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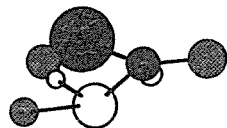
**QIT**

**76 HANDBOOK**

APPLIED SCIENCE

# **SCHOOL OF APPLIED SCIENCE**

**APPLIED GEOLOGY  
BIOLOGY AND  
ENVIRONMENTAL SCIENCE  
CHEMISTRY  
MATHEMATICS AND  
COMPUTER SCIENCE  
PARAMEDICAL STUDIES  
PHYSICS**



**QUEENSLAND INSTITUTE OF TECHNOLOGY**  
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## **SCHOOL OF APPLIED SCIENCE**

**Head of School:** Vacant.

The School consists of –

- Department of Applied Geology
- Department of Biology and Environmental Science
- Department of Chemistry
- Department of Mathematics and Computer Science
- Department of Paramedical Studies
- Department of Physics

Each of these Departments conducts courses within its area of interest and the details of these courses – structures, course rules, pre-requisites and co-requisites, synopses of subjects – are provided in this School handbook.

In order to facilitate and promote liaison between the Institute, the professions, employers and allied groups on matters pertaining to the Institute's objectives, Advisory Committees have been established within the various departmental areas. These Committees provide the vehicle by which informed opinion may be brought to the attention of the School Academic Board, and exert an advisory influence on the aims and objectives of the Board in respect of the educational environment to be engendered in its sphere of influence. In addition these Committees advise the Board on the relevance of educational programmes to the educational requirements of industry and the professions.



CALENDAR

## CALENDAR

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### 1975 CALENDAR

#### OCTOBER 31

### EVENTS

Closing date for lodgement of Grade 12 course preference forms. Closing date for lodgement of applications for enrolment in Autumn Semester, 1976, by all applicants who are not eligible to lodge Grade 12 Course preference forms.

#### NOVEMBER

	Sun	M	T	W	Th	F	Sat
							1
B	2	3	4	5	6	7	8
A	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30						

14: Spring semester ends.  
15–29: Spring semester examinations.

#### DECEMBER

	Sun	M	T	W	Th	F	Sat
			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		

1–31: Summer Recess  
15: Availability of Grade 12 students order of merit list.  
19: Release of first offers of new enrolments for Autumn Semester 1976.  
25: Public Holiday – Christmas Day.  
26: Public Holiday – Boxing Day.

### 1976 CALENDAR

#### JANUARY

	Sun	M	T	W	Th	F	Sat
					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31

### EVENTS

1: Public Holiday – New Year's Day  
26: Public Holiday – Australia Day.

1–31: Summer Recess.  
2: Closing date for lodgement of applications for review of Spring Semester 1975 examination results.  
7: Final date for acceptance of first offers of enrolment. Closing date for enrolment applications by continuing students.  
9: Release of second offers of enrolments to new students.  
21: Final date for acceptance of second offers of enrolments.

**FEBRUARY**

	Sun	M	T	W	Th	F	Sat		
			1	2	3	4	5	6	7
A	8	9	10	11	12	13	14		
B	15	16	17	18	19	20	21		
A	22	23	24	25	26	27	28		
B	29								

- 2–6: Orientation period. New students programs determined by departmental interview with students.
- 9: Autumn Semester commences.
- 27: Final closing date – late enrolments  
– change of course  
or subjects
- 27: Closing date for applications for awards.

**MARCH**

	Sun	M	T	W	Th	F	Sat	
			1	2	3	4	5	6
A	7	8	9	10	11	12	13	
B	14	15	16	17	18	19	20	
A	21	22	23	24	25	26	27	
B	28	29	30	31				

- 12: Final closing date – cancellation of subjects or course without prejudice to examination results.

**APRIL**

	Sun	M	T	W	Th	F	Sat
B					1	2	3
A	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
B	18	19	20	21	22	23	24
A	25	26	27	28	29	30	

- 12–16: Mid Semester Recess.
- 27: Classes scheduled for Monday 26 to be held.
- 16: Public Holiday – Good Friday.
- 19: Public Holiday – Easter Monday.
- 26: Public Holiday – Anzac Day.

**MAY**

	Sun	M	T	W	Th	F	Sat
							1
B	2	3	4	5	6	7	8
A	9	10	11	12	13	14	15
B	16	17	18	19	20	21	22
A	23	24	25	26	27	28	29
B	30	31					

- 5: Classes scheduled for Monday 3 to be held.
- 10: Autumn Semester Examinations  
Timetables placed on notice boards.
- 3: Public Holiday – Labour Day



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**JUNE**

Sun	M	T	W	Th	F	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

3–4: Examination Preparation – no formal classes

4: Autumn Semester Ends.

5–19: Autumn Semester Examinations

21–30: Winter Recess

14: Public Holiday – Queens Birthday.

---

**JULY**

Sun	M	T	W	Th	F	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
A 25	26	27	28	29	30	31

1–23: Winter Recess

16: Closing date for New Enrolments – Spring Semester

16: Closing date for change of enrolment resulting from Autumn Semester examination results.

16: Closing date for lodgement of applications for review for Autumn Semester examination results

26: Spring Semester commences.

26: Closing date for applications for awards.

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**AUGUST**

Sun	M	T	W	Th	F	Sat
B 1	2	3	4	5	6	7
A 8	9	10	11	12	13	14
B 15	16	17	18	19	20	21
A 22	23	24	25	26	27	28
B 29	30	31				

2–6: 'QIT in Action'.

13: Final closing date – late enrolments, or subjects.

27: Final closing date – cancellation of subjects or course without prejudice to examination results.

11: Public Holiday – Exhibition day.

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**SEPTEMBER**

Sun	M	T	W	Th	F	Sat
B			1	2	3	4
A 5	6	7	8	9	10	11
B 12	13	14	15	16	17	18
19	20	21	22	23	24	25
A 26	27	28	29	30		

20–24: Recess.

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**OCTOBER**

	Sun	M	T	W	Th	F	Sat
A						1	2
B	3	4	5	6	7	8	9
A	10	11	12	13	14	15	16
B	17	18	19	20	21	22	23
A	24	25	26	27	28	29	30
B	31						

- 25: Spring Semester Examination Timetable placed on notice board.  
 29: Closing date for lodgement of Grade 12 course preference forms for enrolment in 1977.  
 29: Closing date for lodgement of applications for enrolment in Autumn Semester 1977 by all applications who are not eligible to lodge Grade 12 course preference forms.

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**NOVEMBER**

	Sun	M	T	W	Th	F	Sat
B		1	2	3	4	5	6
A	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				

- 12: Spring Semester ends.  
 13–27: Spring Semester examinations.  
 28–30: Summer recess.

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**DECEMBER**

	Sun	M	T	W	Th	F	Sat
				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	

- 1–31: Summer recess.  
 25: Public Holiday – Christmas Day.  
 27: Public Holiday – Boxing Day.

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A, B –

Alternate Classes Code – All classes that are held on alternate weeks only will be held on week designated 'A' if the first class of the year was on an 'A' day, and on week designated 'B' if the first class of the year is on a 'B' day.





**RULES RELATING  
TO STUDENT MATTERS**

## **RULES RELATING TO STUDENT MATTERS**

### **Admission to Courses**

The Council may –

- (1) prescribe the conditions for normal entry to each course offered.
- (2) limit the number of students who shall be permitted to enrol or continue in any course.
- (3) appoint an Admissions Committee and approve of rules providing for –
  - (i) its membership including the appointment of a Chairman;
  - (ii) its method of operation;
  - (iii) the admission of students who do not comply with normal entry;
  - (iv) the selection of students to be admitted where quotas or restrictions have been imposed upon admissions and enrolments;
  - (v) a quorum.

### **Academic Structure and Content of Courses**

The Council may –

- (4) prescribe the academic structure and content of any courses and amend these at any time provided the reasonable rights of students already enrolled in the course are not prejudiced or are sufficiently safeguarded;
- (5) prescribe rules for student progression within a course;
- (6) delegate any or all of its powers under this section.

### **Assessment of Students**

The Council may –

- (7) approve rules relating to the examination and assessment of students and the award of grades of passes;
- (8) delegate any or all of its powers under this section.

### **Exclusion of Students**

The Council may –

- (9) prescribe rules relating to gross failure;
- (10) exclude any student who is classified as having achieved gross failure in subjects or courses;

- (11) delegate any or all of its powers under this section provided that any student shall have a right of appeal to Council against any decision or exclusion.

### **Appeals**

Council shall establish an Appeals Committee to hear student appeals to the Council against exclusion and approve rules not inconsistent with By-law No. 5 or rules thereof in respect of the duties powers membership and management of the business of such Committees.

## **RULES FOR ADMISSION**

1. **Meaning of certain words.** Unless the context otherwise indicates or requires —
  - Admissions Committee means a committee appointed by Council to consider applications for admission to Institute courses.
  - Head of School means a member of the academic staff appointed by Council and so designated. In the case of a Department not attached to a School the Director shall act as Head of School.
  - Senior Student Counsellor means the Senior Student Counsellor of the Institute.
  - Academic Staff Association means the Academic Staff Association of the Institute.
  - Ordered Course means a course in which a student is required to gain credit in a number of subjects in a particular sequence to acquire an award.
  - Head of Department means a member of the academic staff appointed by Council and so designated as the senior academic member of staff in a particular Department.
  - Sub-tertiary course means a course of study leading to the award of a Certificate.
  - Tertiary course means a course of study leading to the award of a Degree, Diploma or an Associate Diploma.

- Assistant Registrar means the Assistant Registrar of the Institute.
  - ‘Registered Student’ shall mean a person whose application for the study of an ordered course has been accepted by the Registrar.
  - ‘Special Student’ shall mean any person so accepted other than as a registered student.
2. The membership of the Admissions Committee shall be –  
 Registrar (who shall act as Chairman)  
 Heads of Schools  
 Senior Student Counsellor  
 One representative appointed by the Academic Staff Assn.
- A member of Committee may be permitted to appoint another person who is not a member to attend and vote on his behalf.
3. The Admissions Committee shall –
- (i) advise the Director and the Education Committee of Council on all matters relating to the admission of students including –
    - (a) the standards of entry to all courses after consideration of recommendations prepared by the Academic Boards;
    - (b) the assessment of prospective future enrolments following periodic reviews of statistical trends;
    - (c) the recommendation of policies for determining those who should be given priorities for admission or enrolment where quotas or restrictions on admissions or enrolments are in the opinion of the Council necessary.
  - (ii) determine eligibility for admission in those cases where the applicant does not possess normal entry standards.
4. A person desirous of entering a course shall make application to the Registrar for admission on an enrolment form provided for this purpose, and shall lodge such form fully and correctly completed not later than the closing date prescribed by the Council. With such application, the person shall produce to the Registrar for verification, sufficient documentary evidence of passes in pre-requisite examinations.

The documentary evidence produced for verification shall be –

- (i) the original documents or facsimile copies thereof;
  - (ii) such other evidence as the Admissions Committee may require.
5. A person who does not have the normal entry qualifications may make application for special consideration for entry on a form provided by the Registrar.
  6. Concurrently with an application for special consideration for entry a person shall lodge with the Registrar an application for enrolment on the form provided for the purpose, and shall lodge such form fully and correctly completed not later than the closing date prescribed.
  7. The Registrar shall notify all applicants for admission of the acceptance or rejection of their applications.
  8. An application for enrolment may be amended by the Head of Department because of –
    - (i) timetable incompatibility;
    - (ii) non-compliance with the rules applicable to the course of study;
    - (iii) selection by the applicant of subjects which in the opinion of the Head of Department are more than his capacity or circumstances allow him to study adequately.

Any applicant whose application for enrolment has been amended shall have a right of appeal to the Head of the School. Such an appeal shall be lodged with the Registrar within fourteen (14) days from date of notification of such amended enrolment. The Registrar shall notify the applicant of the result of the appeal as soon as is reasonably possible.
  9. Late enrolments may be accepted only if a vacancy exists in classes established on the basis of closing date enrolments, and with the approval of the Head of School.
  10. A Head of School may cancel any class in any subject where the number of enrolments in that class is considered to be insufficient.



Class groups shall be determined on enrolments as at closing date prescribed by Council. In the event of the cancellation of any class the enrolment of a student shall be deemed to be cancelled in respect of such subject provided that such cancellation shall be without prejudice to the right of the student to again apply for admission for enrolment in such subject, subject to the conditions prescribed for entry to such subject at the time of his application.

## **SCHEDULE OF CHARGES & PARKING REGULATIONS**

### **Council Resolutions Affecting Students**

Union Charges — \$25.00 per annum for full-time students.  
 \$11.00 per annum for part-time students.

### **Schedule of Charges and Parking Regulations**

The following schedule of charges has been approved by Council —

Late Lodgement of Application for Enrolment—	\$ 5.00
Refundable Deposit for review of Special Consideration decision —	\$10.00
Review of Examination Results —	\$2.00 per paper with a maximum of \$4.00 per subject.
Statement of Results —	\$ 1.00

Council also approved regulations relating to the parking of motor vehicles on campus.

- (a) A member of staff or a student shall not be permitted to park a vehicle within the grounds of the Institute unless such person has previously made application for a parking permit and this permit has been granted.
- (b) The privilege of parking within the grounds shall be subject to such conditions as may be imposed at the time the permit is issued to the applicant.

- (c) An application for permission to park a vehicle within the grounds of the Institute shall be made on a form prescribed and available at the Institute office.
- (d) For a breach in the parking of a vehicle the Director may revoke the permit for a specified period or for the remainder of the academic year.
- (e) For a breach by a person not possessing a parking permit in the parking of a vehicle, the Director may arrange for the vehicle to be removed from the grounds of the Institute and the person shall be required to pay the cost of such removal.

#### **Deposit System for Use of Laboratory Facilities**

- (a) A student enrolled in a day programme tertiary course in the School of Applied Science shall deposit \$20 for year 1, \$30 for year 2 and \$30 for year 3, for the use of laboratory facilities except that \$20 shall be deposited by a student enrolled in the Department of Mathematics in the year or years in which he elects to include Chemistry I in his course.
- (b) A student enrolled in an evening programme tertiary course in the School of Applied Science shall deposit \$20 in each year of his enrolment for the use of laboratory facilities. A student enrolled in the Department of Mathematics shall deposit \$20 in the year or years in which he elects to include Chemistry I in his course.
- (c) A student enrolled in a certificate course in the School of Applied Science shall deposit \$10 in each year of his enrolment for the use of laboratory facilities.
- (d) Students enrolled for Chemistry subjects other than those enrolled in a day programme tertiary course or an evening programme tertiary course or a certificate course in the School of Applied Science shall deposit \$10 in each year of their enrolment for the use of Institute facilities. The following subjects of the Certificate in Industrial Metallurgy and the Certificate in Engineering are relevant –

Chemistry II	Organic Chemistry & Materials
Analytical Chemistry I	Analytical Chemistry II
Analytical Chemistry III	Analytical Chemistry IV

- (e) A student enrolled in the Department of Physics shall deposit \$10 in year 2 and in year 3 for the use of tools.
- (f) At the end of the year the deposit shall be refunded to the student less the cost of any breakages which have not been made good.

## GENERAL EXAMINATION RULES

### Part I. DEFINITIONS

- Academic Board means a Board constituted by Council to exercise certain academic functions in relation to a particular School.
- Committee of the Academic Board means a group of members of the Academic Board constituted by the Academic Board to exercise those particular academic functions prescribed by the Academic Board.
- Unit Course means a course of study in which a student may gain credit for subjects passed and is required to repeat failed subjects only.
- Fixed year course means a course of study in which a student is required to gain credit for all subjects of any year of the course before proceeding to the subjects of the following year.
- Award means a Degree, Diploma, Associate Diploma or Certificate granted by the Council.
- Chief Examiner means an officer appointed and so designated by a Head of Department in relation to an examination in a particular subject for a particular period.
- Examiner means an officer appointed by the Head of Department to set and mark examination papers in a particular subject for a particular period.
- Supervisor means an officer appointed by the Registrar to supervise the conduct of a particular examination.
- Central Examination means any examination administered by the office of the Registrar.
- Departmental Examination means any examination administered by a Department.

- Supplementary Examination means an examination given to a student who has failed to pass either a central or departmental examination.
- Deferred Examination means an examination given to a student in place of a central or departmental examination in cases where the student has failed to sit and the reasons for such failure have been accepted by the Head of School.
- Assignment means written exercises where these are specified as mandatory in a particular subject.
- Practical Work means Laboratory and Workshop exercises where these are specified as mandatory in a particular subject.
- Reports mean opinions expressed after investigation or consideration where such report is mandatory in a particular subject.

## **Part II. AUTHORITY TO PRESCRIBE EXAMINATIONS**

### **1. Academic Boards to Prescribe Examination Requirements**

- (a) An approved system may include Central Examinations, Departmental Examinations, Assignments, Practical Work, Reports and any methods of continuous assessment.
- (b) The system of assessment to be used in each subject will be prescribed by the Department responsible for the subject concerned and approved by the Academic Board responsible for the subject.
- (c) An Academic Board shall have the power of delegation subject to any conditions as it thinks fit to a Committee of the Board but the Board shall resolve any dispute.

### **2. Periods for Central Examinations**

The periods within the academic year to be set aside for Central Examinations, Supplementary Examinations and Deferred Examinations will be determined by Council.

### **3. Periods for Departmental Examinations**

The periods within the academic year to be set aside for Departmental Examinations will be as determined by the Department concerned after agreement with other Departments which might be affected by any determination, and where appropriate, by agreement with the Registrar. The Head of School will resolve any disagreements of an intra-School nature, whereas those of an inter-School nature will be referred to the Director for decision.

### **Part III. CENTRAL EXAMINATIONS**

#### **4. Appointment of Examiners**

- (a) The relevant Head of Department will appoint examiners and, where appropriate, chief examiners each year for each subject in that year.
- (b) The names of all examiners shall be forwarded by the Head of School to the Registrar by a date to be prescribed by the Registrar in consultation with the Head of School concerned.

#### **5. Responsibility for Conduct of Examinations**

- (a) The Registrar will be responsible for the conduct of all Central Examinations in accordance with Parts V and VI of these rules.
- (b) In consultation with the Heads of School, Heads of Department, and if appointed, the Chief Examiners, the Registrar may prescribe the date upon which all examination papers required to be set by examiners are to be received by his office and the form in which such papers will be received.
- (c) The Registrar will be responsible for the preparation of a timetable for all Central Examinations and for the publication of this timetable as required by these rules.

### **Part IV. DEPARTMENTAL EXAMINATIONS**

#### **6. Appointment of Examiners**

The relevant Head of Department will appoint examiners and, where appropriate, chief examiners. He will also be responsible for the conduct of the Departmental examinations.

### **Part V. NOMINATION FOR EXAMINATIONS**

#### **7. Nomination for Central Examinations**

The Registrar may prescribe a form required to be lodged by students presenting themselves for any Central Examination and may prescribe the date by which such form shall be lodged with him.

#### **8. Nomination for Departmental Examination**

The Head of Department may prescribe a form required to be lodged by students intending to sit for a Departmental Examination and prescribe the date by which such form shall be lodged with him.

## **9. Charges**

Any form capable of being lodged under these rules need not be accepted if any charges due from the person lodging it have not been paid. In the event of any non-acceptance the person presenting the form shall not be permitted to sit for that examination.

## **10. Late Lodgement**

At the discretion of the Registrar or Head of Department, as the case may be, a form required to be lodged under these rules may be accepted after the date prescribed for lodgement subject to the payment of any charge prescribed for late lodgement.

## **11. Withdrawal of Entry Examination**

A student who has entered for an examination may withdraw his entry by written notice to the Registrar or the Head of Department, as the case may be, by the prescribed date.

## **12. Timetables**

- (a) The timetable for Departmental Examinations shall be prepared by the Head of Department and shall be posted on appropriate notice boards.
- (b) A preliminary timetable for Central Examinations shall be prepared by the Registrar and posted on appropriate notice boards.
- (c) Should any timetable show a clash between subjects for which the student has nominated, it is the responsibility of the student to notify either the Registrar or the Head of Department as the case may be by the date prescribed for such notification.
- (d) The final examination timetables for Central Examinations shall be so posted not less than 3 weeks prior to the commencement of the examination.

## **13. Eligibility to Sit for Examinations**

- (a) A student may be declared ineligible by the Head of the Department responsible for the course to sit for an examination if he has failed to fulfil all the conditions as set out in the rules pertaining to the course for which he has enrolled.
- (b) The Registrar may prescribe the date by which Heads of Department must advise him of the names of students who are declared to be ineligible under this rule and upon receipt of advice from the relevant departments will so advise the students in writing of their ineligibility inviting them to show cause by a prescribed date why ineligibility should not be confirmed.

- (c) Where a student shows cause why he should not be declared ineligible his case shall be referred to the Head of School for review and determination.
- (d) A student declared by the Head of School to be so ineligible shall have the right of appeal to the Director.

#### **14. Student Examination Form**

- (a) The Registrar shall forward to each student at least two weeks prior to the commencement of all Central Examinations an examination form showing the subjects for which the student is eligible to sit and the date and time of the examination in that subject.
- (b) The student is required to keep this form in his possession at all times during the period of the examination.

#### **15. Failure to Attend for Examination at the Prescribed Date & Time**

- (a) A student who fails to attend an examination for which he has nominated and which in the case of a Central Examination is shown on his examination form will be deemed to have sat for and failed the examination concerned except in cases where he has notified the Registrar before the examination commences or immediately afterwards that he has failed to attend for reasons of incapacity, ill health or other circumstances beyond his control, and subsequently produces an acceptable medical or other certificate to this effect.
- (b) Should the medical or other certificate be acceptable to the Head of School, the student shall be granted a deferred examination.

### **Part VI. CONDUCT OF EXAMINATIONS**

#### **16. Entry to Examination Room**

A person other than a candidate, supervisor, examiner or his nominee, chief examiner or his nominee, may not enter an examination room during an examination session or during the period of forty-five minutes immediately preceding such session except with the permission of a supervisor.

#### **17. Time for Departure**

A candidate may not leave an examination room before the end of the examination session without the permission of a supervisor.

**18. Conditions of Entry and Departure**

A person whether a candidate or not, who is given permission to enter or leave an examination room shall comply with all conditions on which the permission is given.

**19. Unauthorised Material not to be brought into the Examination Room.**

A candidate shall not bring into an examination room anything whatsoever which conveys or is capable of conveying information concerning or otherwise has reference to any subject or is such that it may reasonably give rise to suspicion that it is capable of conveying information concerning or of having reference to any subject or that it was intended by the candidate to do so. It is immaterial that the subject is not a subject to which the examination relates.

It shall be sufficient answer to any alleged breach of this rule if the candidate establishes that anything brought by him into an examination room was —

- (a) declared as permissible by the examiner and is so indicated on the examination paper, or
- (b) brought in with the permission of the supervisor, or
- (c) deposited by the candidate within the room forthwith after entering it at a place designated by the supervisor as a place where such a thing may be deposited.

**20. Candidate not to Communicate with Others**

A candidate shall not during an examination session communicate by word or otherwise with any other person except a supervisor, examiner or his nominee, or assist any other person to communicate with another person, or willingly receive a communication from any person other than a supervisor, examiner or his nominee.

**21. Cheating**

A candidate shall not cheat or attempt to cheat in an examination. A person whether a candidate or not shall not do anything to assist any other examinee in his examination.

**22. Supervisor's Power of Inspection**

A supervisor may require a candidate to show by such means as the supervisor may specify and as the supervisor considers appropriate to the circumstances that the candidate has not in his



possession or in any way available any such thing as is specified under Rule 19 or that he is not committing or has not committed a breach of Rules 20 or 21 and the Candidate shall comply without delay with such requirement.

### **23. Identification**

A candidate shall bring to the examination room his student examination form and shall produce or keep displayed such form in accordance with any directions given to him by notice displayed in the examination room, by directions on an examination book, by a supervisor or otherwise.

### **24. Places**

A candidate for an examination shall upon entering an examination room proceed without delay to such place as he is or has been directed to occupy for that examination by a supervisor or by notice or other means, and shall not leave that place except with the permission or by the direction of a supervisor.

A supervisor may at any time direct a candidate to leave any such place and to occupy another place specified by the supervisor, and a candidate shall without delay comply with any such direction.

### **25. Candidates to Comply with Directions**

- (a) A candidate shall comply with all directions to candidates set forth on the examination book or such other examination material supplied to him or set out on any notice displayed in the examination room and shall without delay comply with any reasonable direction given to him by the supervisor.
- (b) A candidate's behaviour shall not be such as to disturb or distract or adversely affect any other candidate.
- (c) In the event of breach or default by a candidate under or in respect of 25(a) or 25(b) the supervisor may require the offending candidate to leave the examination room and failure by the candidate to do so shall be deemed to be a breach of discipline and he may be dealt with under the By-Law 9(2).
- (d) All such exclusions shall be reported immediately to the Registrar or in his absence the Assistant Registrar or officer designated by the Registrar to conduct the examination and the Registrar, Assistant Registrar or other officer after hearing the supervisor the candidate and any relevant evidence may either confirm or rescind the exclusion.

**26. Candidates not to Remove Papers**

A candidate shall not remove from the examination room any worked script or paper provided for use by him during the course of the examination (other than the question paper supplied to him) or other material the property of the Institute.

**27. Penalties for Breach of Examination Rules**

- (a) If a candidate commits a breach of any rule contained in this part of these rules, he shall be deemed to be guilty of a simple breach of discipline and may be dealt with under By-law 9(2).
- (b) A candidate who commits a breach of a rule contained in this part of these rules shall be liable in addition to any other penalty to have his examination cancelled, and in particular a candidate in breach of Rule 25 or this part of these rules shall be liable to the following penalties.

For a first breach —

- (i) denial of credit for the subject concerned, or
  - (ii) denial of credit for all subjects taken in the same academic year.
- (c) The Registrar, Assistant Registrar or other officer shall forthwith advise the Director of any such alleged breach and after due investigation by the Director, the Director may in writing require the candidate to show cause within not less than seven days from the date of such requirement why a penalty should not be imposed under this rule. In the event of the candidate failing to show cause the Director may impose any penalty provided for under this rule.
  - (d) Penalties for a further breach shall be —
    - (i) exclusion from the Institute for a period, or
    - (ii) permanent exclusion from the Institute.

A candidate incurring either of these penalties shall have a right of appeal to the Appeals Committee.

**Part VII. ASSESSMENT OF RESULTS****28. Registrar or Head of Department to Supply List of Candidates**

For Central Examinations the Registrar shall supply to each examiner a list of candidates for whom a result is required in each subject. For Departmental Examinations the Head of Department shall supply to each examiner a list of candidates for whom a result is required in each subject.

### 29. Duties of Examiners

The Examiners shall furnish to the Head of Department or the Chief Examiner where such is appointed –

- (a) A list of the candidates in respect of whom results for the subject are required on which the examiner shall show –
  - (i) such details of each candidate's performance as may be required by the Head of Department or Chief Examiner;
  - (ii) a statement of those from whom no script was received;
  - (iii) the name of any candidate who submitted a script and whose name was not included in the list supplied by the Registrar.
- (b) The examiner's recommended grade lines;
- (c) The result which the examiner recommends in respect of each candidate; and
- (d) An analysis of the examiner's recommendations showing the numbers of each grade of pass or failure recommended.

### 30. Powers and Duties of Head of Department

The Head of Department or where appointed the Chief Examiner may approve or vary the grading of results recommended for each candidate, provided always that, before making such a variation, the Head of Department or Chief Examiner shall advise the examiner concerned of the variation he proposes and consider any representation that the examiner may wish to make.

### 31. Powers and Duties of the Academic Board

- (a) In relation to the subject being examined –
 

The Head of Department or Chief Examiner shall forward to the Academic Board responsible for the course the results recommended by him together with any comments concerning these results made by the examiner concerned, in respect of each candidate. That Academic Board shall thereupon consider the results recommended for each candidate and shall determine the final award in each subject provided always that –

  - (i) the Academic Board determining such final awards may refer the recommended awards to a meeting of such examiners as the Chairman of the Academic Board may determine for advice, and

- (ii) the Academic Board shall not determine an award different from that recommended by a Head of Department or Chief Examiner except after advice to that Head of Department or Chief Examiner of the intended variation and consideration of any matters which that Head of Department or Chief Examiner may wish to place before the Board.

The Academic Board shall classify each result in terms of the grading of pass as set out in Part VII of these rules.

- (b) In relation to the course in which the student is enrolled —  
The Head of Department responsible shall forward to the relevant Academic Board a listing of the final results of each candidate enrolled in that course who has nominated for the examination.

Where relevant the Academic Board shall consider these results in terms of the approved progression rules for each course and determine —

- (i) whether the candidate has fulfilled all of the requirements for progression to the next stage of the course;
- (ii) whether the candidate shall be granted conceded passes in subjects in which he has not been granted a pass;
- (iii) whether the candidate shall be granted supplementary examinations or shall be required to submit himself for such other additional means of assessment as the Academic Board shall determine.

### **32. Application of Academic Board Policy**

Where an Academic Board has prescribed a policy which requires an adjustment of results the Head of School, before submitting results recommended for each candidate to the Academic Board, shall adjust the recommended grades in any subject in accordance with that policy, and shall report any adjustment so made to the Academic Board.

### **33. Powers of Alteration**

An examination result determined by the Academic Board, and a decision concerning the granting of a supplementary examination to a candidate may be altered by the Head of the School controlling the course with the concurrence of the Head of Department or Chief Examiner concerned —

- (a) to correct a patent error, or

- (b) to make the result or decision accord with the result or decision which the Head of School and the Head of Department, Chief Examiner and where possible the examiner, are satisfied would have been confirmed or made by the Academic Board if it had considered relevant circumstances which were not considered by the Board.

Any such alteration and the reasons therefore shall be reported to the Academic Board at its next meeting.

### **34. Grading of Results**

- (a) A pass in each subject may be credited as an Honour (H), Credit (C), or Pass (P).
- (b) Where the Academic Board responsible for the course so determines in accordance with Rule 31 a pass conceded (Q) may be awarded in a subject.
- (c) Where a student has been granted a supplementary examination in any subject he may not be subsequently credited in that subject with a grade higher than pass (P).
- (d) Where a student has been granted a deferred examination he may be awarded a pass in terms of an Honour (H), Credit (C), Pass (P), or Pass Conceded (Q).

### **35. Withholding of Results**

Where a candidate has failed to comply with the whole of the rules pertaining to a particular subject or course, irrespective of whether he has been permitted to sit for the examination or not, his results in either a particular subject or the whole of the subjects may be withheld at the discretion of the Academic Board responsible for the course, until he has fulfilled these requirements to the satisfaction of the Academic Board.

In such cases the Head of School will notify the Registrar of the reasons for withholding the results and the Registrar will advise the candidate in writing of these reasons and the candidate shall be given the opportunity to show cause to the Registrar why the results should not be withheld.

### **36. Approval of Results**

Departmental Examinations –

- (a) The results of all Departmental Examinations shall be subject to approval by the relevant Academic Board.

- (b) Upon approval by the Board the results shall be forwarded to the Registrar who shall maintain a register for use in the final compilation of results.

### **37. Certification of Final Results**

#### **Central Examinations –**

The Head of School shall certify to the Registrar –

- (a) the final results in respect of each candidate in his School, after all authorities have carried out their functions and exercised any powers given them under these rules;
- (b) in case of fixed year courses, a statement that the candidate has passed or failed the year or been granted supplementary examinations.

### **38. Release of Results**

#### **(a) Departmental Examinations –**

Upon approval of the Academic Board controlling the course, or a Committee of the Board where the authority has been delegated under Section 40, the results may be released by the Head of Department offering the subject.

#### **(b) Central Examinations –**

Following certification of results provided for in Section 37 these will be released at the direction of the Registrar.

### **39. Applications for Review of Results**

The papers submitted by a candidate in any subject shall be reviewed on request lodged by him with the Registrar not later than the date prescribed in the calendar and on payment of a fee prescribed by the Council.

If, on review, a higher grade of pass, or a pass in place of a failure is awarded to the candidate, the fee so paid shall be refunded.

### **40. Delegation of Authority by Academic Board**

Where an Academic Board responsible for a course has determined a policy in relation to the assessment of examination results, it may delegate to a Committee of the Board, the authority to exercise its powers under these rules. All such authority exercised on behalf of the Board must be consistent with the policy laid down by the Board and all decisions made by the Committee must be reported at the next meeting of the Board.

## **Part VIII. GROSS FAILURE**

### **41. Candidate to be Classified as having achieved a Gross Failure**

A candidate in any one year may be classified as having achieved a gross failure under the following circumstances –

- (a) In Unit Courses –
  - (i) Where a candidate has failed twice in the same subject or unit even though he did not nominate for that subject at successive examinations, or
  - (ii) where a candidate has not maintained over two successive years a rate of progress at least equal to fifty percent of that set out in the relevant course rules for normal progression.
- (b) In Fixed Year Courses –
  - (i) Where a candidate has failed twice in the same year of the course, or
  - (ii) In those cases where a candidate has been granted special permission to repeat only some of the subjects of a particular year and he has failed in any of those subjects.

