematics HG and Biology HG or Physical Science HG, or at least 50 % SG in the subjects mentioned.

North: As for the B.Sc. degree. See p.214.

Curriculum: Four years of full-time study. First-year subjects are Physics, Chemistry, Mathematics (UDW) or Mathematical Methods (UNorth), and Biology or Zoology.

Other subjects are, inter alia: Optometry, Ocular Anatomy, Ocular Pathology, Physiology, Psychology, Contact Lenses (UNorth), Pathophysiology (UDW). This degree leads to registration with the SA Medical and Dental Council as an optometrist.

#### POST-GRADUATE DEGREES

Master of Optometry: M.Optom. (UDW)

Doctor of Optometry: D.Optom. (UDW)

**VOCATIONAL SERVICE:** Optometry is based on scientific knowledge and involves sciences such as ophthalmology, chemistry, physics, anatomy, physiology and psychology. The optometrist of today uses specialised techniques and instruments to trace ocular defects and, if necessary, prescribes spectacles or contact lenses as well as possible corrective eye exercises. He assists the entire family in the preservation and care of healthy eyes and his is one of the professions which a community cannot do without. In addition, Optometry is one of the most remunerative professions, particularly when working hours and conditions are also taken into consideration. It is definitely a challenging occupation which provides ample opportunities for research to those interested.

An optometrist can start his own practice or enter into partnership with an established optometrist. His work may cover all aspects of optometry, or he may decide to specialise in a particular field. In this case, he usually enters a group practice to which a number of optometrists are attached. Others find more satisfaction in working in a clinic or hospital, such as a military hospital.

The optometrist described above is not the same as the oculist or eye specialist. The latter is a medical practitioner who undergoes a few years of specialised university training on completion of his normal medical training in order to practise as an oculist and eye surgeon.

#### ORAL HEALTH

University: Durban-Westville

#### FIRST DEGREE

##### Bachelor of Oral Health

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics HG and Biology HG or Physical Science HG or 50 % SG in the subjects mentioned.

Curriculum: Three years of full-time study. Students must do vacation work in approved clinics. The major subjects are Oral Health, Anatomy (for Oral Health), Community Dentistry (for Oral Health) and Radiology (for Dentistry).

#### POST-GRADUATE DEGREE

Honours Bachelor of Oral Health

**VOCATIONAL SERVICE:** See Oral Hygiene, DENTISTRY p.114.

#### ORAL HYGIENE

Universities: Pretoria, Stellenbosch, Western Cape, Witwatersrand

#### DIPLOMAS

Diploma in Oral Hygiene (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Biology HG or Physical Science HG or both, or 50 % SG in the subjects mentioned. Mathematics will be a recommendation. Candidates are selected.

Curriculum: Two years of full-time study. The curriculum comprises, inter alia, Oral Hygiene II, Dental Procedure and Remedies, Anatomy and Histology, Oral Pathology, Radiology.

Diploma in Oral Hygiene (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Preference will be given to students who have obtained passes on the Standard Grade in the following subjects: Mathematics, Physical Science and Biology. Students are selected and applications must be submitted before 30 June of the previous year.

Curriculum: Two years of full-time study. The curriculum includes the following subjects: Oral Hygiene II, Stomatology, Roentgenography, Oral Biology, Oral Pathology.

Diploma in Oral Hygiene (UWC)

Admission requirements: A Senior Certificate. Preference will be given to students with at least Biology, Physical Science or Mathematics. Candidates are selected.

Curriculum: As for US above.

Diploma in Oral Hygiene: Dip. O.H. (UW)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Two years of full-time study. The curriculum comprises Part I and Part II. Part I includes Ethics, Jurisprudence and Administration in relation to Dental Practice; Principles of Human Biology; Principles of Human Disease. Part II comprises Clinical Oral Hygiene; Principles and Practice of Oral Radiography; Public Oral Health Education and Preventive Dentistry.

VOCATIONAL SERVICE: See DENTISTRY p.114.

PARKS AND RECREATION ADMINISTRATION

University: Stellenbosch

FIRST DEGREE

B. in Parks and Recreation Administration

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics SG and a science subject SG. Prospective students who wish to take a course which includes Chemistry and/or Physics are strongly advised to take Physical Science for the Std 10 examination. Should a student wish to take Botany and/or Zoology at the University he is advised to offer Biology in addition to Physical Science for the Std 10 examination.

Curriculum: Four years of full-time study. Subjects for the first year include: Biology, Mathematics (Bio.), Chemistry, Recreation Management and Planning. Subjects for the fourth year include: Principles of Landscape Planning, Public Administration, Hortology (Materials Study), Industrial Psychology (for Forestry), Landscape Architecture, Management Plan.

VOCATIONAL SERVICE: Parks and Recreation Administration offers persons who are fond of outdoor life an excellent future. Institutions which employ persons with these qualifications are, for instance, the Departments of Environment Affairs and Community Development; municipalities, landscape architects, the Railways and the provincial administrations.

Also consult Tertiary Training for particulars on the National Diploma in Nature Conservation and the National Diploma in Parks and Recreation Management.

## PEDOLOGY (SOIL SCIENCE)

University: Potchefstroom

FIRST DEGREE

Bachelor of Science (Pedology): B.Sc. (Ped.)

Admission requirements: The B.Sc. degree with Pedology as one of the major subjects. See p.217.

Curriculum: The curriculum extends over one year and comprises a study of Advanced Pedology.

**VOCATIONAL SERVICE:** Pedology is the science that concentrates on the study of soil or the surface. The task of the pedologist is the mapping of the geographical distribution of the different types of soil, as well as studying the genetic factors that cause the prevalence of certain types of soil in specific localities. An important technological application of pedology in agriculture is the study of the reaction of soils and fertilisation materials and the relation of the plant to the soil. The importance of this for agriculture is obvious.

There are unlimited employment opportunities for persons who have been trained in pedology, especially for persons who have had post-graduate training. A few of the most important employers are the Department of Agriculture and Fisheries, fertiliser companies, construction and engineering firms and agricultural co-operatives. For a person who has chosen farming as a career, this field of study is indispensable.

## PERSONNEL LEADERSHIP/MANAGEMENT

The University of Cape Town offers Personnel Management as one of the special fields for the B.Bus.Sc. degree. See p.83.

The Universities of Durban-Westville and Pretoria offer Personnel Management as one of the options for the B.Com degree. UDW: See p.87; UP: See p.95.

Universities: Fort Hare, Orange Free State, Witwatersrand

FIRST DEGREES

Bachelor of Arts in Personnel Management: B.A. (Personnel Management) (UFH)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. The curriculum consists of 12 courses. The major subjects are Industrial Psychology III and Sociology (option Industrial Sociology III). Other courses are, inter alia, Anthropology I, Development Policy and Administration II and Statistics I.

The University of Fort Hare also offers Personnel Management as an option for the B.Admin. degree. See p.30.

Bachelor of Personnel Leadership: B.P.L. (UOFS)

Admission requirements: As for the B.Admin. degree. See p.30. Students will be selected for this degree. Selection of students takes place on the day of enrolment.

Curriculum: At least six semesters of full-time study or eight semesters of part-time study. The curriculum comprises at least 26 full semester courses. A curriculum for the degree must include at least two major subjects in each of which at least six semester courses must be completed. A student chooses his curriculum according to one of the following fields: Business field, Public Services field, Black Personnel field, Industrial Relations field. The major subjects must be chosen from the following: Industrial Psychology and ONE of the following: Business Economics, State Administration, Applied Anthropology, Industrial Sociology, Economics.

Students are required to do at least one month's vacation work at an approved undertaking during each of the second and third years.

Master in Personnel Management: M.P.M. (UW)

Admission requirements: A degree plus the Higher Diploma in Personnel Management or equivalent post-graduate qualification or an Honours degree in a subject which in the opinion of the Senate is cognate to the subject of Personnel Management.

Curriculum: One year of full-time or two years of part-time study and research on an approved subject plus a dissertation.

#### POST-GRADUATE DEGREES

Bachelor of Arts in Personnel Management (Honours): B.A. (Personnel Management) (Hons.) (UFH)

Honours Bachelor of Personnel Leadership: B.P.L. Hons. (UOFS)

Master of Arts in Personnel Management: M.A. (Personnel Management) (UFH)

Master of Personnel Leadership: M.P.L. (UOFS)

Doctor of Philosophy: Ph.D. (UW)

Doctor of Personnel Leadership: D.P.L. (UOFS)

#### DIPLOMA

Higher Diploma in Personnel Management: H.Dip.Pers.Man. (UW)

Admission requirements: A graduate in any faculty, or a non-graduate who holds a professional qualification, or, in exceptional cases the Senate may admit a person whose admission is warranted by virtue of his experience, qualifications and abilities.

Curriculum: One academic year of full-time study. A student may be required to undertake field projects and to participate in organised practical work during terms and vacations, in addition to his attendance at the prescribed courses of study and his participation in the class work. Course units include, inter alia, General Management Problems and Processes; Personnel Management Systems and Practices.

VOCATIONAL SERVICE: See Industrial and Personnel Psychology, p.104.

#### PHARMACY

Universities: Durban-Westville, North, Potchefstroom, Rhodes, Western Cape

#### FIRST DEGREES

Bachelor of Pharmacy: B.Pharm. (UDW,RU)

Baccalaureus Pharmacorum: B.Pharm. (UNorth)

Baccalaureus Pharmaciae: B.Pharm. (PU for CHE)

Baccalaureus Pharmaceuticae: P.Pharm. (UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Durban-Westville: As for the B.Sc. degree. See p.211.

North: As for the B.Sc. degree. See p.214.

Potchefstroom: A pass in Mathematics HG and in a science subject SG, preferably Physical Science.

Rhodes: At least an F symbol in Mathematics HG or an E symbol in Mathematics SG.

Western Cape: As for the B.Sc. degree (see p.223) and a pass in a science subject other than Mathematics as an additional requirement.

Curriculum: Four years of full-time study. Before admission to the second year of study, a student must submit proof of his registration as a pharmacy student with the SA Pharmacy Board. A student may only be registered as a pharmacist after the completion of his/her apprenticeship as determined by the SA Pharmacy Board.

The subjects for the first year are as follows: Biology or Biological Science, Chemistry, Mathematics or Mathematical Methods, Physics.

First-year subjects at Potchefstroom comprise, inter alia, General Chemistry, Organic Chemistry, Statistics for Pharmacy, Mathematics for Pharmacy, Basic biology and introductory botany.

Major subjects are Pharmaceutics, Pharmaceutical Chemistry and Pharmacology.

Fourth-year subjects at Rhodes comprise Pharmaceutical Chemistry IV, Pharmaceutical Formulation, Pharmacy Law, Drug Therapy and Toxicology, and a Health Science elective.

#### POST-GRADUATE DEGREES

Honours Bachelor of Pharmacy: B.Pharm.(Hons.) (UDW)  
Honoris Baccalaureus Scientiae in Pharmacy: B.Sc.(Pharm.)(Hons.) (UDW)  
Baccalaureus Scientiae cum Honoribus (Pharmacy): B.Sc.Hons. (Pharm.) (UNorth)  
Honneurs Baccalaureus Pharmaciae: Honns.B.Pharm. (PU for CHE)

Master of Pharmacy: M.Pharm. (UDW,RU)  
Magister Pharmacorum: M.Pharm. (UNorth)  
Magister Pharmaciae: M.Pharm. (PU for CHE)  
Master of Science: M.Sc. (RU)  
Magister Pharmaceuticae: M.Pharm. (UWC)

Doctor of Pharmacy: D.Pharm. (UDW)  
Doctor Pharmacorum: D.Pharm. (UNorth)  
Doctor Pharmaciae: D.Pharm. (PU for CHE)  
Doctor of Philosophy: Ph.D. (RU)  
Doctor of Science: D.Sc. (RU)  
Doctor Pharmaceuticae: D.Pharm. (UWC)

#### DIPLOMA

University Diploma in Pharmacology (PU for CHE)

Admission requirements: B.Pharm. degree or the degree of M.B., Ch.B. or an equivalent qualification.

Curriculum: One year comprising a study in advanced Pharmacology.

**VOCATIONAL SERVICE:** The profession of pharmacist, which can be practised by men and women, is a very old profession and one that has always been held in great respect since the pharmacist is much more than a person who sells cosmetics, bric-a-brac and pills. A pharmacist is a skilled person with professional training and his expert knowledge is an indispensable addition to the work of doctors and hospitals. In fact, the pharmaceutical profession today forms the co-ordinating link between manufacturer and doctor, doctor and patient, patient and community, and in this way an important part of the health service to the nation is controlled. The occupation is not restricted to the well-known retail chemist who mainly prepares medicine according to the doctor's prescription, and who sells patent medicines or other remedies as well as various kinds of articles.

Other branches of the occupation are, for example:

- The medical representative who visits medical practitioners and pharmacies to introduce and sell new medicines;
- the pharmacist employed by a wholesaler or manufacturer of medicines with a view to research into pharmaceutical products, manufacturing and testing of medicines, design of apparatus, control of production and packaging, management of purchases, sales, advertising etc.;
- the hospital pharmacist attached to a hospital and responsible for pharmaceutical and related services;
- the railway pharmacist in the employ of the Railways;
- a lecturer at a training centre;
- pharmacists in the service of the Department of Health and Welfare where their services are mainly used in four fields, viz hospital pharmacy duties, control of medicines, regional pharmacists and pharmaceutical services.

Post-graduate training remains important, particularly to provide for the needs of the pharmaceutical industry and training centres. The agreement between the South African Pharmacy Board and the British Pharmaceutical Association creates opportunities for South Africans to study and gain experience overseas.

Also consult Tertiary Training for particulars on the Diploma in Pharmacy which is regarded by the SA Pharmacy Board as equivalent to the degree for registration as a pharmacist.

#### PHYSICAL EDUCATION

Universities: Durban-Westville, Orange Free State, Port Elizabeth, Potchefstroom, Pretoria, Rhodes, Stellenbosch

#### FIRST DEGREES

Baccalaureus Artium in Physical Education: B.A.(Phys.Ed.) (UDW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years. The major subjects are Physical Education and one of the following: Afrikaans, Nederlands, English, Geography, History.

Bachelor of Arts (Physical Education): B.A.(Phys.Ed.) (UOFS,RU)

Bachelor of Arts: B.A. (PU for CHE, US)

Bachelor of Arts in Physical Education: B.A.(Phys.Ed.) (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). A medical certificate is required.

Additional requirements: As for the B.A. degree. See p.55.

Curriculum: Three years of full-time study. Students follow the curriculum for the ordinary B.A. degree with Physical Education as one of the two required major subjects. At UOFS the other subjects must be selected from school examination subjects. US and RU have a list of prescribed subjects from which students have to compile their curricula.

UP also includes Bio-Ergonomics I and II and Hygiene I in the curriculum. UOFS also includes two courses in Biokinetics. RU includes Elements of Anatomy and Physiology and Health Education. PU for CHE requires course units in Physiology.

Candidates intending to become teachers may on completion of the degree course take the one-year H.D.E. (Post-graduate) course. See EDUCATION p.129.

Baccalaureus Artium (Education) (Physical Education): B.A.(Ed.)(Phys.Ed.) (UPE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). All prospective teachers are selected. A satisfactory medical report is required.

Curriculum: Four years of full-time study. The curriculum includes Physical Education III, Pedagogics II, Physiology for Physical Education students, Biokinetics I, three courses in an ordinary degree subject and educational subjects such as Educational Practice III and Method of Physical Education I.

Bachelor of Science with Physical Education: B.Sc. (PU for CHE)

Admission requirements: As for the B.Sc. degree. See p.217. A student must ascertain beforehand whether he is medically fit for the course.

Curriculum: Three years of full-time study. Students pursue the curriculum for the ordinary B.Sc. degree with Physical Education as one of the two major subjects. Students must take course units\* in Physiology.

\* See B.Sc. p.217.

Bachelor of Arts (Education)(Physical Education): B.A.(Ed.)(Phys.Ed.) (UP)

Admission requirements: As for the B.A. degree. See p.55. Students are selected.

Curriculum: Four years of full-time study. Students take two courses in Bio-Ergonomics, one in Hygiene and three in Pedagogics. The major subjects are Physical Education and a subject selected from approved school subjects. The fourth year of study includes educational subjects such as School Organisation, Administration and School Guidance; Method of Physical Education and School Practice.

B.Sc. with Physical Education: B.Sc. (US)

Admission requirements: As for the B.Sc. degree. See p.222. A medical report is required.

Curriculum: Three years of full-time study. The major subjects are Physical Education, Sport and Recreation III and Physiology III or Zoology III or Mathematics III. Other first and second-year subjects are, inter alia, Chemistry; Physics (Bio.); Practical Physical Education, Sport and Recreation.

After obtaining the B.A. or B.Sc. degree (with Physical Education) a student may study for the H.D.E. (see p.139), the Hons.B. degree or the M.Degree.

#### POST-GRADUATE DEGREES

Honoris Baccalaureus Artium in Physical Education: B.A. (Phys.Ed.) Hons. (UDW)

Honours Bachelor of Arts (Physical Education): B.A. Hons.(Phys.Ed.) (UOFS)

Baccalaureus Physicalis Educationis Honores: B.Phys.Ed.Hons. (UPE)

Honours Bachelor of Arts: Honns. B.A. (PU for CHE)

Honours Bachelor of Science: Honns. B.Sc. (PU for CHE)

Bachelor of Arts (Honours) in Physical Education: B.A.(Phys.Ed.)(Hons.) (UP)

Bachelor of Arts with Honours: B.A.(Hons.) (RU)

Hons.B. in Physical Education (US)

Magister Artium in Physical Education: M.A.(Phys.Ed.) (UDW,UOFS)

Magister Physicalis Educationis: M.Phys.Ed. (UPE)

Master of Arts: M.A. (PU for CHE)

Master of Science: M.Sc. (PU for CHE)

Master of Arts in Physical Education: M.A.(Phys.Ed.) (UP)

Master of Arts: M.A. (RU)

M. in Physical Education (US)



Doctor Philosophiae: D.Phil. (UDW,UOFS,PU for CHE,UP)  
Doctor Physicalis Educationis: D.Phys.Ed. (UPE)  
Doctor Scientiae: D.Sc. (PU for CHE)  
Doctor of Philosophy: Ph.D. (RU)  
Doctor of Philosophy (Physical Education): Ph.D. (Physical Education) (US)

#### DIPLOMA

Diploma in Sports Coaching and Recreation (US)

Admission requirements: A limited number of selected, medically fit persons who hold recognised teaching qualifications.

Curriculum: One year of full-time study. The curriculum comprises, inter alia, the following subjects: Physiology; Organisation and Administration of Sport and Recreation; Kinesiology and Sport Injuries; Specialisation in a sport.

See EDUCATION p.123 for specialisations in Physical Education.

VOCATIONAL SERVICE: A degree with Physical Education as one major subject offers job opportunities in the teaching profession; as sport or recreation officers or sport coaches in the service of industries, mines, universities, colleges and municipalities; as sport officers in the defence force, police and prison services. In combination with Communication (Journalism), there are opportunities as sport journalists. More and more job opportunities are offered by the Department of National Education. One of the posts which can be held, is that of liaison officer, whose task comprises co-ordinating sport activities on a country-wide basis, and promoting participation in sport.

However, large numbers of men and women in South Africa, particularly in the urban areas, do not take part in organised sport, although they are in need of physical development and recreation. In this case, a private gymnasium offers a wonderful opportunity for qualified persons who also have the necessary knowledge, initiative and organising ability.

#### PHYSIOTHERAPY

Universities: Cape Town, Durban-Westville, Medunsa, Orange Free State, Stellenbosch, Witwatersrand

#### FIRST DEGREES

Bachelor of Science (Physiotherapy): B.Sc.(Phys.) (UCT)

Bachelor of Physiotherapy: B.Physio. (UDW)

Bachelor of Science in Physiotherapy: B.Sc.(Physiotherapy) (MEDUNSA,UW)

or

B.Sc. in Physiotherapy (US)

Baccalaureus Scientiae in Physiotherapy: B.Sc.(Physiotherapy) (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town: A pass in Mathematics HG or at least 50 % in Mathematics SG. It is recommended that Biology, Physical Science, Physics or Chemistry be a subject for the Std 10 examination. A medical certificate is required.

Durban-Westville: As pass in Mathematics HG and in Biology HG (or Physical Science HG) or at least 50 % SG in the aforementioned subjects.

Medunsa: A pass in Mathematics and a science subject. Candidates must be of good physique (not obviously overweight) and must be interested in the medical field and in human relationships.

Orange Free State: A pass in Mathematics SG and a medical examination. Prospective students are strongly advised to offer Physical Science and, if possible, Biology as well for the Std 10 examination.

Stellenbosch: A pass in Mathematics HG or SG. Prospective students are strongly advised to take Physical Science and/or Biology and/or Physiology for the Std 10 examination. Enrolment is limited and students are selected during September of the preceding year. Applications for admission to the course should reach the Registrar before 30 June.

Witwatersrand: A pass in Mathematics HG or at least 50 % in Mathematics SG and a pass on the Higher Grade in one of the following subjects if Mathematics has been passed on the Higher Grade or two of the following subjects if Mathematics has been passed on the Standard Grade: Bantu Language, Biology, French, Geography, German, Hebrew, History, Latin, Physical Science, Physiology.

Curriculum: Four years of full-time study. First-year subjects are Biology (UCT, MEDUNSA, UW) or Zoology (UOFS, US), Chemistry, Physics, Psychology (UDW, UOFS, US, UW), Human Sciences (MEDUNSA), Physiotherapy. Durban-Westville offers a choice of either Botany, Biology or Zoology.

The major subject is Physiotherapy. Practical vacation work is required by some universities.

At Medunsa students are employed throughout the course, as student therapists on the staff of Ga-Rankuwa Hospital to gain the necessary practical experience.

#### POST-GRADUATE DEGREES

Master of Physiotherapy: M.Physio. (UDW)  
Magister in Physiotherapy: M.Sc.(Physiotherapy) (UOFS)  
Master of Science in Physiotherapy: M.Sc. in Physiotherapy (US) or M.Sc. (Physiotherapy) (UW)

Doctor of Philosophy: Ph.D. (UW)

#### DIPLOMAS

Diploma in Teaching Physiotherapy (UCT,UDW)

Tertiary Education Diploma in Physiotherapy (UOFS)

Diploma in Physiotherapy Education (UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption); a qualification in Physiotherapy which is accepted for registration with the SA Medical and Dental Council; and at least two years' approved experience in the practice of Physiotherapy.

Curriculum: One year of full-time study (UCT) or three semesters of part-time study or two semesters of full-time study (UOFS) or two years of part-time study (UW) or full-time study (UDW).

Diploma in Intensive Care Physiotherapy (UCT)

Admission requirements: As for the Diploma in Teaching Physiotherapy.

Curriculum: One year of full-time study.

## Diploma in Respiratory Physiotherapy (UDW)

Admission requirements: A qualification in Physiotherapy recognised by the SA Medical and Dental Council.

Curriculum: One year.

## Diploma in Advanced Physiotherapy (UW)

Admission requirements: A B.Sc. (Physiotherapy) degree or an equivalent degree; registration with the SA Medical and Dental Council; and at least one year's experience as a physiotherapist. In an exceptional case, a person who is registered with the SA Medical and Dental Council as a physiotherapist by virtue of his holding a recognised diploma in physiotherapy and who has had at least two years' experience as a physiotherapist may be admitted.

Curriculum: 1½ years of full-time study.

VOCATIONAL SERVICE: Medical science has become so comprehensive and complicated nowadays that the doctor is compelled to specialise to an increasing extent. The result is that the process of restoring the functions of the human body (by means of the natural elements such as cold, heat and water) is increasingly entrusted to the paramedical services such as physiotherapy.

Physiotherapy, like occupational therapy, thus forms a very important part of the paramedical services which is supplementary to medical practice. The primary function of a physiotherapist is to enable a patient to help himself. With this aim in view, various methods are applied and sick or injured persons, persons with retarded or weakened muscular action, etc. are treated according to the doctor's instructions. The work is sometimes tiring but never boring.

Most physiotherapists work in hospitals or physiotherapy clinics where apparatus and facilities are available to undertake the five main forms of treatment, viz massage and mechanotherapy, electrotherapy, phototherapy, hydrotherapy and ultrasonic therapy. Physiotherapists can work in sections for adults or children; sections for medical, orthopaedic and surgical cases; sections for heart, maternity or accident cases, in intensive care units or centres for those with cerebral palsy. In addition to these, there are favourable opportunities for them in the Department of Health and Welfare, provincial departments of Hospital Services, mines, private medical clinics and in private practice.

At present there is a great shortage of physiotherapists, and lecturers in this field are particularly scarce. Thus promotion for able persons (women as well as men) is very fast. Registration as a physiotherapist with the SA Medical and Dental Council is compulsory.

Also consult Tertiary Training in connection with the course offered by the Pretoria College of Physiotherapy.

## POLICE SCIENCE

University: South Africa

### FIRST DEGREE

Bachelor of Arts (Police Science): B.A. (Pol.)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years. The curriculum consists of ten courses. The major subjects are Criminology III and Police Science III. Other compulsory subjects are Criminal Procedure, Criminal Law I and Evidence. The tenth course is chosen from subjects such as Medical Jurisprudence, Private Law, I, Psychology I, Sociology I, Anthropology I.

## DIPLOMA

### Diploma for Police

Admission requirements: A Senior Certificate.

Curriculum: Three years. The curriculum comprises the following courses: Police Science III, Criminology II, Introduction to the Theory of Law, Criminal Law I, Criminal Procedure, Evidence and a course in English or Afrikaans or an African language.

VOCATIONAL SERVICE: The uniform, detective and security branches in which the SA Police is organised, offer virtually unlimited possibilities for promotion to ambitious men and women. Promotion to higher ranks occurs mainly after the successful completion of internal examinations but this can be expedited if a person already holds an appropriate degree or diploma.

Also consult Tertiary Training for particulars on training in the police service.

### PURE SCIENCE

Universities: All the universities except Medunsa

## UNIVERSITY OF CAPE TOWN

### FIRST DEGREE

#### Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A pass in Mathematics HG or at least 50 % in Mathematics SG
- A pass in at least one subject from Group C (Natural Sciences including Physiology) on the Higher Grade or with at least 50 per cent on the Standard Grade.

Curriculum: Three years of full-time study. The curriculum contains at least eight qualifying courses\* including

- at least one major subject chosen from Group I below;
- Mathematics I or the half course Mathematics Ia;
- at least six qualifying courses chosen from among those listed in Groups I, II and III below;
- at least four senior courses of which at least three must be chosen from Groups I, II and III;
- remaining courses which may be chosen from
  - . among those listed in Groups I, II and III;
  - . courses in subjects approved for the B.A. degree;
  - . Accounting A or Accounting B;
  - . other courses as may in special cases be approved by the Board of the Faculty of Science.

## GROUP I Science Majors

Applied Mathematics; Biochemistry; Botany; Chemistry; Computer Science; Geology; Geography; Mathematics; Microbiology; Physics; Statistics; Zoology.

## GROUP II Other Science Courses

Animal Biology; Astronomy; Astrophysics; Celestial Dynamics; General Biology; Genetics; Geochemistry; Geological and Geophysical Remote Sensing; Marine Biology; Marine Geology; Molecular Biology; Numerical Analysis; Physical Oceanography; Plant Biology.

## GROUP III Approved courses in other faculties

Actuarial Science (Commerce); Archaeology (Arts); Physiology (Medicine); Psychology (Social Science); Environmental Resource Management (School of Environmental Studies); Chemical Engineering courses (Engineering); Metallurgy and Material Science courses (Engineering); History and Philosophy of Science (Arts).

A candidate, in order to enter senior courses in a subject, must have attended and completed the prerequisite courses, e.g. the prerequisite courses for Biochemistry I are Chemistry I and Physics I.

\*The term "qualifying course" means either a full course or two half courses.

## POST-GRADUATE DEGREES

### Bachelor of Science (Honours): B.Sc. (Hons.)

Admission requirements: A candidate may, with the permission of the Senate, proceed to the degree in any approved subject other than Analytical Science; Astronomy; Chemistry; Geochemistry; Immunology; Materials Science; Molecular Biology; Operations Research; Theoretical Physics and Virology if he holds the B.Sc. degree with the subject in which he proposes to proceed to Honours as a major subject.

A candidate who proposes to proceed to Honours

- in Analytical Science must have qualified for admission to Honours in Chemistry, Geology, Geochemistry, Chemical Engineering or one of the Life Sciences;
- in Astronomy must have completed three courses in Physics;
- in Chemistry must have completed all three third-year half-courses;
- in Geochemistry must have completed a major course in Geology and the senior courses Geochemistry and Physical Chemistry I or equivalent courses;
- Immunology or Virology must have completed the third-year courses in Microbiology and Genetics;
- in Materials Science must have majored in Applied Sciences, Chemistry or Physics;
- in Molecular Biology must have completed the third-year courses in Genetics, Microbiology and Biochemistry;
- in Operations Research must have completed Mathematical Statistics IIIa (Operations Research) or other qualifying courses;
- in Theoretical Physics must have completed the third-year courses in Applied Mathematics and Physics.

Curriculum: One year for full-time study and not more than two years for part-time study. The degree is conferred in any one of the following subjects: Analytical Science; Applied Mathematics; Archaeology; Astronomy; Biochemistry; Botany; Chemistry; Computer Science; Geochemistry; Geography; Geology; Immunology; Materials Science; Mathematics; Mathematical Statistics; Microbiology; Molecular

Biology; Operations Research; Physical Oceanography; Physics; Physiology; Psychology; Theoretical Physics; Virology; Zoology.

The course will, in general, contain only advanced work in the selected subject, though in certain cases some part of the work may be done in a related subject. A candidate who fails the Honours examination will not be allowed to rewrite the examinations.

Master of Science: M.Sc.

Doctor of Science: D.Sc.

Doctor of Philosophy: Ph.D.

## UNIVERSITY OF DURBAN - WESTVILLE

### FIRST DEGREE

Baccalaureus Scientiae: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in Biology HG or in Physical Science HG or at least 50 % in Biology SG or in Physical Science SG.

Curriculum: At least three years. Not more than four science courses may be taken in each of the first and second years and not more than three science courses in the third year.

The curriculum must include two major subjects listed in Group 1.

#### Group 1

- (a) Major subjects with three courses (six semester courses): Applied Mathematics; Botany; Chemistry; Computer Science; Geography; Geology; Mathematics; Physics; Psychology; Statistics; Zoology.
- (b) Major subjects with two courses (four semester courses): Biochemistry; Microbiology; Physiology.
- (c) Major subject with four courses (eight semester courses): Geology.

#### Group 2: Non-major subjects

- Biology (provided that neither Botany nor Zoology is included in the curriculum)
- Subjects which are not offered in the Faculty of Science, but which are acceptable for any other degree.

The curriculum must consist of at least nine courses of which at least eight courses must be in subjects from Group 1.

For certain major subjects there are compulsory ancillary courses, e.g. a candidate who takes Geology as a major subject must also take at least one course in Chemistry.

### POST-GRADUATE DEGREES

Honoris Baccalaureus Scientiae: B.Sc.(Hons.)

Admission requirements: A B.Sc. degree with a final mark of at least 60 per cent in the respective major subject: provided that on the recommendation of the Head of the Department concerned, the Senate may grant exemption from the rule.

Curriculum: One year of full-time study or two years of part-time study. The degree may be conferred in any subject in Group 1, and in Mathematical Studies.

Magister Scientiae: M.Sc.

Doctor Philosophiae: Ph.D.

Doctor Scientiae: D.Sc.

## UNIVERSITY OF FORT HARE

### FIRST DEGREE

Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics.

Additional requirements:

- Mathematics I: A minimum pass mark of 40 % (E symbol) in Mathematics HG or 50 % (D symbol) in Mathematics SG or Pre-differentiated.

- Statistics I: A minimum pass mark of 40 % (E symbol) in Mathematics SG or Pre-differentiated.

Curriculum: Three years of full-time study. The curriculum consists of at least nine qualifying courses in the following subjects:

#### Group I

Agricultural Biology; Applied Computer Science; Applied Mathematics; Biochemistry; Biology; Botany; Chemistry; Geography; Geology; Mathematical Statistics; Mathematics; Physics; Psychology; Statistics; Surveying I; Zoology.

#### Group II

Accounting I; Afrikaans-Nederlands; English; Practical English; Xhosa or another indigenous language.

No student shall obtain credit for more than one course from Group II. Each curriculum must contain at least two major subjects selected from Group I.

Note: Agricultural Biology and Surveying are only single first-year courses.

For some major subjects there are certain ancillary subjects which must be passed before or together with the examination in the major subject, e.g. a candidate who majors in Geology must pass at least one course in Chemistry.

### POST-GRADUATE DEGREES

Bachelor of Science (Honours): B.Sc.(Hons.)

Admission requirements: A B.Sc. degree.

Curriculum: One year of full-time study. A candidate may attend and complete the course in two successive parts each extending over one academic year.

The degree may be obtained in the following subjects: Applied Computer Science; Applied Mathematics; Biochemistry; Botany; Chemistry; Geography; Geology; Mathematical Statistics; Mathematics; Physics; Psychology; Theoretical Physics; Zoology.

Master of Science: M.Sc.

Doctor of Science: D.Sc.

## DIPLOMA

### Diploma in Applied Chemistry: D.A.C.

Admission requirements: A B.Sc. degree with Chemistry as a major subject.

Curriculum: One academic year.

## UNIVERSITY OF NATAL

### FIRST DEGREE

#### Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes of at least 40 % on the Higher Grade or 50 % on the Standard Grade in both Mathematics and a natural science subject.

Curriculum: Not less than three years of full-time study and not less than four years of part-time study.

### DURBAN

The academic year is divided into two semesters. The first semester runs from February to June and the second from July to November. With minor exceptions courses at levels I and II are worth 3 or 6 credit points and courses at level III are worth 4 or 8 credit points. They are examined in the semester in which they are given. The number of credit points is an indication of the work load involved in the course.

A candidate must obtain at least 110 credits of which at least 98 must be in courses in subjects chosen from the list below. Thirty-two or more of these credits must be at level III and at least 16 must be obtained in one of the subjects under (a) in the list and these 16 credits must be obtained in one academic year.

- (a) Applied Chemistry II, III; Applied Geology II; Applied Mathematics I, II, III; Biology T I; Business Data Processing II; Cell Biology I, II, III; Chemistry I, II, III; Computer Science I, II, III; Environmental Biology I, II, III; Geology I, II, III; Mathematics I, II, III; Mathematical Statistics II, III; Physics S I; Physics T I; Practical Mathematics T I; Soils II; Statistics I; Survey I; Theoretical Chemistry III.
- (b) Economics I, II, III; Geography I, II, III; Psychology I, II, III.

The subjects under (b) are offered by departments in other faculties. These faculties are not semesterised and students are advised that lectures in these subjects may continue during the June examination period.

### PIETERMARITZBURG

Credits are obtained by passing the examinations associated with a course. Courses at level I or II are based on a maximum of 12 credits. Courses at level III are based on a maximum of 16 credits.

A candidate must obtain at least 110 credits of which at least 98 must be in courses in subjects chosen from the list below; provided that at least 32 of these credits must be at level III, of which 16 must be obtained in one subject in the same academic year.

Applied Mathematics I, II, III; Applied Physics III ( $\frac{1}{2}$  course); Biochemistry II, III; Biology I; Biometry I; Botany I, II, III; Chemistry I, II, III; Chemistry III M ( $\frac{1}{2}$  course); Computer Science I; Economics I, II, III; Entomology II, III; Genetics (Sc.) II, III; Geography I, II, III; Geology I, II, III; Hydrology II, III; Introduction to Computer Science I ( $\frac{1}{2}$  course); Introduction to Sample Survey Methods I ( $\frac{1}{2}$  course); Mathematics I, II, III; Mathematics B I; Microbiology-Plant Pathology II, III; Philosophy of Science ( $\frac{1}{2}$  course); Physics I, II, III; Psychology I, II, III; Sample Survey Methods II ( $\frac{1}{4}$  course); Soil Science II, III; Statistics I, II, III; Zoology I, II, III.



The Roman numerals indicate the level at which courses are available. 12 credits towards the minimum of 110 may be obtained in one of the following courses, all of which are at level I:

Afrikaans; Afrikaans en Nederlands; Biblical Studies; Classical Civilization; Classical Hebrew; Economic History; English; French or Introductory French; German or Introductory German; Greek; Hebrew or Introductory Hebrew; History; History of Art; Jewish Studies; Latin; Philosophy; Prehistory of Southern Africa; Social Anthropology; Theology; Zulu. Any other course that may be approved by the Senate.

#### POST-GRADUATE DEGREES

Bachelor of Science (Honours): B.Sc. Hons.

Admission requirements: The B.Sc. degree. The Senate may refuse to admit a student to an Honours course in any subject if the standard of proficiency of the student in the subject concerned is not sufficiently high.

Curriculum: A candidate must attend the University for at least one academic year, and must pursue a course of advanced study in the subject in which he has completed, during the B.Sc. curriculum, all prerequisite courses for entry to the Honours degree.

A candidate may be required to complete a course in any prescribed ancillary subject and to pass a test in a foreign language. He must present himself for all parts of the final examination at one and the same time. No candidate may present himself for the final examination more than once.

Master of Science: M.Sc.

Doctor of Philosophy: Ph.D.

Doctor of Science: D.Sc.

#### UNIVERSITY OF THE NORTH

##### FIRST DEGREE

Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements: Students shall be admitted only if they have a rating of 23 or more on the Selection Scale\* which is based on the results of the matriculation examination.

##### \* Selection Scale

The rating of a candidate is compiled as follows:

2 x Mathematics mark  
Physical Science or Biology mark whichever is the highest  
plus 1 x English mark.

The matric symbols of subjects on the Standard Grade have the following mark values:

A = 8	C = 6	E = 4	G = 2
B = 7	D = 5	F = 3	H = 1

For symbols of subjects on the Higher Grade add one extra mark.

Curriculum: Three years. The curriculum consists of at least two major subjects, each of which consists of either three couplet-degree courses or six independent semester courses and six other semester courses. The courses are selected from the following subjects:

## Group I

Applied Mathematics; Biological Science\*; Biology\*; Botany; Chemistry; Computer Science; Engineering Analysis and Design\*; Geography; Geology; Mathematical Methods; Mathematical Statistics; Mathematics; Physical Education; Physics; Physiological Chemistry\*; Physiology; Psychology; Statistical Methods\*; Zoology.

\* May not be selected as major subjects.

## Group II

Afrikaans en Nederlands; German (Basic course); Philosophy; Practical English or English.

Only one couplet is permitted from Group II.

## POST-GRADUATE DEGREES

Honours Bachelor of Science: B.Sc.Hons.

Admission requirements: A B.Sc. degree.

Curriculum: At least one year. The degree is offered in the following departments: Applied Mathematics; Botany; Chemistry; Computer Science; Geography; Geology; Mathematical Statistics; Mathematics; Operational Research; Physics; Physiology; Psychology; Zoology.

Master of Science: M.Sc.

Doctor of Philosophy: Ph.D.

## UNIVERSITY OF THE ORANGE FREE STATE

### FIRST DEGREE

Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 40 % in Mathematics SG, and a pass in Physical Science SG and/or Biology SG as well.

Additional requirements:

Mathematics I: A pass in Mathematics HG or at least 50 % in Mathematics SG.

Curriculum: Three years of full-time study. The curriculum normally comprises the following number of courses: First year - 8 semester courses; second year - 6 semester courses; third year - 6 semester courses. The curriculum must include at least two approved major subjects in each of which the prescribed number of semester courses must be completed.

The major subjects are chosen from the following: Applied Mathematics; Biochemistry; Botany; Chemistry; Computer Science; Entomology; Genetics; Geochemistry; Geography; Geohydrology; Geology; Guidance Psychology; Mathematical Statistics; Mathematics; Microbiology; Physical Education; Physics; Physiology; Psychology; Soil Science; Statistics; Zoology.

In addition to his major subjects a student must include in his curriculum such ancillary subjects which the University may prescribe. A curriculum must be compiled in accordance with the regulations regarding the grouping of subjects and the requirements of the particular field of study.

A student selects one of the following curricula: Biological Sciences; Chemical, Physical and Mathematical Sciences; Geography (possible major subjects are Geography and Mathematics); Geological Sciences (possible major subjects are Geology and

Geochemistry); Physical Education; Psychology (possible major subjects are Psychology and Physiology).

#### POST-GRADUATE DEGREES

##### Honours Bachelor of Science: B.Sc. (Hons.)

Admission requirements: A Bachelor's degree. A student must satisfy the head of the department concerned that he has sufficient knowledge of the subject at his command to justify admission to the course of study.

Curriculum: Each candidate must pursue an approved course of study as a registered student of the university for at least one year.

Subjects in which the degree may be conferred: Applied Mathematics; Astronomy; Biochemistry; Botany; Chemistry; Computer Science; Counselling Psychology; Entomology; Genetics; Geochemistry; Geography; Geohydrology; Geology; Hydrology; Limnology; Mathematical Statistics; Mathematics; Microbiology; Physics; Psychology; Soil Science; Statistics; Zoology; Zoology - Entomology.

Prerequisites for certain subjects:

- Astronomy: Prescribed B.Sc. curricula with Chemistry and Mathematics or Physics and Mathematics as major subjects.
- Biochemistry: Chemistry III
- Hydrology: A degree in Engineering or a B.Sc. degree with Mathematics and Physics as ancillary subjects.
- Limnology: A B.Sc. or a B.Sc. Agric. degree with at least one of the following as a major subject: Biochemistry, Botany, Chemistry, Entomology, Microbiology, Physics, Soil Science, Zoology.
- Zoology - Entomology: Zoology III and Entomology III.

Master of Science: M.Sc.

Doctor of Philosophy: Ph.D.

Doctor of Science: D.Sc.

#### UNIVERSITY OF PORT ELIZABETH

#### FIRST DEGREE

##### Baccalaureus Scientiae: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics of at least 40 per cent on the Higher or the Standard Grade.

Additional requirements: For admission to the following courses a candidate must have obtained the standard indicated in each case:

- Mathematics I, Statistics I, Applied Mathematics I: a pass of at least 40 % in Mathematics SG
- Computer Science: A pass in Mathematics SG.

Curriculum: Three years of full-time study. An approved curriculum consists of not less than nine two-semester courses, of which not less than three must be on second-year level and not less than two must be major courses on third-year level selected from the following: Accounting, Applied Mathematics, Biochemistry, Botany, Business Economics, Chemistry, Computer Science, Economics, Economic Statistics, Fundamental Biology, Geology, Mathematics, Mathematical Statistics, Operations

Research, Physical Geography, Physics, Statistics (becomes Mathematical Statistics from the second year of study), Zoology.

#### POST-GRADUATE DEGREES

Baccalaureus Scientiae Honores: B.Sc.Hons.

Admission requirements: A B.Sc. degree. A candidate should have passed a subject at third-year level before proceeding with the Honours course in that subject. Only a candidate who satisfies the Senate that he has attained an acceptable level of competence in his study for the Bachelor's degree, shall be admitted.

Curriculum: A candidate may be admitted to an Honours course in any of the following subjects and may be required to complete as additional work a course or courses in any other prescribed subject: Applied Mathematics, Biochemistry, Botany, Chemistry, Computer Science, Geology, Mathematics, Mathematical Statistics, Operations Research, Physics, Zoology.

The curriculum for an Honours degree extends over at least two consecutive semesters and the examination consists of not less than four papers, oral and/or written.

Magister Scientiae: M.Sc.

Philosophiae Doctor: Ph.D.

Doctor Scientiae: D.Sc.

P O T C H E F S T R O O M   U N I V E R S I T Y   F O R   C H R I S T I A N  
H I G H E R   E D U C A T I O N

#### FIRST DEGREE

Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or passes in a natural science subject, preferably Physical Science, and Mathematics on the Standard Grade.

Additional requirements:

- Mathematics: A pass in Mathematics HG
- Physical Education: A student must ascertain beforehand whether he is medically fit.

Curriculum: Three years. A curriculum must include at least two major subjects. The first major subject must be selected from the following: Applied Mathematics, Biochemistry, Botany, Chemistry, Computer Science, Geography, Geology, Industrial and Personnel Psychology, Mathematics, Microbiology, Pedology, Physical Education, Physics, Physiology, Psychology, Statistics, Zoology.

All the course units of the first major subject must be passed. The second major subject may be selected in the same manner or it may be made up of course units from different subjects. The composite second major subject must include course units with a total of at least 32 credits on the second level of study and at least 48 credits on the third level of study. The total number of credits required for this degree is at least 300.

The distribution of credits in the following subject serves as an example:

<u>Credits</u>	<u>Subject and descriptive name of the course unit</u>
	BIOCHEMISTRY
16	Introductory Biochemistry
16	Intermediate metabolism
12	Molecular Biology

12	Advanced metabolism
12	Immunochemistry
12	Enzymology

The degree of B.Sc. is offered at Potchefstroom and also in certain subjects at the Vaal River Branch of the University.

Besides the general B.Sc. degree, the B.Sc. degree is also offered in the following specialised fields: With Chemistry and Industrial Chemistry (see p.160); with Dietetics (see p.115); with Economic Subjects (see p.121); with Operational Research (see p.109); and with Technical Subjects (see p.77).