### **42. Procedures to be Adopted**

- (a) Following the certification of final results as required under Rule 37, the Academic Board responsible for the course will forward to the Registrar a list showing those candidates who are considered by the Academic Board to have achieved gross failure at the examinations.
- (b) The Registrar shall notify all such students that they have been so classified and shall give them the opportunity to show cause by a prescribed date which is not more than four weeks from the date of posting the notification, why they should not be dealt with as provided for in these rules.
- (c) A student who wishes to show cause why he should not be dealt with under the rules may do so in writing to the Registrar.
- (d) When the date prescribed for showing cause has elapsed the Registrar will forward to the Head of School all submissions received and these will be considered by the Academic Board responsible for the course and the penalties to be imposed, if any, will be determined.

**43. Penalties for Gross Failure**

Where it is confirmed under Rule 41 above that a student has achieved gross failure and the student has failed under Rule 42 to show cause the following penalties may be imposed by the Academic Board responsible for the course –

- (a) The student may be refused enrolment in any course offered by the Institute.
- (b) The student may be refused enrolment in the course in which he has achieved a gross failure.
- (c) The student may be refused enrolment in a particular subject in which he has achieved gross failure but allowed to proceed with the course provided that subject is not mandatory in the course.
- (d) The student may be permitted to repeat a particular subject or in the case of a fixed year course a particular year but on the condition that further failure will result in his exclusion from enrolment in any course at the same level offered by the Institute.

**44. Right of Appeal**

Where a penalty is imposed under Rule 43, a student shall have the right of appeal to the Appeals Committee.

**45. Appointment of Committee of Academic Board**

An Academic Board may appoint a Committee of the Academic Board to make recommendations to the Academic Board.







**ENTRANCE  
REQUIREMENTS**

## ENTRANCE REQUIREMENTS

### Tertiary and Sub-tertiary Courses

#### A. Normal Entry

Full-time Senior or Junior students. Specific details are set out on Pages 30–34.

Candidates who have gained their entrance qualifications by full-time or part-time study will be considered for enrolment in accordance with the regulations applying to normal requirements.

#### B. Adult Entry

See details for each course in the 'Tertiary Entry Requirements' section of this handbook.

#### C. Entry to Second or Later Year of a Course

Provision exists to permit a candidate to enrol in the second or later year of a course if he has already completed part of a comparable tertiary course at another educational establishment and if he can meet certain prescribed conditions.

#### D. Special Entry

A candidate whose educational qualifications do not correspond precisely with the entrance requirements prescribed for the course in which he wishes to enrol, but who can present documentary evidence of his academic attainment which he believes should satisfy these requirements, may submit his qualifications to the Registrar for special consideration.

## TERTIARY REQUIREMENTS –

For enrolment in the following course –

### **Graduate Diploma in Nutrition and Dietetics**

To be eligible for enrolment in the Graduate Diploma in Nutrition and Dietetics the applicant shall have completed an acceptable tertiary course at professional level which includes physiology and biochemistry, one of which has been studied for at least two years.

#### **Special Entry:**

Applicants not completely satisfying the subject requirements may obtain enrolment upon completion of bridging courses prescribed by the Head of Department.

For enrolment in the following courses –

- Bachelor of Applied Science – Applied Chemistry**  
**Applied Geology**  
**Biology**  
**Chemistry**  
**Medical Technology**  
**Physics**
- Diploma of Applied Science – Optometry**  
**Chiropody**

**Normal Entry:**

An applicant for enrolment shall have reached a Tertiary Entrance score of 810 or better and in addition shall have studied for at least three semesters the Board subjects Mathematics I (or equivalent), Physics and Chemistry at upper-secondary level;

**OR**

shall have obtained a minimum total score of 80 semester points over 20 semester units and in addition shall include a minimum of sixteen (16) points over four semester units in each of the Board subjects Mathematics I (or equivalent), Physics, Chemistry and two others.

Students who have sat for the external Senior examination and who are not included on the Order of Merit and have not been awarded a T.E. score must obtain a minimum score of twenty (20) points over five subjects including Mathematics I (or equivalent), Physics and Chemistry.

**Adult Entry:**

To qualify for adult entry an applicant must obtain a minimum score of sixteen (16) points in four Senior examination subjects including Mathematics I (or equivalent) Physics and Chemistry. All credits must be obtained after the candidate has reached the age of 21 years.

For enrolment in the following courses –

- Bachelor of Applied Science – Mathematics**  
**Computing**

**Normal Entry:**

An applicant for enrolment shall have reached a Tertiary entrance score of 810 or better and in addition shall have gained a total of at least thirty-two (32) semester points over four semesters in Mathematics I and Mathematics II (or equivalent Mathematics subjects);

**OR**

shall have obtained a minimum total score of eighty (80) semester points over 20 semester units and in addition shall include a minimum total of sixteen (16) points over four semester units in each of the Board subjects Mathematics I and Mathematics II.

Students who have sat for the external Senior examination and who have not been awarded a T.E. score must obtain a minimum score of twenty (20) points over five subjects including Mathematics I and Mathematics II (or equivalent Mathematics subjects).

**Adult Entry:**

To qualify for adult entry an applicant must obtain a minimum score of sixteen (16) points in four Senior examination subjects including Mathematics I and Mathematics II (or equivalent Mathematics subjects), with a minimum total of eight (8) points obtained in the two Mathematics subjects together. All credits must be obtained after the candidate has reached the age of 21 years.

For enrolment in the following courses —

**Associate Diploma in Diagnostic Radiography**  
**Associate Diploma in Therapeutic Radiography**

**Normal Entry:**

- (i) For students who have completed a course of study leading to the award of a Senior Certificate of the Board of Secondary School Studies in 1974 and subsequent years, the requirements shall be:
  - (a) a Tertiary Entrance score of 745 or better;
  - (b) a minimum score of 16 semester points in each of Mathematics I, Physics, English and one other, but a minimum score of 12 semester points may be accepted in one (not both) of English or the other subject used.
- (ii) For students who completed Senior in 1973 or completed Senior under normal school assessment in 1974 and subsequent years, and do not have a Tertiary Entrance Score, the requirement shall be a total score of 64 semester points over 16 semester units, including at least 16 semester points in each of Mathematics I (or equivalent), Physics, English and one other, but a minimum score of 12 semester points may be accepted in one (not both) of English or the other subject used.

- (iii) For students who have sat for the external Senior examination and do not have a Tertiary Entrance Score, the requirement shall be a total score of 16 points over four subjects including Physics, Mathematics I (or equivalent) and two others. A minimum grade of 4 points is required in each of Mathematics I and Physics, but a minimum grade of 3 may be accepted in one (not both) of English or the other subject used.

For enrolment in the following course —

**Associate Diploma in Health Surveying**  
**Associate Diploma in Clinical Laboratory Techniques**

**Normal Entry:**

- (i) for students who have completed a course of study leading to the award of a Senior Certificate of the Board of Secondary School Studies in 1974 and subsequent years, the requirements shall be:
- (a) a T.E. score of 745;
  - (b) study over three semesters of the Board subjects — Mathematics I (or equivalent), Physics and Chemistry.
- (ii) for students who completed Senior in 1973, or completed Senior under normal school assessment in 1974 and subsequent years but do not have a T.E. score, the requirement shall be a total score of 64 points over 20 semester units in Chemistry, Physics, Mathematics I (or equivalent) and two others.
- (iii) students who have sat for the external Senior examination and who do not have a T.E. score must obtain a minimum score of sixteen (16) points over five subjects including Mathematics I (or equivalent), Physics and Chemistry.

**Adult Entry:**

To qualify for adult entry an applicant must obtain a minimum score of thirteen (13) points in four Senior examination subjects including Mathematics I (or equivalent), Physics and Chemistry. All credits must be obtained after the candidate has reached the age of 21 years.

**SUB-TERTIARY REQUIREMENTS —**

**Normal Entry:**

To be eligible to enrol in a sub-tertiary course a candidate must gain the entrance requirements set out below —

- (a) Generally a minimum total score of sixteen (16) points in four Junior subjects.

- (b) A minimum grade of three points may be accepted in English, but the accepted minimum grade in Science A, Science B and other subjects shall be four (4) points, except as stated in (c).
- (c) The following requirements in MATHEMATICS should be carefully noted :

Courses in the School of Applied Science require a grade of three (3) points or better in Advanced level or a grade of five (5) points or better in ordinary level. (Note: In the event of an applicant using a grade of three in Advanced level, the acceptable minimum total score shall be 15, and if using a grade of 5 in Ordinary level the acceptable minimum total score shall be 17.)

For enrolment in the following courses, applicants will need to have studied the prescribed Junior level subjects and received grades in them in accordance with the requirements detailed above.


**School of Applied Science –**

**Certificate in Chemistry**

**Certificate in Biological Laboratory Techniques.**

**Prescribed subjects –**

**English, Maths, Science A, Science B.**



**ACADEMIC BOARD  
AND ADVISORY  
COMMITTEES**



## APPLIED SCIENCE ACADEMIC BOARD AND ADVISORY COMMITTEES

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- Ex-Officio:** Mr. E. Codd (Built Environment)  
Mr. W. Hoskins (Business Studies)  
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Co-ordinator General's Department, Brisbane.
- Mr. R. Fleming** Lecturer, Department of Physics, QIT.
- Mr. P. Grenning** Mineral Deposits Ltd., Southport.
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- Mr. J.C. Kable** Head, Department of Management, QIT.
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- Mr. J. McLean-Hodgson** Geologist, Shell Development (Aust.) Pty. Ltd.
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- Mr. D. Welburn** Lecturer, Department of Mathematics and Computer Science, QIT.
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Mr. G. Howard	Student Representative.
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Mr. E. Bennett	Senior Lecturer, Department of Paramedical Studies, QIT.
Mr. I. Charles	Area Superintendant, Consolidated Fertilizers Ltd., Gibson Island.
Dr. W.A. Dodd	Senior Lecturer, Department of Biology and Environmental Science, QIT.

Dr. G. Douglas	Lecturer, Department of Chemistry, QIT.
Mr. D. Mathers	Director, Government Chemical Laboratories, Brisbane.
Mr. D. O'Connell	Lecturer, Department of Geology, QIT.
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Dr. R. Park	Senior Research Scientist, Food Research Division, CSIRO.
Mr. P. Parodi	Chief Research Chemist, Butter Marketing Board, Hamilton.
Mr. H. Rose	Senior Lecturer, Department of Physics, QIT.
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Mr. D. Welburn	Lecturer, Department of Mathematics and Computer Science, QIT.
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Dr. J.F. Coulson	Lecturer, Department of Paramedical Studies, QIT.
Mr. R. Glanville	Chiropodist, Private Practitioner.
Mr. C.W. Graves	Chiropodist, Private Practitioner.
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Mr. E.A. Bennett	Senior Lecturer, Department of Paramedical Studies, QIT.
Mr. J. Bray	Chief Health Surveyor, Brisbane City Council.
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Dr. T. Gaffney	Pathologist, Specialist Practitioner.
Dr. W.J.W. Hanna	Lecturer, Department of Chemistry, QIT.
Colonel A. Groessler	Director, Medical Services, Victoria Barracks, Brisbane.
Mr. C.R. McDonald	Senior Lecturer, Department of Paramedical Studies, QIT.
Mr. J.P. McGilvray	Senior Lecturer, Department of Physics, QIT.
Dr. H. McKenna	Pathologist in Charge, Royal Women's Hospital, Herston.
Mr. B. McMahon	Lecturer, Department of Biology and Environmental Science, QIT.
Dr. N.J. Nicolaides	Pathologist, Specialist Practitioner.
Dr. R.L. Quinn	Histopathologist, Princess Alexandra Hospital.

Mr. N. Roffey-Mitchell	Lecturer, Department of Communication and General Studies, QIT.
Mr. J. Saal	Head, Department of Paramedical Studies, QIT
Mr. S. Walsh	Graduate Representative, Mater Hospital.
Mr. D.F. Welburn	Lecturer, Department of Mathematics and Computer Science, QIT.

#### ADVISORY COMMITTEE – NUTRITION AND DIETETICS

Mr. J.R. Saal (Chairman)	Head, Department of Paramedical Studies, QIT.
Mr. J.R.M. Armstrong	Lecturer in Catering Management, Qld. Agricultural College, Gatton.
Mr. E.A. Bennett	Senior Lecturer in Biochemistry, Department of Paramedical Studies, QIT.
Prof. E. Chamberlain	Professor of Social Work, University of Queensland.
Mr. R.Y. Chan	Dietitian.
Ms. B. Chester	Dietitian, Royal Brisbane Hospital.
Mr. P.H. Crowe	Senior Lecturer, Department of Management, School of Business Studies, QIT.
Ms. A. Curran	Lecturer, College of Nursing Australia, Queensland Branch.
Mr. C.R. McDonald	Senior Lecturer, Department of Paramedical Studies, QIT.
Dr. R. Gordon	Reader in Medicine, University of Queensland.
Mr. A. Gray	Deputy Commissioner, Department of Repatriation and Compensation.
Ms. J.M. Horwood	Dietitian, Aboriginal Health Programme, Department of Health.
Dr. P.G. Livingstone	Deputy Director-General of Health and Medical Services, Department of Health.
Ms. M. Maguire	Dietitian, Princess Alexandra Hospital.
Mr. H. Osieki	Student Representative.
Mr. B.T. Overell	General Manager, Queensland United Foods.
Dr. E.G. Saint	Dean, Faculty of Medicine, University of Queensland.

Dr. J. Ternouth	Senior Lecturer, Department of Animal Husbandry, Veterinary School, University of Queensland.
Ms. Y. Webb	Lecturer, Department of Paramedical Studies, QIT.
Ms. B. Wright	Dietitian, Princess Alexandra Hospital.

#### **ADVISORY COMMITTEE – OPTOMETRY**

Mr. V.N. Verney (Chairman)	Senior Lecturer, Department of Paramedical Studies, QIT.
Dr. A. Bailey	Senior Lecturer, Department of Biology and Environmental Science, QIT.
Mr. B. Blumberg	Optometrist.
Dr. G. May	Director, School Health Services, Chairman of Optometrist's Board of Queensland.
Mr. W. Middleton	Lecturer, Department of Physics, QIT.
Mrs. A.M. Reed	Optometrist.
Mr. R.J. Robinson	Optometrist.
Mr. J.R. Saal	Head, Department of Paramedical Studies, QIT.
Mr. P.G. Swann	Lecturer, Department of Paramedical Studies.
Mrs. B.J.M. Tuffley	Lecturer, Department of Paramedical Studies.
Miss C. Wildsoet	Student Representative.

#### **ADVISORY COMMITTEE – PHYSICS**

Dr. B. Thomas (Chairman)	Head, Department of Physics, QIT.
Mr. F.T. Barrell	Regional Inspector of Secondary Schools, Department of Education.
Mr. R.H. Challen	Engineering Development Manager, MIM Holdings Ltd.
Dr. R.J. Coleman	Lecturer, Department of Applied Geology, QIT.
Mr. R.E. Dunlop	Senior Lecturer, Department of Physics, QIT.
Mr. R. Falls	Supervising Meteorologist, Bureau of Meteorology, Brisbane.



Dr B.P. Garfoot	Lecturer, Department of Mathematics and Computer Science, QIT.
Mr. K.P. Herlihy	Lecturer, Department of Chemistry, QIT.
Mr. L.A. Meara	Lecturer, Department of Physics, QIT.
Mr. W.C. Middleton	Lecturer, Department of Physics, QIT.
Mr. B.M. O'Leary	Lecturer, Department of Physics, QIT.
Mr. W.F. Ridley	Lecturer, Department of Applied Geology, QIT.
Mr. D.J. Yates	Lecturer, Department of Biology and Environmental Science, QIT.

#### ADVISORY COMMITTEE – RADIOGRAPHY

Dr. B. Thomas (Chairman)	Head, Department of Physics, QIT.
Dr. D. Greaves	Tutor Radiographer, QRI.
Miss H. Heindorff	Therapy Radiographer, QRI.
Dr. E. Jay	Private Radiologist.
Dr. J. Masel	Private Radiologist, Representative of College of Radiologists of Australasia.
Dr. L. Masel	Representative of Conjoint Committee.
Mr. J.P. McGilvray	Senior Lecturer, Department of Physics, QIT.
Miss B. Moore	Tutor Radiographer, X-ray Department, Royal Brisbane Hospital.
Dr. S. Roberts	Senior Radiotherapist, QRI.
Mr. B. Stevens	Lecturer, Department of Paramedical Studies, QIT.
Mr. K.A. Stevens	Radiation Health Physicist, Department of Health, Brisbane.
Mr. D.K. Wilson	Lecturer, Department of Physics, QIT.
Dr. O.J. Wordsworth	Deputy Director, QIT.
Mr. R. Dimmick	Representative of Australasian Institute of Radiography.



**PRIZES  
AND AWARDS**

## **PRIZES AND AWARDS**

### **Allergan Prize**

Donated by Allergan Pharmaceuticals Pty. Ltd. and awarded to the final year Optometry student gaining most distinction in the subject "Contact Lens Studies".

### **Australian Institute of Medical Technologists Prize**

Awarded to a student displaying qualities of initiative and leadership who attains a high level of proficiency throughout the Course leading to the Bachelor of Applied Science – Medical Technology.

### **Castlemaine Perkins Scholarship in Industrial Chemistry**

This scholarship will be awarded annually for the period of one academic year. Any male student who is eligible to complete the third year syllabus of the full-time course leading to the Bachelor of Applied Science – Applied Chemistry is eligible to make application for this scholarship.

Such application must be submitted on or before the 15th January of each year. Particulars regarding the nature of this scholarship and the necessary application forms can be obtained from Castlemaine Perkins Limited.

### **Chas. Sankey Fraser Memorial Prize**

Awarded to the student gaining the greatest distinction in the final year examinations of the Diploma of Applied Science – Optometry course.

### **Clare Falconer Memorial Prize**

Donated through the Queensland Branch of the Australasian Institute of Radiography and awarded to the student in first year therapeutic radiography gaining the highest aggregate marks for that year.

### **Fraser Edmiston Scholarship**

One scholarship is offered annually and normally is tenable for the duration of the Diploma of Applied Science – Optometry course, but its tenure shall, at all times, be subject to the holder maintaining a standard of conduct and progress acceptable to the Queensland Institute of Technology. The scholarship shall be valued at \$450.

Applicants must be residents of Queensland and have been resident in Australia or the Territories of New Guinea for a period of no less than two years. Age must not be over 21 years at date of application. Applications for the scholarship should be lodged at the following address no later than 16th January of each year.

The Secretary,  
 Australian Optometrical Association, (Queensland Division),  
 P.O. Box 59,  
 St. Lucia. 4067.

#### **I.M. & M.J. Mackerras Prize**

Donated by the Australian Institute of Medical Technologists and awarded to the student gaining the highest pass with distinction in subject area of 'medical parasitology' within the unit PSB754 Microbiology VI.

#### **International Optical Corporation Bursaries**

- (i) A bursary shall be awarded to a student who has completed successfully the first year of the Optometry course leading to the Diploma of Applied Science – Optometry, provided that the student intends to proceed with the remainder of the course. The student must not hold a scholarship or bursary, and he will be assured of long vacation employment by International Optical Corporation.
- (ii) A bursary shall be awarded to a student completing successfully the second year of the Diploma of Applied Science – Optometry course, and intending to proceed with the remainder of the course. The student must not hold a scholarship or bursary, and he will be assured of long vacation employment by International Optical Corporation.

Applications for Bursaries should be addressed to:

The Secretary,  
 Australian Optometrical Association, (Queensland Division),  
 P.O. Box 59,  
 St. Lucia. 4067.

#### **James Vincent Duhig Prize**

Donated by the Australian Institute of Medical Technologists and awarded to the student gaining the highest pass with distinction in the unit 'Histochemistry'.

#### **J.L. Forsyth Prize**

Donated by Provincial Traders Pty. Ltd. and awarded to the student who has shown the greatest proficiency in the subjects of the fifth and sixth years of the part-time course for the Bachelor of Applied Science – Applied Chemistry at the Queensland Institute of Technology.

**Kodak Prize**

Awarded to the student in diagnostic radiography gaining the highest aggregate marks for the course completed in that year.

**M.D. Innis Prize**

Donated by Dr. M.D. Innis and awarded to the student gaining the highest pass with distinction in the unit PSB727 Haematology.

**Noel Middleton Gutteridge Prize**

Donated by Dr. N.M. Gutteridge and awarded to the student obtaining with distinction the highest pass over the fifth and sixth years of the course leading to the Bachelor of Applied Science – Medical Technology.

**Oscar Queitszch Memorial Prize**

Donated through the Queensland Branch of the Australasian Institute of Radiography and awarded to the student in first year diagnostic radiography gaining the highest aggregate marks for that year.

**Philips Electrical Prize**

Awarded to the most outstanding student in the third year of the full-time course leading to the Bachelor of Applied Science – Physics.

**Royal Australian Chemical Institute Prize**

Awarded to –

- (i) The student showing, at the first attempt, the greatest proficiency in the second year of the full-time course leading to the Bachelor of Applied Science – Applied Chemistry.
- (ii) The student showing the greatest proficiency in subjects of the third and fourth years of the part-time course leading to the Bachelor of Applied Science – Applied Chemistry.

**Royal College of Pathologists of Australia Prize**

Awarded to the student who obtains the highest pass in the units Microbiology V and VI in the Bachelor of Applied Science course – Medical Technology.

## SUBJECT NUMBERING SYSTEM

The subject code is of the format XXX999.


The first two characters indicate the Department administering the subject:

ES	Applied Geology
BE	Biology and Environmental Science
CH	Chemistry
MA	Mathematics and Computer Science
PS	Paramedical Studies
PH	Physics
AR	Architecture
BG	Building
AC	Accountancy
CM	Communication and General Studies
MN	Management
CE	Civil Engineering
EE	Electrical Engineering
ME	Mechanical Engineering
SV	Surveying
LB	Librarianship

The third character indicates the level of the course in which the subject is taught – Certificate C, Associate Diploma A, Diploma D, Bachelor's Degree B, Masters' Degree M, Post Graduate Diploma P, Special S.

The remaining characters identify the subject within a course.





**MASTER OF  
APPLIED SCIENCE**



## **SCHOOL OF APPLIED SCIENCE**

### **Master of Applied Science by Research & Thesis**

(Expected to be offered in 1977)

The expertise of the Departments in the School of Applied Science can be employed for the purpose of supervision of students who wish to undertake a Master of Applied Science (by Research). The programme is administered by the Academic Board of the School of Applied Science through Graduate Studies Standing Committee.

#### **Objectives**

- (a) to provide post-graduate educational opportunities in specialised fields of applied science where course work is not applicable;
- (b) to provide further education in research methods for post-graduate students under conditions of close supervision;
- (c) to enable graduates employed in industry to undertake further education by research and thesis;
- (d) to enable industrial organizations and other external agencies to sponsor a student research programme under the control and supervision of the School of Applied Science of the Institute;
- (e) to further the relationships that exist between the Institute and industry or other external agencies engaged in applied science, to their mutual advantage.

#### **Approval of Projects**

All projects should be sponsored either by outside agencies such as industry, Government authorities, or professional organisations, or by the Institute itself. The enforcement of this provision is necessary to prevent students entering into a programme of research which might be irrelevant to the aims of this Institute and the community. It is important that research be firmly directed towards some useful purpose in order to avoid a proliferation of students entering upon an aimless pursuit of research with consequent misuse of Institute facilities and staff supervision time.

#### **Admission**

Applications for admission will be considered from persons who –

- (a) possess a Bachelor of Applied Science Degree of the Queensland Institute of Technology, OR

- (b) possess an equivalent qualification, OR
- (c) submit such other evidence of educational and professional qualifications to satisfy the Academic Board in Applied Science that they have the capacity and an adequate grounding in applied science to undertake graduate studies.

An applicant may be required to undergo a bridging course before admission is granted.

In admitting applicants, the Academic Board in Applied Science will take into consideration the nature of the proposed research programme and its relevance to the aims of the Institute and to the community.

Applicants will be required to submit a supporting statement indicating sponsorship of the programme.

Sponsorship will normally come from an employer, a Government Department or authority, a professional body or a department within the School of Applied Science.

An applicant may enrol as either a full-time or part-time student where the work is conducted wholly within the School of Applied Science;  
OR

an applicant may enrol as an external student where the major part of the work is conducted in an approved work environment.

The Academic Board may require an enrolled student to undertake formal course work as an integral part of his programme.





**DEPARTMENT OF  
APPLIED GEOLOGY**

## DEPARTMENT OF APPLIED GEOLOGY

**Head of Department:** Vacant.

**Senior Lecturer:** V.M. Bofinger, BSc(Hons)(NE), PhD(ANU) –  
Acting Head of Department.  
Vacant.

**Lecturers:** K.R. Martin, MSc(Hons)(Auck).  
D.C. O’Connell, BSc(Qld), DipEd, FGS(Lond).  
W.F. Ridley, MSc(Qld).  
R.J. Coleman, BSc(Hons)(Tas), FGS(Lond), AMIMM,  
AMAusIMM.  
B.M. Haines, MSc(Syd).

**Support Staff:** Senior Technician, Division II – vacancy.  
**(Technician** B. Kwiecien, Laboratory Technician Division II.  
**Division II**  
**and above)** M. Snell, Laboratory Technician Division II.

## ESJ132 BACHELOR OF APPLIED SCIENCE – APPLIED GEOLOGY

Entrance Requirements – see page 31.

1. A registered student may only enrol in a day programme and the subjects and other work comprising the curriculum of the three years of study are as follows:

<i>Semester 1 – Autumn</i>		<i>Approx. Formal Hrs/Wk.</i>
ESB113	Earth Science I	6
CHB141	Chemistry I	6
PHB101	Physics IS	3
PHB106	Experimental Physics I	3
MAB251	Mathematics I	4
CMB101	Professional Communication A	2
<i>Semester 2 – Spring</i>		
ESB213	Earth Science II	6
CHB241	Chemistry II	6
PHB201	Physics IIS	3
PHB206	Experimental Physics II	3
MAB160	Mathematics II	4
CMB102	Professional Communication B	2

*Semester 3 – Autumn*

ESB313	Mineralogy	4
ESB323	Sedimentology	3
ESB333	Geochemistry III	2
ESB343	Surveying	3
ESB353	Structural Geology III	2
ESB363	Economic Geology III	5
ESB373	Economic Analysis for Geologists	2
CHB343	Chemistry for Geologists III	4
ESB383	Field Excursions III	

*Semester 4 – Spring*

ESB413	Petrology IV	4
ESB423	Stratigraphy & Sedimentary Petrology	6
ESB433	Geophysics IV	2
ESB443	Hydrology IV	3
ESB453	Geochemistry IV	1
ESB473	Law for Geologists	2
MAB257	Statistics	4
CHB443	Chemistry for Geologists IV	3
ESB483	Field Excursions IV	

*Semester 5 – Autumn*

ESB513	Economic Geology V	4
ESB523	Hydrology V	4
ESB533	Exploration Geochemistry V	4
ESB543	Petrology V	3
ESB553	Field Techniques	3
ESB563	Project V	1
ESB573	Field Excursions V	3
ESB583	Administration for Geologists	3

*Semester 6 – Spring*

ESB613	Mineragraphy and Mining Geology	3
ESB623	Petroleum Geology	4
ESB633	Exploration Geophysics VI	3
ESB643	Structural Geology VI	3
ESB653	Engineering Geology	3
ESB663	Project VI	4
ESB673	Field Excursions VI	3
ESB683	Property Evaluation for Geologists	2

2. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –

- written and/or oral tests;
- general assignments;
- laboratory exercises and reports;
- projects, field testing, etc.

3. Students gain credits for passed units and are required to repeat failed units only.
4. Students who pass all units in one semester of the programme as set out in Rule 1 will be expected to enrol in the units set out for the following semester of the programme. Timetables are organised on the basis of normal progression.
5. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 6 and 7; and
  - (iii) the established timetable permits the selected units to be studied concurrently, except that, in certain circumstances students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.
6. Except with the approval of the Head of Department, the total of hours associated with units selected for study should not exceed the number of hours allocated to the semester of the programme in Rule 1 and from which the majority of units have been selected.
7. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
8. Where quotas would be exceeded by the acceptance of new applicants –
  - (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.

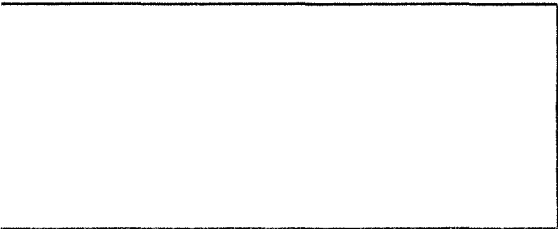
9. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
10. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
11. If a student before enrolling for the course has at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under rule 1, then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
12. A student may under Rule 11 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
CHB241 Chemistry II	CHB141 Chemistry I	
CHB343 Chemistry for Geologists III	CHB241 Chemistry II	
CHB443 Chemistry for Geologists IV	CHB343 Chemistry for Geologists III	
ESB363 Economic Geology III	ESB113 Earth Science I	
ESB513 Economic Geology V	ESB213 Earth Science II	
ESB653 Engineering Geology	ESB363 Economic Geology III	
	ESB413 Petrology IV	
	ESB423 Stratigraphy & Sedimentary Petrology	
	ESB463 Structural Geology IV	
PHB106 Experimental Physics I		PHB101 Physics IS
PHB206 Experimental Physics II	PHB106 Experimental Physics I	PHB201 Physics IIS
ESB533 Exploration Geochemistry V	ESB453 Geochemistry IV	
ESB633 Exploration Geophysics VI	ESB433 Geophysics IV	



<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
ESB385 Field Excursions III	ESB113 Earth Science I ESB213 Earth Science II	ESB343 Surveying
ESB483 Field Excursions IV	ESB383 Field Excursions III	
ESB573 Field Excursions V	ESB483 Field Excursions IV	
ESB673 Field Excursions VI	ESB573 Field Excursions V	
ESB553 Field Techniques	ESB463 Structural Geology III ESB343 Surveying	
ESB333 Geochemistry III	CHB141 Chemistry I CHB241 Chemistry II	
ESB453 Geochemistry IV	ESB333 Geochemistry III	
ESB433 Geophysics IV	PHB201 Physics IIS	
ESB523 Hydrology V	ESB443 Hydrology IV	
MAB160 Mathematics II	MAB251 Mathematics I	
ESB613 Mineragraphy & Mining Geology	ESA363 Economic Geology III	
ESB313 Mineralogy	ESB113 Earth Science I	
ESB623 Petroleum Geology	ESB523 Hydrology V ESB423 Stratigraphy & Sedimentary Petrology	
ESB413 Petrology IV	ESB313 Mineralogy	
ESB543 Petrology V	ESB413 Petrology IV	
PHB101 Physics IS		PHB106 Experimental Physics I
PHB201 Physics IIS		PHB206 Experimental Physics II
ESB563 Project V	ESB413 Petrology IV ESB423 Stratigraphy & Sedimentary Petrology ESB463 Structural Geology III	ESB533 Exploration Geochemistry ESB553 Field Techniques
ESB663 Project VI	ESB563 Project V	
ESB683 Property Evaluation for Geologists	ESB373 Economic Analysis for Geologists	
ESB323 Sedimentology	ESB113 Earth Science I	
MAB257 Statistics	MAB160 Mathematics II	
ESB423 Stratigraphy & Sedimentary Petrology	ESB323 Sedimentology ESB313 Mineralogy	
ESB643 Structural Geology VI	ESB353 Structural Geology III	

Subjects not listed have no pre-requisites other than normal course entry requirements.



**DEPARTMENT OF  
BIOLOGY AND  
ENVIRONMENTAL  
SCIENCE**

## DEPARTMENT OF BIOLOGY & ENVIRONMENTAL SCIENCE

**Head of Department:** R.G. Everson, BSc(Hons)(Syd), PhD(Melb),  
MIBiol, AAIFST.

**Senior Lecturers:** A. Bailey, BSc(Hons)(L'pool), PhD(Adel), MIBiol.  
W.A. Dodd, MSc(Adel), PhD(Alberta).  
J.M. Monro, BSc(Hons)(Syd), PhD(Adel).

**Lecturers:** D.H. Barry, BSc(Hons)(Lond).  
O. Cartledge, BSc(Hons)(ANU), PhD(Qld).  
D.S. Kells, BAgSc(Melb), DipEd(Melb).  
C.R. King, BSc(Lond), MSc(Salford).  
B.J. McMahon, BSc(Qld).  
M.K. Ross, BAgSc(Hons)(Qld), MSc(Calgary).  
R.T. Williams, BSc(Hons)(Durham), PhD(Notts).  
D.J. Yates, BAgSc(Melb), MAIAS, PhD(Melb).