#### POST-GRADUATE DEGREES

##### Honours Bachelor of Science: Hons. B.Sc.

Admission requirements: A B.Sc. degree.

Curriculum: A student must attend an approved course at the University for at least one year. The degree may be completed in one of the following subjects: Applied Mathematics, Biochemistry, Botany, Chemistry, Clinical Psychology, Clothing, Computer Science, Dietetics, Electrotechnics, Entomology, Geography, Geology, Hygiene, Industrial and Personnel Psychology, Industrial Chemistry, Industrial Pharmacy, Industrial Sociology, Mathematics, Microbiology, Operational Research, Pedology, Pharmaceutical Chemistry, Pharmaceutics, Pharmacology, Physical Education, Physics, Physiology, Psychology, Nutritional Science, Statistics, Zoology.

There are certain prerequisites which have to be fulfilled, e.g. Biochemistry may only be taken if Chemistry II has been passed.

A student may present himself only once for the final examination.

Master of Science: M.Sc.

Doctor of Science: D.Sc.

#### U N I V E R S I T Y   O F   P R E T O R I A

#### FIRST DEGREE

##### Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A candidate will not be admitted to the following courses unless he has obtained a pass in Mathematics as well as Physical Science on the Higher Grade or at least 50 % on the Standard Grade: Biochemistry, Biological Science, Botany, Chemistry, Entomology, Genetics, Geology, Metallurgy, Microbiology, Physics, Physiology or Zoology.

- Computer Science, Applied Mathematics, Mathematics or Mathematical Statistics: A candidate will not be admitted to these courses unless he passed Mathematics on the Higher Grade or obtained at least 50 per cent on the Standard Grade.

- For Biological fields of study Biology is recommended as a matriculation subject.

Curriculum: Three years of full-time study. Each curriculum must include at least nine qualifying courses. No candidate will be allowed to choose more than four courses in the first year of study, four in the second and three in the third year of study.

A candidate must compile his curriculum from the following subjects: Applied Mathematics, Biochemistry, Biological Science, Biology, Botany, Chemistry, Computer Science, Entomology, Genetics, Geography, Geology, Mathematical Statistics, Mathematics, Metallurgy, Meteorology, Microbiology, Physics, Physiology, Zoology.

Each curriculum must include at least two major subjects. There are certain requirements with regard to the major subjects which have to be fulfilled: e.g. (i) Biochemistry as a major subject may only be offered together with Chemistry. (ii) Genetics as a major subject may only be taken with either Zoology or Entomology or Botany or Mathematical Statistics as the second major subject.

Major subjects with three qualifying courses: Applied Mathematics, Botany, Chemistry, Computer Science, Entomology, Geography, Geology, Mathematical Statistics, Mathematics, Physics, Zoology.

Major subjects with two qualifying courses: Biochemistry, Genetics, Metallurgy, Microbiology.

#### POST-GRADUATE DEGREES

##### Bachelor of Science (Honours): B.Sc. (Hons.)

Admission requirements: The B.Sc. or B.Sc.(Ed.) degree. A candidate must fulfil all the requirements set out under the syllabuses of the subjects concerned: Provided that for admission to the B.Sc.(Meteorology) (Hons.) the degree of B.Sc. (Meteorology) is not a prerequisite, but an undergraduate qualification that may be considered for admission to B.Sc.(Hons.) study in Applied Mathematics, in addition to the successful completion of the courses Meteorology III A and III B, will be a prerequisite for admission to the course of study.

Curriculum: At least one year of full-time study. The degree is conferred in the following subjects: Applied Mathematics, Biochemistry, Botany, Chemistry, Computer Science, Engineering Geology, Entomology, Genetics, Geography, Geology, Mathematical Statistics, Mathematics, Metallurgy, Meteorology, Microbiology, Physics, Plant Physiology, Water Environmental Studies, Zoology; and the B.Sc. (Hons.) in Wild Life Management.

Master of Science: M.Sc.

Doctor of Science: D.Sc.

#### R A N D A F R I K A A N S U N I V E R S I T Y

#### FIRST DEGREE

##### Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Additional requirements:

- Mathematics, Mathematical Statistics: Candidates who have passed Mathematics on the Standard Grade will only in exceptional cases be admitted to the course in Mathematics after a test set by the Department of Mathematics has been passed.

- Mathematics IC and ID: A minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG.

Curriculum: Three years' full-time study or four years' part-time study. Each curriculum must consist of at least 18 semester courses. A curriculum includes either two primary major subjects or one primary plus two secondary major subjects. One reinforced major subject may be taken instead of a primary major subject. (See ARTS p.57.)

The degree is offered in each of the following curriculum groups: Biological Sciences, Earth Sciences, Mathematical Sciences, Physical Sciences, Teacher Training (see p.134).

A student registers for a Bachelor's degree under a specific curriculum group and his registration and course adjustments must be approved by the chairman of the curriculum group.

The curriculum consists of courses in the following subjects: Biochemistry, Botany, Chemistry, Computer Methods, Computer Science, Education, Geography, Geology, Logic, Mathematical Statistics, Mathematics, Physics, Psychology, Statistical Methods, Theoretical Physics, Zoology.

Theory of Science A and B are compulsory and additional to the minimum of 18 semester courses for the B.Sc. degree.

#### POST-GRADUATE DEGREES

Honours Bachelor of Science: B.Sc.Hons.  
See B.A.Hons. p.58.

Master of Science: M.Sc.  
Magister Philosophiae: M.Phil.

Doctor of Science: Ph.D.  
Doctor Philosophiae: D.Phil.

#### R H O D E S U N I V E R S I T Y

##### FIRST DEGREE

Bachelor of Science: B.Sc

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with an F symbol in Mathematics HG or an E symbol in Mathematics SG.

##### Additional requirements

- Chemistry I: A pass in Physical Science
- Mathematics IA: An E symbol in Mathematics HG or a D symbol in Mathematics SG
- Physics I: An F symbol in Physical Science HG or Physics HG or an E symbol in Physical Science SG or Physics SG.

Curriculum: Three years of full-time study. A candidate must obtain credit in not less than nine courses.

A candidate must obtain credit in all the required courses in at least two subjects, to be known as major subjects, which must be selected from the following:

- (a) Major subjects with three courses: Chemistry; Computer Science; Economics; Geography; Geology; Mathematics; Music (in conjunction with Physics); Physics; Physics with Electronics; Plant Science; Psychology, Zoology.
- (b) Major subjects with two courses: Applied Chemistry; Applied Chemistry(Geol.); Applied Mathematics; Chemistry (Biol.), Entomology, Mathematical Statistics; Microbiology.

A curriculum may contain courses in any of the above-mentioned subjects which have not already been chosen as major subjects; and any of the following courses: Biological Science I; Biological Science II; Statistics.

The ninth course may be chosen from the following subjects: Afrikaans; English; French; General Economics; German; Italian; Journalism; Logic; Philosophy; Xhosa or any other modern language.

There are certain provisions which have to be observed e.g. Biological Science I may not be taken together with Plant Science I or Zoology I.

#### POST-GRADUATE DEGREES

##### Bachelor of Science with Honours: B.Sc.(Hons.)

Admission requirements: The B.Sc. degree with at least a second class pass in the final year in the subject in which the candidate wishes to take Honours.

Curriculum: A candidate must attend the University for not less than one academic year and pursue a course of advanced study in one of the following subjects: Applied Mathematics; Chemistry; Computer Science; Electronics; Entomology; Geography; Geology; Ichthyology; Mathematical Statistics; Mathematics; Microbiology; Operations Research; Physics; Plant Science; Psychology; Zoology.

The subject for the Honours course must be one which the candidate has completed as a major subject for the B.Sc. degree. Operations Research is an approved exception.

A candidate must write all parts of the examination at one time and will not be permitted to present himself for the Honours examination more than once in the same subject.

Master of Science: M.Sc.

Doctor of Philosophy: Ph.D.

Doctor of Science: D.Sc.

#### UNIVERSITY OF SOUTH AFRICA

##### FIRST DEGREE

##### Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 60 % in Mathematics SG.

A student who is registered for modules or courses for which practical work is prescribed, must do practical work during the year in an approved laboratory. It is the student's own responsibility to find a suitable laboratory and supervisor for his practical work except in the case of Physics and Computer Science.

Curriculum: The degree must be obtained within ten years of a student's first registration for the degree.

A course unit is known as a module. A student receives credit for each module passed. The subjects in which modules may be taken are as follows: Applied Mathematics; Astronomy; Biology; Botany; Chemistry; Computer Science; Geography; Geology; Information Systems; Mathematics; Microbiology; Operations Research; Physics; Physiology; Physiological Chemistry; Psychology; Statistics; Zoology.

The curriculum consists of thirty modules composed as follows:

- (i) At least 24 modules must be taken in the above-mentioned subjects. At least 16 of these 24 modules must be taken on second level or higher level and of these at least 8 must be on third level or higher level.
- (ii) Not more than 6 modules, or the equivalent weighting in courses, may be taken in subjects from the curricula of first Bachelor's degrees of other faculties.

A student must not take more than 12 modules per year.



The modules which may be taken in Biology, for example, are as follows:

Module    Description

BI0101    Introductory Biology

BI0102    Co-ordination, Life perpetuation and practical

BI0103    Taxonomy, Morphology, Reproduction, Development, Ecology and practical

The prerequisite for Biology is a pass in Physical Science or Biology in the Std 10 examination.

POST-GRADUATE DEGREES

Honours Bachelor of Science: Hons.B.Sc.

Admission requirements: A Bachelor's degree or an equivalent qualification and proof of the candidate's proficiency in the subject concerned.

Curriculum: At least one year. The curriculum consists of ten modules. The degree may be conferred in the following subjects: Applied Mathematics; Chemistry; Computer Science; Geography; Information Systems; Mathematics; Operations Research; Physics; Psychology; Statistics.

Master of Science: M.Sc.

Doctor of Philosophy: Ph.D.

U N I V E R S I T Y   O F   S T E L L E N B O S C H

FIRST DEGREE

Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics and Physical Science of which at least one must be on the Higher Grade. For all courses in which Mathematics I is offered as a subject, a pass in Mathematics on the Higher Grade or at least a C symbol on the Standard Grade is required.

Students who intend to take a course in Chemistry and/or Physics are strongly recommended to take Physical Science for the Std 10 examination. Should a student wish to take Botany and/or Zoology, he is strongly recommended to take Biology, besides Physical Science, for the Std 10 examination.

Curriculum: Three years of full-time study. The curriculum normally consists of nine year courses. The subjects which are taken only during the first and/or second years are known as ancillary subjects and the two subjects taken in the third year are major subjects.

The following subjects are major subjects which may also lead to post-graduate study if the requirements are fulfilled: Applied Mathematics; Biochemistry; Botany; Chemistry; Computer Science; Dietetics; Entomology; Genetics; Geochemistry; Geography; Geology; Mathematical Statistics; Mathematics; Microbiology; Physical Education; Physics; Physiology; Plant Pathology; Psychology; Statistics; Zoology.

POST-GRADUATE DEGREES

Honours Bachelor of Science: B.Sc.Hons.

Admission requirements: The B.Sc. degree and a written application for admission to the course concerned.

Curriculum: Students must pursue the prescribed course at the University for at least one year and pass in the required examination.

Master of Science: M.Sc.

Doctor of Science: D.Sc.

Doctor of Philosophy: Ph.D.

## UNIVERSITY OF THE WESTERN CAPE

### FIRST DEGREE

Baccalaureus Scientiae: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A minimum pass mark of 40 % in Mathematics HG or 50 % in Mathematics SG
- A minimum pass mark of 40 % in Biology HG or in Physical Science HG or 50 % in Biology SG or in Physical Science SG.

Curriculum: Three years of full-time study. A curriculum consists of at least nine qualifying courses in the following subjects: Applied Mathematics; Biochemistry\*; Biology; Botany; Chemistry; Computer Science\*; Geography; Geology; Mathematical Statistics\*; Mathematics; Physics; Physiology\*; Zoology.

\* Major subjects with two qualifying courses.

Each curriculum contains at least two major subjects. The above-mentioned subjects are all major subjects except Biology which is a one-year course. The other subjects are major subjects with three qualifying courses.

There are certain restrictions on the choice of subjects, e.g. a student shall not be admitted to register for Biochemistry I unless he has passed Chemistry IA or IB.

### POST-GRADUATE DEGREES

Honours Baccalaureus Scientiae: B.Sc.Hons.

Admission requirements: A B.Sc. degree. Unless the Senate decides otherwise, a student must have obtained in the subject concerned, a minimum of 60 % in the final examination for the B.Sc. degree.

Curriculum: One year of full-time study or two years of part-time study. The degree may be taken in the following subjects: Applied Mathematics; Biochemistry; Botany; Chemistry; Geography; Mathematical Statistics; Mathematics; Physics; Physiology; Zoology.

Magister Scientiae: M.Sc.

Doctor Scientiae: D.Sc.

## UNIVERSITY OF THE WITWATERSRAND

### FIRST DEGREE

Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

### Additional requirements:

- A pass in Mathematics HG, or for curricula not including a course in Mathematics, at least 60 % in Mathematics SG.

- A pass on the Higher Grade in one of the subjects in List A below if Mathematics has been passed on the Higher Grade, or if Mathematics has been passed on the Standard Grade, either two of the subjects in List A below or one of the subjects in List A and one of the subjects in List B below:

<u>List A</u>	<u>List B</u>
Biology	French
Geography	German
Physical Science	Hebrew
Physiology	History
	Latin

Curriculum: Three years of full-time study. A student must include in his curriculum either all the courses offered in two major subjects, in which event his curriculum need comprise no more than nine courses; or all the courses offered in only one major subject, in which event his curriculum must comprise not fewer than ten courses of which at least five are at second or third-year level.

The major subjects in which three courses are offered are the following: Applied Mathematics; Applied Psychology; Archaeology; Botany; Chemistry; Computer Science; General Psychology; Geography; Geology; Industrial Psychology; Mathematical Statistics; Mathematics; Physics; Zoology.

The major subjects in which two courses are offered are the following: Anatomy; Biochemistry; General Anatomy; Genetics; Histology; Medical Biochemistry; Micro-anatomy; Microbiology; Physiology (Dental); Physiology (Medical); Physiology (Science).

The major subjects in which one course is offered are the following: Actuarial Science (not offered in 1981); Applied Chemistry; Chemistry III (Advanced); Geophysics; Mathematics III (Teaching); Theoretical Physics.

There are certain auxiliary and prerequisite requirements, e.g. a student shall not be admitted to Biochemistry I unless he has obtained credit in a first course in Chemistry.

A student must include in his curriculum at least one course in one of the following subjects: Archaeology; Botany; Chemistry; General Biology; Geography; Geology; Physics; Psychology; Zoology.

An approved curriculum must include one of the courses listed in (a); provided that, by permission of the Senate, one of the courses listed in (b) may be substituted:

(a) English I, Political Ideas and Institutions, Philosophy of Science.

(b) African Political Studies; Afrikaans; Afrikaans en Nederlands I; Biblical and Religious Studies I; Classical Life and Thought I; Economic History I; Economics I; French I; German I; Greek I; Hebrew I; History I; History and Appreciation of Music; History of Art I; History of Music I; International Relations; Italian; Latin I; Legal Theory and Institutions; Linguistics I; Organisational Behaviour; Philosophy I; Political Studies I; Portuguese I; Russian I; Social Anthropology I; Sociology I; Southern Sotho I; Zulu I.

### POST-GRADUATE DEGREES

Bachelor of Science with Honours: B.Sc.Hons.

Admission requirements: A candidate must have obtained credit in all the qualifying courses for the B.Sc. degree or B.Sc.(Education) degree.

A person who has completed all the requirements for the degree of B.D.S. or M.B., B.Ch. may be admitted as a candidate for the Honours course in Pharmacology or in Human Genetics.

Except in the case of Human Genetics, Palaeontology or Pharmacology, the Honours course selected must be in a major subject completed by the candidate for the B.Sc. degree.

Curriculum: One year of full-time study or two years of part-time study. The degree may be awarded in a course selected from one of the following subjects: Actuarial Science, Anatomy, Applied Chemistry, Applied Mathematics, Archaeology, Biochemistry, Botany, Chemistry, Computer Science, Experimental Physiology, General Anatomy, General Physiology, Genetics, Geography, Geology, Geophysics, Histology, Human Genetics, Mathematical Statistics, Mathematics, Mathematics (Teaching), Medical Biochemistry, Micro-anatomy, Microbiology, Palaeontology, Pharmacology, Physics (Experimental and Theoretical), Psychology, Zoology.

Master of Science: M.Sc.

Doctor of Philosophy: Ph.D.

Doctor of Science: D.Sc.

U N I V E R S I T Y   O F   Z U L U L A N D

F I R S T   D E G R E E

Bachelor of Science: B.Sc.

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass of at least 40 % on the Higher Grade or 50 % on the Standard Grade in Mathematics as well as Physical Science or Biology.

Curriculum: At least three years or four years depending on the student's matriculation results in Mathematics, English and Biology or Physical Science.

The curriculum consists of at least eighteen qualifying semester courses, where a year course will be considered equivalent to two semester courses in a particular subject.

The curriculum consists of courses in the following subjects:

Group 1

Applied Mathematics, Biochemistry, Biology, Botany, Chemistry, Chemistry-Bio, Ecology, Engineering Drawing and Design, Geography, Geology, Mathematics, Mathematical Statistics, Physics, Physics-Bio, Psychology, Statistics, Statistical Methods, Zoology.

Group 2

Afrikaans or Practical Afrikaans, English or Practical English, German Special, Zulu.

Each curriculum must contain at least two major subjects selected from the following:

Major subjects with six semester courses: Applied Mathematics, Botany, Chemistry, Geography, Geology, Mathematics, Mathematical Statistics, Physics, Zoology.

Major subject with four semester courses: Biochemistry

Major subject with two semester courses: Ecology.

The final examination in a major subject shall not be taken before the third year of study.

Some major subjects have ancillary subjects which must be passed, e.g. a student taking Zoology as a major subject must pass at least Biochemistry II.

## POST-GRADUATE DEGREES

### Honours Bachelor of Science: Hons.B.Sc.

Admission requirements: A B.Sc. degree with an average pass mark of 60 per cent in the course concerned, with a sub-minimum of 50 per cent in each paper, unless the Faculty Board decides to admit a student on special recommendation of the Head of the Department concerned.

Curriculum: At least one year. The degree may be conferred in the following departments: Applied Mathematics, Botany, Chemistry, Geography, Geology, Mathematics, Physics, Zoology.

Master of Science: M.Sc.

Doctor of Science: D.Sc.

**VOCATIONAL SERVICE:** It should be emphasized that students should be very selective as regards their choice of subject combinations in their field of interest, particularly as far as major subjects are concerned. With a view to career possibilities, they should also make use of the guidance services of the school and university, since many occupational fields also demand intimate knowledge of certain other subjects.

The following are some of the career possibilities which arise from the most important major subjects:

Astronomy: Although interest in astronomy has greatly increased in recent times owing to the exploration of space, prospective students are nevertheless advised to include in their courses as many of the subjects such as Mathematics, Applied Mathematics, Physics, Statistics and Computer Science as possible, with a view to a possible change of career. However, prospects for the astronomer have improved considerably over the past few years and developments may cause a considerable rise in the demand for astronomers of high standing.

There are opportunities for employment as research or technical officers at the following observatories: The SA Astronomical Observatory, Sutherland, CP (previously known as the Republic Observatory, Johannesburg; the Royal Observatory, Cape Town; and the Radcliffe Observatory, Pretoria), as well as the Magnetic Observatory, Hermanus, CP, both of which are administered by the CSIR; the Boyden Observatory, Bloemfontein and the Leiden Southern Station at Hartebeespoort.

The work of a modern astronomer mainly involves short-term projects and candidates should be in possession of at least an honours degree to make any form of progress. A B.Sc. degree with Physics as a major and as many of the above-mentioned subjects as possible as subsidiaries, will be a good starting point. Only from honours level and above should one concentrate on Astronomy.

Biochemistry: Biochemistry is actually, as the name indicates, the chemistry of biological systems, which means the study of the very great variety of chemical processes or reactions which are continually taking place in the life of any living creature. As a science therefore it is the study of living organisms from a molecular point of view.

Since Biochemistry forms a link between the physical (exact) sciences such as Chemistry, Physics, etc., and the biological sciences such as Botany, Zoology, Physiology and Microbiology, training with Biochemistry as one of the majors offers the particular opportunity of making a choice between careers existing in any of these fields. At present there is a need for highly trained biochemists, and the number of institutions employing graduates for research in the fields of, for example, nutrition and diseases of people and animals, agriculture, water purification and industry in general is increasing rapidly.

Some of the organisations employing biochemists are, inter alia, the research institutes and units of the CSIR, the SA Medical Research Council and the AEB; the SABS; large hospitals and municipalities; universities (Faculties of Medicine, Science and Agriculture); industries responsible for the production of food, drink,

pharmaceutical products, cosmetics, textiles, fertilizers, insecticides and weed-killers, cattle remedies and cattle-feed, vitamin concentrates and so forth. Not only is research undertaken in most of the industries but there are also opportunities for the development of new products and the chance of promotion to managerial posts. Biochemists are also employed by the Government Departments such as Agriculture and Fisheries, Co-operation and Development and Health and Welfare.

Biology: The biologist studies and does research into the origin, derivation, development, anatomy, distribution and other basic characteristics of flora and fauna and the relation between plant and animal life.

Although some universities offer Biology as a separate subject, biologists usually specialise in one or other section within the two main fields, namely Botany and Zoology. The occupational field for the biologist will consequently be much the same as that for zoologists discussed on p.235 and for botanists below.

Biometry: See p.40.

Botany: The science of living creatures (organisms) is known as Biology. The two main branches of this science are Zoology and Botany. The latter is the science which has the living plant as subject-matter and when regarded from a scientific, practical and utilitarian point of view, it is a comprehensive, vital and interesting field of study.

With a suitable second major or subsidiaries from, for example, Zoology, Chemistry, Biochemistry, Microbiology, Geography, Geology, Physiology, Physics and Mathematics and eventual specialisation, the trained botanists should be able to find a remunerative occupation in one or more of the following lines: Plant morphology (form and structure of plants); plant taxonomy (classification of plants); plant physiology (life processes and activities of plants); plant genetics (heredity in plants); plant ecology (relationship between plants and their environment); plant pathology (plant diseases and the combating thereof); economic botany (use and economic importance of plants), and so forth.

The Department of Agriculture and Fisheries supplies various services which contribute to the conservation and functional utilisation of the country's flora. Thus the Botanical Research Institute employs botanists (professional officers) for the activities of the sections National Herbarium, Flora Research, Botanical Survey, Economic Botany, and Data Processing. In addition to the work of this Institute, a considerable amount of botanical research is also done by other institutes and regional organisations, particularly in connection with pasture, agronomy, horticulture and plant physiology.