**Senior Tutor:** R.B. Lee, BA(Maine).

**Support Staff:** A.A.J. Cillekens, Senior Laboratory Technician,  
**Technician Div.** DipTropAg, DipSugTech(Holland).

**II and above.** E. Guindy, Laboratory Technician.  
K. Ilievski, Laboratory Technician, BSc(Hons)(Skopje).

**BEJ131 BACHELOR OF APPLIED SCIENCE – BIOLOGY**

Entrance Requirements – see page 31.

1. A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. For a registered student in a day programme, the subjects and other work comprising the curriculum of the three years of study are as follows –

<i>Semester 1 – Autumn</i>		<i>Approx. Formal Hrs./Wk.</i>
MAB251	Mathematics I	4
CMB101	Professional Communication A	2
CHB141	Chemistry I	6
PHB101	Physics IS	3
PHB106	Experimental Physics I	3
BEB105	Human Ecology	3
BEB101	Cell Biology	3
<i>Semester 2 – Spring</i>		
MAB252	Statistics	2
MAB260	Introduction to Programming	2
CMB102	Professional Communication B	2
CHB241	Chemistry II	6
PHB201	Physics IIS	3
PHB206	Experimental Physics II	3
BEB109	Experimental Biology	6
<i>Semester 3 – Autumn</i>		
BEB321	Plant Physiology	6
BEB322	Plant Diversity	6
BEB390	Field Methodology I	4
* MAB257	Statistics	4
	Elective:	4
ESB311	Earth Science III OR	
PSB405	Biochemistry III OR an equivalent elective.	

\* In 1977 this subject will be replaced by MAB258 *Experimental Design*.

*Semester 4 - Spring*

BEB411	Animal Physiology	6
BEB412	Animal Diversity	6
BEB490	Field Methodology II	4
	Elective.	4
BEB331	Classical & Applied Genetics OR	
ESB411	Earth Science IV OR	
PSB407	Biochemistry IVB OR an equivalent elective.	

*Semester 5 - Autumn*

BEB535	Population Genetics	6
BEB553	Population Dynamics	6
BEB590	Projects in Terrestrial and Aquatic Ecology	6
BEB529	Vegatation Mapping	3
	Elective:	4
PSB450	Microbiology III OR an equivalent elective.	

*Semester 6 - Spring*

BEB651	Ecosystems	6
BEB656	Biosphere & Conservation	6
BEB590	Projects in Terrestrial and Aquatic Ecology	6
BEB659	Productivity & Trophic Levels	3
	Elective:	4
PSB454	Microbiology IVC OR	
BEB331	Classical & Applied Genetics OR an equivalent elective.	

N.B. Choice of elective subjects must be made in consultation with the Head of Department or his delegate.

3. For a registered student in an evening programme, the subjects and other work of the six years of study are as follows –

<i>Semester 1 - Autumn (1976)</i>		<i>Approx. Formal Hrs./Wk.</i>
CHB141	Chemistry I	6
BEB109	Experimental Biology	6
<i>Semester 2 - Spring (1976)</i>		
CHB241	Chemistry II	6
BEB105	Human Ecology	3
BEB101	Cell Biology	3
<i>Semester 3 - Autumn (1977)</i>		
PHB101	Physics IS	3
PHB106	Experimental Physics I	3
MAB251	Mathematics I	4
CMB102	Professional Communication B	1

*Semester 4 – Spring (1977)*

PHB201	Physics IIS	3
PHB206	Experimental Physics II	3
CMB102	Professional Communication B	1
MAB252	Statistics	2
MAB260	Introduction to Programming	2

*Semester 5 – Autumn*

BEB390	Field Methodology I (refer rule 16)	3
* MAB257	Statistics	3
	Elective	3

*Semester 6 – Spring*

BEB321	Plant Physiology	6
BEB322	Plant Diversity	6
	(time equivalent to 3 hrs/wk of this unit will possibly be organised as field studies, refer rule 16.)	

*Semester 7 – Autumn*

BEB411	Animal Physiology	6
BEB412	Animal Diversity	6

*Semester 8 – Spring*

BEB490	Field Methodology II	2
BEB553	Population Dynamics	6
	Elective	3

N.B.: Choice of elective subjects must be made in consultation with the Head of Department or his delegate.

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
5. Students of the day programme or the evening programme gain credit for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day or evening programme as set out in Rules 2 or 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.

\* In 1977 this subject will be replaced by MAB258 *Experimental Design*.

- 7 Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
- (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes.

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.
9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the area of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
  14. If a student before enrolling for the course has at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
  15. A student may under Rule 14 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.
  16. Students may be required to attend intensive segments of course work in QIT recess periods (normally to fulfill field work requirements of the course).



## BACHELOR OF APPLIED SCIENCE – BIOLOGY

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
BEB411 Animal Physiology	BEB101 Cell Biology BEB109 Experimental Biology	
PSB405 Biochemistry III	CHB241 Chemistry II	
PSB407 Biochemistry IVB	PSB405 Biochemistry III	
CHB241 Chemistry II	CHB141 Chemistry I	
BEB651 Ecosystems	BEB553 Population Dynamics	
PHB106 Experimental Physics I		PHB101 Physics IS
PHB206 Experimental Physics II	PHB106 Experimental Physics I	PHB201 Physics IIS
BEB390 Field Methodology I	MAB159 Mathematics I	
PSB450 Microbiology III	PSB405 Biochemistry III	
PSB454 Microbiology IVC	PSB450 Microbiology III PSB407 Biochemistry IVB	
CHB482 Physical & Inorganic Chemistry IV	CHB241 Chemistry II	
PHB101 Physics IS		PHB106 Experimental Physics I
PHB201 Physics IIS		PHB206 Experimental Physics II
BEB321 Plant Physiology	BEB101 Cell Biology	
BEB553 Population Dynamics	MAB257 Statistics	
BEB535 Population Genetics	MAB257 Statistics	
BEB659 Productivity & Trophic Levels	BEB390 Field Methodology I BEB553 Population Dynamics	
BEB590 Projects in Terrestrial and Aquatic Ecology	BEB101 Cell Biology BEB109 Experimental Biology BEB390 Field Methodology I	
MAB257 Statistics	MAB160 Mathematics II	
BEB529 Vegetation Mapping	BEB490 Field Methodology II	

Subjects other than electives not listed have no pre-requisites other than normal course entry requirements.

## BEC109 CERTIFICATE IN BIOLOGICAL LABORATORY TECHNIQUES

It is anticipated that no new enrolments for Semesters 1 and 2 in this course will be accepted in 1977. A final decision depends on approval for the Associate Diploma in Applied Biology by the Commission on Advanced Education.

1. A registered student may enrol either as a day and evening programme student or an evening programme student.

A day and evening programme student will normally attend day classes for the first two years of the programme and complete his programme of study by evening attendance for one year.

2. For a registered student in a day and evening programme the subjects and other work comprising the curriculum are as follows —

### Normal Course Programme — Two years day and one year evening.

Day Programme		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 — Autumn</i>		
CHC110	Analytical Chemistry I	5
CMC124	Technical Writing I	3
CHC130	Inorganic Chemistry I	2
MAC151	Mathematics IA	4
BEC100	Biology I	9
CHC151	Organic Chemistry I	5
<i>Semester 2 — Spring</i>		
CHC210	Analytical Chemistry II	5
CMC125	Technical Speaking I	3
CHC230	Inorganic Chemistry II	2
MAC152	Mathematics IB	4
BEC200	Biology II	9
CHC251	Organic Chemistry II	5
<i>Semester 3 — Autumn</i>		
CHC351	Biological Chemistry III	4
MAC451	Mathematics IIA	4
PHC451	Certificate Physics I	4
PSC410	Biological Instrumentation III	4
PSC430	Physiology III OR	4
BEC321	Plant Physiology III	4
PSC451	Microbiology III	4

*Semester 4 Spring*

CHC451	Biological Chemistry IV	4
MAC452	Mathematics IIB	4
PHC452	Certificate Physics II	4
PSC411	Biological Instrumentation IV	4
PSC431	Physiology IV OR	4
BEC421	Plant Physiology IV	4
PSC452	Microbiology IV	4

**Evening Programme:***Semester 5 Autumn*

PSC406	Biochemistry V	3
PSC601	Histological Techniques V	3
BEC590	Biological Techniques V	3

*Semester 6 – Spring*

PSC407	Biochemistry VI	3
BEC621	Histological Techniques VI	3
BEC690	Biological Techniques VI	3

3. For a registered student in an evening programme, the subjects and other work are as follows –

**Normal Course Programme – five years evening programme –**

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
CHC110	Analytical Chemistry I	3
CMC124	Technical Writing I	1½
CHC130	Inorganic Chemistry I	1½
MAC152	Mathematics IB	3
<i>Semester 2 – Spring</i>		
CHC210	Analytical Chemistry II	3
CMC124	Technical Writing I	1½
CHC230	Inorganic Chemistry II	1½
MAC151	Mathematics IA	3
<i>Semester 3 – Autumn</i>		
BEC100	Biology I	6
CHC151	Organic Chemistry I	3
<i>Semester 4 – Spring</i>		
BEC200	Biology II	6
CHC251	Organic Chemistry II	3

*Semester 5 – Autumn*

PSC430	Physiology III OR	3
BEC321	Plant Physiology III	3
MAC452	Mathematics IIB	3
PHC451	Certificate Physics I	3

*Semester 6 – Spring*

PSC431	Physiology IV OR	3
BEC421	Plant Physiology IV	3
MAC451	Mathematics IIA	3
PHC452	Certificate Physics II	3

*Semester 7 – Autumn*

PSC410	Biological Instrumentation III	3
CHC351	Biological Chemistry III	3
PSC451	Microbiology III	3

*Semester 8 – Spring*

PSC411	Biological Instrumentation IV	3
CHC451	Biological Chemistry IV	3
PSC452	Microbiology IV	3

*Semester 9 – Autumn*

PSC406	Biochemistry V	3
PSC601	Histological Techniques V	3
BEC590	Biological Techniques V	3

*Semester 10 – Spring*

PSC407	Biochemistry VI	3
BEC621	Histological Techniques VI	3
BEC690	Biological Techniques VI	3

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
5. Students of the day and evening programme or the evening programme gain credits for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day and evening or evening programme as set out in Rules 2 and 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.

7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
- (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day and evening programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of the units have been selected.
9. Except with the approval of the Head of Department the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. Where quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.


Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of the School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
  14. If a student before enrolling for the course has at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
  15. A student may under Rule 14 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

**CERTIFICATE IN BIOLOGICAL LABORATORY TECHNIQUES**

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
BEC590 Biological Techniques V	BEC100 Biology I BEC200 Biology II	
BEC690 Biological Techniques VI	BEC100 Biology I BEC200 Biology II	
PSC410 Biological Instrumentation III		CHC351 Biological Chemistry III
PSC411 Biological Instrumentation IV	PSC410 Biological Instrumentation III	
PSC601 Histological Techniques V	BEC100 Biology I BEC200 Biology II	
BEC621 Histological Techniques VI	BEC100 Biology I BEC200 Biology II	
BEC321 Plant Physiology III	BEC100 Biology I BEC200 Biology II	
BEC421 Plant Physiology IV	BEC100 Biology I BEC100 Biology II	
CHC210 Analytical Chemistry II	CHC110 Analytical Chemistry I	
CHC230 Inorganic Chemistry II	CHC130 Inorganic Chemistry I	
MAC451 Mathematics IIA	MAC151 Mathematics IA	
CHC251 Organic Chemistry II	CHC151 Organic Chemistry I	
CHC351 Biological Chemistry III	CHC251 Organic Chemistry II	
PSC430 Physiology III		BEC100 Biology I CHC151 Organic Chemistry I
PSC451 Microbiology III	BEC100 Biology I	CHC351 Biological Chemistry III
CHC451 Biological Chemistry IV	CHC351 Biological Chemistry III	
MAC452 Mathematics IIB	MAC152 Mathematics IB	
PSC431 Physiology IV	PSC430 Physiology III	
PSC452 Microbiology IV	PSC451 Microbiology III	
PSC406 Biochemistry V	CHC451 Biological Chemistry IV PSC411 Biological Instrumentation IV	
PSC407 Biochemistry VI	PSC406 Biochemistry V	

Subjects other than electives not listed have no pre-requisites other than normal course entry requirements.



**DEPARTMENT  
OF CHEMISTRY**



## DEPARTMENT OF CHEMISTRY

**Head of Department:** R.F. Cane, DSc(Tas), FRIC, FRACI, FIChemE, CChem, CEng.

**Senior Lecturers:** L.G. Amos, BSc(Qld), ARACI, MACE.  
 W. Draper, BSc(Tech)(Manch), MS(Mass), PhD (UofVa), ARIC, CChem.  
 C.L. Graham, BSc(Hons)(Dunelm), PhD(N'cle,UK), ARACI, ARIC, AAIFST, CChem.  
 P.S. Hallman, MSc(Syd), PhD(Syd), ARACI.  
 P.J. Hetherington, BSc(App)(Hons)(Tas), PhD(Tas), ARACI.  
 E.J. O'Reilly, BSc(Hons)(Qld), DipEd, ARACI.  
 N. Street, BSc(Melb), PhD(Melb), FRACI.

**Lecturers:** N.D. Bofinger, BSc(NE), ARACI.  
 L. Burwell, BSc(Qld), ARACI.  
 M.R. Chambers, PhD(Lond), ARIC, CChem.  
 G.K. Douglas, BSc(Hons)(NE), PhD(Tas), ARACI.  
 R.L.W. Frost, MSc(Qld), BEd(Qld), ARACI.  
 W.J.W. Hanna, BSc(Hons)(Belf), PhD(Belf).  
 M.P. Henry, BSc(Hons)(ANU), MSc(ANU), PhD(Essex), ARACI.  
 K.P. Herlihy, BSc(Hons)(Qld), DipIndChem, ARACI.  
 G.M. Kimber, MSc(Qld), BEd(Qld), ARACI.  
 S. Kokot, BSc(Hons)(NSW), PhD(NSW).  
 D.S. Litster, BSc(Hons)(Qld), BEd(Qld), ARACI.  
 R.J. Noakes, DipSugarChem, DipIndChem, ARACI.  
 E.T. Pallister, MSc(NSW), PhD(NSW), ARIC, ARACI, ASTC.  
 D.P. Schweinsberg, ASTC, BSc(NSW), MSc(Qld), ARACI, AMAusIMM.  
 G. Smith, BSc(Qld), DipIndChem, ARACI.  
 B.N. Venzke, MSc(Qld), PhD(Qld).

- Senior Tutors:** J.P. Bartley, MSc(Hons)(Auck), PhD(Auck), FCS, AAIFST.  
L.R. Holman, BSc(Hons)(Adel), PhD(Adel).
- Technologist:** N. Barr, BSc(Hons)(Belf), CertEd(Tech)(Manchester).
- Support Staff:** P. Comino, Laboratory Technician Division II.  
(Technician Div. II and above) T.L. Hamilton, Laboratory Technician Division I, DipSugChem, DQIT(BusAdmin), AAST, AAIM, AAIPM.  
P. Johnston, Laboratory Technician Division II.  
A.H. Newland, Laboratory Technician Division II.  
A. Schwede, Laboratory Technician Division II.  
N.A. Seils, Senior Laboratory Technician Division I, DipIndChem, ARACI.  
W. Skeaf, Laboratory Technician Division II.  
P. Stevens, Laboratory Technician Division II.

## BACHELOR OF APPLIED SCIENCE – APPLIED CHEMISTRY

Entrance Requirements – see page 31.

- 1 A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. For a registered student in a day programme, the subjects and other work comprising the curriculum of the three years of study are as follows –

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
CHB110	Analytical Chemistry I	3
CHB130	Inorganic Chemistry I	2
CHB150	Organic Chemistry I	4
CHB170	Physical Chemistry I	4
MAB251	Mathematics I	4
PHB120	Physics I T	6
<i>Semester 2 – Spring</i>		
CHB210	Analytical Chemistry II	3
CHB250	Organic Chemistry II	4
CHB270	Physical Chemistry II	4
MAB160	Mathematics II	4
PHB121	Physics II T	6
	Either;	
ESB210	Geology OR	
BEB100	Biology	6
<i>Semester 3 – Autumn</i>		
CHB310	Analytical Chemistry III	4
CHB330	Inorganic Chemistry III	1
CHB350	Organic Chemistry III	5
CHB370	Physical Chemistry III	5
MAB262	Computing	2
CHB320	Chemical Process Principles	4
	Either;	
PSB405	Biochemistry III OR	
ESB310	Mineralogy	3

*Semester 4 – Spring*

CHB410	Analytical Chemistry IV	4
CHB430	Inorganic Chemistry IV	1
CHB450	Organic Chemistry IV	5
CHB470	Physical Chemistry IV	5
CMB101	Professional Communication A	2
MAB257	Statistics	4
MNA041	Introduction to Business	2
	Either:	
PSB406	Biochemistry IVA OR	3
ESB410	Mineralogy IV	

*Semester 5 – Autumn*

CHB530	Inorganic Chemistry V	4
CHB550	Organic Chemistry V	6
CHB570	Physical Chemistry V	6
	Either:	
CHB510	Analytical Chemistry V OR	6
CHB520	Chemical Technology V	
	+ Either:	
ESB510	Economic Geology V OR	3
PSB450	Microbiology III	

*Semester 6 – Spring*

CHB630	Inorganic Chemistry VI	2
CHB650	Organic Chemistry VI	2
CHB670	Physical Chemistry VI	2
CHB600	Research Project	13
	Either:	
CHB610	Analytical Chemistry VI OR	2
CHB620	Chemical Technology VI	
	+ Either:	
ESB610	Economic Geology VI OR	3
PSB453	Microbiology IVB	
CHB660	Industrial Visits	1

3. For a registered student in an evening programme the subjects and other work of the six years of study are as follows –

**Normal Course Programme – six years evening programme –**

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
CHB110	Analytical Chemistry I	3
CHB170	Physical Chemistry I	3
	Either:	
ESB210	Geology OR	6
BEB100	Biology	

*Semester 2 Spring*

CHB150	Organic Chemistry I	3
CHB210	Analytical Chemistry II	3
MAB251	Mathematics I	4

*Semester 3 Autumn*

CHB250	Organic Chemistry II	3
PHB120	Physics I T	6
MAB160	Mathematics II	4

*Semester 4 Spring*

CHB130	Inorganic Chemistry I	2
CHB270	Physical Chemistry II	3
PHB121	Physics IIT	6

*Semester 5 – Autumn*

CHB310	Analytical Chemistry III	4
CHB330	Inorganic Chemistry III	1
MAB262	Computing	2
CMB101	Professional Communication A	2
MNA041	Introduction to Business	2

*Semester 6 – Spring*

CHB350	Organic Chemistry III	5
CHB370	Physical Chemistry III	5
	Either:	
PSB405	Biochemistry III OR	
ESB310	Mineralogy III	3

*Semester 7 – Autumn*

CHB450	Organic Chemistry IV	5
CHB470	Physical Chemistry IV	5
	Either:	
PSB406	Biochemistry IV A OR	
ESB410	Mineralogy IV	3

*Semester 8 – Spring*

CHB410	Analytical Chemistry IV	4
CHB430	Inorganic Chemistry IV	1
MAB257	Statistics	3
CHB320	Chemical Process Principles	4

*Semester 9 – Autumn*

CHB570	Physical Chemistry V	6
	Either:	
CHB510	Analytical Chemistry V OR	
CHB520	Chemical Technology V	6

*Semester 10 – Spring*

CHB530	Inorganic Chemistry V	4
CHB550	Organic Chemistry V	6
	Either:	
ESB510	Economic Geology V OR	3
PSB450	Microbiology III	

*Semester 11 – Autumn*

CHB630	Inorganic Chemistry VI	2
CHB650	Organic Chemistry VI	2
CHB600 *	Research Project	5
	Either:	
ESB610	Economic Geology VI OR	3
PSB453	Microbiology IVB	

*Semester 12 – Spring*

CHB670	Physical Chemistry VI	2
CHB600 *	Research Project	8
	Either:	
CHB610	Analytical Chemistry VI OR	2
CHB620	Chemical Technology VI	
CHB660	Industrial Visits	1

\* *CHB600 Research Project is a two semester unit in the evening programme. This unit must be studied in consecutive semesters.*

- The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
- Students of the day programme or the evening programme gain credits for passed units and are required to repeat failed units only.
- Students who pass all units in one semester of a day or evening programme as set out in Rules 2 or 3 will be expected to enrol in the units set out for the following semester of the relevant programme in these Rules. Timetables are organised on the basis of this normal progression.
- Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and

- (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
- (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes.

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.
9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
- (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.

12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
14. Before entering the fourth and subsequent years as defined in Rule 3, an evening programme student must be employed in an approved laboratory.
15. If a student before enrolling for the course has at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
16. A student may under Rule 15 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.



## BACHELOR OF APPLIED SCIENCE - APPLIED CHEMISTRY

<i>Subject</i>	<i>Pre requisite</i>	<i>Co-requisite</i>
CHB210 Analytical Chemistry II	CHB110 Analytical Chemistry I	
CHB310 Analytical Chemistry III	CHB210 Analytical Chemistry II CHB130 Inorganic Chemistry I CHB170 Physical Chemistry I	
CHB410 Analytical Chemistry IV	CHB310 Analytical Chemistry III	
CHB510 Analytical Chemistry V	CHB410 Analytical Chemistry IV	
CHB610 Analytical Chemistry VI	CHB410 Analytical Chemistry V	
PSB405 Biochemistry III	CHB210 Analytical Chemistry II CHB130 Inorganic Chemistry I CHB250 Organic Chemistry II CHB170 Physical Chemistry I CHB270 Physical Chemistry II	
PSB405 Biochemistry IVA	PSB405 Biochemistry III	
CHB320 Chemical Process Principles	CHB270 Physical Chemistry II	
CHB520 Chemical Technology V	CHB470 Physical Chemistry IV CHB320 Chemical Process Principles	
CHB620 Chemical Technology VI	CHB520 Chemical Technology V	
CHB330 Inorganic Chemistry III	CHB130 Inorganic Chemistry I	
CHB430 Inorganic Chemistry IV	CHB130 Inorganic Chemistry I	
CHB530 Inorganic Chemistry V	CHB330 Inorganic Chemistry III	
CHB630 Inorganic Chemistry VI	CHB430 Inorganic Chemistry IV CHB530 Inorganic Chemistry V	
ESB510 Economic Geology V	ESB310 Mineralogy III	
ESB610 Economic Geology VI	ESB410 Mineralogy IV ESB310 Mineralogy III ESB410 Mineralogy IV	

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
MAB160 Mathematics II	MAB251 Mathematics I	
PSB450 Microbiology III		PSB405 Biochemistry III
PSB453 Microbiology IVB	PSB450 Microbiology III PSB406 Biochemistry IVA	
ESB310 Mineralogy III	ESB210 Geology	
ESB410 Mineralogy IV	ESB210 Geology	
CHB250 Organic Chemistry II	CHB150 Organic Chemistry I	
CHB350 Organic Chemistry III	CHB250 Organic Chemistry II	
CHB450 Organic Chemistry IV	CHB350 Organic Chemistry III	
CHB550 Organic Chemistry V	CHB450 Organic Chemistry IV	
CHB650 Organic Chemistry VI	CHB450 Organic Chemistry IV	
CHB370 Physical Chemistry III	CHB170 Physical Chemistry I	
CHB470 Physical Chemistry IV	CHB170 Physical Chemistry I CHB270 Physical Chemistry II	
CHB570 Physical Chemistry V	CHB270 Physical Chemistry II CHB370 Physical Chemistry III	
CHB670 Physical Chemistry VI	CHB370 Physical Chemistry III CHB470 Physical Chemistry IV	
CHB600 Research Project	CHB510 Analytical Chemistry V OR CHB520 Chemical Technology V AND two of: CHB530 Inorganic Chemistry V CHB550 Organic Chemistry V CHB570 Physical Chemistry V	
MAB257 Statistics	MAB160 Mathematics II	

Subjects not listed have no pre-requisites other than normal course entry requirements.

**CHJ130 BACHELOR OF APPLIED SCIENCE – CHEMISTRY**

Entrance Requirements – see page 31.

1. A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. For a registered student in a day programme the subjects and other work comprising the curriculum of the three years of study are as follows –

	<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>	
PHB101 Physics IS	3
PHB106 Experimental Physics I	3
MAB251 Mathematics I	4
CHB141 Chemistry I	6
CMB101 Professional Communication A	2
Either:	
BEB105 Human Ecology AND	6
BEB101 Cell Biology	6
Or:	
ESB113 Earth Science I	6
Or:	
an equivalent subject.	
<i>Semester 2 – Spring</i>	
PHB201 Physics IIS	3
PHB206 Experimental Physics II	3
MAB160 Mathematics II	4
CHB241 Chemistry II	6
CMB102 Professional Communication B	2
Either:	
BEB109 Experimental Biology	6
Or:	
ESB213 Earth Science II	6
Or:	
an equivalent subject.	
<i>Semester 3 – Autumn</i>	
CHB310 Analytical Chemistry III	4
CHB330 Inorganic Chemistry III	1
CHB351 Organic Chemistry III	3½

CHB371	Physical Chemistry III	3½
	Electives: See Note 2.3	
PSB436	Human Physiology A	4
PSB435	Human Physiology	8
PSB405	Biochemistry III	3
PSB427	General Anatomy	6
PHB303	Physics IIIC	4
BEB350	Principles of Ecology I	4
MAB305	Introduction to Computing A	4
ESB311	Earth Science III OR	4
ESB313	Mineralogy OR	4
ESB310	Mineralogy III OR	3
CHB320	Chemical Process Principles OR an equivalent subject.	4

*Semester 4 – Spring*

CHB410	Analytical Chemistry IV	4
CHB430	Inorganic Chemistry IV	1
CHB451	Organic Chemistry IV	3½
CHB471	Physical Chemistry IV	3½
	Electives: See Note 2.3	
PSB406	Biochemistry IVA	4
PSB450	Microbiology III	3
PSB437	Human Physiology B	4
PHB403	Physics IVC	4
MAB306	Introduction to Computing B	4
MAB309	Modern Algebra	4
MAB257	Statistics	4
BEB450	Principles of Ecology II	4
ESB411	Earth Science IV OR	4
ESB413	Petrology IV OR	4
ESB410	Mineralogy IV OR	3
CHB320	Chemical Process Principles OR an equivalent subject.	4

*Semester 5 – Autumn*

**Chemistry Units**

CHB530	Inorganic Chemistry V	4
CHB550	Organic Chemistry V	6
CHB570	Physical Chemistry V	6
	Electives: See Note 2.3	
CHB510	Analytical Chemistry V OR	6
CHB520	Chemical Technology V	6
PSB450	Microbiology III	3
PHB502	Physics VB	3
PHB504	Electronics	8
BEB322	Plant Diversity	6
BEB321	Plant Physiology	6
BEB590	Projects in Terrestrial and Aquatic Ecology	6
PSB737	Basic Immunology	4
MAB306	Introduction to Computing B	4

MAB309	Modern Algebra	4
ESB511	Earth Science V OR	4
ESB510	Economic Geology V OR an equivalent subject	3

*Semester 6 Spring*

**Chemistry Units** (See Note 2.1)

CHB630	Inorganic Chemistry VI	2
CHB651	Organic Chemistry VI	6
CHB671	Physical Chemistry VI	6

**Electives** (See Note 2.1, 2.3)

CHB611	Analytical Chemistry VI OR	6
CHB621	Chemical Technology VI	6
PSB452	Microbiology IVA	3
PSB453	Microbiology IVB	3
PHB609	Radiation Physics A	4
PHB610	Radiation Physics B	4
PHB607	Materials	4
PHB611	Astronomy	4
BEB651	Ecosystems	6
BEB411	Animal Physiology	6
BEB412	Animal Diversity	6
BEB656	Biosphere & Conservation	6
MAB605	Computers & Programming	4
MAB635	Classical Theoretical Mechanics	4
ESB610	Economic Geology VI OR	3
ESB611	Earth Science VI OR an equivalent subject.	4

**Notes:**

- Students who elect to study four chemistry units in this semester will undertake a project as outlined for the B.App.Sc. (App.Chem) course, with no formal laboratory work in any of the chemistry units. Students who elect to study the minimum requirement of three chemistry units will undertake the formal laboratory work associated with those units.
- The units PHB607, PHB609, PHB610 and PHB611 will not in general all be offered. These are four of five elective units in the final semester of the B.App.Sc. (Physics) course. In any year, only 3 of these units will be offered, the choice depending mainly on student demand.
- Students are required to study elective units totalling between 35 and 46 hours during semesters 3, 4, 5 and 6. Students should aim to organise their semester programme so as to average no more than 25 hrs. per semester. The

above programme gives suggested electives for each semester, but students may study any suitable elective, subject to pre-requisites, availability and time-tabling.

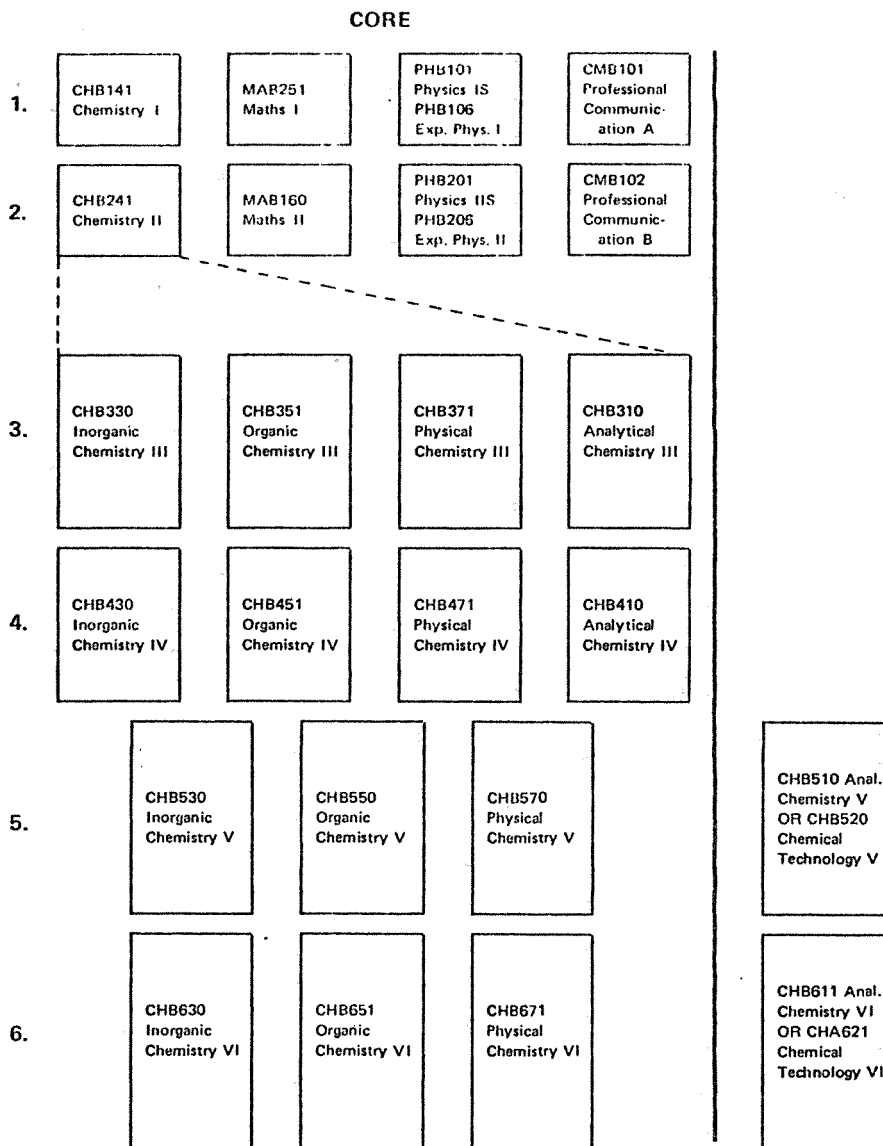
- 2.4 Students should refer to the 'Course Structure Diagram' (item 4) for guidance in selection of their study program. Before commencing Semester 3, students must consult a staff member nominated by the Head of Chemistry Department to discuss their study program for the remainder of the course.
- 2.5 In Semesters 1 and 2, a 1 hour tutorial will be available in Chemistry.
3. For a registered student in an evening programme, the subjects and other work of the six years of study are as follows –

	<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn (1976)</i>	
CHB141 Chemistry I	6
BEB109 Experimental Biology	6
<i>Semester 2 – Spring (1976)</i>	
CHB241 Chemistry II	6
BEB105 Human Ecology	6
BEB101 Cell Biology	6
<i>Semester 3 – Autumn (1977)</i>	
PHB101 Physics IS	3
PHB106 Experimental Physics I	3
MAB251 Mathematics I	4
CMB101 Professional Communication A	2
<i>Semester 4 – Spring (1977)</i>	
PHB201 Physics IIS	3
PHB206 Experimental Physics II	3
MAB160 Mathematics II	4
CMB102 Professional Communication B	2

Conduct of the fifth and subsequent semesters of this course on an evening basis will depend upon the number of enrolments received.

4. INSERT: see pages 90 and 91.
5. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
- |                                   |                               |
|-----------------------------------|-------------------------------|
| written and/or oral tests;        | general assignments;          |
| laboratory exercises and reports; | projects, field testing, etc. |

## 4. COURSE STRUCTURE DIAGRAM



## ELECTIVES

## Physical Sciences

ESB113  
Earth  
Science I

ESB213  
Earth  
Science II

## Biological Sciences

BEB105  
Human Ecol.  
BEB109  
Cell Biology

BEB109  
Experimental  
Biology

Students may choose the relevant number of electives for each semester from any of the following units, subject to appropriate pre-requisites and timetable availability. Some suggested groupings of electives are given below but these should not be read as rigid combinations.

PHB303 Physics IIIC	MAB305 Intro. to Computing A	ESB311 Earth Science III OR ESB313 Mineralogy OR ESB310 Mineralogy III	PSB435 Human Physiology PSB436 Human Physiology A PSB405 Biochem. III PSB427 General Anatomy	BEB350 Principles of Ecology I
PHB403 Physics IVC	MAB306 Intro. to Computing B MAB309 Mod. Algebra MAB257 Statistics	ESB411 Earth Science IV OR ESB413 Petrology IV OR ESB410 Mineralogy IV	PSB450 Microbiol. III PSB406 Biochem. IVA PSB437 Human Physiology B	BEB450 Principles of Ecology II
PHB502 Physics VB PHB504 Electronics	MAB306 Intro. to Computing B MAB309 Mod. Algebra	ESB511 Earth Science V OR ESB510 Economic Geology	PSB450 Microbiol. III PSB737 Basic Immunology	BEB322 Plant Diversity BEB321 Plant Physiology BEB590 Projects in Terrestrial & Equatic Ecology
PHB609 Radiation Physics A PHB610 Radiation Physics B PHB607 Materials PHB611 Astronomy	MAB606 Computers and Programming MAB635 Classical Theoretical Mechanics	ESB611 Earth Science VI OR ESB610 Economic Geology VI	PSB453 Microbiol. IVB OR PSB452 Microbiol. IVA	BEB651 Ecosystems BEB411 Animal Physiology BEB412 Animal Diversity BEB656 Biosphere & Conservation



6. Students of the day programme or the evening programme gain credits for passed units and are required to repeat failed units only.
7. Students who pass all units in one semester of a day or evening programme as set out in Rules 2 and 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
8. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 9, 10 and 11; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes.

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

9. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.
10. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
11. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.

12. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.  
Where quotas for units in both programmes would be exceeded by acceptance of new applicants –
  - (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
13. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the area of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
14. Pre-requisite and co-requisite subjects are shown in a schedule attached to these rules.
15. If a student before enrolling for the course has at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
16. A student may under Rule 15 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

**BACHELOR OF APPLIED SCIENCE – CHEMISTRY**

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
CHB310 Analytical Chemistry III	CHB241 Chemistry II	
CHB410 Analytical Chemistry IV	CHB310 Analytical Chemistry III	
CHB510 Analytical Chemistry V	CHB410 Analytical Chemistry IV	
CHB611 Analytical Chemistry VI	CHB410 Analytical Chemistry IV	
BEB411 Animal Physiology	BEB101 Cell Biology BEB109 Experimental Biology	
PHB611 Astronomy	PHB101 Physics IS PHB106 Experimental Physics I PHB201 Physics IIS PHB206 Experimental Physics II	
PSB737 Basic Immunology	PSB450 Microbiology III PSB405 Biochemistry III PSB435 Human Physiology OR PSB436 Human Physiology A PSB437 Human Physiology B	
PSB405 Biochemistry III	CHB241 Chemistry II	
PSB406 Biochemistry IVA	PSB405 Biochemistry III	
CHB320 Chemical Process Principles	CHB241 Chemistry II	
CHB520 Chemical Technology V	CHB471 Physical Chemistry IV CHB320 Chemical Process Principles	
CHB621 Chemical Technology VI	CHB520 Chemical Technology V	
CHB241 Chemistry II	CHB141 Chemistry I	
MAB606 Computers & Programming	MAB305 Introduction to Computing A	
ESB511 Earth Science V	ESB311 Earth Science III	
ESB611 Earth Science VI	ESB411 Earth Science IV	
ESB510 Economic Geology V	ESB310 Mineralogy III OR ESB410 Mineralogy IV	
ESB610 Economic Geology VI	ESB310 Mineralogy III OR ESB410 Mineralogy IV	
PHB504 Electronics	PHB301 Physics IIIA OR PHB303 Physics IIIC	
PHB106 Experimental Physics I		PHB101 Physics IS

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PHB206 Experimental Physics II	PHB106 Experimental Physics I	PHB201 Physics IIS
PSB427 General Anatomy		BEB101 Cell Biology
PSB436 Human Physiology A	PSB427 General Anatomy	
PSB437 Human Physiology B	CHB241 Chemistry II	
CHB330 Inorganic Chemistry III	PSB436 Human Physiology A	
CHB430 Inorganic Chemistry IV	CHB241 Chemistry II	
CHB530 Inorganic Chemistry V	CHB241 Chemistry II	
CHB630 Inorganic Chemistry VI	CHB330 Inorganic Chemistry III	
PHB607 Materials	CHB430 Inorganic Chemistry IV	
	PHB401 Physics IVA OR	
	PHB403 Physics IVC	
	MAB460 Maths IVP	
MAB160 Mathematics II	MAB251 Mathematics I	
PSB450 Microbiology III		PSB405 Biochemistry III
PSB453 Microbiology IVB	PSB450 Microbiology III	
	PSB406 Biochemistry IVA	
ESB313 Mineralogy	ESB113 Earth Science I	
CHB351 Organic Chemistry III	CHB241 Chemistry II	
CHB451 Organic Chemistry IV	CHB351 Organic Chemistry III	
CHB550 Organic Chemistry V	CHB451 Organic Chemistry IV	
CHB551 Organic Chemistry VI	CHB451 Organic Chemistry IV	
ESB413 Petrology IV	ESB313 Mineralogy	
CHB371 Physical Chemistry III	CHB241 Chemistry II	
CHB471 Physical Chemistry IV	CHB241 Chemistry II	
CHB570 Physical Chemistry V	CHB241 Chemistry II	
	CHB371 Physical Chemistry III	
CHB671 Physical Chemistry VI	CHB371 Physical Chemistry III	
	CHB471 Physical Chemistry IV	
PHB101 Physics IS		PHB106 Experimental Physics I
PHB201 Physics IIS	PHB101 Physics IS	PHB206 Experimental Physics

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PHB303 Physics IIIC	PHB101 Physics IS PHB201 Physics IIS MAB160 Maths II OR MAB251 Mathematics I PHB206 Experimental Physics II	
PHB403 Physics IVC	PHB101 Physics IS PHB201 Physics IIS PHB206 Experimental Physics II MAB160 Mathematics II OR MAB251 Mathematics I	
PHB502 Physics VB	PHB304 Physics III OR PHB303 Physics IIIC	
BEB321 Plant Physiology	BEB101 Cell Biology	
BEB530 Projects in Terrestrial and Aquatic Ecology	BEB109 Experimental Biology BEB101 Cell Biology BEB390* Field Methodology	
PHB609 Radiation Physics A	PHB304 Physics III OR PHB303 Physics IIIC	
PHB610 Radiation Physics B	PHB304 Physics III OR PHB303 Physics IIIC	
MAB257 Statistics	MAB160 Mathematics II	

\* *BEB390* – this pre-requisite may be waived.

Subjects not listed have no pre-requisites other than normal course entry requirements.

**CHC108 CERTIFICATE IN CHEMISTRY**

Entrance Requirements – see page 33.

1. A registered student may enrol either as a day and evening programme student or an evening programme student.
2. For a registered student in a day and evening programme the subjects and other work comprising the curriculum are as follows –

**Normal Course Programme – two years day and one year evening.**

<i>Semester 1 – Autumn</i>		<i>Approx. Formal Hrs./Wk.</i>
CHC110	Analytical Chemistry I	6
CMC124	Technical Writing I	3
CHC130	Inorganic Chemistry I	2
MAC151	Mathematics IA	4
CHC170	Physical Chemistry I	5
CHC150	Organic Chemistry I	5
 <i>Semester 2 – Spring</i>		
CHC210	Analytical Chemistry II	6
CMC125	Technical Specking I	3
CHC230	Inorganic Chemistry II	2
MAC152	Mathematics IB	4
CHC270	Physical Chemistry II	5
CHC250	Organic Chemistry II	5
 <i>Semester 3 – Autumn</i>		
CHC310	Analytical Chemistry III	7
CHC350	Organic Chemistry III	4
CHC380	Physical & Inorganic Chemistry III	4
PHC451	Certificate Physics I	4
MAC451	Mathematics IIA	4
	Elective:	
BEC302	Biology III OR	5
ESC310	Geology III	
 <i>Semester 4 – Spring</i>		
CHC410	Analytical Chemistry IV	7
CHC450	Organic Chemistry IV	4
CHC480	Physical & Inorganic Chemistry IV	4
PHC452	Certificate Physics II	4
MAC452	Mathematics IIB	4
	Elective:	
BEC402	Biology IV OR	5
ESC410	Geology IV	

## Evening Programme

*Semester 5 – Autumn*

CHC550	Organic Chemistry V	3
CHC580	Physical & Inorganic Chemistry V Elective:	3
PSC451	Microbiology III OR	3
ESC510	Mineralogy V	

*Semester 6 – Spring*

CHC650	Organic Chemistry VI	3
CHC680	Physical & Inorganic Chemistry VI Elective:	3
PSC452	Microbiology IV OR	3
ESC610	Mineralogy VI	

3. For a registered student in an evening programme, the subjects and other work are as follows –

**Normal Course Programme – five years evening programme –**

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
CHC110	Analytical Chemistry I	3
CMC124	Technical Writing I	1½
CHC130	Inorganic Chemistry I	1½
MAC152	Mathematics IB	3
<i>Semester 2 – Spring</i>		
CHC210	Analytical Chemistry II	3
CMC124	Technical Writing I	1½
CHC230	Inorganic Chemistry II	1½
MAC151	Mathematics IA	3
<i>Semester 3 – Autumn</i>		
CHC150	Organic Chemistry I	3
CHC270	Physical Chemistry II Tutorials	3 2
<i>Semester 4 – Spring</i>		
CHC250	Organic Chemistry II	3
CHC170	Physical Chemistry I Tutorials	3 2
<i>Semester 5 – Autumn</i>		
PHC451	Certificate Physics I	3
MAC452	Mathematics IIB	3
CHC310	Analytical Chemistry III	3

*Semester 6 – Spring*

PHC452	Certificate Physics II	3
MAC451	Mathematics IIA	3
CHC410	Analytical Chemistry IV	3

*Semester 7 – Autumn*

CHC450	Organic Chemistry IV	3
CHC480	Physical & Inorganic Chemistry IV	3
	Elective:	
BEC302	Biology III OR	3
ESC310	Geology III	

*Semester 8 – Spring*

CHC350	Organic Chemistry III	3
CHC380	Physical & Inorganic Chemistry III	3
	Elective:	
BEC402	Biology IV OR	3
ESC410	Geology IV	

*Semester 9 – Autumn*

CHC550	Organic Chemistry V	3
CHC580	Physical & Inorganic Chemistry V	3
	Elective:	
PSC451	Microbiology III OR	3
ESC510	Mineralogy V	

*Semester 10 – Spring*

CHC650	Organic Chemistry VI	3
CHC680	Physical & Inorganic Chemistry VI	3
	Elective:	
PSC452	Microbiology IV OR	3
ESC610	Mineralogy VI	

- The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
- Students of the day and evening programme or the evening programme gain credits for passed units and are required to repeat failed units only.



6. Students who pass all units in one semester of a day and evening or evening programme as set out in Rules 2 and 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day and evening programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.
9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.

12. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

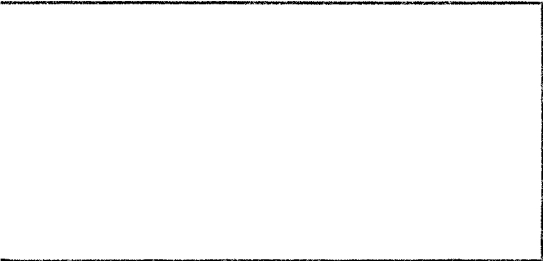
Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
13. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  14. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
  15. A student may under Rule 14 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

### CERTIFICATE IN CHEMISTRY

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
CHC210 Analytical Chemistry II	CHC110 Analytical Chemistry I	
CHC310 Analytical Chemistry III	CHC210 Analytical Chemistry II	
CHC410 Analytical Chemistry IV	CHC310 Analytical Chemistry III	
CHC230 Inorganic Chemistry II	CHC130 Inorganic Chemistry I	
MAC451 Mathematics IIA	MAC151 Mathematics IA	
MAC452 Mathematics IIB	MAC152 Mathematics IB	
PSC451 Microbiology III	BEC302 Biology III CHC250 Organic Chemistry II	
PSC452 Microbiology IV	PSC451 Microbiology III	
ESC510 Mineralogy V	ESC310 Geology III ESC410 Geology IV	
ESC610 Mineralogy VI	ESC310 Geology III ESC410 Geology IV	
CHC250 Organic Chemistry II	CHC150 Organic Chemistry I	
CHC350 Organic Chemistry III	CHC250 Organic Chemistry II	
CHC450 Organic Chemistry IV	CHC250 Organic Chemistry II	
CHC550 Organic Chemistry V	CHC450 Organic Chemistry IV	
CHC650 Organic Chemistry VI	CHC450 Organic Chemistry IV	
CHC380 Physical and Inorganic Chemistry III	CHC170 Physical Chemistry I	
CHC480 Physical and Inorganic Chemistry IV	CHC170 Physical Chemistry I CHC270 Physical Chemistry II	
CHC580 Physical and Inorganic Chemistry V	CHC270 Physical Chemistry II CHC380 Physical and Inorganic Chemistry III	
CHC680 Physical and Inorganic Chemistry VI	CHC380 Physical and Inorganic Chemistry III CHC480 Physical and Inorganic Chemistry IV	

Subjects not listed have no pre-requisites other than normal course entry requirements.



**DEPARTMENT OF  
MATHEMATICS AND  
COMPUTER  
SCIENCE**

## DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

**Head of Department:** R.N. Gould, MSc(Lond), PhD(Hull).

**Senior Lecturers:** C.M. Bothwell, BSc, BEd, MLitSt(Qld), ALCM.  
 J.L. Byrne, BSc(Qld), MSc(Soton), PhD(Adel).  
 P.A. Dutton, BSc, DipEd(Syd), MSc(NSW).  
 K.J. Gough, MSc, PhD(Well), GradNZEI.  
 J. Gudgeon, BSc(Hull), FIMA.  
 C.R. Jones, MSc(Liv), FSS.  
 K.R. Macbeth, BSc(Lond), MACE.  
 G.M. Mohay, BSc(WAust), PhD(Monash), MACS.

**Lecturers:** J.S. Beck, BSc(Qld).  
 C.C. Calder, MSc(Lond).  
 P.T.J. Cattell, BSc, BEd, DipCompSc(Qld).  
 E.P. Dawson, BS, DipEd(UW), MA(Syd).  
 K. Forbes, BSc(Qld), MEngSc(NSW), MACS.  
 B.P. Garfoot, BSc(N'cle NSW), PhD(Qld).  
 C.G. Holland, BA(NE), BSc, BEcon(Qld), MIREE(Aust),  
 AAIM.  
 M. Ilic, MSc(Qld).  
 D.F. Jelavic, BSc(NSW), DipEd(Syd).  
 M.T. Kelly, BSc, DipEd(Qld).  
 M.R. Littler, BSc(Lond), LIMA.  
 H.B. Nath, MA(Panj(I)).  
 I.F. Ogle, MSc(NE).  
 D.J. O'Kane, BSc, DipCompSc(Qld), MACS.  
 L.M. Scotney, BSc, DipEd(Qld).  
 J. Staples, MSc(Melb), PhD(Bristol).  
 B.S. Tasker, BA(NE).  
 J.F. Warren, BEcon(Qld), MSc(CranIT).  
 D.F. Welburn, BSc(Qld).  
 M.A.B. Wolanowski, MSc(Lublin), PhD(Warsaw).

**Senior Tutors:** R.F. Hubbard, BA(NZ).  
E.M. Walker, BSc(Qld), MSc(Oxon).

**Tutors:** S.R. Buckley, BAppSc, DipTech(NSWIT).  
P.K. Frame, BSc(Syd).  
R. Parslow, AQIT(Math).  
S.J. Sugden, BSc(Qld).

**MAJ128 BACHELOR OF APPLIED SCIENCE – COMPUTING**

Entrance Requirements – see page 31.

1. A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. For a registered student in a day programme, the subjects and other work comprising the curriculum of the three years of study are as follows –

**Normal Course Programme – three years day programme –**

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
MAB351	Introduction to Computing A	4
MAB353	Introduction to Computer Hardware	4
MAB355	Basic Mathematics A	4
MAB357	Applied Statistical Methods A	4
ACB181	Accounting Information Systems I	4
CMB101	Professional Communication A	1
<i>Semester 2 – Spring</i>		
ACB297	Introduction to Computing B	4
MAB354	Computers and Programming	4
MAB356	Basic Mathematics B	4
MAB358	Applied Statistical Methods B	4
ACB281	Accounting Information Systems II	4
CMB101	Professional Communication A	1
<i>Semester 3 – Autumn</i>		
MAB651	Switching Theory	4
MAB653	Data Structures	4
MAB655	Numerical Analysis IA	4
MAB657	Operations Research IA	4
ACB397	Information Systems I	4
CMB3102	Professional Communication B	1
<i>Semester 4 – Spring</i>		
MAB652	Computer Organisation I	4
MAB654	Programming Languages	4
MAB656	Numerical Analysis IB	4

MAB658	Operations Research IB	4
ACB497	Information Systems II	4
CMB102	Professional Communication B	1
<i>Semester 5 – Autumn</i>		
MAB951	Systems Programming A	4
MAB953	Computer Organisation II	4
ACB597	Information Systems III	4
	Elective subjects: *	
(a) MAB955	Mathematical Methods	4
(b) MAB957	Operations Research IIA	4
(c) MNB081	Management	4
<i>Semester 6 – Spring</i>		
MAB952	Systems Programming B	4
MAB954	Compiler Construction	4
ACB697	Information Systems IV	4
	Elective subjects: *	
(a) MAB956	Numerical Analysis II	4
(b) MAB958	Operations Research IIB	4
(c) MNB091	Marketing	4

\* Two of the three elective groupings denoted by (a), (b) and (c) must be chosen.

3. For a registered student in an evening programme, the subjects and other work of the six years of study are as follows –

**Normal Course Programme – six years evening programme –**

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Spring – (To commence 1976).</i>		
MAB351	Introduction to Computing A	4
MAB353	Introduction to Computer Hardware	4
ACB181	Accounting Information Systems I	4
<i>Semester 2 – Autumn</i>		
ACB297	Introduction to Computing B	4
ACB281	Accounting Information Systems II	4
CMB101	Professional Communication A	2
<i>Semester 3 – Spring</i>		
MAB355	Basic Mathematics A	4
MAB357	Applied Statistical Methods A	4
<i>Semester 4 – Autumn</i>		
MAB354	Computers and Programming	4
MAB356	Basic Mathematics B	4
MAB358	Applied Statistical Methods B	4



*Semester 5 – Spring*

MAB651	Switching Theory	4
MAB653	Data Structures	4
ACB397	Information Systems I	4

*Semester 6 – Autumn*

MAB652	Computer Organisation I	4
ACB497	Information Systems II	4
CMB102	Professional Communication B	2

*Semester 7 – Spring*

MAB655	Numerical Analysis IA	4
MAB657	Operations Research IA	4

*Semester 8 – Autumn*

MAB654	Programming Languages	4
MAB656	Numerical Analysis IB	4
MAB658	Operations Research IB	4

*Semester 9 – Spring*

MAB951	Systems Programming A	4
MAB953	Computer Organisation II	4
ACB597	Information Systems III	4

*Semester 10 – Autumn*

MAB952	Systems Programming B	4
ACB697	Information Systems IV	4

*Semester 11 – Spring*

	Elective subjects: *	
(a) MAB955	Mathematical Methods	4
(b) MAB957	Operations Research IIA	4
(c) MNB081	Management	4

*Semester 12 – Autumn*

MAB954	Compiler Construction	4
	Elective subjects: *	
(a) MAB956	Numerical Analysis II	4
(b) MAB958	Operations Research IIB	4
(c) MNB091	Marketing	4

\* Two of the three elective groupings denoted by (a), (b) and (c) Must be chosen.

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –

written and/or oral tests;  
 general assignments;  
 laboratory exercises and reports;  
 projects, field testing, etc.

5. Students of the day programme or the evening programme gain credits for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day or evening programme as set out in Rules 2 or 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
- (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.

9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students is as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
  14. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
  15. A student may under Rule 14 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
ACB181 Accounting Information Systems I		MAB351 Introduction to Computing A
ACB281 Accounting Information Systems II	ACB181 Accounting Information Systems I	
MAB358 Applied Statistical Methods B	MAB357 Applied Statistical Methods A	
MAB954 Compiler Construction	MAB654 Programming Languages	
MAB652 Computer Organisation I		MAB651 Switching Theory
MAB953 Computer Organisation II		MAB652 Computer Organisation I
MAB354 Computers and Programming	MAB351 Introduction to Computing A	
MAB653 Data Structures	MAB351 Introduction to Computing A	
ACB397 Information Systems I	ACB297 Introduction to Computing B	
ACB497 Information Systems II		ACB397 Information Systems I
ACB597 Information Systems III	ACB497 Information Systems II	
ACB697 Information Systems IV		ACB597 Information Systems III
ACB297 Introduction to Computing B	MAB351 Introduction to Computing A	
MAB955 Mathematical Methods	MAB355 Basic Maths A	
MAB655 Numerical Analysis IA	MAB356 Basic Maths B	
	MAB351 Introduction to Computing A	
	MAB355 Basic Mathematics A	
	MAB356 Basic Mathematics B	
MAB656 Numerical Analysis IB		MAB655 Numerical Analysis IA
MAB956 Numerical Analysis II	MAB955 Mathematical Methods	
	MAB655 Numerical Analysis IA	
	MAB656 Numerical Analysis IB	

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
MAB657 Operations Research IA	MAB351 Introduction to Computing A MAB355 Basic Mathematics A MAB356 Basic Mathematics B	
MAB658 Operations Research IB		MAB657 Operations Research IA MAB358 Applied Statistical Methods B
MAB957 Operations Research IIA	MAB657 Operations Research IA	MAB658 Operations Research IB
MAB958 Operations Research IIB		MAB957 Operations Research IIA
MAB654 Programming Languages	ACB297 Introduction to Computing B MAB354 Computers and Programming	
MAB651 Switching Theory	MAB353 Introduction to Computer Hardware	
MAB951 Systems Programming A	MAB354 Computers and Programming MAB653 Data Structures	MAB953 Computer Organisation II
MAB952 Systems Programming B		MAB951 Systems Programming A

Subjects not listed have no pre-requisites other than normal course entry requirements.

## MAJ133 BACHELOR OF APPLIED SCIENCE – MATHEMATICS

Entrance Requirements – see page 31.

1. A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. Criteria for the Award of the Degree of Bachelor of Applied Science – Mathematics.

To be eligible for the award of the degree of Bachelor of Applied Science – Mathematics a registered student will have successfully completed a study programme which is in accord with the following criteria:

The course of study will comprise subject units selected from the list given below having regard to specified pre-requisites and co-requisites and include:

- (i) all mandatory units;
- (ii) at least 14 units above first year level;
- (iii) at least 4 units above second year level;
- (iv) at least 28 units having a minimum total tuition time of 84 semester hours of scheduled lecture/practical work.

<i>First year level –</i>		<i>Approx. Formal Hrs/Wk.</i>
*	MAB301 Calculus and Analysis A	3
*	MAB302 Calculus and Analysis B	3
*	MAB305 Introduction to Computing A	3
*	MAB306 Introduction to Computing B	3
*	MAB331 Introductory Vector Analysis	3
*	MAB310 Linear Algebra	3
*	MAB342 Mathematics of Finance	3
*	MAB308 Mathematical Statistics I	3
*	MAB309 Modern Algebra	3
*	CMB103 Professional Communication	3
*	First year elective units	3–6
*	First year elective units	3–6
	First year elective units	3–6
	First year elective units	3–6

*Second year level –*

* MAB617	Applied Differential Equations	3
* MAB610	Applied Linear Algebra	3
* MAB604	Complex Variables	3
* MAB607	Mathematical Statistics IIA	3
* MAB608	Mathematical Statistics IIB	3
* MAB601	Multivariable Calculus A	3
MAB641	Actuarial Mathematics	3
MAB609	Algebraic Structures	3
MAB635	Classical Theoretical Mechanics	3
MAB606	Computers and Programming	3
MAB636	Introductory Advanced Dynamics	3
MAB602	Multivariable Calculus C	3
MAB613	Numerical Analysis IA	3
MAB614	Numerical Analysis IB	3
MAB627	Operations Research IA	3
MAB628	Operations Research IB	3
MAB626	Topics in Mathematics I	3
MAB615	Topics in Mathematics IIA	3
MAB616	Topics in Mathematics IIB	3
	Second year elective units	3–9
	Second year elective units	3–9

*Third year level –*

MAB901	Analysis A	3
MAB902	Analysis B	3
MAB931	Elasticity	3
MAB938	Fluid Dynamics	3
MAB933	Theoretical Electromagnetism	3
MAB934	Applied Electromagnetism	3
MAB913	Numerical Analysis II	3
MAB921	Methods of Mathematical Physics A	3
MAB922	Methods of Mathematical Physics B	3
MAB907	Mathematical Statistics IIIA	3
MAB908	Mathematical Statistics IIIB	3
MAB941	Methods of Mathematical Economics	3
MAB924	Applied Statistical Techniques	3
MAB927	Operations Research IIA	3
MAB928	Operations Research IIB	3
MAB960	Project Work	3

*Note:*

- (i) *The units which are asterisked are mandatory, the remainder are referred to as optional.*
- (ii) *The choice of 'elective units' will be subject to timetabling constraints but elective groupings for which timetabling arrangements may be expected to be made will include selections from the programmes offered by the following departments –*  
*Physics, Chemistry, Biology and Environmental Science, Geology, Accountancy and Management. Students are advised to consult the Head of Department prior to their initial enrolment in an elective unit.*

- (iii) For the purpose of this rule, when computing the total semester hours for a particular programme the numerals in the above table which indicate the semester hours applicable to particular units will be used.
- (iv) The description of the criteria given above has been varied from that shown in the 1975 Handbook in order to take account of amendments to the course programme approved by the Academic Board in Applied Science for introduction in 1976. Students admitted to the course prior to 1976 may either – (i) pursue their individual study programmes having regard to the criteria described in the 1975 Handbook or (ii) in consultation with the Head of Department, select a programme in accord with the description given above.

- 3(a) For a registered student in a day programme a normal mode of progression which enables the units and other work comprising the curriculum of the three years of study to be completed in the standard time is as follows:—

**Example of possible Course:**

**FIRST YEAR –**

<i>Semester 1 – Autumn (Total semester Hrs/Wk: 15–18)</i>		<i>Approx. Formal Hrs/Wk.</i>
MAB301	Calculus and Analysis A	3
MAB305	Introduction to Computing A	3
MAB309	Modern Algebra	3
MAB331	Introductory Vector Analysis	3
CMB103	Professional Communication OR	3
	First year elective unit	3–6

*Semester 2 – Spring (Total semester Hrs/Wk: 15–18)*

MAB302	Calculus and Analysis B	3
MAB308	Mathematical Statistics I	3
MAB310	Linear Algebra	3
MAB342	Mathematics of Finance	3
MAB306	Introduction to Computing B OR	3
	First year elective unit	3–6

**SECOND YEAR –**

*Semester 3 – Autumn (Total semester Hrs/Wk: 15–18)*

MAB601	Multivariable Calculus A	3
MAB607	Mathematical Statistics IIA	3
MAB617	Applied Differential Equations	3
TWO subject units chosen from among the following:		
MAB609	Algebraic Structures	3
MAB613	Numerical Analysis IA	3
MAB615	Topics in Mathematics IIA	3
MAB627	Operations Research IA	3
MAB635	Classical Theoretical Mechanics	3
MAB641	Actuarial Mathematics	3
CMB103	Professional Communication	3
	First year level elective unit/s	3–6



*Semester 4 – Spring (Total semester Hrs/Wk: 15–18)*

MAB604	Complex Variables	3
MAB608	Mathematical Statistics IIB	3
MAB610	Applied Linear Algebra	3
TWO subject units chosen from among the following:		
MAB602	Multivariable Calculus C	3
MAB606	Computers and Programming	3
MAB614	Numerical Analysis IB	3
MAB616	Topics in Mathematics IIB	3
MAB626	Topics in Mathematics I	3
MAB628	Operations Research IB	3
MAB636	Introductory Advanced Dynamics	3
MAB306	Introduction to Computing B	3
	First year level elective unit/s	3–6

*THIRD YEAR –**Semester 5 – Autumn (Total semester Hrs/Wk: 12–18)*

FOUR subject units chosen from among the following:

MAB609	Algebraic Structures	3
MAB613	Numerical Analysis IA	3
MAB615	Topics in Mathematics IIA	3
MAB627	Operations Research IA	3
MAB635	Classical Theoretical Mechanics	3
MAB641	Actuarial Mathematics	3
MAB901	Analysis A	3
MAB907	Mathematical Statistics IIIA	3
MAB913	Numerical Analysis II	3
MAB921	Methods of Mathematical Physics A	3
MAB927	Operations Research IIA	3
MAB931	Elasticity	3
MAB933	Theoretical Electromagnetism	3
MAB941	Methods of Mathematical Economics	3
	First year level elective unit/s	3–6
	Second year level elective unit/s	3–9

*Semester 6 – Spring (Total semester Hrs/Wk: 12–18)*

FOUR subject units chosen from among the following:

MAB602	Multivariable Calculus C	3
MAB606	Computers and Programming	3
MAB614	Numerical Analysis IB	3
MAB616	Topics in Mathematics IIB	3
MAB626	Topics in Mathematics I	3
MAB628	Operations Research IB	3
MAB636	Introductory Advanced Dynamics	3
MAB902	Analysis B	3
MAB908	Mathematical Statistics IIIB	3
MAB922	Methods of Mathematical Physics B	3
MAB924	Applied Statistical Techniques	3
MAB928	Operations Research IIB	3
MAB934	Applied Electromagnetism	3

MAB938	Fluid Dynamics	3
MAB960	Project Work	3
	First year level elective unit/s	3-6
	Second year level elective unit/s	3-9

Note:

- (i) *Students should consult the Head of Department prior to their initial enrolment in elective units. In particular for those students intending to enter the teaching profession, eligibility to enter particular teacher training courses on completion of their studies at this Institute may be affected. Students holding Queensland Department of Education Teacher Scholarships must consult the Head of Department regarding their course programme.*
- (ii) *In certain circumstances the choice of optional units may be specified by the Head of Department: the availability of such units may depend on time-tabling arrangements.*

- 3(b) Registered students may be accepted into an evening programme commencing in the Spring Semester. A normal mode of progression in these cases is available from the Department on request. For a registered student in an evening programme commencing in the Autumn Semester a normal mode of progression which enables the units and other work comprising the curriculum of the six years of study to be completed in the standard time is as follows:

Example of Possible Course –		Approx. Formal Hrs/Wk.
<i>Semester 1 – Autumn (Total semester Hrs/Wk: 6–9)</i>		
MAB342	Mathematics of Finance	3
	First year elective unit/s	3–6
<i>Semester 2 – Spring (Total semester Hrs/Wk: 9–12)</i>		
MAB301	Calculus and Analysis A	3
CMB103	Professional Communication	3
	First year elective unit/s	3–6
<i>Semester 3 – Autumn (Total semester Hrs/Wk: 6)</i>		
MAB302	Calculus and Analysis B	3
MAB308	Mathematical Statistics I	3
<i>Semester 4 – Spring (Total semester Hrs/Wk: 9)</i>		
MAB305	Introduction to Computing A	3
MAB309	Modern Algebra	3
MAB331	Introductory Vector Analysis	3
<i>Semester 5 – Autumn (Total semester Hrs/Wk: 6)</i>		
MAB306	Introduction to Computing B	3
MAB310	Linear Algebra	3

*Semester 6 – Spring (Total semester Hrs/Wk: 9)*

MAB601	Multivariable Calculus A	3
MAB607	Mathematical Statistics IIA	3
MAB617	Applied Differential Equations	3

*Semester 7 – Autumn (Total semester Hrs/Wk: 9)*

MAB604	Complex Variables	3
MAB608	Mathematical Statistics IIB	3
MAB610	Applied Linear Algebra	3

*Semester 8 – Spring (Total semester Hrs/Wk: 6)*

TWO subject units chosen from among the following:

MAB602	Multivariable Calculus C	3
MAB606	Computers and Programming	3
MAB616	Topics in Mathematics IIB	3
MAB626	Topics in Mathematics I	3
MAB908	Mathematical Statistics IIIB	3
MAB924	Applied Statistical Techniques	3

*Semester 9 – Autumn (Total semester Hrs/Wk: 9–12)*

THREE subject units chosen from among the following:

MAB609	Algebraic Structures	3
MAB613	Numerical Analysis IA	3
MAB615	Topics in Mathematics IIA	3
MAB627	Operations Research IA	3
MAB635	Classical Theoretical Mechanics	3
MAB641	Actuarial Mathematics	3
MAB901	Analysis A	3
MAB907	Mathematical Statistics IIIA	3
MAB921	Methods of Mathematical Physics A	3
MAB931	Elasticity	3
MAB933	Theoretical Electromagnetism	3
MAB941	Methods of Mathematical Economics	3
	First year elective unit/s	3-6
	Second year elective unit/s	3-6

*Semester 10 – Spring (Total semester Hrs/Wk: 6–12)*

TWO subject units chosen from among the following:

MAB602	Multivariable Calculus C	3
MAB606	Computers and Programming	3
MAB614	Numerical Analysis IB	3
MAB616	Topics in Mathematics	3
MAB626	Topics in Mathematics I	3
MAB628	Operations Research IB	3
MAB636	Introductory Advanced Dynamics	3
MAB902	Analysis B	3
MAB908	Mathematical Statistics IIIB	3
MAB922	Methods of Mathematical Physics B	3
MAB924	Applied Statistical Techniques	3

MAB934	Applied Electromagnetism	3
MAB938	Fluid Dynamics	3
	First year elective unit/s	3-6
	Second year elective unit/s	3-9

*Semester 11 – Autumn (Total semester Hrs/Wk: 9–12)*

THREE subject units chosen from among the following:

MAB609	Algebraic Structures	3
MAB613	Numerical Analysis IA	3
MAB615	Topics in Mathematics IIA	3
MAB627	Operations Research IA	3
MAB635	Classical Theoretical Mechanics	3
MAB641	Actuarial Mathematics	3
MAB901	Analysis A	3
MAB907	Mathematical Statistics IIIA	3
MAB913	Numerical Analysis II	3
MAB921	Methods of Mathematical Physics A	3
MAB927	Operations Research IIA	3
MAB931	Elasticity	3
MAB933	Theoretical Electromagnetism	3
MAB941	Methods of Mathematical Economics	3
	First year elective unit/s	3-6
	Second year elective unit/s	3-6

*Semester 12 – Spring (Total semester Hrs/Wk: 6–12)*

TWO subject units chosen from among the following:

MAB602	Multivariable Calculus C	3
MAB606	Computers and Programming	3
MAB614	Numerical Analysis IB	3
MAB616	Topics in Mathematics IIB	3
MAB626	Topics in Mathematics I	3
MAB628	Operations Research IB	3
MAB636	Introductory Advanced Dynamics	3
MAB902	Analysis B	3
MAB908	Mathematical Statistics IIIB	3
MAB922	Methods of Mathematical Physics B	3
MAB924	Applied Statistical Techniques	3
MAB928	Operations Research IIB	3
MAB934	Applied Electromagnetism	3
MAB938	Fluid Dynamics	3
MAB960	Project Work	3
	First year elective unit/s	3-6
	Second year elective unit/s	3-9

Note:

- (i) *Students should consult the Head of Department prior to their initial enrolment in elective units. In particular for those students intending to enter the teaching profession, eligibility to enter particular teacher training courses on completion of their studies at this Institute may be affected.*

(iii) *In certain circumstances the choice of optional units may be specified by the Head of Department: the availability of such units may depend on time-tabling arrangements.*

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of —
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
5. Students of the day programme or the evening programme gain credits for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day or evening programme as set out in Rules 3(a), 3(b) will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next year of the programme provided that —
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8 or 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 3(a) and from which the majority of units have been selected.
9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students is as specified in any one year in Rule 3 (b).
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
  14. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 3(a) and 3(b) then he may be granted either credit for that subject or subjects or

exemption from whole or part of the programme of that subject or subjects.