There are also employment prospects for teachers of Biology and Botany at secondary schools and, with advanced study, for lecturers at universities; for professional officers at the agricultural experimental stations; for researchers at the SABS, the CSIR and the oceanographic research institutes; for officers in the service of the National Parks Board, the Nature Conservation Divisions of the different provinces, private concerns such as fertiliser companies, manufacturers of phytopathological preventatives and nurseries. There are fairly numerous posts available to persons in possession of a B.Sc. degree, but candidates with post-graduate training are given preference.

Chemistry: On commencing his studies it is certainly not always possible or desirable that a student should immediately choose a particular branch of chemistry for a lifelong study. There are far too many interesting fields within the major branches and innumerable new developments in industry which must first be investigated or discovered. Chemistry is traditionally subdivided into three main sections, namely Organic, Inorganic and Physical Chemistry, but in the course of time Analytical Chemistry, Biochemistry, Theoretical Chemistry, Nuclear Chemistry and Polymer Chemistry also developed into full-fledged sections. Each of these comprises a number of specialised fields, each with its own design and career possibilities. Depending on the objectives to be realised, Chemistry as a major can be combined meaningfully with quite a number of other natural science subjects.

The career opportunities for graduates are virtually unlimited, mainly because Chemistry is such a basic component of modern society.

- Research: Research projects are normally centralised as far as is possible and the following bodies, which take the lead in this, also offer numerous job opportunities:

- . The CSIR in the field of utilisation of natural resources, the building trade, water utilisation, nutrition, etc. Different research units of the CSIR also serve certain industries, for example, the timber, ceramics, sugar, leather, paint, fuel, fishing, wool and other industries;
- . the AEB at Pelindaba, which undertakes research in connection with atomic energy;
- . the National Institute for Metallurgy for the recovery of metals which are difficult to come by, such as berillium, niobium and tantalum for use in rockets and jet engines;
- . the Government Agricultural Research Institutes for the study of water and soil chemistry, fertilizers, industrial products, pest control, cattle-feed, phytochemistry, and so forth;
- . the Medical Research Council (MRC) (various research institutes);
- . research units attached to universities.

- Chemists who have the correct subject combination are employed as professional officers by various government departments and their activities vary from one department to the other.

- The consulting chemist and chemist in testing services who undertake testing and research for other producers who do not have chemists in their employ, for example the SABS.

- There are excellent opportunities for chemists, production leaders and research or development officers in industry and bodies such as Iscor, Sasol, Phoscor, CSIR, SABS, oil refineries, explosives and chemical industries, Sappi and other paper-mills, synthetic rubber producers, sugar-mills, coal washing plants and refining installations, power stations, National Chemical Products, mining companies, municipalities and the Railways.

- Training of chemists is of increasing importance in order to provide for the growing demand and thus vacancies still arise for teachers in secondary schools and for lecturers at universities and technikons.  
Also see Chemical Engineering, p.149.

Also consult Tertiary Training for particulars on the National Diplomas which may be obtained in the various fields of Chemistry.

Entomology (the study of insects): Whereas Entomology used to be a subsection of Zoology, it has developed today into a specialised science with several subdivisions. Thus it offers opportunities for specialisation in fields such as the identification and classification of insects or a study of the anatomy, physiology or behaviour of insects. The specialised knowledge of the entomologist is invaluable in many fields, but particularly in the field of agriculture.

Entomologists normally work as researchers in, for example, museums, the Government Departments of Health and Welfare and Agriculture and Fisheries (various research institutes and regional organisations), the SABS, the CSIR (several research institutes), the Medical Research Institute, Onderstepoort and the private sector, as technical advisers to spray firms, co-operatives, various large producers of fruit, sugar, timber etc.; as marketing representatives in firms which manufacture and distribute insecticides and spraying equipment. There are also posts as lecturers at universities or colleges and as teachers of agriculture and biology. There is also the possibility of acting as a consulting entomologist in private practice.

Genetics (Theory of heredity): Of all the biological sciences, Genetics is perhaps the most penetrating. In this subject a study is made of the underlying causes of the

hereditary similarities and differences in biological aspects between organisms related by descent. Genetics is therefore concerned with the way in which living organisms reproduce their own kind.

Research posts for geneticists in plant culture (for the improvement of various cereals, fruit, vegetables, flowers, sugar-cane, tobacco, garden and forest trees etc.) and in animal husbandry (for the upgrading of large and small stock, poultry, fur-bearing animals, etc.), exist at the various research institutes and experimental farms throughout the country under the control of the Department of Agriculture and Fisheries, as well as with large semi-private and private organisations. Geneticists are also employed by the Department of Health and Welfare, the National Parks Board, agricultural colleges and universities. There is an increasing demand for geneticists in medical schools and large hospitals, to undertake research in, for example, cytogenetics and biochemical genetics, and to qualify themselves as human geneticists for genetic guidance and consultation.

Geography: A characteristic of this subject is that practically all the universities offer it as a major subject for B.A., B.Sc. or a degree in the economic sciences. The undergraduate courses are, in all the cases, not planned to offer specialised professional training. Students who wish to become practising geographers will consequently have to be prepared to undertake advanced post-graduate study. The broad educational spectrum covered by courses in Geography can easily be adapted to the requirements of many careers. However, it is obvious that a discreet choice of major and subsidiary subjects will, in this case, be a highly decisive factor in the achievement of success.

A large percentage of students enter the teaching profession, whereas others, particularly those with post-graduate training, take up posts in the Public Service (sectors such as meteorology, hydrography, soil survey, soil utilisation survey); in the service of municipal, provincial or other government institutions in the field of environmental conservation, cartography or town and regional planning; in journalism, the foreign service, tourist industry and commerce and industry. The subject is of particular value for Defence Force officers.

Geology (including Geophysics and Palaeontology): Geoscience as such currently has many divisions and includes advanced research and its practical application to many facets of modern society. Within these various areas of research and application the geologist, geophysicist and palaeontologist contribute, each in his own specialised field, to the welfare of man. The geologist, who may specialise in various fields, makes use of his training in Geology, Chemistry, Geochemistry, Geography, Physics, Statistics and Mathematics in the various techniques employed in the geological mapping and exploration of the country, the discovery and evaluation of mineral deposits, and research concerning engineering projects and physical planning. The geophysicist makes use of his knowledge of Physics, Geology, Mathematics and Geophysics in the search for mineral deposits and underground water and also in determining the suitability of sites for planned construction projects. The palaeontologist, with his knowledge of Zoology, Botany, Palaeontology and Geology, undertakes the unravelling of the historical development of life and applies this knowledge to the correlation of rock formations with conditions of sedimentation.

In a country such as South Africa where the economy is largely dependent on mineral production, it is obvious that a subject such as Geology plays an important role. It offers an opportunity for study and work in the open to persons who are fond of life in the fresh air. However, it also offers sufficient opportunity for research in a laboratory with modern equipment.

The Department of Mineral and Energy Affairs employs graduates who have already reached an Honours level, as geologists, palaeontologists or geophysicists in one of the six divisions of the Geological Survey Branch. Other Government Departments which employ graduates are Agriculture and Fisheries, Environment Affairs and the provincial administrations.

Most geologists, however, are employed by mining groups as field explorers or mine geologists. The remainder are attached to universities as lecturers, to scientific bodies or institutes such as the CSIR, museums and the Bernard Price Institute for Geophysical Research at the University of the Witwatersrand. Some are employed to do



geological work for concerns such as Sasol, Iscor, SOECOR, other large industries and civil engineering firms. A few act as private consultants.

Also consult Tertiary Training for particulars on the National Diploma in Geology.

Hydrology: Hydrology comprises a study of the whole hydrological cycle, the respective laws governing each component of the cycle and the techniques of utilising the various components of the cycle for the benefit of man. Broadly speaking, it is consequently the hydrologist's task to try and ensure the optimal utilisation of the country's water resources.

The most important employer is the Department of Environment Affairs. The Scientific Services Branch of the Department is functionally divided into three main divisions, namely Geohydrology, Applied Hydrology and Hydrological Research, each employing hydrologists, assistant hydrologists, technicians and civil engineers.

Hydrology is not a major for a first B.degree and candidates must be in possession of a B.Sc.(Hons.) degree with one or more of the following as principal field of study:  
Basic fields of study: Hydrology, Mathematics, Applied Mathematics, Physics  
Geohydrology: Geohydrology, Geology, Geophysics, Engineering Geology, Geochemistry  
Applied Hydrology: Computer Science, Operations Research, Statistics, Civil Engineering  
Hydrological Research: Chemistry, Soil Physics, Microbiology, Botany, Zoology, Geography.

A four-year degree in forestry, agriculture or engineering is also a suitable qualification. Persons with a three-year degree in the fields indicated above are eligible for appointment as assistant hydrologists.

Mathematical Sciences: The mathematical sciences such as Mathematics, Applied Mathematics, Statistics and Mathematical Statistics, are indispensable as auxiliary sciences of most of the natural, engineering, commercial and several other sciences. Hence the time when a candidate with mathematical qualifications was dependent on teaching only is long past. Owing to developments and an expanding labour field, the demand for people trained in Mathematics is still increasing.

- Statistics: On the one hand Statistics depends very largely on Mathematics and Probabilism; on the other hand there are various sciences which depend on Statistics, such as actuarial science (insurance etc.) and operational analysis (the aim of which is to bring about efficiency in industrial processes and commercial concerns). Many sciences also use statistical methods as an essential aid, for instance the biological sciences (biometrics), psychological and sociological sciences (psychometrics and sociometrics), economic sciences (econometrics), etc. Computer Science also is closely related to Statistics.

With a view to career possibilities, the broad scope of the fields in which Statistics can be applied (Statistics, Mathematical Statistics, and so forth) can briefly be indicated by a few examples:

- . In the field of agriculture, the statistician has the task of interpreting data arising from experiments with matters such as the influence of fertilisers, soil conservation methods, soil fertility, types of seed etc. on the yield; the effect of nutrients, feed mixtures, inherited traits etc. on the production of beef breeds.
- . The handling of statistical problems in the sphere of other biological sciences such as zoology and botany, medicine and dietetics, physiology, etc.
- . The contribution of statistical methods, for example in respect of the measurement of intelligence, behaviour, compilation of scales etc., for the human sciences such as psychology, education and sociology.
- . The use of statistical methods has also become indispensable in the extensive field of the economic sciences, industrial concerns, engineering problems, mining, finance and so on.

- . Statisticians also occupy themselves with the study and improvement of methods to find better mathematical descriptions for the phenomena which appear in their fields of application.

Tasks connected with the career which include, for example, scientific planning of experimental surveys, the analysis of data, the drawing of conclusions and the possible making of decisions, are therefore interesting and stimulating to the statistician.

Statisticians are also employed as research officers or routine workers, for example to do statistical work, operational analysis or computer work for a large variety of bodies such as insurance and investment corporations; industries such as Iscor, Sasol and others with research laboratories; mining; transport and communication; the AEB; the CSIR; the HSRC and other semi-government institutions; the MRC; NIPR (CSIR); universities and wherever numerical data must be processed and interpreted.

The following government departments, which also offer good prospects of promotion, employ statisticians who hold appropriate approved Bachelor's degrees: Agriculture and Fisheries; Manpower; Industries, Commerce and Tourism; Co-operation and Development; and Statistics.

- Mathematics and Applied Mathematics: Apart from the demand for mathematicians with Pure or Applied Mathematics as major subjects, one of these two subjects is a prerequisite for specialisation in, for example, Physics, Chemistry, Engineering, Astronomy, Economics and even Biology, Psychology and many others. In the choice of an occupational sphere, the student should also bear in mind the fact that the subjects Mathematics, Applied Mathematics and Physics are closely related to each other as regards field of study and methods. In many cases knowledge of Statistics is a requirement or at least a recommendation.

Mathematicians are, for example, employed by the bodies and government departments as indicated under Statistics above. Furthermore, as well known, there is a considerable shortage of mathematics teachers in the secondary schools. There is also a demand for lecturers especially with post-graduate training, at the universities and other tertiary training institutions. Various concerns employ mathematicians for training as actuaries.

- Actuary: In order to qualify as an actuary, a series of examinations must be passed. Tuition takes place by means of correspondence courses. There are two professional bodies which set actuarial examinations, viz the Institute of Actuaries with headquarters in London, and The Faculty of Actuaries with headquarters in Edinburgh. These two bodies jointly control The Actuarial Tuition Service in London, which deals with all tuition matters. There is a local centre of this tuition service in Johannesburg and another in Cape Town.

Prospective actuaries can first complete a B.Com, B.Sc. or even B.A. degree and then continue with studies in order to become actuaries. However, the most important requirement is that their university course should include at least two years of Pure Mathematics, and if possible, also an introduction to Statistics, Accounting and Economics. Although university study is of great help in passing the actuarial examinations, it is nevertheless not a requirement. After leaving school, a candidate may enter the service of an insurance company or a firm of consulting actuaries and immediately commence with his actuarial studies.

The University of Cape Town offers an actuarial field of study for the B. Business Science degree, which provides partial exemption from the actuarial examinations.

The particular training an actuary receives definitely gives access to a wide variety of other fields. Actuaries are few and far between and chief managerial posts are within their grasp, even while they are still studying. Most actuaries are employed by life assurance companies which also offer exceedingly favourable prospects of promotion. Others act as consultants in the service of, for example, building societies and other financial institutions; trading companies, industries, mines, the Railways, municipalities and so forth. The expansion of commerce and industry entails that more and more actuaries are being appointed in the private sector. Some government departments appoint actuaries in a full-time or in a consulting capacity.

More information may be obtained from the Honorary Secretary, The Actuarial Association of South Africa, P.O. Box 4464, Cape Town 8000.

**Metallurgy:** Metallurgists, are concerned with the science and technology of metals and can generally be divided into three groups, viz extractive metallurgists, who process ore and extract and refine the metal; the manufacturing metallurgists, who process metals into alloys and change these into various useful forms, and the physical metallurgists, who are concerned with the physical characteristics of processed metals and alloys as well as their behaviour when in use.

For research work which has to be undertaken, particularly in extractive metallurgy, the National Institute for Metallurgy, Johannesburg, serves as a research centre for practically the whole of the South African mineral industry. The work of this Institute is managed by various sections. Some mining companies undertake research work in their own laboratories, while the Chamber of Mines has a large research organisation in Johannesburg.

For more information in connection with employment, training and so forth, intending students in this field are referred to the following bodies, which also represent the most important employers: The Chamber of Mines, the individual mining groups, Iscor, the National Institute for Metallurgy, the Atomic Energy Board and the Universities of Pretoria and the Witwatersrand.

Also see Metallurgical Engineering, p.150.

Also consult Tertiary Training for particulars on the National Diploma in Physical Metallurgy.

**Microbiology and Virology:** Important basic knowledge is obtained through these two fields of study on microscopical organisms, including their biochemistry, genetics and ecology. This knowledge is applied to good advantage to combat human, animal and plant diseases and to protect food, clothing, wood and other organic matter against microbial decay.

There are various fields of specialisation in Microbiology and sometimes the names of these originate from the type of organism that is being studied. Thus Virology has to do with viruses, Bacteriology with bacteria, etc. The lines of specialisation also serve as a key to a possible occupational field, for example, general microbiology, agricultural microbiology, industrial microbiology, medical and veterinary microbiology, marine microbiology and geobiology. Graduates in these fields mainly qualify for work as researchers in industries, municipalities and research institutions such as the CSIR, SABS and the Medical Research Council, of which various research units and institutes are established in different parts of the country. Microbiological research is also undertaken by the various research institutes of the Department of Agriculture and Fisheries. The Department of Health and Welfare employ virologists at the Vaccine Institute in Pinelands, Cape Town, in connection with the manufacturing of vaccines. Prospective virologists should select their majors from Virology, Biology, Microbiology, Biochemistry, Biophysics, Physics or Chemistry. Microbiologists and virologists can also obtain employment as laboratory technicians in medical schools and hospitals, and with appropriate subject combinations they can also choose teaching as a profession. However, post-graduate training is necessary for appointment to a lecturing post at a university. Moreover, research constitutes the backbone of the study of Microbiology and the microbiologist must remain a student if he wishes to be successful in his career.

Also consult Tertiary Training for particulars on the National Diploma in Microbiology.

**Oceanography and Marine Biology:** Oceanography is the study of the sea - including life in it, the ocean floor and the air above the ocean. It is a compound of various subject fields which require the co-ordinated services of divergent kinds of scientists who, as a result of their particular interest in the sea and its environs, are closely associated with each other. Here one thinks, for example, of marine geologists, chemists, physicists, biologists and meteorologists who, in turn, are dependent on mathematicians, engineers, technologists and technicians to assist in various fields in compiling and processing data.

Because of this wide range of subject fields involved, the specialised training of an oceanographer actually starts only when he has obtained a B.Sc. degree, or preferably, a B.Sc. (Hons.) degree in ordinary science subjects. Apart from Botany, Zoology, Chemistry, Geology, Physics or Microbiology as one of the majors, these subjects should also include Mathematics and, in addition, a carefully chosen combination of subsidiaries. A degree in engineering offers an excellent basis for specialisation in certain aspects of physical oceanography. (The University of Cape Town is at present the only South African University which offers a degree in Physical Oceanography). Oceanographic work, however, is not restricted to persons with a degree specifically in Oceanography. Generally oceanographic knowledge is acquired in practice.

Marine Biology and Oceanography are not synonymous terms. Marine Biology is a specialised branch of Oceanography comprising a study of plant and animal life in the sea. To sum up, one can state that this field of research involves all aspects of modern biological sciences such as taxonomy, biochemistry, physiology, ecology, life history, behavioural and environmental studies.

The University of Cape Town offers Marine Biology and Physical Oceanography as auxiliary subjects for the B.Sc. degree. These courses provide a grounding for Honours studies in Physical Oceanography.

Oceanographers and marine biologists are employed by the Department of Agriculture and Fisheries. The major part of their time is spent in modern laboratories at the headquarters of the Sea Fisheries Branch at Sea Point, Cape Town. They have the opportunity to specialise in fields such as chemical oceanography, physical oceanography, fisheries biology and biological oceanography, statistics, and marine mammals.

Other bodies which employ marine experts are the following: The South African Museum, Cape Town; Fisheries Development Corporation of South Africa Limited, Cape Town; National Research Institute for Oceanology, CSIR, Stellenbosch; Port Elizabeth Museum, Port Elizabeth; Oceanographic Research Institute, Durban; The J.L.B. Smith Institute of Ichthyology, Rhodes University, Grahamstown; National Institute for Water Research, CSIR, Pretoria; Fishing Industry Research Institute, University of Cape Town, Cape Town.

Also consult Tertiary Training for particulars on the National Diploma in Oceanography.

Ornithology: At present no specific training for the study of birds is offered in South Africa. Ornithologists are therefore appointed from among the members of qualified zoologists. The requirement for appointment is normally a B.Sc. degree with Zoology as a major in combination with subjects such as Botany, Entomology, Geography, Geology, etc. However, an Honours or Master's degree will be a strong recommendation.

Job opportunities for ornithologists are extremely limited and only really dedicated persons with particular talent and interest in this field may hope to obtain a position and achieve success in such a career. They are employed, for example, by the National Parks Board, the provincial administrations, the Department of Agriculture and Fisheries and some museums.

Physics: Man has the urge to rule over nature, and to do this, he must know nature. Physics comprises the study of inanimate nature and all phenomena in this connection in order to get to know the fundamental principles thereof. It extends from phenomena of astronomical dimensions, such as in space, to others which are inconceivably minute and which, for example, may be observed in the nuclei of atoms. As an auxiliary to Physics, Mathematics is indispensable. Mathematics provides an exact rounding off to the physical investigation. Simultaneously, Mathematics obtains additional significance since it is applied to real things. Physics also combines well with subjects such as Chemistry, Geology, Geography, Zoology, Botany and Applied Mathematics.

The particularly wide field covered by Physics, together with a judicious combination of major and subsidiary subjects will not only lay the foundation for the choice of an interesting career, but will also serve as an incentive for post-graduate study and research which are both absolutely imperative in this science. There is a great demand for physics teachers in all the education departments; for atomic and nuclear

physicists or other research officers in the service of the CSIR, the AEB and some universities; for researchers employed by, for example, Iscor, Sasol, AECI, the mines and other industries such as textile and wool processing, oil companies, oceanographic institutes and companies which sell scientific instruments. The developing electronic industry creates particular opportunities for research, development and production in, for example, television, radar, automation, as well as the design and operation of high-speed computers. There is also an increasing demand for physicists and biophysicists in hospitals and related institutions.

In the Public Service graduates are employed as professional officers by departments such as those of Agriculture and Fisheries (oceanographers, soil scientists, agricultural officers, other professional officers); Environment Affairs (asst. hydrologists); Manpower (inspectors of occupational safety).

Geophysics is a branch of Physics which deals with the whole earth, including its hydrosphere and atmosphere. It embraces disciplines such as seismology, geomagnetism, gravitation, meteorology, etc. Geophysical methods are applied in the search for and the identification of structures in the earth which are important in finding mineral deposits, oil and subsurface water and in the field of civil engineering. For this purpose geophysicists are chiefly employed by the Geological Survey Division of the Department of Mineral and Energy Affairs. However, the minimum qualification required for appointment is a B.Sc.(Hons.) or an equivalent four-year degree in Geophysics or Physics.

For the top students and for those who have completed advanced studies in Physics and Geophysics, there are possibilities as lecturers at universities or as researchers employed by the CSIR or, for example, the Bernard Price Institute for Geophysical Research at the University of the Witwatersrand.

Also consult Tertiary Training for particulars on the National Diploma for Technicians in various fields of Physics.

Physiology: Physiology is a biological science which embraces a study of the normal functions of living creatures, particularly of man. It contributes particularly to a knowledge of the normal functions of the human body and consequently also indirectly to deviations and diseases of humans. In actual fact it is an applied science of life which forms the basis for further training in medicine, veterinary science, pharmacology, pharmacy and other specialised fields in medicine and paramedical services such as physiotherapy, occupational therapy, nursing and hospital dietetics. In the context of the natural sciences Physiology is important for training in dietetics, home economics and physical education and it also serves as a preparatory course for advanced research in many applied fields.

A career with this biological science as a major, in combination with subjects such as Chemistry, Physics, Mathematics, Zoology, Microbiology, Psychology, Biochemistry, Botany, Physical Education and Dietetics, can be found mainly in two directions, viz teaching and research. Physiology is of great value in the teaching of Biology and some secondary schools offer it as a separate subject. At higher educational institutions there is a demand for lecturers with advanced training in Physiology.

Various laboratories which undertake biological research employ physiologists, for instance the Chamber of Mines' Human Sciences Laboratory, the Central Medical Laboratory of the Defence Force at Voortrekkerhoogte, the Medical Research Council and the CSIR's laboratories for human nutrition research and physiological chemistry etc., the Atomic Energy Board's section for Human Sciences for research in connection with radiation, Iscor's laboratory for Industrial Hygiene, etc. The NIPR of the CSIR has a Physiological Psychological programme, in which persons who have Physiology and Psychology as subjects can do valuable work in connection with neuro-physiology and sensory-motor studies. Physiologists also work as laboratory technicians in medical schools, hospitals, universities and pathology laboratories.

There are also good occupational prospects for physiologists in the Department of Agriculture and Fisheries, especially for veterinary research at Onderstepoort and other agricultural research institutes in connection with animal nutrition, meat and wool production, plant poisoning problems and the physiology of insects.

Also see Animal Physiology under Agriculture p.39.

Zoology: Zoology in itself embraces such a wide field of study that, for the sake of convenience, it is divided into a number of basic subsections such as Morphology, Anatomy, Histology, Physiology, Taxonomy, Embryology, Palaeontology, Zoography, Ecology and others. Other specialised fields of study such as, for example, Entomology and Genetics have developed into completely separate subjects. Because of the varied fields of study in Zoology, students with this subject as a major can consequently enter interesting fields. For many of the fields of employment and particularly for research posts, the subject which is taken with Zoology as a major is an important factor and, together with some subsidiaries, it should be carefully considered. Botany, Chemistry, Physiology, Geology, Biochemistry and Microbiology are some of the subjects which combine very effectively with Zoology.

Zoologists generally have the opportunity of choosing from a variety of occupational fields. Some of these are primarily concerned with laboratory work, while others require work in open air. Examples of some of the employers are the following: All the education departments; the medical research institutes; the CSIR; the SABS; Onderstepoort; museums, divisions for nature conservation, game reserves, zoos and fisheries; oceanographic institutes; industries such as the manufacturers of fertilizers, insecticides and cattle remedies; the National Parks Board, and numerous larger and smaller private firms with interests in zoological products. In the Public Service graduates also have an opportunity of choosing from among various professional fields.

Lately employers have been giving increasing preference to candidates with post-graduate training - the higher the qualification, the better the prospects of an appointment and promotion to higher posts. Usually there is such a dire need of highly trained zoologists that a large number of students who have completed an honours degree, are appointed to positions even before they have rounded off their training.

#### QUANTITY SURVEYING

Universities: Cape Town, Natal, Orange Free State, Port Elizabeth, Pretoria, Witwatersrand

#### FIRST DEGREES

Bachelor of Science in Quantity Surveying: B.Sc. (Q.S.) (UCT)

Bachelor of Quantity Surveying: B.Sc. (Q.S.) (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Cape Town: A pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in a science subject SG.

Pretoria: A pass in Mathematics HG or at least 50 % in Mathematics SG and a pass in Physical Science HG or at least 40 % in Physical Science SG.

Curriculum: Five years' study comprising two years of full-time study and three years of part-time study (Pretoria) or three years of full-time study and two years of part-time study (Cape Town).

A candidate is required to be employed full-time in the office of a registered quantity surveyor during the period in which he is studying part-time.

The curriculum includes, inter alia, the following courses: Quantities V, Professional Practice, Specification, Building Construction or Building Technology, Price Analysis (UP), Building Economics (UCT).

Bachelor of Science in Quantity Surveying: B.Sc. Q.S. (UN)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass of 40 % in Mathematics HG or 50 % in Mathematics SG.

Curriculum: Four years of full-time study. The curriculum includes, inter alia, the following courses: Quantities IV, Professional Practice, Building Technology III, Building Economics, Theory and Design of Structures II.

Baccalaureus Scientiae in Quantity Surveying: B.Sc. (Q.S.) (UOFS, UPE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

Orange Free State: Passes in Mathematics SG and in Physical Science SG. Candidates are selected.

Port Elizabeth: A pass of at least 40 % in Mathematics SG.

Curriculum: Five years (UOFS) or four years (UPE) of full-time study. Candidates may study part-time at UOFS and at UPE they may be permitted to spread the fourth-year courses over two years: provided that they are employed in the office of a quantity surveyor.

Candidates are required to be employed in the office of a registered quantity surveyor for a minimum of six weeks in each year of study. The curriculum includes, inter alia, the following courses: Quantity Surveying (UOFS) or Quantities (UPE), Professional Practice, Building Technology (UOFS) or Building Science (UPE), Cost Evaluation (UOFS), Building Economics (UPE).

Bachelor of Science in Quantity Surveying: B.Sc.(Q.S.) (UW)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 60 % in Mathematics SG and a pass on the Higher Grade or at least 60 % SG in one of the following subjects: Biology, Geography, Physical Science, Physiology.

Curriculum: Four years of full-time study. At the end of each of the second and third academic years a student must spend the next succeeding long vacation working in the office of a registered quantity surveyor, or a quantity surveying office of a Government department, provincial administration, or local authority.

The curriculum includes, inter alia, the following subjects: Building Science, Theory and Practice of Quantity Surveying, Economics, Cost Evaluation and Control.

POST-GRADUATE DEGREES

Master of Science in Quantity Surveying: M.Sc.(Q.S.) (UW) or M.Sc. Q.S. (UN)

Magister Scientiae in Quantity Surveying: M.Sc. (Q.S.) (UOFS, UPE)

Master of Quantity Surveying: M.Sc. (Q.S.) (UP)

Doctor of Philosophy: Ph.D. (UN, UW)

Doctor of Science in Quantity Surveying: D.Sc.(Q.S.) (UW) or D.Sc.Q.S. (UN)

Philosophiae Doctor in Quantity Surveying: Ph.D. (UPE)

VOCATIONAL SERVICE: The quantity surveyor's field covers all aspects of building costs and he is often referred to as the technical accountant of the building industry. He works in close collaboration with the architect, engineer and building contractor. In addition, he is a professional adviser, for example, in the case of a lawsuit in connection with a building contract, the appraisal of properties with a view to insurance, or advice to estate developers and investors in real estate.

The Public Service offers the quantity surveyor the opportunity of being active in practically any branch of quantity surveying. Persons employed by the Departments of Co-operation and Development, Community Development and the South African Defence Force are stationed in Pretoria. Quantity surveyors of the provincial administrations are stationed at the different administrative head-offices.

Opportunities for quantity surveyors are virtually unlimited in the private sector, while ample job opportunities also exist with municipalities; the Railways; the CSIR, and universities. In the course of time a quantity surveyor may embark upon an undertaking of his own and today this is most rewarding.

The profession is not limited to men only. Women are equally welcome and there is reason to believe that persons with the appropriate aptitude and interest may be very successful in this career.

Also consult Tertiary Training for particulars on the National Diploma (Building Surveying).

### RADIOGRAPHY

Universities: Medunsa, Orange Free State, Pretoria

#### FIRST DEGREES

Bachelor of Radiography (Diagnostic): B. Rad. (Diagnostic) (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a minimum pass mark in Mathematics SG. It is recommended that Physical Science or Physics, and if possible Biology as well, be taken for the Std 10 examination.

Applications for admission should be addressed to: The Medical Superintendent, Universitas Hospital, Bloemfontein 9301.

All applications are subject to selection.

Curriculum: Three years of in-service training. The curriculum includes the following subjects: Clinical Radiography, Radiographic Anatomy, Applied Biophysics, Radiography Theory.

Bachelor of Radiography (endorsement Radiodiagnosis): B.Rad. (UP)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Biology HG or Physical Science HG or both, or 50 % SG in the subjects mentioned. It is preferable that both Physical Science and Biology should be passed.

With a view to selection for the course each candidate must take a preliminary course in nursing at the H.F. Verwoerd Hospital for five weeks.

Each student must apply for registration with the SA Medical and Dental Council as a student in Radiography immediately after admission to the first year of study.

Curriculum: Three years of full-time study. During this period each candidate must be attached to the Department of Radiodiagnosis of the H.F. Verwoerd Hospital as a student radiographer.

The curriculum comprises 13 courses. The major subjects are Medical Physics III and Radiographic Diagnosis III.

#### POST-GRADUATE DEGREES

Honours Bachelor of Radiography: B.Rad.Hons. (UOFS)  
Bachelor of Radiography (Honours): B.Rad.(Hons.) (UP)

Master of Radiography: M.Rad. (UOFS, UP)



## DIPLOMAS

### Diploma in Diagnostic Radiography: Dip. Diag. Rad. (Medunsa)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with passes in Mathematics, Physical Science and/or Biology.

Curriculum: Three years. During training candidates are enrolled as students at Medunsa and are simultaneously appointed in in-service training posts as employees of the Department of Health and Welfare.

The curriculum comprises 12 courses. The major subjects are Anatomy, Physiology and Pathology; Image Recording; Radiation Techniques.

### Diploma in Radiographic Therapy: Dip. Rad. Th. (UP)

Admission requirements: B.Rad.(Diag.) or a two-year diploma in Radiographic Diagnosis.

Curriculum: 18 months of which the academic part extends over one year and the additional practical training lasts six months.

### Diploma in Radiation Protection for Sisters (UP)

Admission requirements: A Senior Certificate and the status of a sister in a general hospital.

Curriculum: One year of full-time study. During this period each candidate must be attached to the departments of Radiognosis and Radiotherapy of the H.F. Verwoerd Hospital as a sister-student radiographer.

### Diploma in Teaching Radiography (UCT)

Admission requirements: Candidates must

- have passed the Matriculation examination or any other examination approved by the Senate;
- hold a qualification in the appropriate branch of Radiography which is registrable with the SA Medical and Dental Council;
- have had at least four years' approved experience in the appropriate branch of Radiography.

Curriculum: One year of full-time study. Training is offered in any of the three disciplines of Radiography, namely in Radiodiagnosis, in Radiotherapy or in Nuclear Medicine. The curriculum covers educational methods as well as clinical instruction in modern trends in treatment affecting Radiography.

**VOCATIONAL SERVICE:** Radiography embraces the two branches of radiographic diagnosis (examination of a patient with the aid of X-ray apparatus) and radiotherapy (X-ray treatment of outwardly invisible ailments). Both these fields are interesting and they include a variety of duties which must be carried out in co-operation with doctors and hospital officials but mainly under the supervision and according to the prescription of a radiologist. (The radiologist is a qualified medical practitioner who has also specialised in radiotherapy and/or radiographic diagnosis.)

The occupation is normally practised by women. There is, however, a need for qualified men as well and favourable prospects exist. Misconceptions concerning X-rays, their use and attendant dangers have in the past caused hesitation in the minds of persons interested in this occupation. Today, however, adequate precautionary measures are taken to protect the radiographer against possible radiation, and the occupation is thus absolutely safe.

Radiographers are employed by all the hospitals in the country and the doubly qualified radiographer (in radiographic diagnosis as well as radiotherapy), in particular, should experience no difficulty in obtaining a suitable post. Many radiographers are also appointed in the private practices of radiologists. The South African qualification is recognised internationally and the double qualification, in particular, paves the way for experience abroad in diagnostic and therapeutic work.

Also consult Tertiary Training for particulars on the National Diploma in Radiography.

## SECRETARIAL PRACTICE

University: Rhodes

### CERTIFICATE

#### Certificate in Secretarial Practice

Admission requirement: A Senior Certificate.

Curriculum: Two years of full-time study. A candidate must obtain credit in ten courses. The following courses are included in the curriculum: Secretarial and Commercial Practice, Shorthand, Typewriting, Business Administration and subjects chosen from, inter alia, the following: Afrikaans or Afrikaans/Nederlands I, English I, French, German, Psychology, Accounting, Speech and Drama, Sociology.

VOCATIONAL SERVICE: The purpose of this course is to train secretaries who not only possess the secretarial skills required in a business environment, but are also competent and well-informed. Modern business firms have an urgent need for the competent private secretary/personal assistant who is capable of attending to the numerous clerical and secretarial details of business. Career opportunities are virtually unlimited. See also Tertiary training for various secretarial courses.

## SOCIAL SCIENCE

Universities: Cape Town, Natal, Orange Free State, Rhodes

### FIRST DEGREES

Bachelor of Social Science: B.Soc. Sc. (UCT, UN, RU)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study or four years of part-time study (UN). The curriculum includes nine or ten courses depending on the university. Students select their courses from subjects such as Anthropology (RU), Comparative African Government and Administration (UN) or Comparative African Government and Law (UCT), Economic History, Economics, Geography, History, Psychology, Social Anthropology (UCT, UN) and Sociology.

At UCT students must take three courses in one of the following subjects: Psychology, Public Administration, Sociology.

Baccalaureus Societatis Scientiae: B.Soc. Sc. (UOFS)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years. Students first select their two major subjects and then the packet (group of subjects) with the supporting subjects of their choice. A packet comprises approximately 22 semester courses. The packets are grouped under fifteen fields according to the combination of major subjects. The following serve as examples:

- Industrial Sociology field (Industrial field): Major subjects are Industrial Sociology and Industrial Psychology
- Industrial Sociology field (Public services): Major subjects are Industrial Sociology and Public Administration
- Criminology field: Major subjects are Criminology and Psychology or Criminology and Sociology.

Other major subjects are Anthropology, Economics, Geography, Philosophy, Political Science.

#### POST-GRADUATE DEGREES

Bachelor of Social Science (Honours): B.Soc.Sc. (Hons.) (UCT) or B.Soc.Sc.Hons. (UN)

Honneursbaccalaureus Societatis Scientiae: B.Soc.Sc. Hons. (UOFS)

Bachelor of Social Science with Honours: B.Soc.Sc. (Hons.) (RU)

Master of Social Science: M.Soc.Sc. (UCT, UN, RU)

Magister Societatis Scientiae: M.Soc.Sc. (UOFS)

Master of Public Administration: M.Pub.Ad. (UCT)

Doctor of Philosophy: Ph.D. (UCT, UN, RU)

Doctor of Social Science: D.Soc.Sc. (UCT, UN, RU)

Doctor Societatis Scientiae: D.Soc.Sc. (UOFS)

#### DIPLOMAS

Diploma in Applied Social Sciences (UN)

Admission requirements: A graduate who has completed a major in one or more of the following subjects: Business Administration, Comparative African Government and Administration, Economic History, Economics, Geography, History, Industrial Psychology, Industrial Sociology, Philosophy, Political Science, Psychology, Social Anthropology, Social Work, Sociology, Town and Regional Planning.

Curriculum: One year of full-time study or two years of part-time study.

Diploma in Social Studies (RU)

Admission requirements: A Senior Certificate.

Curriculum: Two years of full-time study. The curriculum consists of eight courses. Five courses must be selected from subjects prescribed for the B.Soc.Sc. degree.

VOCATIONAL SERVICE: See ARTS(p.44) for the vocational service under the subjects concerned.

#### SOCIAL WORK

Universities: All the universities except Medunsa

#### FIRST DEGREES

Bachelor of Social Science in Social Work: B.Soc.Sc.(S.W.) (UCT)

Baccalaureus Artium in Social Work: B.A.(S.W.) (UDW, UPE)

Bachelor of Social Science: B.Soc.Sc. (UN)

Baccalaureus Societatis Scientiae in Social Work: B.Soc.Sc.(S.W.) (UOFS)

Bachelor of Arts in Social Work: B.A.(S.W.) (UP, RAU)

Bachelor of Social Science (Social Work): B.Soc.Sc.(Soc.Work) (RU)

B.A. in Social Work (US)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years of full-time study or five years of part-time study (UP). The curriculum usually includes ten or eleven courses comprising four courses in Social Work, three courses in Sociology or Psychology and at least two courses in Sociology or

Psychology (the subject which was not chosen as second major). Other courses are selected from ordinary B.A. subjects.

A student is usually required to do practical social work with an organisation employing a trained social worker.

Students who have completed the B.A.(S.W.) degree successfully at UP and RAU may continue directly with the M.A.(S.W.) degree course.

Bachelor of Arts in Social Work: B.A.(S.W.) (UFH, UZ)

Baccalaureus Artium in Social Work: B.A.(S.W.) (UNorth, UWC)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three years of full-time study. The curriculum includes Social Work III; Sociology III or Psychology III; Sociology II or Psychology II (the subject which was not chosen as second major) and ordinary B.A. courses.

Students must undergo practical training with a recognised organisation.

Bachelor of Arts (Social Work): B.A.(S.W.) (PU vir CHE)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Students are selected.

Curriculum: Four years of full-time study. A student compiles his curriculum with course units\* from the following subjects:

- Subjects in Social Work: Social Work Theory; Social Work: Professional Practice
- Other subjects: Criminology, Psychology, Sociology and one other subject selected from the ordinary B.A. subjects

The major subjects are Social Work and Psychology or Sociology. A dissertation is required.

\*See B.A., p. 54.

Bachelor of Arts in Social Science: B.A.(S.S.) (UNISA)

Admission requirements: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

A student shall be admitted only with the special permission of the Senate, and only after having submitted evidence that arrangements for practical work at an approved organisation can be made and that supervision will be carried out by a suitable person.

Curriculum: At least four years. The curriculum comprises at least eleven courses and practical social work. The major subjects are Social Work IV and either Sociology III or Psychology III. The remaining courses are as follows: Two courses in Sociology or Psychology (the subject which was not selected as the second major subject); Marriage Guidance and Counselling; Welfare Law.

Bachelor of Arts in Social Work: B.A. (Social Work) (UW)

Admission requirements: See p. 64.

Curriculum: Four years of full-time study. The curriculum comprises Social Work Theory and Practice IV, Field Instruction in Social Work Practice IV, Psychiatry and Mental Hygiene for Social Workers or, by permission of the Senate, a course in an ordinary B.A. subject, Applied Psychology III or Sociology III, Afrikaans or Afrikaans en Nederlands I or English I or a course in another language and a course selected from subjects for the ordinary B.A. In the fourth year of study a dissertation on an approved topic is required.

## POST-GRADUATE DEGREES

Bachelor of Social Science in Social Work (Honours): B.Soc.Sc.(S.W.)(Hons.) (UCT)  
Honoris Baccalaureus Artium in Social Work: B.A.(S.W.)Hons. (UDW)  
Bachelor of Arts in Social Work (Honours): B.A.(S.W.)(Hons.) (UFH)  
Bachelor of Social Science (Honours): B.Soc.Sc.Hons. (UN)  
Baccalaureus Artium cum Honoribus in Social Work: B.A. Hons.(S.W.) (UNorth)  
Honneursbaccalaureus Societatis Scientiae in Social Science: B.Soc.Sc.Hons.(S.W.) (UOFS)  
Baccalaureus Artium Honores: B.A.Hons. (UPE)  
Honours Bachelor of Arts: Honns. B.A. (PU for CHE)  
Honours Bachelor of Arts in Social Science: Hons.B.A.(S.S.) (UNISA)  
Honours Bachelor of Arts in Social Work: B.A. Social Work Hons. (US)  
Honours Bachelor of Arts in Social Work (Medical Social Work field): B.A.Social Work (Medical Social Work)(Hons.) (US)  
Honours Baccalaureus Artium in Social Work: B.A.Hons. (S./W.) (UWC)  
Honours Bachelor of Arts in Social Work: Hons.B.A.(S.W.) (UZ)

Master of Social Science: M.Soc.Sc. (UCT, UN, RU)  
Magister Artium in Social Work: M.A.(S.W.) (UDW, UNorth) or M.A.(S./W.) (UWC)  
Master of Arts in Social Work: M.A.(S.W.) (UFH, UP, RAU, UZ)  
Magister Societatis Scientiae in Social Work: M.Soc.Sc.(S.W.) (UOFS)  
Magister Artium: M.A. (UPE, PU for CHE)  
Master of Arts in Social Science: M.A.(S.S.) (UNISA)  
Master of Arts in Social Science in Mental Health: M.A. (S.S.)(Mental Health) (UNISA)  
Master of Arts in Social Work: M.A. in Social Work (US) or M.A. (Social Work) (UW)

Doctor of Philosophy: Ph.D. (UCT, UN, RU, UW)  
Doctor Philosophiae: D.Phil. (UDW, UNorth, UPE, PU for CHE, UP, US, UWC)  
Doctor of Philosophy: D.Phil. (UFH, UNISA, UZ)  
Doctor Societatis Scientiae in Social Work: D.Soc.Sc.(S.W.) (UOFS)  
Doctor of Literature and Philosophy: D. Litt. et Phil. (RAU)

## DIPLOMAS

Diploma in Social Science (Social Work): Dip.Soc.Sc.(S.W.) (UCT)

Admission requirement: A Senior Certificate.

Curriculum: Three years of full-time study. The curriculum is identical to the first three years of the degree of B.Soc.Sc.(S.W.).

Advanced Diploma in Social Work (UCT)

Admission requirement: A B.Soc.Sc.(S.W.) degree or the Diploma in Social Work or an equivalent qualification.

Curriculum: One year.

University Diploma in Social Work: Dip. Soc. Work (UFH)

Admission requirement: A Senior Certificate.

Curriculum: The curriculum is the same as that for the degree of B.A.(S.W.).

Diploma in Advanced Social Work (UPE)

Admission requirement: Registered social workers in possession of a three-year diploma.

Curriculum: Two years of part-time study.

Diploma in Social Work (PU for CHE, RU)

Admission requirement: A Senior Certificate. Students are selected.

Curriculum: Four years of full-time study.

The curriculum is the same as that laid down for the degree of B.Soc.Sc.(S.W.) or B.A.(S.W.) according to the university offering the Diploma course.

Advanced Diploma in Social Work (Supervision) (US)

Admission requirement: A Bachelor's degree in Social Work or an approved Diploma in Social Work. Only candidates who have been in Social Work practice for at least three years are admitted. Selection is done by a personal interview. Not more than 6 and not less than 3 students are admitted to the course each year.

Curriculum: One year of full-time study.

Diploma in Social Work (UWC)

Admission requirement: A Senior Certificate.

Curriculum: Three years of full-time study. The curriculum is the same as that for the degree of B.A.(S/W).

Higher Diploma in Social Work (UWC)

Admission requirement: The Diploma in Social Work with a minimum of 60 % in the final examination.

Curriculum: One year of full-time study or two years of part-time study.

Higher Diploma in Advanced Social Work Practice (UW)

Admission requirement: A. B.A. degree in Social Work.

Curriculum: Two years of part-time study.

Higher Diploma in Community Organisation: H.Dip.Com.Org. (UZ)

Admission requirement: A. B.A.(S.W.) degree or a diploma in Social Work.

Curriculum: One year.