15. A student may under Rule 14 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

	<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
1st year level	MAB302 Calculus and Analysis B		MAB301 Calculus and Analysis A
	MAB306 Introduction to Computing B		MAB305 Introduction to Computing A
	MAB308 Mathematical Statistics I		MAB302 Calculus and Analysis B
	MAB310 Linear Algebra		MAB331 Introductory Vector Analysis
2nd year level	MAB617 Applied Differential Equations	MAB301 Calculus and Analysis A MAB302 Calculus and Analysis B	
	MAB604 Complex Variables		MAB601 Multivariable Calculus A
	MAB607 Mathematical Statistics IIA	MAB301 Calculus and Analysis A MAB302 Calculus and Analysis B MAB308 Mathematical Statistics I	
	MAB608 Mathematical Statistics IIB		MAB607 Mathematical Statistics IIA
	MAB601 Multivariable Calculus A	MAB301 Calculus and Analysis A MAB302 Calculus and Analysis B	
	MAB602 Multivariable Calculus C		MAB601 Multivariable Calculus A
	MAB641 Actuarial Mathematics		MAB342 Mathematics of Finance
	MAB609 Algebraic Structures	MAB309 Modern Algebra	
	MAB610 Applied Linear Algebra	MAB310 Linear Algebra	
	MAB635 Classical Theoretical Mechanics	MAB331 Introductory Vector Analysis	MAB617 Applied Differential Equations
	MAB606 Computers and Programming	MAB305 Introduction to Computing A	

	<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
	MAB626 Topics in Mathematics I	MAB301 Calculus and Analysis A	
	MAB616 Topics in Mathematics IIB	MAB309 Modern Algebra	
	MAB636 Introductory Advanced Dynamics		MAB635 Classical Theoretical Mechanics MAB601 Multivariable Calculus A MAB617 Applied Differential Equations
	MAB613 Numerical Analysis IA	MAB301 Calculus and Analysis A MAB310 Linear Algebra MAB305 Introduction to Computing A	
	MAB614 Numerical Analysis IB		MAB613 Numerical Analysis IA
	MAB627 Operations Research IA	MAB301 Calculus and Analysis A MAB310 Linear Algebra MAB305 Introduction to Computing A	
	MAB628 Operations Research IB		MAB308 Mathematical Statistics I MAB627 Operations Research IA
3rd year level	MAB901 Analysis A	MAB601 Multivariable Calculus A	
	MAB902 Analysis B		MAB901 Analysis A
	MAB934 Applied Electromagnetism	MAB601 Multivariable Calculus A MAB604 Complex Variables MAB602 Multivariable Calculus C	
	MAB924 Applied Statistical Techniques	MNB132 Macro-economics MNB232 Micro-economics MAB607 Mathematical Statistics IIA MAB608 Mathematical Statistics IIB	
	MAB931 Elasticity	MAB635 Classical Theoretical Mechanics MAB601 Multivariable Calculus A MAB602 Multivariable Calculus C MAB604 Complex Variables	



<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
MAB938 Fluid Dynamics	MAB635 Classical Theoretical Mechanics	
	MAB601 Multivariable Calculus A	
	MAB602 Multivariable Calculus C	
	MAB604 Complex Variables	
MAB907 Mathematical Statistics IIIA	MAB608 Mathematical Statistics IIB	
MAB908 Mathematical Statistics IIIB	MAB608 Mathematical Statistics IIB	
MAB941 Methods of Mathematical Economics	MAB601 Multivariable Calculus A	
	MAB617 Applied Differential Equations	
	MAB310 Linear Algebra	
	MNB132 Macro-economics	
	MNB232 Micro-economics	
MAB921 Methods of Mathematical Physics A	MAB635 Classical Theoretical Mechanics	
	MAB601 Multivariable Calculus A	
	MAB602 Multivariable Calculus C	
	MAB604 Complex Variables	
	MAB617 Applied Differential Equations	
MAB922 Methods of Mathematical Physics B	MAB635 Classical Theoretical Mechanics	
	MAB601 Multivariable Calculus A	
	MAB602 Multivariable Calculus C	
	MAB604 Complex Variables	
	MAB617 Applied Differential Equations	
MAB913 Numerical Analysis II	MAB613 Numerical Analysis IA	
	MAB614 Numerical Analysis IB	
MAB927 Operations Research IIA	MAB627 Operations Research IA	MAB628 Operations Research IB
MAB928 Operations Research IIB		MAB927 Operations Research IIA

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
MAB933 Theoretical Electromagnetism	MAB601 Multivariable Calculus A MAB602 Multivariable Calculus B MAB604 Complex Variables	
MAB960 Project Work	Successful completion of at least two third year level optional subject units in addition to all mandatory mathematics units.	





**DEPARTMENT OF  
PARAMEDICAL  
STUDIES**

## DEPARTMENT OF PARAMEDICAL STUDIES

**Head of Department:** J.R. Saal, DMT, FAIMT.

**Senior Lecturers:** E.A. Bennett, BSc(Hons)(Qld).  
 C.R. McDonald, BSc(Adel), MIBiol.  
 V.N. Verney, FBOA, HD, DOrth, FAAO.  
 A.J. Webber, MS(G'town Wash DC), DMT,  
 FAIMT.

**Lecturers:** J.D. Bevan, DipAppSc(QIT).  
 T.N. Cassidy, BSc(Qld).  
 J.F. Coulson, BPharm(Hons)(Lond), MPharm(Qld),  
 PhD(Strathclyde), PhC.  
 C.J. Craven, MSc(Qld), AAACB.  
 L.F. Garner, BSc(Melb), PhD(Melb), LOSc, FAAD.  
 M.L. Harland, BSc(Qld).  
 B.M. Keeffe, FRSH, FAIHS.  
 B.W. Macdonald, BAppSc(QIT), BSc(Qld), DMT, AAIMT.  
 R.J. Sheedy, BSc(Hons)(Qld).  
 P.P. Stallybrass, BAppSc(QIT), DMT, FAIMT.  
 D.H. Staples, BSc(Melb), PhD(Bristol).  
 B. Stevens, BSc(Hons)(Qld).  
 P.G. Swan, BSc(Hons)(Aston), FBOA.  
 N.A. Tingle, BAppSc(QIT), DMT, FAIMT.  
 B.J.M. Tuffley, BSc(Hons)(Qld), MSc(Qld), MACE.  
 H.E. Waldron, DipAppSc(QIT).  
 Y.E. Webb, BSc(Qld), DipNutDiet(Syd).  
 P. Wood, BSc(Hons)(Qld).  
 D. Wyatt, BAppSc(QIT), AAIMT.

**Senior Tutor:** A.J. Anderson, BSc(Hons)(Qld), MSc(Qld).

**Tutor:** H.S.F. Loh, BSc(UNE), AAIMT.

**Support Staff:** I.F. Coombe, FIMLT, Technologist Div. I.  
**(Technician** B. Fieldhouse, BSc(Qld), Technologist Div. I.  
**Div II** J.L. Findlayson, DMT, AIMT, Senior  
**and above)** Technician Div. I.  
S.J. Gill, BSc(Qld), Laboratory Technician Div. I.  
M. Lal, Laboratory Technician Div. II.  
T.W. Sweatman, Workshop Demonstrator Div. I.  
P.B. Campbell, Technician, Div. II.  
M. Williams, DMT, AAIMT,  
Laboratory Technician Div. II.

PSJ126 – DAY

PSJ170 – EVENING

**BACHELOR OF APPLIED SCIENCE – MEDICAL TECHNOLOGY**

1. A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. This course has been restructured and the approved changes are programmed for implementation during the years 1976 and 1977. Copies of normal course programmes for registered students in 1976 are available from the office of the Department of Paramedical Studies. For registered students enrolling in 1976 the subjects on offer in the three year day programmes are as follows –

<i>Semester 1 – Autumn</i>		<i>Approx. Formal Hrs/Wk.</i>
CHB142	Chemistry I	7
PSB101	Human Genetics and Embryology	3
BEB101	Cell Biology	3
MAB251	Mathematics I	4
PHB120	Physics I†	6
 <i>Semester 2 – Spring</i>		
CHB242	Chemistry II	7
BEB109	Experimental Biology	6
MAB252	Statistics	2
PHB121	Physics II†	6
 <i>Semester 3 – Autumn</i>		
PSB413	Biological Chemistry III	5
PSB427	General Anatomy	5
CHB312	Analytical Chemistry III	1
PSB440	Laboratory Technology III	3
PSB450	Microbiology III	3
* MAB157	Statistics A	2
CMB102	Professional Communication B	2
PSB448	Haematology III OR	3
PSB449	Histotechnology III	3
PSD428	An Introduction to General Pathology	1

\* This subject will be replaced by MAB253 Basic Computer Science in 1977.

*Semester 4 – Spring*

PSB414	Biological Chemistry IV	5
PSB435	Human Physiology	7
CHB482	Physical and Inorganic Chemistry IV	1
PSB441	Laboratory Technology IV	3
PSB452	Microbiology IVA	3
MAB258	Experimental Design	2
PSB448	Haematology III OR	3
PSB449	Histotechnology III	3
PSD429	An Introduction to Special Pathology	1

*Semester 5 – Autumn*

PSB718	Clinical Biochemistry V	4
PSB726	Haematology V	4
PSB737	Basic Immunology	4
PSB753	Microbiology V	7
PSB747	Medical Technology V	3
PSB790	Histotechnology V	3

*Semester 6 – Spring*

PSB719	Clinical Biochemistry VI	4
PSB738	Clinical Immunology	4
PSB754	Microbiology VI	7
PSB748	Medical Technology VI	3
PSB791	Histochemistry	3
PSB727	Haematology VI	4

3. This course has been restructured and the approved changes are programmed for implementation during the years 1976 and 1977. Copies of normal course programmes for registered students in 1976 are available from the office of the Department of Paramedical Studies. For registered students enrolling in 1976, the subjects on offer in the six year evening programme are as follows –

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
CHB142	Chemistry I	6
BEB109	Experimental Biology	5
<i>Semester 2 – Spring</i>		
CHB242	Chemistry II	6
BEB101	Cell Biology	2
PSB101	Human Genetics and Embryology	3
<i>Semester 3 – Autumn</i>		
MAB251	Mathematics I	3
PHB120	Physics IT	6
PSB448	Haematology III	3



*Semester 4 – Spring*

MAB252	Statistics	2
PHB121	Physics IIT	6
PSB449	Histotechnology III	3

*Semester 5 – Autumn*

PSB427	General Anatomy	5
PSB436	Human Physiology A	3½
CMB102	Professional Communication B	2

*Semester 6 – Spring*

PSB413	Biological Chemistry III	5
PSB437	Human Physiology B	3½
	Tutorial	1

*Semester 7 – Autumn*

PSB414	Biological Chemistry IV	5
* MAB157	Statistics A	2
CHB312	Analytical Chemistry III	1
PSB440	Laboratory Technology III	3

*Semester 8 – Spring*

MAB258	Experimental Design	2
CHB482	Physical & Inorganic Chemistry IV	1
PSB441	Laboratory Technology IV	3
PSB451	Microbiology IV	6

*Semester 9 – Autumn*

PSB718	Clinical Biochemistry V	4
PSB726	Haematology V	4
PSB790	Histotechnology V	3
PSB745	Medical Technology VA	1½

*Semester 10 – Spring*

PSB719	Clinical Biochemistry VI	4
PSB727	Haematology VI	4
PSB791	Histochemistry	3
PSB746	Medical Technology VB	1½

*Semester 11 – Autumn*

PSB754	Microbiology VI	7
PSB737	Basic Immunology	4
PSB749	Medical Technology VIA	1½

*Semester 12 – Spring*

PSB753	Microbiology V	7
PSB738	Clinical Immunology	4
PSB750	Medical Technology VIB	1½

\* This subject will be replaced by MAB253 Basic Computer Science in 1977.

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
5. Students of the day programme or the evening programme gain credit for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day or evening programme as set out in Rules 2 or 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.

9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
  14. Students may be exempted from the whole or part of the programme in PSB448 Haematology III and PSB449 Histo-technology III on providing evidence of training and experience in these units acceptable to the Head of Department.
  15. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.

16. A student may, under Rule 15, be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

#### BACHELOR OF APPLIED SCIENCE – MEDICAL TECHNOLOGY

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
CHB210 Analytical Chemistry II	CHB110 Analytical Chemistry I	
CHB312 Analytical Chemistry III	CHB252 Organic Chemistry II CHB172 Physical Chemistry I	
PSB737 Basic Immunology	PSB414 Biological Chemistry IV PSB435 Human Physiology PSB452 Microbiology IVA	
PSB413 Biological Chemistry III	CHB210 Analytical Chemistry II CHB232 Inorganic Chemistry II CHB252 Organic Chemistry II CHB172 Physical Chemistry I CHB272 Physical Chemistry II PHB120 Physics I T	
PSB414 Biological Chemistry IV	PSB413 Biological Chemistry III	
CHB242 Chemistry II	CHB142 Chemistry I	
PSB718 Clinical Biochemistry V	PSB414 Biological Chemistry IV PSB441 Laboratory Technology IV PSB435 Human Physiology	MAB158 Statistics B
PSB719 Clinical Biochemistry VI	PSB718 Clinical Biochemistry V	
PSB738 Clinical Immunology	PSB737 Basic Immunology	
MAB258 Experimental Design	MAB252 Statistics	
PSB427 General Anatomy		BEB101 Cell Biology

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSB726 Haematology V	PSB414 Biological Chemistry IV PSB435 Human Physiology PSB441 Laboratory Technology IV PSB446 Medical Technology III PSB447 Medical Technology IV	
PSB727 Haematology VI	PSB726 Haematology V	
PSB791 Histochemistry	PSB790 Histotechnology V	
PSB790 Histotechnology V	PSB414 Biological Chemistry IV PSB427 General Anatomy PSB435 Human Physiology PSB446 Medical Technology III PSB447 Medical Technology IV	
PSB435 Human Physiology	PSB427 General Anatomy CHB252 Organic Chemistry II CHB172 Physical Chemistry I CHB272 Physical Chemistry II	
PSB436 Human Physiology A	PSB427 General Anatomy CHB252 Organic Chemistry II CHB172 Physical Chemistry I CHB272 Physical Chemistry II	
PSB437 Human Physiology B	PSB436 Human Physiology A	
CHB232 Inorganic Chemistry II	CHB132 Inorganic Chemistry I	
PSB440 Laboratory Technology III	CHB232 Inorganic Chemistry II CHA210 Analytical Chemistry II CHB172 Physical Chemistry I CHB272 Physical Chemistry II PHB120 Physics I PHB121 Physics II	CHB312 Analytical Chemistry III
PSB441 Laboratory Technology IV	PSB440 Laboratory Technology III	

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSB448 Haematology III		PSB101 Human Genetics and Embryology BEB101 Cell Biology CHB242 Chemistry II
PSB449 Histotechnology III		PSB101 Human Genetics and Embryology BEB101 Cell Biology CHB242 Chemistry II
PSB747 Medical Technology V	PSB414 Biological Chemistry IV PSB435 Human Physiology PSB441 Laboratory Technology IV PSB447 Medical Technology IV PSB452 Microbiology IV A	
PSB745 Medical Technology VA	PSB414 Biological Chemistry IV PSB437 Human Physiology B PSB441 Laboratory Technology IV PSB451 Microbiology IV	
PSB746 Medical Technology VB	PSB745 Medical Technology VA	
PSB748 Medical Technology VI	PSB747 Medical Technology V	
PSB749 Medical Technology VIA	PSB746 Medical Technology VB	
PSB750 Medical Technology VIB	PSB749 Medical Technology VIA	
PSB450 Microbiology III		PSB413 Biological Chemistry III
PSB451 Microbiology IV	BEB109 Experimental Biology BEB101 Cell Biology	PSB414 Biological Chemistry IV
PSB452 Microbiology IV A	PSB450 Microbiology III	PSB414 Biological Chemistry IV
PSB753 Microbiology V	PSB452 Microbiology IV A OR PSB451 Microbiology IV AND PSB414 Biological Chemistry IV	

<i>Subject</i>		<i>Pre-requisite</i>	<i>Co-requisite</i>
PSB754	Microbiology VI	PSB452	Microbiology IVA OR
		PSB451	Microbiology IV
CHB252	Organic Chemistry II	CHB152	Organic Chemistry I
CHB482	Physical and Inorganic Chemistry IV	CHB232	Inorganic Chemistry II
		CHB252	Organic Chemistry II
		CHB272	Physical Chemistry II

Subjects not listed have no pre-requisites other than normal course entry requirements.

## PSK134 DIPLOMA OF APPLIED SCIENCE – OPTOMETRY

Entrance Requirements – see page 31.

1. A registered student may enrol only in a day programme and the subjects and other work of the three years of study comprising the curriculum are given below.
2. A number of changes to course structure have been approved for implementation during 1976. The course structure shown contains the subjects on offer in 1976. Details of the programmes are available from the office of the Head, Department of Paramedical Studies.

<i>Semester 1 – Autumn</i>		<i>Approx. Formal Hrs/Wk.</i>
PHD140	Optics I	7
BEB109	Experimental Biology	6
PSD129	General Psychology I	2
PSD167	Ophthalmic Dispensing I	3
CMB102	Professional Communication B	2
PSD111	Medical Chemistry	5
 <i>Semester 2 – Spring</i>		
PHD141	Optics II	7
BEB101	Cell Biology	3
PSD130	General Psychology II	2
PSB427	General Anatomy	5
PSD168	Ophthalmic Dispensing II	1
PSD112	Biochemistry	4
PSB101	Human Genetics and Embryology	3
 <i>Semester 3 – Autumn</i>		
PSB435	Human Physiology	7
PSD428	An Introduction to General Pathology	1
PSD468	Ophthalmic Dispensing III	2
PSD411	Applied Visual Science III	4
PSD419	Clinical Optometry III	4
PSD425	Fundamentals of Visual Science III	4
MAD253	Statistics and Data Processing	2
PSD465	Ocular Anatomy	1
 <i>Semester 4 – Spring</i>		
PSD466	Ocular Physiology	2
PSD429	An Introduction to Special Pathology	1
PSD469	Ophthalmic Dispensing IV	3
PSD412	Applied Visual Science IV	6
PSD420	Clinical Optometry IV	9
PSD426	Fundamentals of Visual Science IV	4



*Semester 5 - Autumn*

PSD703	Applied Visual Science V	4
PSD731	Clinical Optometry V	11
PSD733	Contact Lens Studies	4
PSD766	Ocular Pathology V	3
	Assigned Optometry	3

*Semester 6 - Spring*

PSD704	Applied Visual Science VI	4
PSD732	Clinical Optometry VI	15
PSD767	Ocular Pathology VI	1
MNA072	Introduction to Business	2
	Assigned Optometry	3

3. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises;
  - project, field testing, etc.
4. Students gain credits for passed units and are required to repeat failed units only.
5. Students who pass all units in one semester as set out in Rule 2 will be expected to enrol in the units set out for the following semester of the programme. Timetables are organised on the basis of this normal progression.
6. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 7 and 8; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

7. Except with the approval of the Head of Department, the total of hours associated with units selected should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of the units have been selected.
8. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
9. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under rule 2 then he may be granted either credit for that subject or subjects, or exemption from whole or part of the programme of that subject or subjects.
10. A student may, under Rule 9, be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

## DIPLOMA OF APPLIED SCIENCE – OPTOMETRY

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSD411 Applied Visual Science III	PSD130 General Psychology II	PSD425 Fundamentals of Visual Science III PSD419 Clinical Optometry III PSD468 Ophthalmic Dispensing III
PSD412 Applied Visual Science IV	PSD411 Applied Visual Science III	PSD426 Fundamentals of Visual Science IV PSD420 Clinical Optometry IV PSD469 Ophthalmic Dispensing IV
PSD703 Applied Visual Science V		PSD766 Ocular Pathology V PSD733 Contact Lens Studies PSD731 Clinical Optometry V
PSD704 Applied Visual Science VI	PSD703 Applied Visual Science V	PSD732 Clinical Optometry VI PSD767 Ocular Pathology VI
PSD419 Clinical Optometry III		PSD425 Fundamentals of Visual Science III PSD411 Applied Visual Science III PSD468 Ophthalmic Dispensing III
PSD420 Clinical Optometry IV	PSD419 Clinical Optometry III	PSD426 Fundamentals of Visual Science IV PSD412 Applied Visual Science IV PSD469 Ophthalmic Dispensing IV
PSD731 Clinical Optometry V	PSD420 Clinical Optometry IV	PSD766 Ocular Pathology V PSD733 Contact Lens Studies
PSD732 Clinical Optometry VI	PSD733 Contact Lens Studies PSD731 Clinical Optometry V	PSD704 Applied Visual Science VI PSD767 Ocular Pathology VI

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSD733 Contact Lens Studies		PSD766 Ocular Pathology V PSD703 Applied Visual Science V PSD731 Clinical Optometry V
PSD425 Fundamentals of Visual Science III	PSD168 Ophthalmic Dispensing II PHD141 Optics II PSD130 General Psychology II	
PSD426 Fundamentals of Visual Science IV	PSD425 Fundamentals of Visual Science III	
PSB427 General Anatomy		BEA101 Cell Biology
PSD130 General Psychology II	PSD129 General Psychology I	
PSB435 Human Physiology	PSB427 General Anatomy	
PSD465 Ocular Anatomy	PSB427 General Anatomy	
PSD466 Ocular Physiology	PSD465 Ocular Anatomy	
PSD766 Ocular Pathology V	PSD420 Clinical Optometry IV PSD429 An Introduction to Special Pathology	PSD703 Applied Visual Science V PSD731 Clinical Optometry V PSD733 Contact Lens Studies
PSD767 Ocular Pathology VI	PSD766 Ocular Pathology V	PSD721 Clinical Optometry VI PSD704 Applied Visual Science VI
PSD168 Ophthalmic Dispensing II	PSD167 Ophthalmic Dispensing I	PHD141 Optics II
PSD468 Ophthalmic Dispensing III	PSD168 Ophthalmic Dispensing II PHD141 Optics II	PSD419 Clinical Optometry III
PSD469 Ophthalmic Dispensing IV	PSD468 Ophthalmic Dispensing III	PSD420 Clinical Optometry IV PSD403 Applied Visual Science IV

Subjects not listed have no pre-requisites other than normal course entry requirements.

**PSK172 DIPLOMA IN APPLIED SCIENCE – CHIROPODY**

Entrance Requirements – see page 31.

1. A registered student may enrol only in a day programme and the subjects and other work of the three years of study comprising the curriculum are as follows:

**Normal Course Programme – three year day programme –**

<i>Semester 1 – Autumn</i>		<i>Approx. Formal Hrs/Wk.</i>
PSD111	Medical Chemistry	5
PHD121	Medical Physics	5
BEB109	Experimental Biology	6
PSD129	General Psychology I	2
PSD121	Chiroprody I	5
 <i>Semester 2 – Spring</i>		
PSD112	Biochemistry	4
PSB427	General Anatomy	6
BEB101	Cell Biology	3
PSB101	Human Genetics and Embryology	3
PSD130	General Psychology II	2
CMB102	Professional Communication B	2
PSD122	Chiroprody II	6
 <i>Semester 3 – Autumn</i>		
PSD441	Human Physiology	7
PSD451	Microbiology	3
MAD253	Statistics and Data Processing	2
PSD423	Podology III	9
PSD421	Chiroprody III	6
 <i>Semester 4 – Spring</i>		
PSD403	Introductory Medicine, Surgery and Pathology	5
CMD411	Sociology	2
PSD424	Podology IV	9
PSD422	Chiroprody IV	11
 <i>Semester 5 – Autumn</i>		
PSD701	Dermatology	2
PSD723	Therapeutics V	12
PSD721	Chiroprody V	13
 <i>Semester 6 – Spring</i>		
MNA072	Introduction to Business	2
PSD724	Therapeutics VI	12
PSD722	Chiroprody VI	13

8 weeks clinical practice in an approved Institution is required during vacations in second and third years.

2. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises;
  - project, field testing, etc.
3. Students gain credits for passed units and are required to repeat failed units only.
4. Students who pass all units in one semester as set out in Rule 1 will be expected to enrol in the units set out for the following semester of the programme. Timetables are organised on the basis of this normal progression.
5. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 6 and 7; and
  - (iii) the established timetable permits the selected units to be studied concurrently,except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.
6. Except with the approval of the Head of Department, the total of hours associated with units selected for study should not exceed the number of hours allocated to the semester of the programme in Rule 1 and from which the majority of the units have been selected.
7. Where quotas for units would be exceeded by acceptance of new applicants –
  - (i) normally, students applying to repeat one unit will have precedence over new applicants;

- (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
8. No formal supplementary examination will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  9. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these Rules.
  10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
  11. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rule 1 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
  12. A student may, under Rule 11, be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

**DIPLOMA IN APPLIED SCIENCE – CHIROPODY**

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSD112 Biochemistry	PSD111 Medical Chemistry	
PSD122 Chiropody II	PSD121 Chiropody I	
PSD421 Chiropody III	PSD122 Chiropody II	
PSD422 Chiropody IV	PSD421 Chiropody III	
PSD721 Chiropody V	PSD422 Chiropody IV	
PSD722 Chiropody VI	PSD721 Chiropody V	
PSD701 Dermatology	PSD403 Introductory Medicine and Surgery, Pathology.	
PSB427 General Anatomy	BEB101 Cell Biology	
PSD130 General Psychology II	PSD129 General Psychology I	
PSD441 Human Physiology	PSB427 General Anatomy	PSB427 General Anatomy
PSD403 Introductory Medicine and Surgery, Pathology	PSD441 Human Physiology	
PSD451 Microbiology	BEB109 Experimental Biology	
PSD423 Podology III		PSD441 Human Physiology
PSD424 Podology IV	PSD423 Podology III	
PSD723 Therapeutics V	PSD112 Biochemistry	
	PSD441 Human Physiology	
PSD724 Therapeutics VI	PSD723 Therapeutics V	



**PSL173 ASSOCIATE DIPLOMA IN HEALTH SURVEYING**

Entrance Requirements — see page 33.

1. A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes. Evening programme students shall be employed in approved employment throughout the course.

2. For a registered student in a day programme, the subjects and other work of the two years of study comprising the curriculum are as follows —

**Normal Course Programme — two year day programme —**

<i>Semester 1 — Autumn</i>		<i>Approx. Formal Hrs/Wk.</i>
PSA111	Biological Chemistry I	5
PHA111	Medical Physics	3
PSA151	Microbiology I	3
PSA141	Human Anatomy and Physiology I	3
MAA251	Statistics and Data Processing	2
PSA101	An Introduction to Medicine	2
PSA131	Health Surveying I	2
<i>Semester 2 — Spring</i>		
PSA152	Microbiology II	4
PSA142	Human Anatomy and Physiology II	4
CMB102	Professional Communication B	2
SVA152	Land Use	2
CMA211	Social Community II	2
PSA132	Health Surveying II	6
SVA155	Geographical Studies	2
PSA106	Administration II	2
<i>Semester 3 — Autumn</i>		
PSA421	An Introduction to Pathology	1
PSA128	Introduction to Psychology	1
PSA431	Health Surveying III	14
PSA404	Administration III	2
PSA401	Social Community III	2
ARS104	Principles of Town Planning	2
ARS101	Building Construction	3

*Semester 4 - Spring*

ARS105	Man and His Environment	2
PSA432	Health Surveying IV	18
ARS102	Building Services	3
ARS103	Building Surveying	2

3. For a student in an evening programme, the subjects and other work comprising the curriculum of the four years of study are as follows –

**Normal Course Programme – four year evening programme –***Semester 1 – Autumn* *Approx. Formal  
Hrs/Wk;*

PSA111	Biological Chemistry I	4
PHA111	Medical Physics	3
MAA251	Statistics and Data Processing	2

*Semester 2 – Spring*

PSA151	Microbiology I	3
PSA141	Human Anatomy and Physiology I	3
PSA101	An Introduction to Medicine	2
PSA131	Health Surveying I	1

*Semester 3 – Autumn*

PSA152	Microbiology II	4
CMA211	Social Community II	2
SVA155	Geographical Studies	2
CMB102	Professional Communication B	2

*Semester 4 – Spring*

SVA152	Land Use	2
PSA142	Human Anatomy and Physiology II	4
PSA106	Administration II	2
PSA132	Health Surveying II	2

*Semester 5 – Autumn*

PSA421	An Introduction to Pathology	1
PSA404	Administration III	2
PSA401	Social Community III	2
PSA433	Health Surveying IIIA	4

*Semester 6 – Spring*

PSA128	Introduction to Psychology	1
ARS101	Building Construction	1
ARS104	Principles of Town Planning	2
PSA434	Health Surveying IIIB	4

*Semester 7 – Autumn*

ARS105	Man and His Environment	2
ARS102	Building Services	3
PSA435	Health Surveying IVA	4

*Semester 8 Spring*

ARS103	Building Surveying	2
PSA436	Health Surveying IVB	6

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
5. Students of the day programme or the evening programme gain credits for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day or evening programme as set out in Rules 2 or 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.
9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) Students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.

14. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
15. A student may, under Rule 14, be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

#### ASSOCIATE DIPLOMA IN HEALTH SURVEYING

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSA152 Microbiology II	PSA151 Microbiology I PSA111 Biological Chemistry	
PSA142 Human Anatomy & Physiology II	PSA141 Human Anatomy & Physiology I	
PSA132 Health Surveying II	PSA131 Health Surveying I PSA151 Microbiology I PSA111 Biological Chemistry	
PSA421 An Introduction to Pathology	PSA142 Human Anatomy & Physiology II	
PSA431 Health Surveying III	PSA152 Microbiology II	
PSA433 Health Surveying IIIA	PSA152 Microbiology II	
PSA434 Health Surveying IIIB	PSA433 Health Surveying IIIA	
PSA401 Social Community III	CMA211 Social Community II	
ARS104 Principles of Town Planning	SVA152 Land Use SVA155 Geographical Studies	
PSA432 Health Surveying IV	PSA404 Administration III PSA132 Health Surveying II PSA431 Health Surveying III	
PSA435 Health Surveying IVA	PSA404 Administration III PSA132 Health Surveying II PSA431 Health Surveying III	
PSA436 Health Surveying IVB	PSA435 Health Surveying IVA	
ARS102 Building Services	ARS101 Building Construction	
ARS103 Building Surveying	ARS101 Building Construction	

## PSM175 GRADUATE DIPLOMA IN NUTRITION AND DIETETICS

Entrance Requirements – see page 30.

1. A registered student may enrol only in a day programme and the subjects of the course of study are as follows –

**Normal Course Programme – one and one half year  
day programme –**

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
PSP111	Biochemistry of Nutrients	5
PSP141	Clinical Physiology	4
PSP102	Food Technology and Production	2
PSP171	Principles of Education	2
CMP111	Sociology and Communication	2
CMP112	Sociology and Psychology	1
PSP143	Food Promotion and Public Health Services	1
PSP151	Microbiology of Food	4
MAP251	Statistics	1
MAB253	Basic Computer Science	2
PSP103	Nutrition within the Community	2
<i>Semester 2 – Spring</i>		
PSP101	Animal Nutrition	3
PSP131	Large Scale Feeding	5
PSP135	Principles of Catering	2
MNP053	Management	3
PSP104	Nutrition of Specific Groups	3
PSP121	Therapeutic Dietetics	8
PSP142	Medicine	2
<i>Semester 3 – Autumn</i>		
PSP132	Practice in Large Scale Feeding (½ semester)	24
PSP122	Practice in Therapeutic Dietetics (½ semester)	24

2. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
3. Students gain credits for passed units and are required to repeat failed units only.

4. Students who pass all units in one semester as set out in Rule 1 will be expected to enrol in the units set out for the following semester of the programme. Timetables are organised on the basis of this normal progression.
5. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 6 and 7; and
  - (iii) the established timetable permits the selected units to be studied concurrently,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

6. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 1 and from which the majority of units have been selected.
7. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
8. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
9. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.

10. Before entering the third semester of study, students shall have completed all units of the first and second semester.
11. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rule 1 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
12. A student may, under Rule 11, be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

#### GRADUATE DIPLOMA IN NUTRITION AND DIETETICS

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSP101 Animal Nutrition	PSP111 Biochemistry of Nutrients	
PSP131 Large Scale Feeding	PSP151 Microbiology of Food	
PSP104 Nutrition of Specific Groups	PSP111 Biochemistry of Nutrients	
PSP121 Therapeutic Dietetics	PSP141 Clinical Physiology	
PSP132 Practice in Large Scale Feeding	)	
PSP122 Practice in Therapeutic Dietetics	)	Completion of all subjects of Semesters 1 and 2



## PSL182 ASSOCIATE DIPLOMA IN CLINICAL LABORATORY TECHNIQUES

This course is planned for 1976; however, approval to conduct the course has not yet been given. Intending students seeking further information should consult the Head of Department.

Entrance Requirements – see page 33.

1. A registered student may enrol either as a day or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. For a registered student, the subjects and other work of the two years of study comprising the curriculum are as follows:

### Present Day Programme

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
PSA111	Biological Chemistry I	5
PHA111	Medical Physics	3
PSA151	Microbiology I	3
PSA141	Human Anatomy & Physiology I	3
MAA251	Statistics & Data Processing	2
PSA101	An Introduction to Medicine	2
PSA102	An Introduction to Clinical Techniques	3
<i>Semester 2 – Spring</i>		
PSA152	Microbiology II	4
PSA142	Human Anatomy & Physiology II	4
CMB102	Professional Communication B	2
PSA112	Biological Chemistry II	5
	Electives (two of the following)	
PSA121	Instrumentation IIA	4
PSA122	Instrumentation IIB	4
* PHA211	Instrumentation IIC	4
* PHA212	Instrumentation IID	4

*Semester 3 – Autumn*

PSA421	An Introduction to Pathology	1
PSA128	Introduction to Psychology	1
PSA441	Human Physiology	3
	Electives (four of the following)	
PSA461	Histological Techniques III	5
PSA452	Clinical Bacteriological Techniques III	5
* PSA463	Cytological Techniques III	4
PSA471	Clinical Biochemical Techniques III	5
* PSA456	Parasitological Techniques III	4
* PSA481	Animal Care Techniques III	4
PSA491	Haematological Techniques III	5
* PSA442	Electrographic Techniques	4
* PHA311	Medical Instrumentation III	4
* PSA433	Physiological Techniques III	4
	Instrumentation subjects not selected from Semester 2	4

*Semester 4 – Spring*

ARS105	Man and His Environment	2
PHA103	Elements of Laboratory Management	2
	Electives (four of the following)	
PSA462	Histological Techniques IV	5
* PSA464	Cytological Techniques IV	4
PSA492	Haematological Techniques IV	5
PSA472	Clinical Biochemical Techniques IV	5
PSA457	Virological & Mycological Techniques IV	5
* PHA411	Medical Instrumentation IV	4
* PSA482	Animal Care Techniques IV	4
* PSA455	Immunological Techniques IV	4
* PSA493	Cytogenetics Techniques IV	4
* PSA466	Electron Micrographic Techniques	4
	Technique subjects not selected previously from Semester 3	

*\*Available in evening programme only and, subject to the constraints of enrolments, budget and timetables.*

3. For a student in an evening programme, the subjects of the four years of study are as follows:

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
PSA111	Biological Chemistry I	4
PSA151	Microbiology I	3
PSA101	An Introduction to Medicine	2
<i>Semester 2 – Spring</i>		
PHA111	Medical Physics	3
PSA141	Human Anatomy & Physiology I	3
MAA251	Statistics & Data Processing	2

*Semester 3 – Autumn*

PSA142	Human Anatomy & Physiology II	3
CMB102	Professional Communication B	2
PSA112	Biological Chemistry II	4

*Semester 4 – Spring*

PSA152	Microbiology II	3
	Electives (two of the following)	
PSA121	Instrumentation IIA OR	3
PSA122	Instrumentation IIB	
PHA211	Instrumentation IIC OR	3
PHA212	Instrumentation IID	

*Semester 5 – Autumn*

PSA441	Human Physiology	3
	Electives (two of the following)	
PSA461	Histological Techniques III	4
PSA452	Clinical Bacteriological Techniques III	4
PSA463	Cytological Techniques III	4
PSA471	Clinical Biochemical Techniques III	4
PSA456	Parasitological Techniques III	4
PSA481	Animal Care Techniques III	4
PSA443	Physiological Techniques III	4
PSA491	Haematological Techniques III	4
PSA442	Electrographic Techniques	4
PHA311	Medical Instrumentation III	4

*Semester 6 – Spring*

PSA128	Introduction to Psychology	1
PSA421	An Introduction to Pathology	1
	Electives (two of those not selected previously from Semester 5)	8

*Semester 7 – Autumn*

ARS105	Man and His Environment	2
	Electives (two of the following)	
PSA462	Histological Techniques IV	4
PSA464	Cytological Techniques IV	4
PSA492	Haematological Techniques IV	4
PSA457	Virological & Mycological Techniques IV	4
PHA411	Medical Instrumentation IV	4
PSA482	Animal Care Techniques IV	4
PSA455	Immunological Techniques IV	4
PSA493	Cytogenetics Techniques IV	4
PSA486	Electron Micrographic Techniques	4
PSA472	Clinical Biochemical Techniques IV	4

*Semester 8 – Spring*

PHA103	Elements of Laboratory Management	2
	Electives (two of those not selected previously from Semester 5 or 7)	8

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
5. Students of the day programme or the evening programme gain credits for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day or evening programme as set out in Rules 2 or 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes;

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.
9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants:-

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these rules.
  14. If a student before enrolling for the course has at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.

15. A student may under Rule 14 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.
16. Students may be exempted from the whole or part of a unit on providing evidence of training and experience acceptable to the Head of Department.

#### ASSOCIATE DIPLOMA IN CLINICAL LABORATORY TECHNIQUES

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSA152 Microbiology II	PSA151 Microbiology I	PSA112 Biological Chemistry II
PSA142 Human Anatomy & Physiology II	PSA141 Human Anatomy & Physiology I PSA111 Biological Chemistry I	
PSA112 Biological Chemistry II	PSA111 Biological Chemistry I PSA151 Microbiology I	PSA121 Instrumentation IIA
PSA121 Instrumentation IIA	PHA111 Medical Physics PSA111 Biological Chemistry I	
PSA122 Instrumentation IIB		
PHA211 Instrumentation IIC		
PHA212 Instrumentation IID	PHA111 Medical Physics PSA111 Biological Chemistry I PSA141 Human Anatomy & Physiology I	PSA142 Human Anatomy & Physiology II
PSA421 An Introduction to Pathology	PSA141 Human Anatomy & Physiology I PSA101 An Introduction to Medicine	
PSA441 Human Physiology	PSA142 Human Anatomy & Physiology II PSA112 Biological Chemistry II	
PSA461 Histological Techniques III	PSA142 Human Anatomy & Physiology II PSA112 Biological Chemistry II PSA121 Instrumentation IIA	
PSA452 Clinical Bacteriological Techniques III	PSA152 Microbiology II	

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSA463 Cytological Techniques III	PSA142 Human Anatomy & Physiology II	PSA461 Histological Techniques III
PSA471 Clinical Biochemical Techniques III	PSA112 Biological Chemistry II PSA142 Human Anatomy & Physiology II PSA121 Instrumentation IIA PSA122 Instrumentation IIB	
PSA453 Parasitological Techniques III	PSA151 Microbiology I	PSA461 Histological Techniques III
PSA451 Animal Care Techniques III	PSA152 Microbiology II PSA112 Biological Chemistry II PSA142 Human Anatomy & Physiology II	PSA421 An Introduction to Pathology
PSA491 Haematological Techniques III	PSA142 Human Anatomy & Physiology II PSA112 Biological Chemistry II PSA121 Instrumentation IIA PSA122 Instrumentation IIB	
PSA442 Electrographic Techniques	PHA212 Instrumentation IID	PSA441 Human Physiology
PHA311 Medical Instrumentation III	PHA211 Instrumentation IIC	
PSA433 Physiological Techniques III	PSA112 Biological Chemistry II PHA212 Instrumentation IID	PSA441 Human Physiology PSA471 Clinical Biochemical Techniques III
PSA462 Histological Techniques IV	PSA461 Histological Techniques III	
PSA464 Cytological Techniques IV	PSA463 Cytological Techniques III	
PSA492 Haematological Techniques IV	PSA491 Haematological Techniques III	
PSA472 Clinical Biochemical Techniques IV	PSA471 Clinical Biochemical Techniques III	
PSA454 Virological & Mycological Techniques IV	PSA152 Microbiology II	
PHA411 Medical Instrumentation IV	PHA311 Medical Instrumentation III	

<i>Subject</i>		<i>Pre-requisite</i>		<i>Co-requisite</i>
PSA482	Animal Care Techniques IV	PSA481	Animal Care Techniques III	
PSA455	Immunological Techniques IV	PSA152	Microbiology II	
		PSA142	Human Anatomy & Physiology II	
PSA465	Electron Micro- graphic Techniques	PSA461	Histological Techniques III	

Subjects not listed have no pre-requisites other than normal course entry requirements.







**DEPARTMENT  
OF PHYSICS**

## DEPARTMENT OF PHYSICS

**Head of Department:** B.W. Thomas, MSc, PhD, DipEd(WA), FAIP,  
MInstP.

**Senior Lecturers:** R.E. Dunlop, BSc(Hons), MSc(Qld), MAIP.  
J.P. McGilvray, BSc(Hons), MSc(Qld), MAIP,  
MIBE(Aust).  
H.C. Rose, BSc(Hons), MSc(Man), MInstP, AIM.  
J.F. Whiting, MSc, DipEd(Qld), MSc(Surrey),  
MAIP, MIBE(Aust).

**Lecturers:** B.M. Blyth, MAIP.

J.A. Davies, BSc(Hons)(City,London), MAIP, AIMEE.  
I.R. Edmonds, BSc(Hons), MSc(Auck), PhD(Warwick), MAIP.  
H.D. Ellis, BSc(Hons), PhD(Durham), MAIP.  
D.M. Field, BSc(Hons), PhD(Adel).  
R.A. Fleming, BSc(Hons), MSc(Qld), MAIP.  
T.G. Lewis, BSc, BEd(Qld), MSc(Aston), MAIP.  
L.A. Meara, MSc, BA, AEd(Qld), MAIP.  
W.C. Middleton, BSc(Hons), BEd(Qld), MAIP.  
R.J. Norton, BSc(Qld).  
B.M. O'Leary, BSc, DipEd(Sydney), MSc(Surrey), MAIP.  
R.J. Treffene, BSc(Qld), MSc(Lond), MAIP.  
D. Wilson, MIR.  
C.F. Wong, DipSc(Hong Kong), MSc(McGill),  
PhD(Saskatch).

**Senior Tutors:** I.R. Cowling, BSc(Hons), PhD(Flin), GradAIP.  
B.J. Rigby, BSc(Hons), PhD(Qld), MAIP.  
G.P. Haberkern, BSc(Hons), PhD(Monash), MAIP.

**Support Staff:** R. Jeffrey, MIREE, Senior Technician.  
(Technician J.E. Davey, LRIC, Technician Div. II.  
Div. II J.F. Davey, Technician Div. II.  
and above) R.R. Galloway, Technician Div. I.  
G.W. Kibbey, Technician Div. II.

**Support Staff:** M.K. Power, Technician Div. II.  
B. Wheeler, Technician Div. I.  
G.J. Young, Technician Div. II.

**Radiobiological  
Technologist  
(Div. I)** A. Waller, FIMLT(Lond), AAIMT.

**PHJ127 BACHELOR OF APPLIED SCIENCE – PHYSICS**

Entrance Requirements – see page 31.

1. A registered student may enrol either as a day programme or evening programme student.

A day programme student is one who normally attends day classes associated with his study programme. He may, however, elect or be required to attend some evening classes.

An evening programme student is one who normally attends evening classes associated with his study programme. He may, however, elect or be required to attend some day classes.

2. For a registered student in a day programme the subjects and other work of the three years of study comprising the curriculum are as follows –

**Normal Course Programme – three year day programme –**

<i>Semester 1 – Autumn</i>		Approx. Formal Hrs/Wk.
PHB101	Physics IS	3
PHB106	Experimental Physics I	3
CHB141	Chemistry I	6
CMB101	Professional Communication A	2
MAB251	Mathematics I	4
BEB105	Human Ecology AND	
BEB101	Cell Biology OR	
ESB113	Earth Science I OR an equivalent subject.	6
 <i>Semester 2 – Spring</i>		
PHB201	Physics IIS	3
PHB206	Experimental Physics II	3
CHB241	Chemistry II	6
CMB102	Professional Communication B	2
MAB160	Mathematics II	4
BEB109	Experimental Biology OR	
ESB213	Earth Science II OR an equivalent subject.	6
 <i>Semester 3 – Autumn</i>		
PHB304	Physics III	4
PHB306	Experimental Physics III	5
MAB459	Mathematics IIIP	6
PHB307	Experimental Electronics	3
MEB370	Workshop Technology	3
MAB305	Introduction to Computing A	3

*Semester 4 – Spring*

PHB401	Physics IVA	3
PHB402	Physics IVB	3
PHB406	Experimental Physics IV	5
MAB252	Statistics	2
MAB460	Mathematics IVP	6
ESB411	Earth Science IV OR	
BEB450	Principles of Ecology II OR any other suitable subject.	3–6

*Semester 5 – Autumn*

PHB501	Physics VA	3
PHB502	Physics VB	3
PHB503	Physics VC	3
PHB504	Electronics	6
PHB506	Experimental Physics V	8
MAB759	Mathematics VP	2

*Semester 6 – Spring*

PHB601	Physics VIA	3
PHB602	Physics VIB	3
PHB603	Physics VIC	2
PHB606	Experimental Physics VI	9
* TWO of the following:		
PHB607	Materials	3
PHB608	Applied Acoustics	3
PHB609	Radiation Physics A	3
PHB611	Astronomy	3
PHB612	Physical Methods of Analysis	3
PHB613	Biophysics	3
PHB614	Physics Education or any other suitable subject	3

\*The topics offered will be determined by demand and staffing.

3. For a registered student in an evening programme the subjects and other work of the six years of study are as follows –

**Normal Course Programme – six years evening programme –**

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn (1976)</i>		
CHB141	Chemistry I	6
BEB109	Experimental Biology	6
<i>Semester 2 – Spring (1976)</i>		
CHB241	Chemistry II	6
BEB105	Human Ecology	3
BEB101	Cell Biology	3

*Semester 3 – Autumn (1977)*

PHB101	Physics IS	3
PHB106	Experimental Physics I	3
MAB251	Mathematics I	4

*Semester 4 – Spring (1977)*

PHB201	Physics IIS	3
PHB206	Experimental Physics II	3
CMB102	Professional Communication B	2
MAB160	Mathematics II	4

4. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
5. Students of the day programme or the evening programme gain credits for passed units and are required to repeat failed units only.
6. Students who pass all units in one semester of a day or evening programme as set out in Rules 2 or 3 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
7. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
  - (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 8, 9 and 10; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

8. Except with the approval of the Head of Department, the total of hours associated with units selected for study by day programme students should not exceed the number of hours allocated to the semester of the programme in Rule 2 and from which the majority of units have been selected.
9. Except with the approval of the Head of Department, the maximum number of hours allowable for study by evening programme students are as specified in any one year in Rule 3.
10. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
11. When quotas for units in the day programme have been filled with students who have enrolled for the first time, but quotas in units in the evening programme have not been filled, students repeating units will be enrolled for such units in the evening programme.

Where quotas for units in both programmes would be exceeded by acceptance of new applicants –

- (i) normally, students applying to repeat one unit will have precedence over new applicants;
  - (ii) students applying to repeat two or more units may be excluded from those units at the discretion of the Head of School on the advice of the Head of Department.
12. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
  13. Pre-requisite and co-requisite subjects are shown in a Schedule attached to these Rules.



14. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 2 and 3 then he may be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.
15. A student may under Rule 14 be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of day programme of such course by study within the Institute.

#### BACHELOR OF APPLIED SCIENCE – PHYSICS

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PHB608 Applied Acoustics	PHB304 Physics III	
PHB611 Astronomy	PHB101 Physics IS PHB102 Physics IIS PHB206 Experimental Physics II	
CHB241 Chemistry II	CHB141 Chemistry I	
PHB504 Electronics	PHB307 Experimental Electronics	
PHB106 Experimental Physics I		PHB101 Physics IS
PHB206 Experimental Physics II	PHB106 Experimental Physics I	PHB201 Physics IIS
PHB306 Experimental Physics III	PHB101 Physics IS PHB201 Physics IIS PHB206 Experimental Physics II	PHB304 Physics III
PHB406 Experimental Physics IV	PHB306 Experimental Physics III	PHB401 Physics IVA OR PHB402 Physics IVB
PHB506 Experimental Physics V	PHB406 Experimental Physics IV	
PHB606 Experimental Physics VI	PHB506 Experimental Physics V	
PHB607 Materials	PHB401 Physics IVA MAB460 Mathematics IVP	
MAB160 Mathematics II	MAB251 Mathematics I	
MAB459 Mathematics IIIP	MAB251 Mathematics I MAB160 Mathematics II	
MAB460 Mathematics IVP	MAB459 Mathematics IIIP	
MAB759 Mathematics VP	MAB460 Mathematics IVP	
PHB101 Physics IS		PHB106 Experimental Physics I

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PHB613 Biophysics	PHB101 Physics IS PHB201 Physics IIS PHB206 Experimental Physics II	
PHB201 Physics IIS		PHB206 Experimental Physics II
PHB304 Physics III	PHB101 Physics IS PHB201 Physics IIS PHB206 Experimental Physics II MAB251 Mathematics I OR MAB160 Mathematics II	
PHB401 Physics IVA	PHB101 Physics IS PHB201 Physics IIS PHB206 Experimental Physics II MAB251 Mathematics I OR MAB160 Mathematics II	
PHB402 Physics IVB	PHB101 Physics IS PHB201 Physics IIS PHB206 Experimental Physics II MAB251 Mathematics I OR MAB160 Mathematics II	
PHB501 Physics VA	PHB304 Physics III PHB402 Physics IVB MAB460 Mathematics IVP	
PHB502 Physics VB	PHB304 Physics III	
PHB503 Physics VC	PHB304 Physics III PHB402 Physics IVB	
PHB601 Physics VIA	PHB401 Physics IVA * PHB501 Physics VA MAB460 Mathematics IVP	
PHB602 Physics VIB	PHB304 Physics III PHB406 Experimental Physics IV	
PHB603 Physics VIC	PHB304 Physics III MAB460 Mathematics IVP	
PHB609 Radiation Physics A	PHB402 Physics IVB	
PHB610 Radiation Physics B	PHB402 Physics IVB	

Subjects not listed have no pre-requisites other than normal course entry requirements.

\* *This subject must have been studied. A passing grade is not essential.*

## ASSOCIATE DIPLOMA IN RADIOGRAPHY

Entrance Requirements – see page 32.

1. Candidates for enrolment in these courses must be trainees who have been accepted for employment within an approved Department or Practice. Documentary evidence of such employment must accompany the application for registration and enrolment.
2. A student enrolled in a Radiography course may attempt to recover a failed subject while unemployed provided that –
  - (i) the log-book is assessed as satisfactory for the period of employment corresponding to the initial examination attempt at the failed subject;
  - (ii) employment was terminated for reasons other than unacceptability as a potential radiographer;
  - (iii) continuation of the course after recovery will be subject to normal enrolment conditions.
3. A registered student admitted under these Rules may elect to specialise in either of the Diagnostic or Therapeutic courses.
4. A registered student will enrol for evening study with some day release from his appropriate employment. The subjects and other work comprising the Diagnostic and Therapeutic courses are those listed in Rules 5 and 6.
5. For a registered student in the Diagnostic course, the subjects and other work comprising the curriculum are as follows –

### PHL135 Associate Diploma in Diagnostic Radiography

- NOTE: (i) The following structure represents the 'normal' course of progression for students passing all units each semester.
- (ii) A proposed course of study must be approved, prior to enrolment for any semester, by the Head of Department or other nominated staff member.

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
PHA101	Hospital Practice & Care of Patient	1
PHA102	Physics for Radiographers I	3
PHA103	Radiographic Technique I	1
PSA411	Anatomy and Physiology I	4
<i>Semester 2 – Spring</i>		
PHA202	Physics for Radiographers II	3
PHA103	Radiographic Technique I	2
PSA412	Anatomy and Physiology II	4

*Semester 3 – Autumn*

PHA301	Radiographic Technique II	3
PHA302	Radiographic Equipment I	4
PHA303	Introduction to Pathology	2

*Semester 4 – Spring*

PHA401	Radiographic Technique III	3
PHA402	Radiographic Equipment II	4
PHA404	Radiobiology & Protection	2

*Semester 5 – Autumn*

PHA501	Radiographic Technique IV	3
PHA502	Radiographic Equipment III	3
PHA503	Nuclear Medicine & Allied Techniques	1
PSD129	General Psychology I OR	
CMB101	Professional Communication A OR	2
CMB102	Professional Communication B	

*Semester 6 – Spring*

PHA601	Radiographic Technique V	3
PHA602	Radiographic Equipment IV	3
PHA503	Nuclear Medicine & Allied Techniques	1
PSD130	General Psychology II OR	
CMB101	Professional Communication A OR	2
CMB102	Professional Communication B	

6. For a registered student in the Therapeutic course, the subjects and other work are as follows –

**PHL136 Associate Diploma in Therapeutic Radiography**

- NOTE: (i) The following structure represents the 'normal' course of progression for students passing all units each semester.
- (ii) A proposed course of study must be approved, prior to enrolment for any semester, by the Head of Department or other nominated staff member.

		<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 1 – Autumn</i>		
PHA101	Hospital Practice & Care of Patient	1
PHA102	Physics for Radiographers I	3
PHA105	Preliminary Radiotherapeutic Practice	1
PSA411	Anatomy & Physiology I	4
<i>Semester 2 – Spring</i>		
PHA202	Physics for Radiographers II	3
PHA204	Principles of Pathology	2
PSA412	Anatomy & Physiology II	4

*Semester 3 – Autumn*

PHA305	Principles of Treatment I	2
PHA306	Radiotherapeutic Physics I	3
PHA307	Radiotherapeutic Practice I	3
PHA308	Tumour Pathology	1

*Semester 4 – Spring*

PHA405	Principles of Treatment II	2
PHA406	Radiotherapeutic Physics II	3
PHA407	Radiotherapeutic Practice II	3

*Semester 5 – Autumn*

PHA504	Radiotherapeutic Practice III	3
PHA505	Radioisotopes, Principles & Practice I	2
PHA506	Programming & Data Handling I	2
PSD129	General Psychology I OR	
CMB101	Professional Communication A OR	2
CMB102	Professional Communication B	

*Semester 6 – Spring*

PHA604	Radiotherapeutic Practice IV	3
PHA605	Radioisotopes, Principles & Practice II	2
PHA606	Programming & Data Handling II	2
PSD130	General Psychology II OR	
CMB101	Professional Communication A OR	2
CMB102	Professional Communication B	

7. The method of assessment to be used in the case of each subject will be as approved by the Academic Board and may comprise one or more of –
  - written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports;
  - projects, field testing, etc.
8. Students gain credits for passed units and are required to repeat failed units only.
9. Students who pass all units in one semester of a day or evening programme as set out in Rules 5 & 6 will be expected to enrol in the units set out for the following semester of the relevant programme in those Rules. Timetables are organised on the basis of this normal progression.
10. Students are required to maintain log books of their clinical work, and progression in the course will depend on satisfactory performance in examinations of both course work and log books.

11. Students who fail units shall be allowed to proceed with the study of some or all of the units from the next semester of the programme provided that –
- (i) they have successfully completed all pre-requisite units and, where applicable, have also enrolled in the co-requisite units; and
  - (ii) the hours associated with the selected programme fall between the maximum and minimum hours defined in Rules 12, 13 and 14; and
  - (iii) the established timetable permits the selected units to be studied concurrently. When timetable clashes make it necessary, day programme students may be permitted or required to attend evening classes and evening programme students may be permitted or required to attend day classes,

except that, in certain circumstances, students who fail one unit which is a pre-requisite for a second unit may nevertheless be deemed eligible to enrol in the second unit, such eligibility being determined by the Head of the Department administering the subject.

12. Except with the approval of the Head of Department, the maximum number of hours allowable for study by day release students are as specified in any one semester in Rules 5 and 6.
13. Except with the approval of the Head of Department, the total hours associated with the units selected for study shall not be less than 50% of the number of hours allocated to the semester of the programme from which the majority of the units have been selected.
14. No formal supplementary examinations will be offered following the semester examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the unit previously shown to be below standard. On the basis of this additional testing, a pass may be granted.
15. If a student before enrolling for the course has, at this Institute or elsewhere completed a programme considered by the Head of Department as being an adequate and relevant substitute for a subject or subjects prescribed under Rules 5 and 6 then he may

be granted either credit for that subject or subjects or exemption from whole or part of the programme of that subject or subjects.

16. A student may, under Rule 15, be granted credit or exemption for any number of subjects prescribed in an undergraduate programme except that all students must satisfactorily complete the equivalent of at least two academic semesters of a day programme of such course by study within the Institute.

#### ASSOCIATE DIPLOMA IN DIAGNOSTIC RADIOGRAPHY

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSA412 Anatomy and Physiology II	PSA411 Anatomy and Physiology I	
PSD130 General Psychology II	PSD129 General Psychology I	
PHA402 Radiographic Equipment II	PHA202 Physics for Radiographers II	
	PHA302 Radiographic Equipment I	
PHA502 Radiographic Equipment III	PHA402 Radiographic Equipment II	
PHA602 Radiographic Equipment IV	PHA402 Radiographic Equipment II	
PHA501 Radiographic Technique IV	PHA301 Radiographic Technique II	
	PHA401 Radiographic Technique III	
PHA601 Radiographic Technique V	PHA301 Radiographic Technique II	
	PHA401 Radiographic Technique III	

Subjects not listed have no pre-requisites other than normal course entry requirements.

## ASSOCIATE DIPLOMA IN THERAPEUTIC RADIOGRAPHY

<i>Subject</i>	<i>Pre-requisite</i>	<i>Co-requisite</i>
PSA412 Anatomy and Physiology II	PSA411 Anatomy and Physiology I	
PHA405 Principles of Treatment II	PHA305 Principles of Treatment I	
PHA505 Radioisotopes, Principles and Practice I	PHA307 Radiotherapeutic Practice I	
	PHA407 Radiotherapeutic Practice II	
PHA605 Radioisotopes, Principles and Practice II	PHA307 Radiotherapeutic Practice I	
	PHA407 Radiotherapeutic Practice II	
PHA306 Radiotherapeutic Physics I	PHA202 Physics for Radiographers II	
PHA406 Radiotherapeutic Physics II	PHA202 Physics for Radiographers II	
	PHA306 Radiotherapeutic Physics I	
PHA407 Radiotherapeutic Practice II	PHA305 Principles of Treatment I	
	PHA306 Radiotherapeutic Physics I	
	PHA307 Radiotherapeutic Practice II	
PSD130 General Psychology II	PSD129 General Psychology I	

Subjects not listed have no pre-requisites other than normal course entry requirements.



## PHN176 MASTER OR APPLIED SCIENCE – MEDICAL PHYSICS

1. To be eligible to enrol for the Master of Applied Science – Medical Physics, an applicant must have completed an acceptable tertiary course with a major in physics.  
Applicants with other qualifications may be enrolled subject to the approval of the Head of Department of Physics and may be required to undertake a bridging programme.
2. A registered student may enrol either as a full-time or part-time student.  
A part-time student will be required to attend some day classes, and a full-time student may be required to attend some evening classes.
3. The part-time programme will be offered only in those years in which sufficient enrolments are received.
4. The programme consists of two parts, Stage I and Stage II. Progression to Stage II will be dependent on satisfactory completion of Stage I. Formal contact hours for students enrolled in the full-time course average approximately 18 hours per week during each semester, and the topics covered within the course are as follows –

**Normal Course Programme – two year full-time programme -  
– four year part-time programme –**

### *STAGE 1 – Course Work PHM100*

<i>Semester 1 – Autumn</i>	<i>Approx. Formal Hrs/Wk.</i>
Radiation Physics	4
Anatomy and Physiology I	5
Concepts in Biochemistry	1
Safety: Ionizing and Non-ionizing Radiation	2
Electronics	4
Computing Technology & Data Processing	3
<i>Semester 2 – Spring</i>	
Biomechanics	3
Radioisotope Techniques	2
Ionizing Radiation Dosimetry	1
Principles of Biochemical Measurement	1
Physical Measurement of Biological Parameters	2
Clinical Applications of Ionizing Radiation	3
Medical Applications of Wave Physics	2
Anatomy and Physiology II	1
Radiobiology	1

*STAGE II – Course Work PHM200  
Thesis PHM300*

	<i>Approx. Formal Hrs/Wk.</i>
<i>Semester 3</i>	
Genetics	2
Instrumentation	4
Administration and Budgeting	3
Project Perspectives and Case Studies	4
Project	4
<i>Semester 4</i>	
Project	18

5. The method of assessment to be used in the case of each subject will be approved by the Academic Board and may comprise one or more of –
- written and/or oral tests;
  - general assignments;
  - laboratory exercises and reports.