VOCATIONAL SERVICE: Social work deals with the effective social functioning of man within, and outside the family context in groups and in the community. In addition to handling the usual problems which arise in the individual and family context, such as, for instance, marital problems, adoptions, drug addiction and other personal problems, the social worker is also faced by the challenge to assist in finding solutions to problems in respect of personal and social adaptation which threaten nations, and more particularly the youth of today. The aim of the social worker is therefore to assist people from all spheres and groups of society to help themselves, to enable them once again to play a meaningful part in society by including them in the normal social and economic service set-up. Three primary methods are applied to cope with the work, viz case studies, social group work and community work. Apart from particular personality traits, the social worker must have professional training (degree or diploma) which will equip him for the demands of this specialised profession.

At present the Public Service is the largest single employer of men and women who have qualified in the social sciences. The activities comprise such a broad field that provision has been made for a large number of high professional posts. The Departments which are concerned with welfare and related services, are those of Health and Welfare and Co-operation and Development. Other bodies which render social services or where social work is secondary to the main aim are, for example, The South African National Council on Alcoholism and Drug Dependence, the Christelike Maatskaplike Raad, hospitals, municipalities, prisons, the Railways, the Defence Force, Posts and Telecommunications, child welfare associations, marriage bureaux, the mines, Iscor, Sasol and other large industrial concerns. Important posts in personnel management are at present held by social workers, whereas persons with the necessary qualifications and experience may obtain posts as lecturers at universities. The subject Social Work

is not restricted to the profession of social work. As a subject for practically any B.A. field of study, it is of particular value to ministers, nurses, teachers, psychologists, sociologists, and so on.

Also see Sociology, p.75.

#### SPEECH THERAPY AND AUDIOLOGY/LOGOPAEDICS

Universities: Cape Town, Durban-Westville, Pretoria, Witwatersrand

#### FIRST DEGREES

Bachelor or Science (Logopaedics): B.Sc.(Log.) (UCT)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least 50 % in Mathematics SG. Biology is recommended for the Std 10 examination.

Curriculum: Four years of full-time study. The curriculum includes the following courses: Speech Pathology and Therapy IV, Audiology III, Psychology III, Structural and Functional Anatomy I, Phonetics and Linguistics II, Neuro-Sciences I (half course), and a treatise on an aspect of either Speech Pathology or Audiology. Students are required to undertake practical work.

Bachelor of Speech and Hearing Therapy (UDW)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or a science subject HG, or at least 50 % SG in the subjects mentioned.

Curriculum: Four years of full-time study. The curriculum includes, inter alia, Speech Pathology IV, Audiology III, Clinical Speech Therapy III, Clinical Audiology II, Phonetics and Linguistics (for Speech and Hearing Therapy) II and a research project.

Bachelor of Speech Therapy and Audiology: B.Log. (UP)

Admission requirement: As for the ordinary B.A. degree (see p.55) and preferably with passes of at least 40 % in Mathematics as well as Biology and/or Physics.

Curriculum: Four years of full-time study. The curriculum includes, inter alia, the following courses: Speech Therapy IV; Audiology III; Psychology III; Neurology of Speech, Voice and Hearing; Pathology of the Speech, Voice and Hearing Organs and Clinical Neurology; Speech Science II; two courses in any modern language and a dissertation on an approved specific section of either Speech Therapy or Audiology.

Students are required to do practical work in their second, third and fourth years of study.

Bachelor of Arts in Speech and Hearing Therapy: B.A.(Sp. & H. Therapy) (UW)

Admission requirement: As for the ordinary B.A. degree (see p.64) with a pass in Mathematics HG or at least 50 % in Mathematics SG.

Curriculum: Four years of full-time study. The curriculum comprises, inter alia, the following courses: Speech and Language Pathology IV, Clinical Practicum in Speech Pathology IV, Audiology III, Clinical Practicum in Audiology III, Applied Psychology III, Linguistics II. A report based on research on an approved topic is required in the fourth year of study.

#### POST-GRADUATE DEGREES

Master of Speech and Hearing Therapy (UDW)

Master of Speech Therapy and Audiology: M.Log. (UP)

Master of Arts in Audiology: M.A.(Audiology) (UW)

Master of Arts in Speech Pathology: M.A.(Speech Pathology) (UW)

Doctor of Philosophy: D.Phil. (UP)  
Doctor of Philosophy: Ph.D. (UW)  
Doctor of Literature: D.Litt. (UW)

**VOCATIONAL SERVICE:** There is a growing awareness of the importance of this profession, which can be practised by both men and women. In contrast with Speech (as found in Speech Training and Drama fields of study), in which an attempt is made to improve the standard of normal speech, speech therapy is applied to persons with voice, speech and hearing disturbances or deviations. Deficiencies in communication which are treated by the speech therapist are, for example, speech defects which arise as a result of hearing defects, problems with certain sounds, stuttering, reading difficulties, the cleft palate and brain damage which has a deleterious effect on speech, voice aberrations (e.g. hoarseness), deviations which originate as a result of psychological problems, et cetera.

The qualified speech therapist will have no difficulty in obtaining a post in accordance with his or her aptitude and interest and the occupation may, for example, be pursued through

- entering the service of a provincial education department or the Department of National Education (in some cases a teacher's qualification and/or teaching experience may be required);

- serving in hospitals or hospital clinics, in co-operation with ear, nose and throat specialists, neurologists, pediatricians, plastic surgeons and psychiatrists;

- an appointment in a speech, voice and hearing clinic at the university;

- a clinic of one's own and private practice;

- an appointment as audiologist in the SA Defence Force where, for example, the hearing of pilots is tested.

One may derive much personal satisfaction from speech therapy as a career. Helping someone to regain his place in the community is an experience which brings great happiness; assisting him or her to communicate normally is indeed worth the trouble.

## TAXATION

University: Cape Town

## DIPLOMA

Advanced Diploma in Taxation: Adv.Dip.Tax.

Admission requirement: A graduate or a non-graduate who holds an approved professional qualification.

Curriculum: One year of full-time study or three semesters of part-time study. The examination consists of a formal examination. In addition a technical report may be required. A candidate who is not successful in the examination will not be permitted to present himself for the examination again.

**VOCATIONAL SERVICE:** This course is intended for persons who are involved with taxation in a professional capacity. They are thus more prepared to deal with their tasks.

## TEXTILE SCIENCE

University: Port Elizabeth

## FIRST DEGREE

Magister Scientiae in Textile Science: M.Sc. in Textile Science

Admission requirement: A candidate must hold one of the following minimum qualifications:



- B.Sc. (Textiles) degree
- Diploma in Textile Engineering equivalent to a B.Sc. Hons. degree
- B.Sc. (Hons.) degree in Chemistry, Physics, Mathematics or Mathematical Statistics.

Curriculum: One of the following fields may be selected for research: Textile Chemistry, Textile Physics, Mechanical Processing, Textile Engineering.

All candidates should be employed by a well established textile laboratory having the necessary research facilities.

#### DOCTOR'S DEGREE

Philosophiae Doctor in Textile Science: Ph.D. in Textile Science

VOCATIONAL SERVICE: The textile industry in South Africa is an important source of future growth and job opportunities. Owing to its phenomenal expansion, this powerful industry offers wonderful opportunities for men and women trained as textile technologists. The prospects are obvious. Textile scientists are received with open arms, particularly by textile manufacturers in the following sections, for example: scouring, carbonising, carding and combing, drawing and spinning, knitting, weaving, dyeing and finishing and quality control. Graduates are also employed by, for example, the Wool and Textile Research Institute of the CSIR and the test laboratories of the SABS.

#### THEOLOGY

Universities: Durban-Westville, Fort Hare, Natal, North, Orange Free State, Potchefstroom, Pretoria, Rhodes, South Africa, Stellenbosch, Western Cape, Zululand

The University of Port Elizabeth and the Rand Afrikaans University also offer curricula for the B.A. Admission degree.

#### FIRST DEGREES

Baccalaureus Theologiae: B.Theol. (UDW)  
Bachelor of Theology: B.Theol. (UFH, UZ)  
Baccalaureus Theologiae: B.Th. (UNorth)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Three or four years of full-time study. The curriculum includes, inter alia, the following subjects; Old Testament, New Testament, General Church History or Ecclesiastical History, Missiology, Greek or Hellenistic Greek, Hebrew or Classical Hebrew.

Bachelor of Arts: B.A. (UN)

The University of Natal offers both Biblical Studies and Theology as major subjects in which two qualifying courses may be taken. No first year student will be admitted to Biblical Studies I or Theology I unless special permission is obtained from the Head of the Department. A student must also complete one course in Classical Hebrew. He may then be admitted to the B.A.Hons. degree in Divinity.

See ARTS: University of Natal (p.48) for further particulars concerning the B.A. degree course.

Bachelor of Theology: B.Th. (RU)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years of full-time study. There is a selection from five curricula, viz 1. General; 2. Biblical Studies; 3. Systematic Theology; 4. Ecclesiastical History; and 5. Pastoral Theology. A candidate may only be admitted to curricula 2 to 5 if he has obtained the permission of the Dean of the Faculty of Divinity.

Bachelor of Theology: B.Th. (UNISA)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: At least three years and not more than ten years. The curriculum consists of at least 30 modules (see p.221). The following subjects at first-year level are compulsory: Old Testament, New Testament, Church History, Missiology and Science of Religion, Systematic Theology, Theological Ethics, Practical Theology. At least two of these subjects must be major subjects.

Note: The University of South Africa also grants the following degrees to students of the Huguenot College, Wellington:

Baccalaureus Diaconologiae: B.Diac.  
Honours Bachelor of Diaconologiae: Hons.B.Diac.  
Magister Diaconologiae: M.Diac.

Baccalaureus Theologiae: B.Th. (UWC)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Curriculum: Four years of full-time study. The curriculum consists of 17 courses of which 8½ are theological courses and 8½ are courses from the B.A. curriculum. Fourth-year subjects are Diaconiology, Systematic Theology, Ecclesiastical History, New Testament and Old Testament.

POST-GRADUATE DEGREES

Baccalaureus Divinitatis: B.D. (UDW)

Bachelor of Divinity: B.D. (UZ)

Admission requirement: A B.A. degree with certain prescribed courses, inter alia, Greek, Hebrew, Latin and/or German; or a B.Theol. degree (UZ).

Curriculum: Three years of full-time study.

Baccalaureus Theologiae: B.Th. (UOFS)

Admission requirement: A Bachelor's degree with the following subjects: Hebrew II, Greek II, Biblical Studies I, Latin Special or German Special (if the candidate has not passed Std 10 Latin or Std 10 German).

Curriculum: Three years of full-time study.

Bachelor of Theology: Th.B. (PU for CHE)

Admission requirement: A B.A. degree. The following courses must be completed: Semitic Languages II, Greek II (including New Testament Greek), Latin (Std 10) or Latin Special, Philosophy I.

A student may not include the subject Biblical Studies in his curriculum for the B.A. degree. A student must give proof of a satisfactory reading knowledge of German.

Curriculum: Four years of full-time study.

Bachelor of Divinity: B.D. (UP)

Admission requirement

Division A - Dutch Reformed Church of Africa (Ned. Hervormde Kerk van Afrika): A Bachelor's degree and credit for Greek II, Hebrew II, Philosophy I, Biblical Studies I; one of the following: Latin IA or IB, a modern language, Psychology I, Anthropology I.

Any two of the above-mentioned subjects may be taken as major subjects provided that at least one of the two must be either Greek III or Hebrew III.

A student must have passed Std 10 Latin or Latin Special.

Division B - Dutch Reformed Church (Nederduitse Gereformeerde Kerk): A Bachelor's degree and credit for Biblical Studies I, Latin Special or German IB, Greek II (including New Testament Greek) and Hebrew II: Provided that a candidate who passed Latin or German in the Std 10 examination may be exempted from taking Latin Special or German IB.

A candidate who wishes to become a missionary must complete a course in either a Bantu language or Anthropology or Applied Anthropology (Development Science).

Curriculum: Three years of full-time study.

Bachelor of Divinity: B.D. (RU)

Admission requirement: The B.Th. degree or a Bachelor's degree in another faculty, preferably a B.A. degree with two major subjects from Biblical Studies, Systematic Theology and Ecclesiastical History.

Curriculum: One year of full-time study after the B.Th. degree; two years of full-time study after a B.A. degree with the above-mentioned subjects, otherwise three years.

Bachelor of Divinity: B.D. (UNISA)

Admission requirement: A candidate must hold a Bachelor's degree, and have passed Classical Hebrew II and either Greek II or Hellenistic Greek II and either Latin I or Latin IB or have passed in such special examinations in these subjects as may be determined by the Senate: provided that a student may take a maximum of two of the language courses concurrently with specific parts of the B.D. curriculum.

A reading knowledge of German is desirable.

Curriculum: At least three years. The degree has to be completed within ten years after first registration for the degree.

Bachelor of Theology: B.Th. (US)

Admission requirement: A Bachelor's degree obtained in another faculty than the Faculty of Theology. The following subjects must have been passed: Biblical Studies I; Hebrew II and Greek II (A or B) or an approved two-year course in Hebrew and Greek.

The subject Church Assistance must not form part of the minimum ten courses required for the B.A. degree.

In view of prescribed work students are strongly advised to acquire a reading knowledge of German by taking Special German or German I, if necessary.

In view of academic preparation and service in one of the undermentioned divisions of the Dutch Reformed Church, students are strongly advised to include the following subjects as indicated in each division, in their Bachelor's degree course:

- (i) Mother-church: Afrikaans-Nederlands, Philosophy, Psychology and Sociology
- (ii) Missionary church: Afrikaans-Nederlands and Sociology
- (iii) Bantu church: Afrikaans-Nederlands, English, a Bantu language and Anthropology.

Curriculum: Three years of full-time study. The curriculum includes six subjects, all of which are major subjects.

Licentiate in Theology (US)

Students who have obtained the B.Th. degree may be admitted to the fourth-year course to obtain the Licentiate in Theology.

The curriculum consists of a dissertation and continued study in the six subjects which were taken for the B.Th. degree.

Bachelor of Theology(Honours): B.Theol.(Hons.) (UFH)  
Bachelor of Arts(Honours): B.A.Hons. (UN)  
Baccalaureus Theologiae cum Honoribus: B.Th. Hons (UNorth)  
Bachelor of Theology with Honours: B.Th.(Hons.) (RU)  
Honours Bachelor of Theology: Hons.B.Th. (UNISA)  
Honours Baccalaureus Theologiae: B.Th.Hons. (UWC)

Magister Divinitatis: M. Div. (UDW)  
Magister Theologiae: M.Theol. (UDW) or M.Th. (UNorth, UOFS, UWC)  
Master of Theology: M. Theol. (UFH) or M.Th. (RU, UNISA, US)  
Master of Arts: M.A. (UN)  
Theologiae Magister: Th.M. (PU for CHE)

Doctor Divinitatis: D.D. (UDW)  
Doctor of Theology: D.Theol. (UFH) or D.Th. (UNISA, US)  
Doctor Theologiae: D.Th. (UNorth, UOFS, UWC)  
Theologiae Doctor: Th.D. (PU for CHE)  
Doctor of Divinity: D.D. (UP, RU)  
Doctor of Philosophy: Ph.D. (UN, RU)

#### CERTIFICATES AND DIPLOMAS

##### Certificate in Theology (UDW)

Admission requirement: As determined by the Senate after consultation with the respective denominations.

Curriculum: Three years of full-time study. Third-year subjects are Old Testament, New Testament, Dogmatics and Ethics, Practical Theology.

##### Diploma in Theology (UFH, UNorth, UZ)

Admission requirement: A Senior Certificate or mature non-matriculants.

Curriculum: Three or four years of full-time study. The major subjects are Old and New Testament, Systematic Theology, Ecclesiastical History and Missiology.

##### Higher Diploma in Theology (UNorth)

Admission requirement: The Diploma in Theology or the B.Th. degree or an equivalent theological degree or another Bachelor's degree with additional courses as prescribed by the Senate.

Curriculum: The curriculum is the same as that for the B.Th.Hons. degree.

##### Post-graduate Diploma in Theology (UOFS)

Admission requirement: A B.Th. degree or an equivalent qualification.

Curriculum: At least one year.

##### Post-graduate Diploma in Theology (UP)

Admission requirement: A B.D. degree or an equivalent qualification.

Curriculum: One year of full-time study. A candidate who wishes to be trained as a minister of the Dutch Reformed Church (Ned.Geref.Kerk) must obtain this Diploma as well.

##### Certificate in Religious Knowledge (RU)

Admission requirement: Mature non-matriculants who only have two years at their disposal to attend the University.

Curriculum: Two years of full-time study. The Certificate is designed to provide an elementary training for prospective ministers, missionaries and teachers.

The major courses are: Biblical Studies I and II, Ecclesiastical History I and II, Systematic Theology I.

Diploma in Theology: Dip.Theol. (RU)

Admission requirement: Mature non-matriculants sent to the University for training by their ecclesiastical authorities.

Curriculum: Three years of full-time study. The curriculum includes approximately the same courses as for the Certificate in Religious Knowledge for the first two years. In the third year students take, inter alia, Biblical Studies III, Systematic Theology III, Ecclesiastical History II.

Diploma in Theology (UNISA)

Admission requirement: A Senior Certificate or equivalent certificate.

Curriculum: At least two years. The curriculum comprises courses in the following subjects: Old Testament, New Testament, Church History, Missiology and Science of Religion, Systematic Theology, Theological Ethics and Practical Theology.

Diploma in Theology (UWC)

Admission requirement: A Senior Certificate.

Curriculum: The curriculum is the same as that for the B.Th. degree. On completion of the Diploma candidates will be admitted to the curriculum of the Licentiate in Theology which is equivalent to that of the B.Th.Hons. degree.

VOCATIONAL SERVICE: Even more than in the case of most of the other fields of study, intending students should obtain clarity beforehand about questions centering around a study of Theology. As South Africa is a country in which there is religious tolerance and the many denominations are allowed to pursue and to expand their activities virtually without any restrictions, and because they differ so much from one another as regards their organisation, training and conditions of service of clergymen, etc., it is impossible to give comprehensive details about all of them. It is therefore recommended that interested persons should of their own account obtain the required information from authoritative sources in their particular church organisations.

Owing to the rapid increase in the population it is evident that this is a field which offers challenging possibilities. Women as well, particularly those interested in missionary work, need not fear unemployment.

#### TOWN AND REGIONAL PLANNING

Universities: Cape Town, Natal, Orange Free State, Potchefstroom, Pretoria, Stellenbosch, Witwatersrand

#### FIRST DEGREES

Bachelor of Arts and Science (Planning): B.Art. et Scien. (Planning) (PU for CHE)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) with a pass in Mathematics HG or at least a C symbol in Mathematics SG.

Curriculum: Four years of full-time study. The major subjects are Town Planning, Regional Planning and Economics. The other subjects are the following: SA Administrative and Planning Legislation, Methods of Regional Analysis, Geography, Sociology, Statistics, Engineering for Planning.

In the final year of study a candidate must also submit a satisfactory paper on an approved subject.

Philosophy of Science A and Philosophy of Science B are compulsory.

Bachelor of Town and Regional Planning: B.(Town and Reg. Planning) (UP)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements are the same as for the B.Eng. degree. See p.145.

Curriculum: Four years of full-time study. The curriculum includes, inter alia, the following courses: Town Planning IV, Regional Planning IV, Economics III or Sociology III or Geography III, Environmental History, Terrain Survey, Geology, and a paper which must be submitted in the fourth year.

Bachelor of Science in Town and Regional Planning: B.Sc.(T.R.P.) (UW)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption).

Additional requirements:

- A pass in Mathematics HG or at least 60 % in Mathematics SG
- A pass on the Higher Grade or at least 60 % SG in one of the following subjects: Biology, Geography, Physical Science, Physiology.

Curriculum: Four years of full-time study. Students are required to perform practical vacation work and to participate in prescribed visits and tours. The curriculum includes, inter alia, the following courses: Town and Regional Planning Practice IV, Town and Regional Planning Theory IV, Town and Regional Planning Law, Geography I, Economics I, Mathematics I, Professional Practice and Public Administration. Candidates must submit a dissertation in the fourth year of study.

#### MASTER'S DEGREES

Master of City and Regional Planning: M.C.R.P. (UCT)

Admission requirement: A recognised degree from an approved institution.

Curriculum: Two years of full-time study.

Master of City Planning and Urban Design: M.C.P.U.D. (UCT)

Admission requirement: A degree in Architecture from any recognised institution approved by the Senate.

Curriculum: Two years of full-time study.

Master of Town and Regional Planning: M.T.R.P. (UN)

Admission requirement: A Bachelor's degree in an approved field.

Curriculum: Two years of full-time study.

Master of Science in Urban and Regional Planning: M.Sc.U.R.P. (UN)

Admission requirement: A graduate in Architecture, Building, Engineering, Land Surveying, Town Planning or Quantity Surveying or a graduate who holds a Bachelor's degree in another approved field.

Curriculum: One year of full-time research or two years of part-time research.

Master of Town and Regional Planning: M. of Town and Regional Planning (UOFS)

Admission requirement: (i) Persons who hold a degree in Town and Regional Planning or an equivalent qualification.

(ii) Persons with little or no training in planning and related fields, but with a four-year degree or an honours degree in an appropriate field or who hold appropriate qualifications.

Curriculum: (i) Two years for those admitted under (i).

(ii) Two years of full-time study or three years of part-time study for those admitted to the course under (ii).

### Master of Town and Regional Planning (US)

Admission requirement: A candidate must hold one of the following qualifications:

- B.A. degree with at least one of the following as a major subject: Geography A, Economics, Sociology
- B.Sc. degree with at least one of the following as a major subject: Geography B, Geology, Mathematics
- B.Sc. degree in Agriculture (Agricultural Economics)
- B.Com.
- B.Econ.
- B.Admin.
- B.Eng. (Civil Engineering)
- B.Sc. in Forestry
- A Bachelor's degree in Architecture
- A Bachelor's degree in Surveying.

Curriculum: Two years of full-time study. Students who hold a four-year Bachelor's degree in Town and Regional Planning may also be admitted to the course. They must follow an approved curriculum of research and/or advanced study at this University or other approved place and they are required to submit a satisfactory dissertation.

Master of Arts and Science (Planning): M.Art. et Scien. (Planning) (PU for CHE)

Master of Town and Regional Planning: M.(Town and Reg.Planning) (UP)

Master of Science in Town and Regional Planning: M.Sc. (T.R.P.) (UW)

Master of Environmental Planning: M.E.P. (UW)

### DOCTOR'S DEGREES

Doctor of Philosophy: Ph.D. (UCT, UN, UW)

Philosophiae Doctor: Ph.D. (UOFS)

Doctor Philosophiae: D.Phil. (PU for CHE, US)

Doctor of Town and Regional Planning: D.T. and R. (UP)

Doctor of Town and Regional Planning: D.(T.R.P.) (UW)

Doctor of Science in Town and Regional Planning: D.Sc. (T.R.P.) (UW)

### DIPLOMAS

Diploma of City and Regional Planning: Dip. C.R.P. (UCT)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) or any other equivalent certificate; and a diploma or professional qualification approved by the Senate.