Students will be required to submit a project report. This report will be assessed by a panel of examiners including a nominated external examiner. In addition the student will be required to discuss his completed project with the same panel of examiners.

6. Registered students in the course will be expected to enrol for the full semester programme as in Rule 4.
7. No formal supplementary examinations will be offered following examinations. However, if an examiner considers such action justified, a student may be recalled for further informal assessment before the release of the examination results. This may take the form of oral questioning or a short written test, and may cover only the areas of the topic previously shown to be below standard. On the basis of this additional testing, a pass may be granted.

## CHANGES IN SUBJECT TITLES

1975 Code	Subject Name	1976 Code	Subject Name <i>(Name remains unchanged unless otherwise shown)</i>
ESA583	Administration for Geologists	ESB583	
MAB910	Algebraic Structures and Applications	MAB609	Algebraic Structures
CHA611	Analytical Chemistry VI	CHB611	
CHA621	Chemical Technology VI	CHB621	
CHA443	Chemistry for Geologists IV	CHB443	
MAB335	Classical Theoretical Mechanics	MAB635	
MAB903	Complex Variables	MAB604	
ESA511	Earth Science V	ESB511	
ESA611	Earth Science VI	ESB611	
ESA373	Economic Analysis for Geologists	ESB373	
ESA363	Economic Geology III	ESB363	
ESA513	Economic Geology V	ESB513	
ESA653	Engineering Geology	ESB653	
BEB590	Experimental Projects	BEB590	Projects in Terrestrial and Aquatic Ecology
ESA533	Exploration Geochemistry V	ESB533	
ESA633	Exploration Geophysics VI	ESB633	
ESA383	Field Excursions III	ESB383	
ESA483	Field Excursions IV	ESB483	
ESA573	Field Excursions V	ESB573	
ESA673	Field Excursions VI	ESB673	
ESA553	Field Techniques	ESB553	
ESA333	Geochemistry III	ESB333	
ESA453	Geochemistry IV	ESB453	
ESA433	Geophysics IV	ESB433	
PSB446	Haematology	PSB448	
PSB447	Histotechnology	PSB449	
PSD101	Human Genetics & Embryology	PSB101	
ESA443	Hydrology IV	ESB443	
ESA523	Hydrology V	ESB523	
ESA473	Law for Geologists	ESB473	
MAB153	Mathematics I	MAB251	
ESA613	Mineragraphy & Mining Geology	ESB613	
ESA313	Mineralogy	ESB313	
PSA465	Ocular Anatomy & Physiology	PSD465	Ocular Anatomy
		PSD466	Ocular Physiology
CHA351	Organic Chemistry III	CHB351	
CHA451	Organic Chemistry IV	CHB451	
CHA651	Organic Chemistry VI	CHB651	
ESA623	Petroleum Geology	ESB623	
ESA413	Petrology IV	ESB413	
ESA543	Petrology V	ESB543	
CHA371	Physical Chemistry III	CHB371	

1975 Code	Subject Name	1976 Code	Subject Name <i>(Name remains unchanged unless otherwise shown)</i>
CHA471	Physical Chemistry IV	CHB471	
CHA671	Physical Chemistry VI	CHB671	
PHB301	Physics IIIA	PHB304	Physics III
PHB302	Physics IIIB		
CMB101	Professional Communication A	CMB103	Professional Communication
CMB102	Professional Communication B (For B.App.Sc. — Maths only)		
ESA563	Project V	ESB563	
ESA663	Project VI	ESB663	
ESA683	Property Evaluation for Geologists	ESB683	
ESA323	Sedimentology	ESB323	
MAA253	Statistics and Data Processing	MAD253	
ESA423	Stratigraphy & Sedimentary Petrology	ESB423	
ESA353	Structural Geology III	ESB353	
ESA643	Structural Geology VI	ESB643	
ESA343	Surveying	ESB343	
MAB925	Topics in Mathematics IIA	MAB615	
MAB926	Topics in Mathematics IIB	MAB616	





**SYNOPSIS**

## SYNOPSIS

### ACB181 Accounting Information Systems I

A course containing an introduction to accounting concepts, ledger accounts and the double entry system, the accounting cycle. Accounting for cash, debtors and creditors, stocks, fixed assets, revenue and expenses.

### ACB281 Accounting Information Systems II

A continuation of ACB181 covering accounting for ownership, departmental and branch accounts, holding companies and group accounts, managerial accounting, cost estimation, cost-volume-profit decisions, business investment decisions and capital budgeting.

### MAB641 Actuarial Mathematics

Mortality table, annuities depending on the status of a life —whole of life, temporary, deferred, assurances — temporary, whole of life, deferred, endowment; relationships between assurance and annuity functions — annual premiums; premiums — office premiums; policy values — alterations to policies; annuities — premiums payable more frequently than yearly.

### PSA106 Administration II

The administrative and organisational role of the health surveyor. The effective organisation of records, storage and retrieval systems; organisation, management, and selection of staff; office management.

### PSA404 Administration III

The structure of government, particularly at State and Local levels and methods of public finance. An introduction to the law with particular reference to acts, regulations, ordinances, by-laws, codes, resolutions and policies which affect the health surveyor. The place of legal procedures in a health programme, approaches to legal action.

### ESB583 Administration for Geologists

Organisation and management; mineral industries studies, company structure.

### MAB609 Algebraic Structures

Boolean algebra; sets and functions; monoids; groups; rings and ideals; commutative rings; polynomial rings over integral domains and over fields; finite fields; modules.

MAB901 Analysis A: Under review.

MAB902 Analysis B: Under review.

### CHB110 Analytical Chemistry I

A course in the basic theoretical and practical principles of chemical analysis, including semi-micro qualitative analysis, and titrimetric analysis, leading to the determination of simple substances.

**CHC110 Analytical Chemistry I**

A course in the basic principles of qualitative analysis, including group analysis and dry tests.

**CHB210 Analytical Chemistry II**

A continuing course in the theoretical and practical principles of analytical chemistry, including further titrimetric analysis and gravimetric analysis, leading to determination of simple substances.

**CHC210 Analytical Chemistry II**

A course in the basic principles of the theory and practice of titrimetric and gravimetric analysis.

**CHB310 Analytical Chemistry III**

A continuing course in the theoretical and practical principles of classical analytical methods using gravimetric, titrimetric and UV-visible spectrophotometric techniques, leading to the analysis of more complex molecules.

**CHB312 Analytical Chemistry III**

Biochemical relevance of pH. Instrumental analytical techniques used in the pathology laboratory.

**CHC310 Analytical Chemistry III**

A course giving further practice in qualitative analysis (including semimicro qualitative analysis), volumetric analysis and gravimetric analysis. Includes analysis of ores, alloys and limestones.

**CHB410 Analytical Chemistry IV**

A course in the theoretical and practical principles of analytical methods of chromatography (including gas chromatography) and solvent extraction; a study of organic analytical reagents.

**CHC410 Analytical Chemistry IV**

A continuing course giving further practice in the techniques of volumetric and gravimetric analysis and an introduction to industrial analytical techniques.

**CHB510 Analytical Chemistry V**

A course in modern methods of chemical analysis covering flame, x-ray and electrical excitation spectroscopy; UV-visible spectrophotometry and infrared spectrophotometry; fluorimetry; light scattering methods; thermal analysis and electroanalytical techniques. The laboratory program includes the application of modern methods to the analysis of complex materials and commercial products.

**CHB610 Analytical Chemistry VI**

A course in the principles and techniques of nuclear and radiochemistry; NMR, NQR, ESR, ORD and fluorescence spectroscopy; an introduction to the applications of computers to chemistry. Air pollution detection and control.



**CHB611 Analytical Chemistry VI**

A course of 30 lectures in the principles and techniques of nuclear and radio-chemistry; NMR, NQR, ESR, ORD and fluorescence spectroscopy; an introduction to the application of computers in chemistry. Air pollution detection and control. 60 hours of laboratory work designed to complement the lecture course.

**PSA411 Anatomy & Physiology I**

An elementary unit in which the structure and function of cells, tissues, organs and systems are discussed.

**PSA412 Anatomy & Physiology II**

The elaboration and integration of the structure and function of the organs and functions studied in PSA411.

**PSA481 Animal Care Techniques III**

A course dealing with the nutrition, care, housing, and diseases of animals commonly used in clinical laboratories.

**PSA482 Animal Care Techniques IV**

An extension of the subject Animal Care Techniques III to deal more fully with the aspects included in that course and to extend to laboratory animals used in research laboratories.

**BEB412 Animal Diversity**

The range and form of animal types and their classification, the functional anatomy and diversity of organ systems and developmental and evolutionary aspects of animal diversity are covered.

**PSP101 Animal Nutrition**

The study of nutrition principles and experimental techniques related to the feeding of laboratory animals.

**BEB411 Animal Physiology**

Emphasis is placed on basic processes of adaptation with an experimental approach to animal function. Such processes include thermal regulation, preservation of ionic and osmotic balance, migration, hibernation, perception, learning, growth and repair.

**PSA102 An Introduction to Clinical Techniques**

A course for day programme students only to introduce the areas of clinical techniques and their role in the diagnosis of disease, or the monitoring of therapy. Practical work will consist of elementary clinical measurement procedures.

**PSD428 An Introduction to General Pathology**

A course introducing the principles of the study of disease and dealing with the causes and nature of circulatory disorders, degenerative processes, metabolic and nutritional disorders, disturbances of development and growth, inflammation, infections and infestations, regeneration and repair, and neoplasma.

**PSA101 An Introduction to Medicine**

An introduction to the principles of medicine including a survey of major diseases.

**PSA421 An Introduction to Pathology**

An elementary course of the study of disease by scientific methods. General principles and more common disease processes are discussed.

**PSD429 An Introduction to Special Pathology**

A course introducing the applications of general pathology to the study of diseases of the heart and circulatory system, digestive system, respiratory system, urogenital system, endocrine system, and the central nervous system.

**PHB608 Applied Acoustics**

A course of 15 lectures and associated practical work. Standards, principles of methods and instrumentation used in vibration, noise and sound measurements with emphasis upon architectural acoustics and traffic, industrial and community noise. Brief treatment of underwater acoustics and recording and reproduction of sound. Legal and technical aspects of professional practice.

**MAB617 Applied Differential Equations**

Ordinary differential equations, geometric interpretations, exact equations, variables separable, linear and homogeneous types; second and higher order equations, D operator techniques, singularities, Frobenius' series solution; Sturm-Liouville systems; Laplace transform methods; systems of linear equations; partial differential equations, classification of elliptic, parabolic and hyperbolic types, separation of variables, heat, wave and telegraph equations.

**MAB934 Applied Electromagnetism**

Maxwell's equations; waveguide structures; antenna theory.

**MAB610 Applied Linear Algebra: Under review.****MAB357 Applied Statistical Methods A**

Introduction to the theory of probability and probability distributions. Collection and representation of data; parameters and statistics. Elementary treatment of sampling theory leading to the Normal,  $t$ ,  $F$  and  $\chi^2$  sampling distributions. Statistical estimation and tests of hypotheses based on the Normal  $t$ ,  $F$  and  $\chi^2$  distributions.

**MAB358 Applied Statistical Methods B**

Introduction to non-parametric tests of hypotheses. Simple and multiple linear regression. Correlation. Fundamentals of experimental design and the analysis of variance.

**MAB924 Applied Statistical Techniques**

General linear model, least squares estimators; errors in variables; auto correlation; multicollinearity; lagged variables; dummy variables; identification problem; alternative estimation methods.

**PSD411 Applied Visual Science III**

The investigation of vision, relative and absolute. The investigation of the ocular mechanism subjectively and objectively. Normal vision and disturbances of vision.

**PSD412 Applied Visual Science IV**

A study of visual states. Eyestrain and visual hygiene. The course is designed to equip students with necessary theory to evaluate the visual states of live subjects.

**PSD703 Applied Visual Science V**

The extensity and intensity of the visual field. The physiological field and its variations. The state and requirements of binocular vision with special reference to latent strabismus. The colour sense and anomalies of colour vision.

**PSD704 Applied Visual Science VI**

Anomalies of binocular vision with special reference to manifest strabismus. Sub-normal vision. The partially-sighted person. Public health optometry. The elements of illumination engineering. Forensic optometry.

**PHB611 Astronomy**

A course of 15 lectures and associated practical work on the fundamentals of astronomy.

**MAP253 Basic Computer Science**

Introduction to computer systems, input and output media, terminal systems. The computer as a data retrieval system, memory media, file organisation. A review of some hospital data systems, future developments, terminology; basic computer components, functions and use; visits to computer installations.

**PSB737 Basic Immunology**

A study of the mechanisms of the immune process including the nature of antigens, antibodies, antigen-antibody reactions, antibody formation, control of the humoral and cell-mediated immune responses, hypersensitivity and allergy and immunisation of man against infections.

**MAB355 Basic Mathematics A**

An introductory course in mathematics providing the necessary mathematical basis for computing and covering vector spaces, matrices and eigenvalues and eigenvectors.

**MAB356 Basic Mathematics B**

A continuation of MAB355 covering the topics complex numbers, functions of a real variable and cartesian and polar co-ordinates.

**PSD112 Biochemistry**

A course dealing with the biochemistry of selected biological systems including a consideration of the roles played by subcellular components in the overall economy of the cell and of the functional mechanisms of certain specialized organs of the body. Topics include: biological oxidation; metabolism of carbohydrates, lipids and amino acids; protein biosynthesis; and the biochemistry of special systems.

**PSB405 Biochemistry III**

An introductory course for biologists and industrial chemists, dealing with the chemistry and properties of biological molecules. Emphasis is placed on correlating chemical structure with biological activity, so the basic aim of the course is to teach students to predict logically the behaviour of biochemical systems. Topics covered include amino acids, proteins, enzymes, coenzymes, carbohydrates and lipids.

**PSB406 Biochemistry IVA**

This course deals with the production and utilisation of energy in living organisms and the metabolic interrelationships of the compounds encountered in PSB405. Topics of particular interest to industrial chemists (e.g. tanning, insecticides) are discussed and the practical work includes inspection tours of selected industries.

**PSB407 Biochemistry IVB**

This course is an extension of PSB405 for biology students. Topics discussed include bioenergetics, carbohydrate and lipid metabolism, chemistry and function of nucleic acids, photosynthesis and protein biosynthesis.

**PSC406 Biochemistry V**

A study of the chemistry of living processes. The practical work is designed to illustrate the lectures and includes study of enzymic behaviour and metabolism. Topics covered include aspects of protein function, carbohydrate and lipid metabolism.

**PSC407 Biochemistry VI**

An extension of the course PSC406. Practical work includes methods and techniques of biochemistry in biological fields. Topics covered include photosynthesis, integration and control of metabolism and protein synthesis.

**PSP111 Biochemistry of Nutrients**

An advanced course in the theoretical and practical aspects of carbohydrate, fat, protein, vitamin and mineral metabolism; study of food analysis tables.

**PSA111 Biological Chemistry I**

A course introducing the basic biochemistry of major groups of biologically important compounds and systems. Topics include: biochemistry of sugars, fats and amino acids; biological catalysis; energetics of biological systems; and homeostasis in biological systems.

**PSA112 Biological Chemistry II**

A course of lectures and practical work dealing with basic elementary biochemistry. The course includes discussion of introductory protein chemistry, enzymology, respiration and electron transport, basic chemistry of carbohydrates and lipids, metabolism and protein biosynthesis.

**CHC351 Biological Chemistry III**

An introduction to the structure and shape of complex organic molecules of biological importance. This includes topics such as chain and ring forms of molecules; rotation; D and L terminology; structural, geometrical, optical isomerism. Carbohydrates: structure, shape, chemistry and uses of selected monosaccharides, disaccharides and polysaccharides.

A 45 hour laboratory programme complements the above theory course.

**PSB413 Biological Chemistry III**

A course designed for medical technologists as an introduction to a study of biological molecules and biological transformations at the molecular level with particular emphasis on cell structure and function, the chemistry of proteins, enzymology, energy production and utilization, the chemistry of carbohydrates and basic carbohydrate metabolism.

**PSB414 Biological Chemistry IV**

An extension of PSB413, considering further aspects of carbohydrate metabolism in mammals, the chemistry and metabolism of lipids, the basic chemistry and metabolism of porphyrins with emphasis on haemoglobin, the basic katabolism of amino acids, the chemistry and function of the nucleic acids, protein biosynthesis and the molecular bases of genetic mutation, the integration of metabolic schemes and the biochemistry of histological preparation and staining.

**CHC451 Biological Chemistry IV**

Structure, shape, chemistry and functions of triglycerides, phospholipids, steroids, terpenes and plant pigments. The structure, shape, chemistry and properties of amino acids, peptides and proteins. Biochemical basis of genetics, including the shape, structure and chemistry of nucleic acids, and their role in protein biosynthesis.

A 45 hour laboratory programme complements the above theory course.

**PSC410 Biological Instrumentation III**

This subject deals with the foundations of instrumentation in physical chemistry. Simple analytical instruments are considered, together with the theoretical basis of their operation.

**PSC411 Biological Instrumentation IV**

This subject deals more comprehensively with the application of instrumentation to laboratory analytical routines encountered in biological work.

**BEC590 Biological Techniques V**

A subject with elective sub-units in the following areas: entomological techniques, museum techniques, plant and animal breeding, parasitology, animal care.

**BEC690 Biological Techniques VI**

A subject with elective sub-units in the following areas: laboratory management, plant care and propagation, biological photography and illustration, field studies, pollution technology.

**BEB100 Biology**

This subject of the B.App.Sc. (App.Ch.) course covers a similar syllabus to BEB101 and BEB105, but includes extra experimental and tutorial work.

**BEC100 Biology I**

This subject provides an integrated course in general biology, based on the Biological Sciences Curriculum Study and emphasising an experimental approach to understanding science.

**BEC200 Biology II**

A course in general biology with the emphasis on human ecology in which the role of man in the biosphere is explored and discussed with reference to basic ecology and human value systems.

**BEC302 Biology III**

A course in general biology adapted from the Biological Sciences Curriculum Study emphasising an experimental approach to the solution of biological problems. This subject is a prescribed elective for the Certificate in Chemistry.

**BEC402 Biology IV**

A broad course in human ecology in which the role of man in the biosphere is explored and discussed with reference to basic ecology and human value systems. This subject is a prescribed elective for the Certificate in Chemistry.

**PHB613 Biophysics**

A course dealing with the biophysics of selected biological systems (e.g. electrical transmission systems, amplifiers, mechanical systems, molecular behaviour in fields) and instrumentation for inter-cellular and inter-organ measurements (micro-electronics, transducers, etc).

**BEB656 Biosphere and Conservation**

Analysis of contributing processes to stability of the biosphere, constituents of the biosphere, impact of human culture on these and the problems that must be faced in conservation of the biosphere and maintenance of a suitable human habitat.

**ARS101 Building Construction**

The characteristics of construction materials and principles used in building; interpretation of building plans and drawings.

**ARS102 Building Services**

An introduction into the design, performance and testing of building services, such as ventilation, air conditioning, drainage and plumbing, heating, lighting, electrical installations and incineration.

**ARS103 Building Surveying**

The evaluation and surveying of buildings, building plans and specifications to ensure conformity with relevant policies, by-laws, codes, ordinances and acts, and consistency with community needs, health requirements and safety standards.

**MAB301 Calculus and Analysis A**

Differentiation with applications; Analytical geometry of the conics; Complex numbers, Argand diagram, de Moivre's theorem, Integral calculus with applications.

**MAB302 Calculus and Analysis B**

Basic properties of the real number system; functions and continuity; differentiability; Rolle, first mean-value and Taylor theorems; Riemann integration; fundamental theorem of calculus; infinite series.

**BEB101 Cell Biology**

The subject introduces the biology of the cell as the relationship between structure and function. Physico-chemical principles basic to life at the cellular level are emphasised although actual chemistry is kept to a minimum. This provides a frame work for more advanced courses and underscores the relevance of the physical sciences to contemporary biology.

**PHC451 Certificate Physics I**

Basic measurement in physics, mechanics, gravitation, geometrical and physical optics. The course also includes laboratory work.

**PHC452 Certificate Physics II**

Heat, kinetic theory, static and current electricity, magnetic fields, electromagnetic waves, elementary quantum principles and the atomic nucleus. The course also includes laboratory work.

**CHB320 Chemical Process Principles**

A one semester course of lectures and practice covering an introduction to chemical processing, chemical process calculations and chemical process industries.

**CHB520 Chemical Technology V**

Fluid mechanics. Transportation of fluids. Measurement of fluid flow. Heat transfer and heat transfer operations. Particle mechanics. Mechanical operations. Mass transfer and mass transfer operations. Introduction to automatic process control. Chemical plant economics. Industrial toxicology. Industrial safety. Process plant administration.

**CHB620 Chemical Technology VI**

Applied chemical kinetics and process engineering design. Industrial chemistry (including selected unit processes) and technology (food, minerals, energy). Technological economics. Systems. Resources Technology. Environmental chemistry and technology. Technology assessment.

**CHB621 Chemical Technology VI**

A course in advanced aspects of chemical technology. Topics include industrial chemistry (including selected unit processes) and technology (food, minerals energy); applied chemical kinetics and process engineering design; technological economics; resources technology; environmental chemistry and technology.

**CHB141 Chemistry I**

A course designed (together with CHB241) for non-continuing students in Chemistry.

- (a) Inorganic Chemistry: a course covering modern atomic theory, electronic configuration of the elements, covalent bonding of simple molecules.
- (b) Physical Chemistry: theory as for CHB170 with some deletions.
- (c) Organic Chemistry: the chemistry of aliphatic and aromatic compounds.
- (d) Laboratory: a laboratory course designed to complement the above theory.

**CHB142 Chemistry I**

This is an introductory course in chemistry with emphasis placed on applications to biological systems. It is primarily designed for students intending to proceed to the degree of Bachelor of Applied Science in Medical Laboratory Technology.

- (a) Inorganic Chemistry: a course covering modern atomic theory, electronic configuration of the elements, covalent bonding of simple molecules.
- (b) Organic Chemistry: topics include reactions of the carbon-hydrogen bond, carbon-halogen bond, hydroxyl group, ethers, thiols and thio-ethers, the carbon-carbon double bond and aromatic substitutions.
- (c) Physical Chemistry: topics treated include chemical equilibrium; equilibria in electrolyte solutions, properties of liquids, phase rule, liquid mixtures and colligative properties.

A laboratory course of 45 hours is designed to complement the theory.

**CHB241 Chemistry II**

- (a) Inorganic Chemistry: topics include classification and properties of the elements, shapes of molecules, bonding in solids and co-ordination chemistry.
- (b) Physical Chemistry: theory as for CHB270 with some deletions.
- (c) Organic Chemistry: continuing study of aliphatic and aromatic compounds.
- (d) Laboratory: a laboratory course designed to complement the above theory.

For students intending to pursue the Bachelor of Applied Science (Chemistry Strand) course in third semester, a reading list for further study will be recommended at the end of the course.



**CHB242 Chemistry II**

This is the second stage in a course in the fundamental principles of chemistry with emphasis placed on biological systems.

- (a) Inorganic Chemistry: topics include classification and properties of the elements, shapes of molecules, bonding in solids and coordination chemistry.
- (b) Organic Chemistry: a course including the reactions of amino compounds, aldehydes, ketones, carbohydrates, the acyl group (carboxylic acids and derivatives), carbon-carbon triple bond, carbon-nitrogen triple bond, amino-acids and proteins, chemical structure, biological activity, and colour in organic compounds.
- (c) Physical Chemistry: topics treated include the gas laws for ideal and non-ideal systems, first law of thermodynamics and thermochemistry, galvanic cells including applications to the determination of pH and potentiometric titrations, and colloids.

A laboratory course of 45 hours is designed to complement the theory.

**CHB343 Chemistry for Geologists III**

A course in the theory and practice of instrumental and other methods of rock and mineral analysis.

**CHB443 Chemistry for Geologists IV**

Chemistry relevant to the understanding of crystallization from melts and metamorphic reactions. Organic chemistry of coal and petroleum. Further practice in analysis of rocks and minerals.

**PSD121 Chiropody I****PSD122 Chiropody II****PSD421 Chiropody III****PSD422 Chiropody IV****PSD721 Chiropody V****PSD722 Chiropody VI**

Clinical teaching in practical chiropody extends throughout the course. Practical training is given in the management of a wide range of cases of increasing difficulty, these being representative of the whole field of practice in which skills must be at a high level in diagnosis, operating skill, therapeutic procedures and chiropodial appliances. Students are required to undertake special projects and graduates to submit a thesis of 8,000 words on a topic related to their clinical practice.

**BEB331 Classical and Applied Genetics**

This course is designed to give students an understanding of Mendelian, bacterial and biochemical genetics. Emphasis is placed upon critical experiments in the development of the subject and the implication of the theory in animal and plant breeding. Appropriate excursions are included.

**MAB635 Classical Theoretical Mechanics**

Kinematics of a particle; Newton's laws of motion; dynamics of a particle in one and two dimensions; work, power and energy; linear and angular momentum; impulsive motion; statics of a particle and of a rigid body.

**PSA452 Clinical Bacteriological Techniques III**

The techniques used in isolation and identification of bacteria important in human and animal infections; tests for the sensitivity of bacteria to antibiotics; quality control of bacteriological media; techniques of importance in public health microbiology.

**PSA471 Clinical Biochemical Techniques III**

A study of the basic chemical procedures used in biochemical laboratories with emphasis on technique and accuracy. Topics include tests of renal, pancreatic, hepatic and gastric functions, and the estimations of serum proteins and lipids.

**PSA472 Clinical Biochemical Techniques IV**

A study of more complex techniques used in clinical biochemical laboratories, including enzyme assays, estimations of electrolytes, blood gases, drugs, vitamins and hormones. Auto analytical techniques and quality control are also treated.

**PSB718 Clinical Biochemistry V**

This course introduces the study of chemical aspects of human life in health and illness and discusses the application of chemical laboratory methods to diagnosis, control of treatment and prevention of disease. Topics include kidney, pancreas, and liver functions, and the metabolism of lipids and proteins.

**PSB719 Clinical Biochemistry VI**

This course further develops clinical biochemistry with emphasis on enzymes, electrolytes, blood gases, drugs, vitamins, gastric function, function of the thyroid and adrenal gland, autoanalyses and quality control.

**PSB738 Clinical Immunology**

A study of the application of immunological principles including the theoretical and practical aspects of blood group serology. Topics include blood group systems; the selection of blood for transfusion; antenatal serology; immunoglobulinopathies; tissue typing; and laboratory tests for syphilis, autoimmune disease, pregnancy and detection of Australian antigen.

**PSD419 Clinical Optometry III**

Application of the theory of PSD411 to human beings. The aim is for students to acquire knowledge of the classical concepts of human visual states.

**PSD420 Clinical Optometry IV**

Application of the theory of PSD412 to human beings. The aim is for students to acquire knowledge of the classical concepts of human visual states.

**PSD731 Clinical Optometry V**

Application of the theory of PSD703 to human beings. The aim is for students to acquire knowledge of the variations from the classical concepts of human visual states.

**PSD732 Clinical Optometry VI**

The application of the theory of PSD704 to human beings. The aim is for students to acquire knowledge of variations from the classical concepts of human and visual states.

**PSP141 Clinical Physiology**

A comprehensive study of the functional applications of the development, structure and function of the gastro-intestinal tract and related organs; energy and work; interrelationships between foods, food additives and drugs.

**MAB954 Compiler Construction**

A course which deals with the techniques involved in the analysis of source language and the generation of efficient object code. Assembly techniques, syntax, one pass techniques, registers, storage, subroutines and functions, compiler languages.

**MAB604 Complex Variables**

Elementary functions,  $e^z$ ,  $\sin z$ ,  $\log z$  etc.; analytic functions, Cauchy-Riemann equations; integration; Cauchy's theorem, maximum modulus principle, Liouville's theorem, fundamental theorem of algebra; series, Taylor and Laurent series, classification of singularities; the residue theorem; contour integrals; analytic continuation; conformal mapping; boundary value problems; integral transforms.

**MAB652 Computer Organisation I**

This course introduces the methods by which logic modules are used to perform the functions of the central processor unit of a computer. Nondecimal number systems. Counters, comparitors, shift registers and parity checkers. Characteristics of magnetic cores. Characteristics of drum, disk and magnetic tape recording materials.

**MAB953 Computer Organisation II**

A course dealing with system organisation and architecture, augmented by design projects and the evaluation of designs by simulation. Input-output facilities. System organisation. Reliability. Description and simulation techniques. Data transmission.

**MAB606 Computers and Programming**

Computer structure and machine language; addressing techniques; representation of data; symbolic coding and assembly systems; selected programming techniques, macros, program segmentation and linkage; compiling techniques for high level languages; computer systems organisation, system and utility programs.

**MAB354 Computers and Programming**

A course to introduce the student to basic computer organisation, machine language programming and the use of assembly language. Computer structure and machine language, addressing techniques, digital representation of data, symbolic coding and assembly systems, selected programming techniques, macros, program segmentation and linkage, computer systems organisation, systems and utility programs.

**MAB262 Computing**

An introductory course in the use of digital computers for problem solving in the scientific sphere. The course includes a study of algorithm development, the specification of algorithms in a programming language and the concept of stored program execution. Special emphasis is placed on interactive programming and debugging techniques.

**PSD733 Contact Lens Studies**

A series of lectures, demonstrations, and practical sessions designed to equip the student with the theoretical background so that he may proceed to live subject experimentation and practice in PSD732. Lens history, development, and fitting procedures. The altered physiological state with appliances in situ. Patient selection and aftercare.

The course will include lectures on the optics of contact lenses, and the anatomy and physiology of relevant ocular structures.

**PSA493 Cytogenetics Techniques IV**

A course in Cytogenetics which includes the following topics:— fundamental concepts of genetics, types of specimens used in investigations, collection of specimens, detailed consideration of the methods used in chromosome analysis, an outline of human chromosomal abnormalities and their clinical manifestations.

**PSA463 Cytological Techniques III**

A course in which the preparation and examination of both normal and abnormal gynaecological material is studied.

**PSA464 Cytological Techniques IV**

A course of study in which the preparation and examination of non-gynaecological material such as urine, sputum, gastric and tracheal washings, CSF and pleural fluids is undertaken.

**MAB653 Data Structures**

An introduction to the data structures used in computer storage. Basic concepts of data. Linear lists and strings. Arrays and orthogonal lists. Tree structures. Storage systems and structures. Storage allocation and collection. Multilinked structures. Sorting techniques. Symbol tables and searching. Data structures in programming languages.

**PSD701 Dermatology**

The student is trained to observe the skin signs, appreciating both their local significance and their value as an indication of widespread disease.

**ESB113 Earth Science I**

An introductory course in selected aspects of earth science. Basic geological principles and theories; uniformitarianism, superposition, evolution, geologic time. Origin and general constitution of the earth and the solar system. Physical and chemical properties of the earth. The concepts of isostasy, plate tectonics, orogeny, epeirogeny, eustatic adjustment, convection, heat flow, etc. Crystallography; unit cells, crystal systems and classes, symmetry elements, crystallographic laws, habit, parameters, indices, twinning, etc. Mineralogy; chemical and morphological classification of minerals, detailed study of various silicate groups. The structure, textures, mineralogies, modes of occurrence, origins, and classification of igneous, sedimentary, and metamorphic rocks. Structural geology; the origin, morphology, geometrical aspects, and recognition of faults, joints, folds, unconformities, and related structures. Stereographic and orthographic solution of geological problems; other methods of data presentation. Economic geology; processes in the formation and accumulation of metalliferous and non-metalliferous economic materials. Field excursions as required.

**ESB213 Earth Science II**

A course in selected aspects of earth science. Physical geology; weathering, erosional processes. Geomorphology; topographic features resulting from erosion by marine, fluvial, glacial and aeolian agencies. Topographic maps and the interpretation of landform. Pedology; factors of soil formation, soil components, chemical activity, climate and leaching, erosion, solonisation, study of the major soil groups. Hydrology; sources of groundwater, its storage, movement, exploitation and utilisation. Palaeontology; formation and preservation of fossils, the use of fossils, the principles of biological classification and nomenclature, evolutionary theory. Systematic palaeontology; classification, morphology, evolution and ecology of the major phyla within the plant and animal kingdoms. Stratigraphy; stratigraphic principles, sub-division of strata, concept of facies, geological time scale, stratigraphy of Queensland and its relationships to the stratigraphy of Australia as a whole. Field excursions as required.