Curriculum: Two years of full-time study.

Diploma of City Planning and Urban Design: Dip. C.P.U.D. (UCT)

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption) or any other equivalent certificate; and a diploma or professional qualification in Architecture approved by the Senate.

Curriculum: Two years of full-time study.

Higher Diploma in Planning for Developing Areas: H.Dip.P.D.A. (UW)

Admission requirement: A Bachelor's degree in Architecture, Town and Regional Planning, Building, Civil Engineering or Land Surveying or a B.A. or B.Sc. degree with three courses in Economics or Geography or Sociology or at least two courses in each of two of these subjects or other related subjects or other approved degree.

Curriculum: One year of full-time study.

VOCATIONAL SERVICE: Town and Regional Planning is one of the professions which in recent times has gained in importance. In South Africa also there has lately been a strong demand for qualified planners, owing to the fact, inter alia, that many of the cities and larger towns have reached the stage where urban innovation, i.e. the replacement of old and unsuitable buildings and inadequate road systems by modern ones, have become essential. Furthermore, the concentration of population at growth points necessitates thorough planning for the future which will comprise comprehensive surveys of sources, the evaluation thereof and research into the best utilisation of these sources in the entire occupational pattern. The planner serves to a large extent as a link between architect and engineer, between economist and sociologist and between public interests and industry.

The majority of planners are at present employed by the larger municipalities, whereas about one third of them are attached to government departments. The rest of them are either employed by the four provincial administrations or have private practices. Additional training in planning is of exceptional value to the civil engineer, architect or land surveyor and may lead to senior posts, particularly in the Public Service. Post-graduate study will also be required for appointment to a post as lecturer at a university. There are academic posts at some technikons as well.

Also consult Tertiary Training for particulars on the National Diploma in Town and Regional Planning.

### TRANSLATION

Universities: Rhodes, South Africa, Stellenbosch, Witwatersrand

#### FIRST DEGREES

Bachelor of Arts (Translation): B.A.(Trans.) (RU)

Admission requirement: As for the B.A. degree. See p.59.

Curriculum: Three years of full-time study. A candidate must obtain credit in at least ten courses selected from the list of subjects for the ordinary B.A. degree (see p.60). The curriculum must include Translation I, II and III; a second major subject chosen from the major subjects for the B.A. degree; Linguistics II; English I and Afrikaans/Nederlands I or Afrikaans I.

Master of Arts in Translation: M.A.(Translation) (UW)

Admission requirement: A graduate in any faculty and in addition, an applicant must satisfy the Senate by means of an entrance examination that he is proficient in at least three languages including at least one official language. A candidate who wishes to proceed to the Court Interpreting option must be proficient in both official languages.

Curriculum: Two years of full-time study. The curriculum comprises Parts I and II each part extending over one year. Part II provides for the selection of one of two options, namely Translating or Court Interpreting.

#### DIPLOMAS

Post-graduate Diploma in Translation: Dip.Trans. (RU)

Admission requirement: A candidate must have been admitted to a degree approved for the purpose; or have been admitted to the status of such degree; and have satisfied the requirements for the Translation Aptitude Test.

Curriculum: At least one academic year. Candidates for the Diploma are required to work for at least four weeks in an approved institution for translation during the period of study to gain practical experience.

Diploma in Translation (UNISA)

Admission requirement: A candidate must



- hold a recognised Bachelor's degree;
- for purposes of the course, select two languages: provided that at least one of the languages must be an official language; and
- have a high degree of proficiency in these two languages.

Curriculum: At least one academic year. A student shall attend a group session (lectures and discussions) of one week per year. Group sessions are arranged in Cape Town and Pretoria and are normally held in November.

The curriculum comprises four papers, viz Elements of Language, Translation Practice I and II, Elements of Translation.

#### Post-graduate Diploma in Translation (US)

Admission requirement: A Bachelor's degree which has been approved for this purpose. Candidates must pass a language proficiency test.

Curriculum: One year of full-time study. Each student is required to work for at least a month in an approved office for translation during the winter vacation.

VOCATIONAL SERVICE: Apart from an excellent command of language, a translator must have a versatile mind which is capable of functioning with ease in any of a great number of fields of knowledge, and of grasping complex and subtle concepts in one language and conveying them in another language, at the level of the expert. He should be a person with wide interests and be well informed on topical matters such as those of a political, economic, educational, social, scientific and technological nature.

The justification for the existence of this profession is based on the claim to equal status of both official languages. Competent translators will always be in demand in the public as well as the private sector.  
Also see p.69.

#### VETERINARY SCIENCE\*

University: Pretoria

#### FIRST DEGREE

#### Bachelor of Veterinary Science: B.V.Sc.

Admission requirement: Matriculation Certificate or a Senior Certificate (Matriculation Exemption). Additional requirements are the same as for the B.Sc. degree. See p.218. As only a limited number of candidates may be admitted, students are selected according to their matriculation achievements.

Curriculum: 5½ years of full-time study. The subjects for the first year are Anatomy, Chemistry, Biological Science and Physics. Subjects taken during the other four and a half years are, inter alia, the following: Anatomy, Pathology, Physiology, Pharmacology, Medicine, Veterinary Public Health, Genesiology, Promotive Animal Health, Surgery.

A candidate must have mastered both official languages sufficiently to be able to follow the lectures in Afrikaans as well as in English. A candidate may choose in which official language he wishes to write the examinations.

Students are required to undertake practical work during university vacations, and to submit proof thereof to the Registrar before the end of the final year.

\* Medunsa offers the degree course from 1982.

#### POST-GRADUATE DEGREES

Bachelor of Veterinary Science (Honours): B.V.Sc. (Hons.)

Master of Veterinary Medicine: M.Med.Vet.

Doctor of Veterinary Science: D.V.Sc.

## DIPLOMA

### Diploma in Veterinary Public Health

Admission requirement: A candidate must hold the degree of B.V.Sc. or an equivalent degree and must be registered with the South African Veterinary Board as a Veterinary Surgeon.

Curriculum: One year of full-time study or two years of part-time study.

VOCATIONAL SERVICE: The qualified veterinary surgeon usually experiences no difficulty in obtaining a satisfactory position in one of the many branches of the profession. On the contrary, there is a need for veterinary surgeons with private practices, particularly in the rural areas.

Since veterinary science is concerned with the prevention and treatment of animal diseases, job opportunities for the veterinary surgeon arise mainly from his interest in the following branches:

- Government veterinary surgeons in the employ of the Department of Agriculture and Fisheries. Basically they are concerned with:
  - . Research on a large and intensive scale in the research institute at Onderstepoort. Here there are opportunities to specialise in one of more than twelve sections. Activities also include the manufacture and distribution of vaccines.
  - . Field service and guidance, which includes visits to farmers, assistance to government departments, routine laboratory duties etc. A Government veterinary surgeon is also assisted by a number of cattle inspectors at outposts in his area.
- The private practitioner, sometimes also in partnership with other veterinary surgeons, with his own consulting rooms. Some of them also specialise and then treat only one kind of animal.
- Veterinary surgeons in the service of municipalities to watch over public health.
- Veterinary surgeons in the employ of agricultural co-operatives for the benefit and convenience of members.
- Veterinary surgeons in the employ of private concerns such as manufacturers of cattle remedies, and animal produce, owners of large cattle stud-farms, poultry farms, etc.
- There is also the possibility of a lecturing post at the University of Pretoria.

Also consult Tertiary Training for particulars on the National Diploma in Veterinary Technology.

## WILD LIFE MANAGEMENT

University: Pretoria

### FIRST DEGREE

Bachelor of Science in Wild Life Management (Honours): B.Sc. Wild Life Management (Hons.)

Admission requirement: Only a limited number of candidates are admitted annually. Written applications for admission must be submitted to the Registrar (Academic) before 15 October each year. Candidates must hold a B.Sc., B.Sc.(Agric.), B.Sc.(Forestry) or B.V.Sc. degree. Candidates who hold a B.Sc. degree must have majored in at least one biological subject and must comply with such requirements as stipulated by the departmental head.

Curriculum: At least one year of full-time study. The curriculum includes, inter alia, Classification, identification and the life cycle of mammals, birds, freshwater fish and flowering plants; Pasture Science; Fishery Management.

#### POST-GRADUATE DEGREES

Master of Science in Wild Life Management: M.Sc.(Wild Life Management)

Doctor of Science in Wild Life Management: D.Sc. (Wild Life Management)

VOCATIONAL SERVICE: See Nature Conservation p.188.

#### WOOD SCIENCE

University: Stellenbosch

#### FIRST DEGREE

Bachelor of Science in Wood Science: B.Sc. in Wood Science

Admission requirement: As for B.Sc. in Forestry. See p.155.

Curriculum: Four years of full-time study. Subjects for the first year comprise Engineering Mathematics, Applied Mathematics, Chemistry, Physics (Eng.), Wood Science (Wood Physics).

Fourth-year subjects include, inter alia, Wood Science (Mechanical Properties), Wood Science (Utilisation), Wood Chemistry, Engineering Economics, Industrial Psychology (for Forestry), Pulp and Paper Technology (Paper Testing).

In their fourth year students may enrol for the Forest Exploitation field. The first three years are the same as that for the B.Sc. in Wood Science. The subjects for the fourth year include the above-mentioned subjects as well as Forest Labour Theory and Work Study, Forest Development and Road Construction, Forest Exploitation and Forest Exploitation Plan.

Students are required to do practical work during vacations and to undertake study tours.

#### POST-GRADUATE DEGREES

Honours Bachelor of Science in Wood Science: B.Sc.Hons. in Wood Science

Master of Science in Wood Science: M.Sc. in Wood Science

Doctor of Philosophy (Wood Science): Ph.D. (Wood Science)

Doctor of Science in Wood Science: D.Sc. in Wood Science

VOCATIONAL SERVICE: There are good prospects for Wood Scientists in South Africa. The sawmilling industry is flourishing and considerable expansion is envisaged in the immediate future in this field as well as in the pulp and paper manufacturing industry and other spheres of wood usage. Apart from the private sector, graduates can also be appointed in the Department of Environment Affairs, the CSIR, the SABS and other public bodies. Research on all the aspects of wood technology will, furthermore, have to be accelerated.

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## APPENDICES

### APPENDIX I

*Subjects not included in the Board's list of subjects for the Matriculation Certificate recognised for exemption purposes when passed at other examinations (H = Higher Grade; S = Standard Grade):*

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#### GROUP D

Arabic S; Hindi S; Telegu S

#### GROUP F

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Aircraft Metalwork Theory S	Instrument Trade Theory S
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Animal Husbandry S	Iron Production and Casting Theory S
Armament Fitting Theory S	Jewellers' Theory S
Armature Winding Theory S	Law of Criminal Procedure and Evidence S
Bakers' Theory S	Letterpress Machine Minding Theory S
Ballet S	Literature (Afr.) S
Bantu Administration S	Literature (Eng.) S
Bantu Law S	Lithography Theory S
Boatbuilding Theory S	Machine Composition Theory (Linesetting)
Bricklaying and Plastering S	Machine Composition Theory (Monotype) S
Bricklaying and Plastering Theory S	Mercantile Law S
Building Construction Theory S	Metallurgical Process Theory (Ferro Alloy Section) S
Business Economics S	Metallurgy (Mining) T1 S
Butchers' Theory S	Metalwork S
Carpentry and Joinery Theory S	Mine Engineering T1 S
Carton Making Theory S	Mine Ventilation T1 S
Coke and By-Product Process Theory S	Mining Coal T1 S
Computer Science S	Mining Economics T1 S
Computer Studies S	Mining (Metalliferous) T1 S
Construction Plant Trade Theory S	Monotype Theory (Including Photo-setting) S
Design S	Motor Body Repairing S
Diamond Trade Theory S	Motor Bodywork Theory S
Diesel Electrical Theory S	Motor Electrical Theory S
Diesel Trade Theory S	Motor Machining Theory S
Electrical Trade Theory S	Motor Mechanics S
Electricians S	Motor Trade Theory S
Electrician-Work S	Motor Vehicle Construction S
Electro Mechanics Theory S	Moulders' Theory S
Electronics S	Music Composition S
Electroplating Theory S	National and Greek Dancing S
Elevator Trade Theory S	Needlework and Clothing S
Farm Mechanics S	Office Equipment Theory S
Field Husbandry S	Packaging Theory S
Ferro Metal Rolling and Shaping Processes Theory S	Painting S
Fitting and Machining Theory S	Painting and Decorating S
Fitting and Turning S	Painting and Decorating Theory S
Footwear Theory S	Patternmakers' Theory S
Furniture Makers' Theory S	Photography Trade Theory S
Furniture Polishing Theory S	Photo Mechanics Theory S
Geology (Mining) T1 S	Phototype Setting and Film Make-up Theory S
Graphic Art S	Plant Operation Theory S
Gravure Machine Minding Theory S	
Hairdressing Theory S	
Hand Composition Theory S	

Platers and Structural Steelworkers' Theory S  
 Plumbers' Theory S  
 Plumbing and Sheet Metalworking S  
 Practical Agriculture S (Shall not be offered with Animal Husbandry S, Farm Mechanics S or Field Husbandry S)  
 Practical Ballet S  
 Practical Music (Second Instrument or Singing) S  
 Public Administration S  
 Radio Theory S  
 Radiotricians S  
 Radiotrician-Work S  
 Railway Signalling Theory S  
 Railway Vehicle Building Theory S  
 Refrigerator Theory S  
 Rigging Theory S  
 Rotary Stereotyping and Rotary Machine Minding Theory S  
 Rubber and Plastic Fitting Theory S  
 Scale Fitters' Theory S  
 Science of Art S  
 Sculpture S  
 Sheet Metalworkers' Theory S  
 Signwriters' Theory S  
 Smithing Theory S  
 South African Criminal Law S  
 Statute Law S  
 Steel Production and Casting Theory S

Stone-work Theory S  
 Surveying (Mining) T1 S  
 Survival Equipment Fitting Theory S  
 Tailors' Theory S  
 Technical Drawing H and S  
 Telecom Trade Theory S  
 Television Theory S  
 Toolmakers' Theory S  
 Tractor Mechanics S  
 Trade Theory and Workshop Practice (Bricklaying and Plastering) S  
 (Building Construction Theory) S  
 (Electrician-Work) S  
 (Fitting and Turning) S  
 (Hotelkeeping and Catering) S  
 (Motor-Body Repairs) S  
 (Motor Mechanics) S  
 (Motor Vehicle Construction) S  
 (Plumbing and Sheet Metalwork) S  
 (Radiotrician Work) S  
 (Welding and Metalwork) S  
 (Wood Working) S  
 Upholstery and Trimming Theory S  
 Vehicle Building Theory S  
 Warehouse and Binding Theory S  
 Watch-making S  
 Welders' Theory S  
 Welding and Metalwork S  
 Welding and Metalworking S  
 Wood Machining Theory S  
 Woodwork S  
 Woodworking S

## APPENDIX II

*School examinations conducted by South African examining bodies which are recognised for purposes of exemption in terms of JMB regulations.*

### Education Department

Cape Education Department  
 Department of Internal Affairs  
 (Coloured Education)  
 Department of Internal Affairs  
 (Indian Education)  
 Department of Education  
 and Training  
 Department of National  
 Education  
 Natal Education Department  
 OFS Education Department  
 Transvaal Education  
 Department

### Examination

Cape Senior Certificate Examination  
 Senior Certificate Examination  
  
 Senior Certificate Examination  
  
 Senior Certificate Examination  
  
 National Senior Certificate Examination  
  
 Natal Senior Certificate  
 OFS Senior Certificate  
 Transvaal Senior Certificate

The minimum aggregate required for purposes of exemption in these examinations is 950 marks except in the case of the Transvaal where it is 1 425 marks.

## APPENDIX III

### MAJOR SUBJECTS FOR B.A.(GENERAL) OFFERED IN THE FACULTY OF ARTS

African History : RU  
 African Politics : UNISA  
 African Studies : US  
 African Thought and Literature : UFH  
 Afrikaans : UDW, UP, US, UZ

Afrikaans and Netherlands Cultural  
 History : UP  
 Afrikaans Cultural Science and  
 Folklore : US

Afrikaans en Nederlands : UCT, UFH, UN,  
 UNorth, UOFS, UPE, PU for CHE, RAU,  
 RU, UNISA, US, UWC, UW  
 Agricultural Economics : UNorth  
 Ancient History : UCT  
 Anthropology : UDW, UFH, UNorth, UOFS,  
 UPE, PU for CHE, UP, RAU, RU, UNISA,  
 US, UWC, UZ  
 Applied Anthropology : UOFS  
 Applied Anthropology (Development  
 Science) : UP  
 Applied Psychology : UW  
 Arabic : UDW, RAU, UNISA  
 Archaeology : UCT, UFH, UP, US, UW  
 Art : UDW  
 Bantu Law : UP  
 Biblical and Religious Studies : UW  
 Biblical Studies : UDW, UFH, UN, UNorth  
 UOFS, UPE, PU for CHE, UP, RAU, RU, UNISA,  
 US, UWC, UZ  
 Church History : UNISA  
 Classical Civilization : UN, RU  
 Classical Culture : US  
 Classical Hebrew : UDW, UNorth, UNISA,  
 UZ  
 Classical Life and Thought : UW  
 Classical Studies : UDW  
 Communication : RAU, UNISA, UZ  
 Comparative African Government and  
 Administration : UN  
 Computer Science : UN, UPE  
 Criminology : UDW, UFH, UNorth, UOFS,  
 PU for CHE, UP, UNISA  
 Cultural History of Western Europe : UCT  
 Development Administration : PU for CHE,  
 RAU, UNISA, US  
 Development Policy and Administration : UFH  
 Development Studies : UZ  
 Dogmatics and Ethics : UDW  
 Drama and Film : UW  
 Drama/Dramatic Art : UCT, PU for CHE, UP,  
 US  
 Ecclesiastical History : RU  
 Ecclesiastical History and Missiology : UFH  
 Economic History : UCT, UN, RU, UW  
 Economics : All the universities  
 Economics of Agriculture : RU  
 Education/Pedagogics : UDW, UPE, RAU, UNISA  
 English: All the universities  
 Ethics : PU for CHE  
 Fine Art : UN, US, UW  
 Fine Art Studies : RU  
 Forms of Government in Africa : UNorth  
 French : UCT, UDW, UN, UOFS, UPE, PU for  
 CHE, UP, RAU, RU, UNISA, US, UWC, UW  
 General Church History : UDW  
 General Linguistics : UNorth, UOFS, UPE,  
 RAU, US  
 General Linguistics and Literary  
 Theory : PU for CHE, UZ  
 General Literary Theory : UNorth, UOFS,  
 UPE, RAU  
 Geography : All the universities  
 German : All the universities except UFH  
 Greek : All the universities except UWC  
 Gujarati : UDW  
 Health Development Administration :  
 UNISA  
 Hebrew : UCT, UFH, UN, UOFS, UP, RAU, RU,  
 US, UWC, UW  
 Hellenistic Greek : UNISA, UWC  
 Hindi : UDW  
 Hindu Studies : UDW  
 History : All the universities  
 History of Art : UCT, UDW, UN, UOFS,  
 PU for CHE, UP, RAU, UNISA, UW  
 History of Music : UDW, PU for CHE,  
 UP, UNISA, UW  
 History of Philosophy : UZ  
 Indian Philosophy : UDW  
 Indigenous Law : US  
 Industrial and Organisational  
 Psychology : UPE  
 Industrial and Personnel Psychology :  
 PU for CHE  
 Industrial Psychology : RAU, UWC, UW  
 Industrial Sociology : UDW, PU for CHE,  
 RU, UW  
 International Politics : UNorth, PU  
 for CHE, UP, UNISA  
 International Relations : UW  
 Islamic Studies : UDW  
 Italian : UCT, RAU, UNISA, US, UW  
 Jewish Studies : UN  
 Judaica : UNISA  
 Latin : All the universities  
 Legal Theory : RU  
 Legal Theory and Institutions : UW  
 Library Science : US, UZ  
 Linguistics : UP, RU, UNISA, UWC, UW  
 Logic : UNISA  
 Mathematical Statistics : UN, UPE, UP,  
 RAU, RU, UW  
 Mathematics : All the universities  
 Modern Hebrew : UNISA  
 Music : UDW, UN, RU, US  
 Music Theory : UZ  
 Nederlands : UDW, UPE  
 Northern Sotho : UNorth, PU for CHE,  
 RAU, UNISA  
 Oriental Studies : UDW  
 Pedagogics/Education : UDW, UPE, RAU,  
 UNISA  
 Penology : UNISA  
 Persian : UDW  
 Philosophy : All the universities  
 except UZ  
 Physical Education : UNorth, PU for  
 CHE, UP, US  
 Political Development : UNorth  
 Political Philosophy : US  
 Political Science : All the universi-  
 ties except RU  
 Political Studies : UW  
 Political Studies (African) : RU  
 Politics : RU  
 Portuguese : UNISA, UW  
 Practical Music : UZ  
 Private Law : UFH, UNorth, UPE, PU  
 for CHE, RAU, UNISA, US, UWC

Psychology : All the universities  
 Psychology (Counselling) : UOFS  
 Public Administration : UCT, UDW, UFH,  
 UNorth, UPE, PU for CHE, UP, UNISA, US,  
 UWC, UZ  
 Religious Studies : UCT  
 Roman-Dutch Law : UP  
 Roman Law : UNISA  
 Russian : UNISA, UW  
 Sanskrit : UDW  
 Science of Religion : UDW, UNISA  
 Semetic/Semitic Languages : UPE, PU for  
 CHE, UP, US  
 Shona : UCT  
 Social Anthropology : UCT, UN, UW  
 Social Work : UP  
 Sociology : All the universities  
 Sotho : UCT, UFH, UP  
 Southern Sotho : UNorth, UOFS, UPE, RU,  
 UNISA, US, UW, UZ

Spanish : UNISA  
 Speech and Drama : UDW, UN, RU, UZ  
 Speech and Interpretation : PU for  
 CHE  
 Statistics : UDW, UN, PU for CHE,  
 UNISA  
 Systematic Philosophy : UZ  
 Systematic Theology : UFH, RU,  
 UNISA  
 Tamil : UDW  
 Telugu : UDW  
 Theatrical Art : PU for CHE  
 Theology : UN  
 Theory of Music : UZ  
 Tsonga : UNorth, UNISA  
 Tswana : UNorth, PU for CHE, UNISA, US  
 Urdu : UDW  
 Venda : UNorth, UNISA  
 Xhosa : UCT, UFH, UPE, RU, UNISA, US, UWC  
 Zulu : UDW, UN, UOFS, PU for CHE, UP,  
 RAU, UNISA, UW, UZ

#### APPENDIX IV

#### UNDERGRADUATE SUBJECTS OFFERED FOR B.COM. IN THE FACULTIES OF COMMERCE AND ECONOMIC SCIENCES

Accounting : All the universities  
 Administration of Estates : UDW, UNorth,  
 UP, UNISA, UZ  
 Administrative Law : UZ  
 Afrikaans : UDW, UN, UNorth, UOFS, UP, RU,  
 UNISA, US, UWC, UW, UZ  
 Afrikaans en Nederlands : UN, RU, UNISA,  
 US, UWC, UW  
 Agricultural Economics : UN, UNorth, UOFS,  
 PU for CHE, US  
 Analytical Techniques : RAU  
 Anthropology : UDW, UPE, UP, RAU  
 Applied Economics : UNISA  
 Applied Computer Science : UFH  
 Applied Mathematics : UW  
 Applied Mathematics, Computer Science and  
 Mathematical Statistics : UW  
 Applied Psychology : UW  
 Auditing : All the universities  
 Banking : UNISA  
 Business Administration : UN, RU  
 Business Communication : UFH  
 Business Computer Science : UNorth  
 Business Data Processing : UCT, UDW, UN,  
 UOFS, PU for CHE, RAU, UW  
 Business Economics : All the universities  
 except UCT and UN  
 Business Finance : UN, UW  
 Business Law : UNorth, UP  
 Business Mathematics and Statistics :  
 RU  
 Business Policies and Agreements : UN  
 Business Statistics : UWC  
 Commercial Computer Science : UPE  
 Commercial Law : UCT, UDW, UFH, UN, UNorth,  
 UPE, UP, RAU, UNISA, UW, UZ  
 Communication/Communication Studies :  
 UOFS, RAU, UW  
 Company Law : UCT, UPE  
 Company Law and Taxation : UNorth  
 Comparative African Government and  
 Administration : UN  
 Computer Science : UN, UP, RAU, RU,  
 UNISA, US, UW  
 Constitutional and Administrative Law :  
 UW  
 Constitutional Law : UN, PU for CHE,  
 UWC, UZ  
 Consumer Behaviour : UP  
 Co-operation : UFH, UNorth, UNISA  
 Cost Accounting : UNorth, PU for CHE,  
 UNISA  
 Cost and Management Accounting : UPE,  
 UP, RU, UWC, UW, UZ  
 Criminal Law : UZ  
 Customary Law : RU  
 Data Processing : US  
 Development Administration : RAU, UNISA,  
 US  
 Development Economics : UDW, UFH  
 Econometry : PU for CHE  
 Economic Analysis : UNorth, UP  
 Economic Development and the Economics  
 of Underdeveloped Regions : UZ  
 Economic Geography : RU  
 Economic History : UCT, UDW, UN, UPE,  
 RU, UNISA, UW  
 Economic Statistics : UPE  
 Economics : All the universities  
 Economics of Agriculture : RU (See also  
 Agricultural Economics)  
 Economics of Transport : UN (See also  
 Transport Economics)  
 Economics of Underdeveloped Regions : UN  
 Education : RAU  
 Elementary Theory of Finance and  
 Statistics : RU

English : UDW, UN, UP, RU, UNISA, US,  
 UWC, UW, UZ  
 English Practical/Special : UDW, UNorth,  
 UOFS, UPE, UNISA, US, UWC, UZ  
 Environment and Structure of Business :  
 UCT  
 Farm Management : UNISA  
 Financial Accounting : UNorth, US  
 Financial Management : UCT  
 French : UN, UW  
 General Economics : RU  
 General Jurisprudence and Roman Law : UPE  
 General Psychology : UW  
 Geography : UN, UPE, UP, US, UW  
 German UN, UW, UZ  
 History : UN, UP  
 Income Tax : UDW, UNorth, UOFS, UPE, PU  
 for CHE, UP, RAU, UNISA, UW, UZ  
 Industrial and Organizational Psychology :  
 UPE  
 Industrial and Personnel Psychology :  
 PU for CHE  
 Industrial Law : UNorth, UPE, UNISA, UZ  
 Industrial Psychology : UDW, UFH, UNorth,  
 UOFS, RAU, UNISA, US, UWC, UW, UZ  
 Industrial Sociology : PU for CHE, UW  
 Informatics : UP  
 Information Systems : UNISA  
 Insurance : PU for CHE  
 International Economic Relationships  
 and Organisations : UN  
 International Relations : UW  
 Interpretation of Law : UZ  
 Interpretation of Statutes : PU for CHE  
 Introduction to and History of South  
 African Law : UW  
 Introduction to Computer Science and  
 Data Processing : UPE  
 Introduction to Legal Science :  
 PU for CHE  
 Introduction to Psychology : UPE  
 Introduction to South African Law :  
 UN  
 Investment Management : RAU  
 Labour Law : UOFS, PU for CHE  
 Language and Communication : UN  
 Latin : UN, UNorth, UOFS, UPE, RAU,  
 RU, UNISA, US, UW  
 Law of Contract : UW  
 Law of Corporations and Insolvency :  
 UW  
 Law of Delict : UZ  
 Law of Things : UZ  
 Legal History : PU for CHE  
 Legal Theory : RU  
 Logic and Methodology : UDW  
 Macro-economics : UPE  
 Management Accounting : UCT, UDW,  
 UFH, UNorth  
 Management Information Systems :  
 UZ  
 Management Information Systems and  
 Data Processing : UNorth  
 Management of Human Resources : UZ  
 Managerial Accounting and Finance : UN  
 Managerial and Operational Accounting :  
 RAU  
 Marketing : UN, UP, UW  
 Marketing and Physical Distribution :  
 UNorth  
 Mathematical Methods : UNorth  
 Mathematical Methods for Economics :  
 UDW  
 Mathematical Statistics : UN, UOFS,  
 UP, RAU, RU, US, UW  
 Mathematics : UCT, UDW, UN, UNorth,  
 UOFS, UPE, PU for CHE, RAU, RU,  
 UNISA, US, UW  
 Mathematics and Statistics : RU, UW  
 Mathematics for Economists : UPE  
 Mercantile Law : UOFS, UPE, PU for  
 CHE, RU, US, UWC  
 Money and Banking : UOFS, PU for CHE  
 Municipal Law and Administration : UDW  
 Netherlands : UDW  
 Organisational Behaviour : UW  
 Personnel Management : UP  
 Philosophy : UN, UP, UW  
 Political Economy of Southern Africa :  
 UN  
 Political Science : UN, UP, RAU,  
 US, UZ  
 Political Studies : UW  
 Population and Labour : UN  
 Principles of Finance : UCT  
 Principles of Marketing : UCT  
 Private Law : UDW, UNorth, UOFS,  
 UPE, RAU, UNISA, US, UWC  
 Professional Afrikaans : UPE  
 Property Economics : UW  
 Psychology : UN, RU, UW  
 Public Administration : UDW, UN, UPE,  
 UP, US, UZ  
 Public International Law :  
 UN  
 Public Sector Accounting : UN  
 Quantitative Techniques : UNorth  
 Retailing : UNorth  
 Retail Management : UFH  
 Roman-Dutch Law : UP  
 Roman Law : UDW, UN, UNorth, PU for  
 CHE, RAU, UNISA, US, UWC, UW  
 Roman Law and Legal History : UOFS  
 Shorthand and Typewriting : US  
 Social and Economic Legislation : UFH  
 Social Anthropology : UN  
 Social Work Special : UPE  
 Sociology : UDW, UN, RAU, US, UW, UZ  
 Sociology for Industrial and Organi-  
 sational Psychology : UPE  
 State Administration : UOFS  
 Statistical and Business Computing :  
 UCT  
 Statistical Methods : UNorth, US

Statistics : UCT, UDW, UFH, UN, UOFS,  
 PU for CHE, UP, UNISA, US, UZ  
 Systematic Philosophy : UZ  
 Taxation : UFH, UN  
 Taxation and Estate Duty : UCT  
 Transport Administration and Management :  
 RAU

Transport Economics : UOFS, RAU, UNISA,  
 US  
 Transport Issues in Economic Develop-  
 ment : UZ  
 Xhosa : UPE  
 Zulu : UN, UZ

## APPENDIX V

### MAJOR SUBJECTS FOR B.Sc. OFFERED IN THE FACULTY OF SCIENCE

Accounting : UPE  
 Anatomy : UW  
 Applied Chemistry : UN, RU, UW  
 Applied Chemistry (Geol.) : RU  
 Applied Computer Science : UFH  
 Applied Geology : UN  
 Applied Mathematics : All the universities  
 except RAU  
 Applied Physics : UN  
 Applied Psychology : UW  
 Archaeology : UW  
 Astronomy : UNISA  
 Biochemistry : UCT, UDW, UFH, UN, UOFS,  
 UPE, PU for CHE, UP, RAU, US, UWC, UW,  
 UZ  
 Biology : UFH  
 Botany : All the universities except RU  
 Business Data Processing : UN  
 Business Economics : UPE  
 Cell Biology : UN  
 Chemistry : All the universities  
 Chemistry (Biol.) : RU  
 Computer Science : UCT, UDW, UN, UNorth,  
 UOFS, UPE, PU for CHE, UP, RAU, RU,  
 UNISA, US, UWC, UW  
 Counselling Psychology : UOFS  
 Dietetics : PU for CHE, US  
 Ecology : UZ  
 Economics : UN, UPE, PU for CHE, RU  
 Economic Statistics : UPE  
 Entomology : UN, UOFS, UP, RU, US  
 Environmental Biology : UN  
 Fundamental Biology : UPE  
 General Anatomy : UW  
 General Psychology : UW  
 Genetics : UN, UOFS, UP, US, UW  
 Geochemistry : UOFS, US  
 Geography : All the universities except  
 UPE  
 Geohydrology : UOFS  
 Geology : All the universities  
 Geophysics : UW

Histology : UW  
 Hydrology : UN  
 Industrial and Personnel Psychology : PU  
 for CHE  
 Industrial Chemistry : PU for CHE  
 Industrial Psychology : UW  
 Information Systems : UNISA  
 Mathematical Methods : UNorth  
 Mathematical Statistics : UFH, UN,  
 UNorth, UOFS, UPE, UP RAU, RU, US,  
 UWC, UW, UZ  
 Mathematics : All the universities  
 Medical Biochemistry : UW  
 Metallurgy : UP  
 Micro-Anatomy : UW  
 Microbiology : UCT, UDW, UOFS, PU  
 for CHE, UP, RU, UNISA, US, UW  
 Microbiology - Plant Pathology : UN  
 Music : RU  
 Operations Research : UPE, PU for  
 CHE, UNISA  
 Pedology : PU for CHE  
 Physical Education : UNorth, UOFS,  
 PU for CHE, US  
 Physical Geography : UPE  
 Physics : All the universities  
 Physics with Electronics : RU  
 Physiology : UDW, UNorth, UOFS, PU  
 for CHE, UNISA, US, UWC  
 Physiology (Dental) : UW  
 Physiology (Medical) : UW  
 Physiology (Science) : UW  
 Plant Pathology : US  
 Plant Science : RU  
 Psychology : UDW, UFH, UN, UNorth,  
 UOFS, PU for CHE, RAU, RU, UNISA,  
 US  
 Soil Science : UN, UOFS  
 Statistics : UCT, UDW, UFH, UN, UOFS,  
 PU for CHE, UNISA, US  
 Theoretical Chemistry : UN  
 Theoretical Physics : RAU, UW  
 Zoology : All the universities

## APPENDIX VI

### USEFUL ADDRESSES

#### 1. UNIVERSITIES

The Registrar  
University of Cape Town  
Private Bag  
RONDEBOSCH  
7700

The Registrar  
University of Durban-Westville  
Private Bag X54001  
DURBAN  
4000

The Registrar  
University of Fort Hare  
Private Bag X1314  
ALICE  
5700

The Registrar : Academic  
Medical University of Southern Africa  
P.O. MEDUNSA  
0204

The Registrar  
University of Natal  
King George V Avenue  
DURBAN  
4001

OR

The Registrar  
University of Natal  
P.O. Box 375  
PIETERMARITZBURG  
3200

The Registrar  
University of the North  
Private Bag X5090  
PIETERSBURG  
0700

The Registrar Academic  
University of the Orange Free State  
P.O. Box 339  
BLOEMFONTEIN  
9300

The Registrar  
University of Port Elizabeth  
P.O. Box 1600  
PORT ELIZABETH  
6000

The Registrar  
Potchefstroom University for Christian  
Higher Education  
POTCHEFSTROOM  
2520

The Registrar  
University of Pretoria  
Brooklyn  
PRETORIA  
0181

The Registrar (Academic)  
Rand Afrikaans University  
P.O. Box 524  
JOHANNESBURG  
2000

The Registrar  
Rhodes University  
P.O. Box 94  
GRAHAMSTOWN  
6140

The Registrar (Academic)  
University of South Africa  
P.O. Box 392  
PRETORIA  
0001

The Registrar (Academic)  
University of Stellenbosch  
STELLENBOSCH  
7600

The Registrar  
University of the Western Cape  
Private Bag X17  
BELLVILLE  
7530

The Registrar  
University of the Witwatersrand  
Jan Smuts Avenue  
JOHANNESBURG  
2001

The Registrar  
University of Zululand  
Private Bag X1001  
KWA-DLANGEZWA  
3886



## 2. TECHNIKONS

The Director  
Cape Technikon  
P.O. Box 652  
CAPE TOWN  
8000

The Director  
Technikon Mabopane East  
P.O. Box 13436  
SINOVILLE  
PRETORIA  
0129

The Director  
Technikon Mangosuthu  
P.O. Box 12363  
JACOBS  
4026

The Director  
M.L. Sultan Technikon  
P.O. Box 1334  
DURBAN  
4000

The Director  
Technikon Natal  
P.O. Box 953  
DURBAN  
4000

The Director  
Technikon OFS  
Private Bag X20539  
BLOEMFONTEIN  
9300

The Director  
Peninsula Technikon  
Private Bag X3  
KASSELSVLEI  
7533

The Director  
Technikon Port Elizabeth  
Private Bag X6011  
PORT ELIZABETH  
6000

The Director  
Technikon Pretoria  
420 Church Street East  
PRETORIA  
0002

The Deputy Director  
Technikon RSA (Teletuition)  
Private Bag X7  
BRAAMFONTEIN  
2017

The Director  
Vaal Triangle Technikon  
Private Bag X021  
VANDERBIJLPARK  
1900

The Registrar  
Technikon Witwatersrand  
P.O. Box 3293  
JOHANNESBURG  
2000

## 3. GOVERNMENT DEPARTMENTS

Unless otherwise stated enquiries should be addressed to the Director-General.

Department of Agriculture and  
Fisheries  
Private Bag X116  
PRETORIA  
0001

Department of Community Development  
Private Bag X65  
PRETORIA  
0001

Department of Co-operation and  
Development  
P.O. Box 384  
PRETORIA  
0001

Department of Education and Training  
Private Bag X212  
PRETORIA  
0001

Department of Environment Affairs  
Private Bag X313  
PRETORIA  
0001

Department of Finance  
Private Bag X115  
PRETORIA  
0001

Department of Foreign Affairs and  
Information  
Private Bag X152  
PRETORIA  
0001

Department of Health and Welfare  
Private Bag X63  
PRETORIA  
0001

Department of Industries, Commerce  
and Tourism  
Private Bag X84  
PRETORIA  
0001

Department of Internal Affairs  
Private Bag X114  
PRETORIA  
0001

Department of Justice  
Private Bag X81  
PRETORIA  
0001

Department of Manpower  
Private Bag X117  
PRETORIA  
0001

Department of Mineral and Energy Affairs  
Private Bag X59  
PRETORIA  
0001

Department of National Education  
Private Bag X122  
PRETORIA  
0001

Commissioner of Prisons  
Department of Prisons  
Private Bag X136  
PRETORIA  
0001

Department of Statistics  
Private Bag X44  
PRETORIA  
0001

Department of Transport  
Private Bag X193  
PRETORIA  
0001

National Intelligence Service  
Private Bag X87  
PRETORIA  
0001

The Auditor-General  
Office of the Auditor-General  
P.O. Box 446  
PRETORIA  
0001

The Secretary  
Office of the Commission for Administra-  
tion  
Private Bag X121  
PRETORIA  
0001

Office of the Prime Minister  
Private Bag X213  
PRETORIA  
0001

Chief of the South African Defence Force  
South African Defence Force  
Private Bag X161  
PRETORIA  
0001

Commissioner of the South African Police  
Department of the South African Police  
Private Bag X94  
PRETORIA  
0001

#### 4. REGIONAL OFFICES OF THE COMMISSION FOR ADMINISTRATION

##### PRETORIA

1419 Transvaal House  
corner of Vermeulen and Van der Walt  
Streets  
Private Bag X121  
PRETORIA  
0001

##### BLOEMFONTEIN

831 H.F. Verwoerd Buildings  
St Andrew Street  
P.O. Box 517  
BLOEMFONTEIN  
9300

##### CAPE TOWN

Ninth Floor  
The Golden Acre  
Adderley Street  
CAPE TOWN  
8000

##### DURBAN

507 Escoval House  
437 Smith Street  
DURBAN  
4001

JOHANNESBURG

1203 Kelhof  
112 Pritchard Street  
P.O. BOX 6371  
JOHANNESBURG  
2000

KIMBERLEY

310 Saambou Buildings  
Du Toitspan Road  
KIMBERLEY  
8301

PORT ELIZABETH

59 Eben Dönges Buildings  
Hancock Street  
North End  
P.O. Box 3192  
PORT ELIZABETH  
6000

5. PROVINCIAL ADMINISTRATIONS

The Provincial Secretary  
Provincial Administration of the Cape  
of Good Hope  
P.O. Box 659  
CAPE TOWN  
8000

The Provincial Secretary  
Provincial Administration of the Orange  
Free State  
P.O. Box 517  
BLOEMFONTEIN  
9300

The Provincial Secretary  
Provincial Administration of Natal  
Private Bag X9037  
PIETERMARITZBURG  
3200

The Provincial Secretary  
Provincial Administration of the  
Transvaal  
Private Bag X64  
PRETORIA  
0001

6. EDUCATION DEPARTMENTS

The Director of Education  
Department of Education, Cape of Good  
Hope  
P.O. Box 13  
CAPE TOWN  
8000

The Director of Education  
OFS Department of Education  
P.O. Box 521  
BLOEMFONTEIN  
9300

The Director-General  
Department of National Education  
Private Bag X122  
PRETORIA  
0001

The Director-General  
Department of Internal Affairs  
(Indian Education)  
Private Bag X92  
PRETORIA  
0001

The Director of Education  
Natal Education Department  
Private Bag X9044  
PIETERMARITZBURG  
3200

The Director of Education  
Transvaal Education Department  
Private Bag X76  
PRETORIA  
0001

The Director-General  
Department of Education and Training  
Private Bag X212  
PRETORIA  
0001

The Director-General  
Department of Internal Affairs (Coloured  
Education)  
Private Bag X9008  
CAPE TOWN  
8000

7. OTHER BODIES AND ORGANISATIONS

The President  
Human Sciences Research Council  
Private Bag X41  
PRETORIA  
0001

The Personnel Officer  
Atomic Energy Board  
Private Bag X256  
PRETORIA  
0001

The Secretary  
Council for Scientific and Industrial  
Research  
P.O. Box 395  
PRETORIA  
0001

The Personnel Manager  
Electricity Supply Commission  
P.O. Box 1091  
JOHANNESBURG  
2000

The Director of Hospital Services  
Cape Provincial Hospitals Department  
P.O. Box 2060  
CAPE TOWN  
8000

The Director of Hospital Services  
Natal Department of Hospital Services  
Private Bag X9051  
PIETERMARITZBURG  
3200

The Director of Hospital Services  
OFS Division Hospital Services  
P.O. Box 517  
BLOEMFONTEIN  
9300

The Director of Hospital Services  
Transvaal Department of Hospital Services  
Private Bag X221  
PRETORIA  
0001

The Head: Personnel  
National Institute for Metallurgy  
Private Bag X3015  
RANDBURG  
2125

The Secretary  
Joint Matriculation Board  
P.O. Box 3854  
PRETORIA  
0001

The Director  
National Institute for Personnel Research  
P.O. Box 10319  
JOHANNESBURG  
2000

The Director  
National Parks Board  
P.O. Box 787  
PRETORIA  
0001

The Director: Personnel  
South African Broadcasting Corporation  
P.O. Box 8606  
JOHANNESBURG  
2000

The Director  
South African Bureau of Standards  
Private Bag X191  
PRETORIA  
0001

The Personnel Manager  
South African Coal, Oil and Gas Corpora-  
tion Limited  
P.O. Box 1  
SASOLBURG  
9570

The Corporative Manager (Personnel)  
South African Iron and Steel Industrial  
Corporation Limited  
P.O. Box 450  
PRETORIA  
0001

The Registrar  
The South African Nursing Council  
P.O. Box 1123  
PRETORIA  
0001

The General Manager  
South African Railways  
Paul Kruger Building  
Wolmarans Street  
JOHANNESBURG  
2001

The Deputy Postmaster General  
Telecommunication Head Office  
Private Bag X74  
PRETORIA  
0001

## B. LIST OF ABBREVIATIONS

AECI	African Explosives and Chemical Industries Ltd
AEB	Atomic Energy Board
CMR	Christelike Maatskaplike Raad
CSIR	Council for Scientific and Industrial Research
Escom	Electricity Supply Commission
HSRC	Human Sciences Research Council
IDC	Industrial Development Corporation of South Africa Ltd
IRS	Information and Research Services (CSIR)
ISCOR	South African Iron and Steel Industrial Corporation Ltd
MRC	South African Medical Research Council
NIPR	National Institute for Personnel Research (CSIR)
PHOSCOR	Phosphate Development Corporation Ltd
SAAU	South African Agricultural Union
SABC	South African Broadcasting Corporation
SABS	South African Bureau of Standards
SASOL	South African Coal, Oil and Gas Corporation, Ltd
SOECOR	Southern Oil Exploration Corporation (Pty) Ltd
<u>Tertiary Training</u>	Tertiary training outside universities and career opportunities (See Bibliography.)
SG	Standard Grade
HG	Higher Grade

## C. LIST OF SOURCES

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SOUTH AFRICA (Republic). Commission for Administration. *Careers in Government Departments 1981-1982*. Pretoria : Government Printer, 1981.

SOUTH AFRICA (Republic). Department of Manpower. *My Career/My Loopbaan*. (Quarterly on vocational information.)

MATRICULATION EXAMINATION HANDBOOK. Pretoria : Joint Matriculation Board, 1981.

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IN-37: COETZEE, C.J.S. and FOURIE, Ewie, C. *Tertiary training outside universities and career opportunities*, 1982.

COETZEE, C.J.S. *Geslagsverskille in tersiêre onderwys en beroepstoetrede*. Pretoria : Human Sciences Research Council, 1979.

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