**ESB311 Earth Science III**

An introduction to geologic materials. Topics discussed include an outline of basic geological principles and theories; the origin and constitution of the earth; earth processes; introductory mineralogy; the origins, modes of occurrence, variations, and classifications of igneous, sedimentary, and metamorphic rocks.

**ESB411 Earth Science IV**

An introduction to geologic processes. Topics discussed include structural geology, elementary hydrology, weathering processes, soils, erosion, geomorphology, the principles of palaeontology and historical geology, introductory economic geology.

**ESB511 Earth Science V**

Optical mineralogy and the use of the petrographic microscope. A more detailed study of igneous and metamorphic rocks and processes.

**ESB611 Earth Science VI**

Processes of formation of sedimentary rocks; petrology of sandstones and limestones. Palaeontological principles; evolutionary theory. Systematic palaeontology; classification morphology, evolution, and ecology of the major invertebrate phyla. An outline of the stratigraphy of Australia and its relation to the tectonic evolution of the Australian continent.

**ESB373 Economic Analysis for Geologists**

Local and overseas investment; world mineral commodity markets; mineral development financing; taxation; mineral statistics; mineral industries studies.

**ESB363 Economic Geology III**

A systematic review of metalliferous and non-metalliferous economic materials covering aspects of mineralogy, genesis, use and value, mining beneficiation, major overseas deposits, Australian deposits. Laboratory techniques for testing and evaluating economic materials. Chemical mineralogy. Froth flotation.

**ESB510 Economic Geology V**

Geochemical evolution of the earth. Theoretical and practical aspects of the study of minerals in polished section. Fundamental processes of ore formation. Applied geochemical analysis. Norm calculations.

**ESB513 Economic Geology V**

Detailed studies of the genesis, discovery, exploitation, and usage of economic materials. Clay technology.

**ESB610 Economic Geology VI**

Magnetic geochemistry; fate of major and minor elements in magnetic processes, particularly differentiation. Phase relationships. Geochemistry of sedimentary rocks. Sedimentary elemental differentiation. Eh/pH factors in sedimentation. Geochemical/geological sampling; type of sample randomisation, replicability, grid set-ups, techniques of taking samples, types of averages and their significance. Reserve calculations and classification. Prospecting geochemistry.

**BEB651 Ecosystems**

To establish an understanding of the reactions between organisms and their environment (including other organisms). World biomes are described. The concept of ecosystem management is introduced with reference to local examples.

**MAB931 Elasticity**

Cartesian tensors; analysis of strain; analysis of motion; analysis of stress; fundamental axioms of continua; constitutive equations; classical elasticity; rubber elasticity.

**PSA442 Electrographic Techniques**

Lectures and practical work involving the diagnostic and monitoring electronic devices which are used in electroencephalography and the investigation of medical parameters for the functional evaluation of cardio-pulmonary, circulatory and renal diseases.

**PHB504 Electronics**

A course of lectures and laboratory work on the theory and application of solid state devices. Includes diodes, transistors, FET, integrated circuits (analogue and digital), RF circuits, pulse circuits and digital circuits.

**PSA466 Electron Micrographic Techniques**

The course is designed to give the student an introduction to the principles of specimen preparation for conventional transmission, scanning transmission, and topographical scanning electron microscopy. The procedures covered will include shadowing, negative staining, critical point drying and ultramicrotomy. Photographic procedures associated with production of the electron micrographs will also be covered.

**PHA103 Elements of Laboratory Management**

A course dealing with principles of laboratory management, work flow, budgeting, selection of staff, handling of staff problems, superannuation and industrial law.

**ESB653 Engineering Geology**

The application of geology to engineering practice. Introductory soil mechanics and rock mechanics. An introduction to design. Foundation and materials studies. Site analysis. Case history studies.

**BEB109 Experimental Biology**

This unit emphasises investigations of problems in selected areas of biology. The student is encouraged to be creative in approaching the experimental work, and is expected to design and execute experiments in attempting to solve problems posed. Further extension of the programme as necessary allows for skill and understanding to be applied to problems existing at the periphery of each experimental area. A basic background in biology is an advantage for this unit, but not essential.

**MAB258 Experimental Design**

A course introducing the chi-square and F distributions; non-parametric statistics; one-way and two-way analysis of variance; latin square and balanced incomplete block designs; multiple and curvilinear regression.

**PHB307 Experimental Electronics**

Electrical safety, electrical components and their function (transistors, diodes, etc), component fixture (clips, soldering, etc.), test equipment (multimeters, CRO, bridges, etc.). Project — construct and test simple electronic circuit.

**PHB106 Experimental Physics I**

A course of laboratory work including introductory experimental methods and skills, and laboratory experiments.

**PHB206 Experimental Physics II**

A course of laboratory work including both set experiments and short experimental investigations.

**PHB306 Experimental Physics III**

A course in practical work designed to train students in the method and details of experimentation. Contains a study of experimental method, advanced experimental skills and laboratory experiments.

**PHB406 Experimental Physics IV**

A course of practical work consisting of some set experiments, but mainly a supervised experimental project.

**PHB506 Experimental Physics V**

Laboratory and field work in applied physics with emphasis on open ended experiments with modern equipment.

**PHB606 Experimental Physics VI**

A course of experimental physics consisting mainly of a supervised project. Students will also be required to present seminars on their project and on approved topics of their choice.

**ESB533 Exploration Geochemistry V**

Techniques for establishing fundamental regional geochemical patterns. The application of geochemistry to the discovery of economic ore deposits and to environmental problems. The study of case histories. A report of a field project embracing geochemical exploration techniques.

**ESB633 Exploration Geophysics VI**

The reduction and manipulation of geophysical data, and their interpretation in geological terms. Also included are field data acquisition and laboratory analog modelling.

**ESB383 Field Excursions III**

A series of weekend and extended (5 day or more) excursions to selected areas of interest. It will be necessary for students to submit assignments, as required, based on these excursions.

**ESB483 Field Excursions IV**

A series of week-end and extended (5 days or more) excursions to selected areas of interest. It will be necessary for students to submit assignments, as required, based on these excursions.



**ESB573 Field Excursions V**

A series of week-end and extended (5 days or more) excursions to selected areas of interest. It will be necessary for students to submit assignments, as required, based on these excursions.

**ESB673 Field Excursions VI**

A series of week-end and extended (5 days or more) excursions to selected areas of interest. It will be necessary for students to submit assignments, as required, based on these excursions.

**BEB390 Field Methodology I**

Computer programming, population sampling, methods, introduction to surveying.

**BEB490 Field Methodology II**

Environmental data collection, aerial photography, photo interpretation, collection and preservation of specimens.

**ESB553 Field Techniques**

Methods of recording, analysing, and presenting field data. Techniques for detailed mapping, reconnaissance and traverse methods, geobotany, sampling procedure. Preparation of photogeological maps and reports.

**MAB938 Fluid Dynamics**

Mathematical models of fluid motion; dimensional analysis and similitude; incompressible potential flow; introduction to boundary layer equations.

**PSP143 Food Promotion and Public Health Services**

The subject is divided into two areas.

Firstly, a course examining some fundamental considerations in setting up a promotional programme. Specific areas of penetration will be buyer motivation and perception; brand names and brand promotion, market segmentation and reseller support.

Secondly, the availability, organization, appraisal areas of responsibility of community health services.

**PSP102 Food Technology and Production**

The essentials of canning, freezing, drying, storage of food; natural and artificial ripening of fruits and vegetables.; Australian food production and trade; world food production and problems.

**PSD425 Fundamentals of Visual Science III**

A study of the eye and the visual processes relating pure optics to basic physiology. All forms of ocular image formation. The schematic eye. The reduced eye. Ocular performance. The compensation for aberrations. Physiological departures from normality of the ocular systems. Focussing and fixating adjustment of the ocular system. Light sense. Form sense.

**PSD426 Fundamentals of Visual Science IV**

A study of the eye and the visual processes including the psychology of the visual process. The visual functions of man. Colour sense. Laws relating visual sensations to the initial stimulus and resultant perception. Visual phenomena from retinal stimulation. Monocular and binocular vision. Spatial localisation.

**PSB427 General Anatomy**

A course dealing with the gross anatomy and microscopic structure of the human body. Consideration is given to the structure of cells, tissues and organ systems.

**PSD129 General Psychology I**

The course covers a general introduction to the social determinants of behaviour. The course deals with the early social behaviours in the developmental stage and traces the processes of socialisation that occur throughout life.

Reference is made to pressures to conformity and specific culture factors which influence behaviour.

**PSD130 General Psychology II**

The course covers two areas. The first is perception and psychophysics. Specific reference is made to experimental and measurement factors. The second area is concerned with general psychological adjustment and adaptation with specific reference being made to the observation and measurement of individual differences.

**ESB333 Geochemistry III**

The general distribution of the elements and their associations. Geochemical mobility within the outer crust, primary and secondary dispersions. Recognition and interpretation of geochemical anomalies by statistical and graphical methods. Techniques of sampling.

**ESB453 Geochemistry IV**

Techniques of the rationalisation and plotting of geochemical data, preparation of geochemical maps and reports.

**SVA155 Geographical Studies**

Regional differentiation as seen in climate, topography, soils, vegetation, and their influences on population growth and distribution. Man's adaptation to the land.

**ESB210 Geology**

Outline of basic geological principles and theories. Origin and constitution of the earth. Global tectonics. Geologic time. Introductory mineralogy and petrology. Fundamental philosophical principles. Structural geology; attitude of strata, joints, faults, and folds. Geomorphology; weathering processes, soils; marine, river, and wind erosion, glaciation. Historical geology; outline of the geological history of Queensland. Introductory economic geology.

**ESC310 Geology III**

An introduction to geologic materials, emphasising chemical concepts and processes. Aspects studied include the origin and constitution of the earth; introductory mineralogy; igneous, sedimentary, and metamorphic petrology.

**ESC410 Geology IV**

An introduction to geological processes including a study of physical and structural geology, geomorphology, stratigraphy, and economic geology.

**ESB433 Geophysics IV**

An introduction to the theory of exploration geophysics. Methods studied include gravity, magnetics, radiometric, well logging, seismic refraction and reflection, electrical resistivity, induced polarisation and electromagnetics.

**PSA491 Haematological Techniques III**

In the course principles and techniques of the basic haematological tests are discussed. Topics include all counts (manual and automated) haemoglobin estimation, ESR, reticulocyte count and preparation, staining and estimation of normal blood films. The importance of quality control is also stressed.

**PSA492 Haematological Techniques IV**

This is an extension of Haematology I. This course deals with the examination of abnormal blood films and a brief outline of the aetiology of the blood disorders, principles and techniques used in screening procedures used in haemostasis, the investigation of haemolytic anaemics, the use of radio isotopic equipment, microbiological assays. Commonly used cytochemical techniques are also included.

**PSB448 Haematology III**

A course in the theoretical and practical aspects of techniques basic to haematology.

**PSB726 Haematology V**

A course of study on the origin and development of blood cells, basic haematological techniques, the application of automation and quality control to haematological techniques, haemocytochemistry, and the general principles used in the laboratory evaluation of anaemia.

**PSB727 Haematology VI**

A course of study involving the laboratory investigation of the diseases of the blood and blood forming organs. Topics include the anaemia, haemoglobinopathies, leukaemias and related conditions, bleeding disorders, paediatric and geriatric haematology.

**PSA131 Health Surveying I**

An introduction to health surveying. The role of the health surveyor in the community, his responsibility under the Health Act and its regulations.

**PSA132 Health Surveying II**

An analytical approach to the appearance and accumulation of toxic and undesirable products which affect man and his environment. The human pharmacology of such substances. The disposal of industrial wastes and refuse; the fate of fertilizers and pesticides. Food additives and labelling of food. Methods of control in the field, collection of samples for analysis, interpretation of laboratory data and of standard acceptable levels.

**PSA431 Health Surveying III**

An integrated unit comprising Health Surveying IIIA (PSA433) and Health Surveying IIIB (PSA434).

**PSA433 Health Surveying IIIA**

Public health studies; the spread of disease in the community; introduction to epidemiology; the zoonoses. Characteristics of microorganisms commonly infecting man. Prophylactic and chemotherapeutic measures.

**PSA434 Health Surveying IIIB**

Sanitary measures used in the control of disease; disposal of night soil, sewage treatment; treatment of town water supplies; operation of swimming pools; food and food handling. Introduction to entomology; insect vectors and insect control. Rodents and their control.

**PSA432 Health Surveying IV**

An integrated unit comprising Health Surveying IVA (PSA435) and Health Surveying IVB (PSA436).

**PSA435 Health Surveying IVA**

Control of community health problems by education and inspection. Nutrition and malnutrition in the community, the physiological and social effects of alcohol and drugs of abuse. Poisons and drugs permitted in the community, their pharmacology and restrictions on their distribution, sale, storage, and usage; the control of lead concentrations and their exposure to groups in the community.

**PSA436 Health Surveying IVB**

Industrial health hazards arising from employment; industrial noise. Health education programmes for particular groups, such as school children. An integrating study of the Health Act as it affects the health surveyor with case studies to illustrate his professional responsibilities to the community, the Director—General of Health, and the local authority.

**PSB791 Histochemistry**

A study of the theoretical and practical basis of the histochemistry of proteins, carbohydrates, lipids, enzymes, applied proteins, and micro-substances as well as the chemical and physical basis of the Remanowsky stains, ultramicroscopy, microspectrophotometric analysis, and fluorescence methods of identification. The practical component provides experience in histochemical analysis.

**PSA461 Histological Techniques III**

A course dealing with the methods employed for the preparation of cells, tissues and organs prior to their examination by microscopy. Topics include fixation, tissue processing, microtomy and introduction to staining.

**PSA462 Histological Techniques IV**

An advanced course dealing with the preparation of cells, tissues and organs for microscopic examination. The emphasis will be placed on the problems associated with the techniques. Topics include fluorescent microscopy, demonstration of carbohydrates, pigments, nervous tissues and microorganisms.

**PSC601 Histological Techniques V**

A course on the fixation, preparation and interpretation of histological material of animal origin. Relevant instruments, including the compound microscope are studied.

**BEC621 Histological Techniques VI**

Preservation and preparation of plant tissues for microscopy, electron microscopy or macroscopic observation, with attention to relevant instrumentation.

**PSB449 Histotechnology III**

A course in the theoretical and practical aspects of techniques basic to histotechnology.

**PSB790 Histotechnology V**

A study of the theoretical and practical aspects of the preparation of cells, tissues and organs for microscopical examination. The course emphasises the chemical and physical basis of histotechnology and provides experience in a range of histological procedures.

**PHA101 Hospital Practice & Care of Patient**

An introductory unit emphasizing the importance of patients and their care, the care and preparation of patients, first aid, the principles of infection, sterilization and asepsis are discussed at an elementary level.

**PSA141 Human Anatomy & Physiology I**

An introductory course, theoretical and practical, in which the study of the cell is considered; cell structure and processes including heredity, and cell development exchange between the cell and its environment, excitable tissues. Gross anatomy.

**PSA142 Human Anatomy and Physiology II**

A study of anatomy and systematic physiology comprising the control, cardiovascular, respiratory, urinary and digestive systems. Practical work is integrated with lecture topics.

**BEB105 Human Ecology**

A comprehensive study of human ecology and of the interplay between biological and cultural processes; the basis for concern about environmental change; the nature and extent of pollution, and its abatement; behaviour and role of individuals, communities and institutions; involvement of value systems, economics and law; prospects for the future.

**PSB101 Human Genetics & Embryology**

The principles of pre-natal human developmental patterns, and the application of modern genetic theory to the study of inherited characteristics, are discussed.

**PSA441 Human Physiology**

A continuation of the subject matter of PSA142 considering general metabolism and nutrition, the control system in some depth, adaptations to environmental stress, defence mechanisms. Associated practical work.

**PSB435 Human Physiology**

This theoretical and practical course provides a comprehensive survey of the functions of cells, tissues, organs, and systems in the human body. Stress is placed on fundamental physiological principles.

**PSD441 Human Physiology**

A study of the functions and inter-relationships between cells, tissues, organs and systems of the human body. Topics considered include the physiology of the cell, nerve and muscle, blood and cardiovascular system, respiration, digestion and elementary nutrition, excretion, endocrine and nervous systems, man's adaptation to his environment.

**PSB436 Human Physiology A**

A study of systematic physiology covering basic areas in theoretical and experimental aspects. Topics considered include: the physiology of the cell, tissues and organs, blood and body fluids, cardiovascular, and endocrine systems.

**PSB437 Human Physiology B**

A continuing study of systematic physiology surveying alimentary, respiratory, renal, and nervous systems. Basic nutrition. Adaptation of environmental stress.

**ESB443 Hydrology IV**

Groundwater hydrology, emphasising the theoretical aspects of the subject. Consideration is given to basic equations of flow, the properties of water-bearing materials; the performance of pumping bores in steady-state and unsteady states, and in confined and unconfined aquifers.

**ESB523 Hydrology V**

A continuation of the subject matter of ESB433 Hydrology IV, with the emphasis on practical aspects. The analysis of pumping tests made under a wide variety of geological conditions is studied, together with flow net analysis and the prediction of safe long-term pumping rates.

**PSA455 Immunological Techniques IV**

The techniques of the antigen-antibody reactions used in diagnostic and laboratory procedures, agglutination, precipitation, complement-fixation and immunofluorescence and, in particular, their application in the detection of pregnancy, microbial infections and autoimmune disease.

**CHB660 Industry Visits**

Visits to selected industries providing a basis for a study of the industries selected together with an appreciation of the role of the chemist in those industries.

**ACB397 Information Systems I**

A course introducing the concepts and objectives involved in the use of the computer as a management tool in organisations. Content covers basic analysis and design of data processing systems.

**ACB497 Information Systems II**

A continuation of ACB397 covering systems methodology, systems specification and systems design requirements.

**ACB597 Information Systems III**

A course containing the methodology of random access techniques, detailed system requirements for both batch and real time systems and data base management technology.

**ACB697 Information Systems IV**

A continuation of ACB597 containing in addition, computer management and operations control and control of systems projects.

**CHB130 Inorganic Chemistry I**

A theoretical course dealing with the modern views on the structure of the atom with particular reference to the electron configuration in relation to the periodic classification and reactivity of various elements. Topics include covalent bonding and shapes of molecules; ionic crystals and lattice energy; co-ordinate bonding and an introduction to co-ordination chemistry, including nomenclature, formation and some applications; a survey of the chemistry of typical elements.

**CHC130 Inorganic Chemistry I**

An introductory course in Inorganic Chemistry covering atomic theory, bonding and organisation of the elements according to electronic structure.

**CHC230 Inorganic Chemistry II**

A continuing introductory course in Inorganic Chemistry covering the periodic table, group chemistry and the chemistry of industrial processes.

**CHB330 Inorganic Chemistry III**

A course on co-ordination chemistry covering bonding, isomerism and nomenclature, aqueous chemistry, reactions, and magnetic behaviour of compounds of metals.

**CHB430 Inorganic Chemistry IV**

A course covering the biological applications of co-ordination chemistry and an introduction to structural chemistry of solids, especially metals and their binary compounds, extraction of metals, the chemistry of selected inorganic materials.

**CHB530 Inorganic Chemistry V**

A course in theoretical inorganic chemistry, in organometallic chemistry, in x-ray diffractometry and vibrational spectroscopy.

**CHB630 Inorganic Chemistry VI**

A course covering the chemistry of selected non-metals; lanthanides and actinides; chemistry of metals, alloys, semiconductors, insulators and defect solids.

**PSA121 Instrumentation IIA**

A course of lectures and practical work on the principles, care and effective use of balances, colorimeters, spectrophotometers, pH meters, and microscopes.

**PSA122 Instrumentation IIB**

A course of lectures and practical work dealing with the principles and techniques of centrifugation including ultracentrifugation, dialysis, chromatography, electrophoresis, freeze drying and temperature regulation.

**PHA211 Instrumentation IIC**

A course dealing with the elementary physical theory, construction, proper usage, maintenance and detection of faults in laboratory instruments including balances, colorimeters, spectrophotometers, pH meters, and heating apparatus.

**PHA212 Instrumentation IID**

A course dealing with the elementary physical theory, construction, proper usage, maintenance and detection of faults in clinical monitoring instruments including cardiac monitoring devices, etc.

**MNA072 & MNA041 Introduction to Business**

The course will introduce to students two important fields, management and economics, as they affect the profession of optometry. It will discuss planning, organizing, staffing, controlling, and budgeting. It will deal with economic concepts that are relevant to a profession, such as the economic flow concept, the role of the government, and the effects of monetary and fiscal policies, and will show the financial methods used to set up and run a professional practice.

**MAB353 Introduction to Computer Hardware**

A course designed to provide the necessary background for subsequent hardware topics. Basic set algebra. Boolean algebra and propositional logic. Circuit theory. Semi-conductor physics. Circuitry.



**and (Part) – Introductory Electronics**

This half-semester subject introduces the student to the theory and practice of electrical and electronic circuits. It includes DC and AC circuit analysis, physics of semiconductors, simple electronic amplifiers, integrated circuits and logic circuitry. Laboratory work is also included.

**MAB305 Introduction to Computing A**

The FORTRAN programming language; Elementary ALGOL programming, computer applications illustrating the role of the computer in modern business, scientific and industrial environments; use of remote terminals.

**MAB351 Introduction to Computing A**

A first course to provide the student with the basic knowledge and experience to use computers effectively in the solution of problems. An introduction to algorithms, programs and computers. Basic concepts of programming. Program structure. Programming and computing systems. Debugging and verification. Data representation. Special programming topics. Organisation and characteristics of computers. Analysis of numerical and non-numerical problems. Programming in FORTRAN and ALGOL. Survey of computers, languages, systems and applications.

**MAB306 Introduction to Computing B**

The COBOL programming language; the JEAN conversational language; use of non-standard peripheral equipment, magnetic tapes and discs, digital plotters; use of system supplied packages.

**ACB297 Introduction to Computing B**

A course covering basic aspects of business data processing. Programming in COBOL.

**PHA303 Introduction to Pathology**

An introductory unit in which aetiology and pathology of various systems are discussed.

**MAB260 Introduction to Programming**

An introduction to computers incorporating theory of computer design, the uses of computers in relevant areas of industry; together with an introductory course in FORTRAN and flow charting structured to enable the student to proceed with practical applications of computing in further course studies.

**PSA128 Introduction to Psychology**

Environmental background of man, the development of sensation and the relevant aspects of the theory of perception, learning concepts of personality, motivation, cognitive needs, intelligence, and abnormal personality.

**MAB636 Introductory Advanced Dynamics**

Motion of a particle in a plane, central orbits, motion under the inverse square law; motion of a system of particles; motion of a rigid body in two and three dimensions; generalised co-ordinates; Lagranges equations, small vibrations.

**PSD403 Introductory Medicine & Surgery, Pathology**

This is an integrated course in which general and special pathology is related to medicine and surgery. The principles of medicine with emphasis on those diseases manifested in the lower extremities, and heart, liver, kidney, vascular and nervous abnormalities; special attention is paid to upper motor and lower motor neurone disorders. General and local conditions of a surgical nature; indications and contra-indications for surgical intervention.

**MAB331 Introductory Vector Analysis**

Matrices, determinants, vector algebra, vector calculus, applications in analytical geometry, kinematics and statistics.

**PSB440 Laboratory Technology III**

A course dealing with the practical aspects of instrumental analysis in the clinical laboratory. While the purely theoretical aspects of a number of topics are dealt with in CHB312 from a chemical point of view, in this course the theoretical aspects covered deal with the physical principles embodied in the instruments. Emphasis is placed throughout on the effective use of the instruments. Topics include photometry, spectrophotometry, pH measurement, control of pH and autoanalysis.

**PSB441 Laboratory Technology IV**

This course deals with techniques encountered in the clinical laboratory. Topics include electrophoresis, chromatography (gas, adsorption, thin layer and ion exchange), gel filtration, radio-isotope techniques and aspects of microscopy. Emphasis is placed on the practical aspects of the maintenance of accuracy, precision and control in the clinical laboratory.

**SVA152 Land Use**

The history of land tenure in Australia and patterns of land occupation and usage. Rural and urban use of land and the effects of industrialization and population movement; the law in relation to land ownership and usage; the imposition of statutory controls.

**PSP131 Large Scale Feeding**

A practical course concerned with introducing the student to the practical applications in institutional feeding. Topics studied include modes of operation, types of equipment, food purchasing. Reference is made to various types of institutions and the subject is complementary to Principles of Catering.

**ESB473 Law for Geologists**

Mining, petroleum, and land laws; types of land tenure, especially mining leases.

**MAB310 Linear Algebra**

Vectors, vector spaces, spanning, linear dependence, bases, orthogonality, matrices, transposition, multiplication, linear transformations; determinants; inverse matrices, systems of linear equations; eigenvalues and eigenvectors; quadratic forms.

**MNB081 Management**

This course introduces the theory of organisational behaviour, human relations and management techniques. Function of management. Behaviour in an organisation. The supervisor and the work group.

**MNP053 Management**

The planning, organising, staffing, directing and controlling of an organisation.

**ARS105 Man and His Environment**

A broader consideration of man's responsibility to his environment in the latter 20th Century, including topics of natural resources, preservation of specific areas and structures; destruction and despoliation by man's pollutants; the economics of conservation and resource utilization.

**MNB091 Marketing**

A course introducing the concepts of marketing and the sales function. Marketing systems and the role of management. Marketing research. The sales function. Product planning. Sales forecasting.

**PHB607 Materials**

A course of 15 lectures and associated practical work on the diffusion processes in crystal lattices, point defect impurities, dislocations, elastic and plastic deformation of materials, and mechanical properties of materials.

**MAB955 Mathematical Methods**

Series, ordinary differential equations, functions of several variables, partial differential equations.

**MAB308 Mathematical Statistics I**

Basic statistics, histograms, permutations and combinations, distributions; sample and population; Event spaces; probability; mathematical expectation; linear regression and correlation; analysis of variance.

**MAB607 Mathematical Statistics IIA**

Distributions and their moments; sampling theory, estimation, confidence intervals, tests of hypothesis, applications of the  $t$ , chi-square and  $F$  distributions; quality control.

**MAB608 Mathematical Statistics IIB**

Theory of bivariate and multivariate probability distributions; moment generating function of distributions; Beta and Gamma distributions; design of experiments, two factor and three factor models; fixed random and mixed models; 2 factorial designs; multiple linear regression; curvilinear regression.

**MAB907 Mathematical Statistics IIIA:** Under review.

**MAB908 Mathematical Statistics IIIB:** Under review.

**MAB251 Mathematics I**

Complex numbers; determinants and matrices; inverse and hyperbolic functions; differentiation with practical applications; partial differentiation; numerical methods; integral calculus with applications.

**MAC151 Mathematics IA**

Revision and extension of fundamental arithmetic and algebraic concepts from Junior; graphs, their construction and uses; introduction to elementary co-ordinate geometry, differential and integral calculus.

**MAC152 Mathematics IB**

Revision and extension of fundamental arithmetic and algebraic concepts from Junior; probability, elementary statistical ideas, data organisation, distributions, random sampling, hypothesis testing, confidence limits.

**MAB160 Mathematics II**

Infinite sequence and series; applications of definite integration; approximate methods; analytic geometry; matrices and vectors; dynamics.

**MAC451 Mathematics IIA**

Binomial Theorem; Remainder Theorem; applications of differentiation to rates of change, rates of reaction, maxima and minima;  $e$  and natural logarithms, differentiation of simple exponential and logarithmic functions, growth and decay; definite integral; area under a curve, applications.

**MAC452 Mathematics IIB**

Variation; linear simultaneous equations; weighted averages; graphs, linear programming; elementary sampling theory,  $t$ -test; chi-squared goodness of fit and contingency tables; regression; control charts; analysis of variance.

**MAB459 Mathematics IIIP**

A course of calculus or several variables, vector analysis and ordinary differential equations with applications particularly relevant to physics.

**MAB460 Mathematics IVP**

A course of ordinary and partial differential equations and functions of a complex variable with applications particularly relevant to physics.

**MAB759 Mathematics VP**

A course of tensor analysis, analysis, further ordinary differential equations, Boolean algebra with applications particularly relevant to physics.

**MAB342 Mathematics of Finance**

Simple interest, compound interest – interest effective p.a. and convertible in monthly rests; annuities certain – including payments more frequently than interest is convertible; analysis of the annuity; sinking funds – capital redemption policies; valuation of securities – capital gains tax and income tax; determination of rates of interest; investment analysis; cost benefit analysis, risk analysis, capital budgeting.

**PSD111 Medical Chemistry**

A course introducing the basic and functional biochemistry of the major groups of compounds and systems of medical importance. Topics include: biochemistry of carbohydrates, lipids and proteins; enzymology; pH in biological systems; energy production and utilization; molecular basis of pharmacological activity; and compounds and reactions of pharmaceutical interest.

**PHA311 Medical Instrumentation III**

An extension of Instrumentation IIC dealing with the Physics of instrumentation, construction and detection by physical testing methods of faults or errors in laboratory instruments.

**PHA411 Medical Instrumentation IV**

An extension of Instrumentation IID dealing in greater detail with the principles, construction and testing of clinical monitoring devices.

**PHA111 Medical Physics**

A course dealing with measurement, kinematics, mechanics, properties of matter, heat, light, sound, electricity and their applications in the paramedical field. Special reference is made to the physics of radiation, x-rays, and to the interaction of ionizing radiation with matter.

**PHD121 Medical Physics**

A course for paramedical students dealing with measurement, kinematics, mechanics, properties of matter, heat, light, sound, electricity. Special reference is made to the physics of radiation, x-rays and to the interaction of ionizing radiation with matter; muscular work and energy; fluid flow and viscosity; elasticity.

**PSB747 Medical Technology V**

Students will select an approved project in a discipline within the field of medical technology and under the guidance of a supervisor conduct a literature survey and prepare a plan for experimental approach. Discussions and seminars on other topics are also undertaken.

**PSB748 Medical Technology VI**

The experimental work planned in PSB747 will be undertaken under a supervisor, the work recorded in a short thesis and presented at a seminar. Discussions and seminars on other topics are also undertaken.

**PSB745 Medical Technology VA****PSB746 Medical Technology VB****PSB749 Medical Technology VIA****PSB750 Medical Technology VIB**

Students will select an approved project in a discipline within the field of medical technology and under the guidance of a supervisor conduct a detailed literature survey, or undertake a programme of experimental work which will be recorded in a short thesis. The review, or the project will be presented at a Departmental Seminar.

**PSP142 Medicine**

Aetiology of disease. Brief description of treatment other than dietary of hypertension, cardiovascular, renal, gastro-intestinal and mental diseases, diabetes mellitus. Effect of nutrition on teeth, eyes, skin; general dental care and the effects of special diets on teeth.

**MAB941 Methods of Mathematical Economics**

The nature of mathematical economics; elements of model construction, demand and production functions; the equilibrium of the firm; aggregation; partial and general equilibrium models – static, continuous time, discrete time, special cyclic growth models; input-output analysis.

**MAB921 Methods of Mathematical Physics A**

Distributions and waves; parabolic equations and Fourier integrals; Laplace's equation and complex variables; general theory of eigenvalues and eigen-functions.

**MAB922 Methods of Mathematical Physics B**

Green's functions; equations of motion; cylindrical eigenfunctions; spherical eigenfunctions.

**PSD451 Microbiology**

An elementary course dealing with the identification, isolation and nutrition of bacteria and fungi as a background to their importance in the practice of chiropody. Principles and practice of sterilisation, disinfection and asepsis.

**PSA151 Microbiology I**

An introduction to the biology of bacteria, fungi, algae, protozoa and viruses, with consideration of structure, nutrition, reproduction, genetics, and classification systems.

**PSA152 Microbiology II**

The growth of microbial populations and methods of controlling growth; sterilisation and disinfection methods; enzymic activity of microorganisms; the identification of the microorganisms more important in public health; host parasite relationships and an introduction to immunity.

**PSB450 Microbiology III**

An introductory core unit of lectures and practical exercises in microbiology dealing with cytology, nutrition, genetics, control of microbial populations, and principles of taxonomy.

**PSC451 Microbiology III**

An introduction to microbiology dealing with the cytology, staining reactions, growth and death of bacteria and an introduction to immunology and mycology.

**PSB451 Microbiology IV**

An introductory unit in microbiology combining PSB450 and PSB452.

**PSC452 Microbiology IV**

An extension of PSC451 which includes elementary classification of microorganisms and methods used in isolation and identification of bacteria with particular reference to those organisms important to man and his environment.

**PSB452 Microbiology IVA**

An extension of the core course in microbiology (PSB450) which includes bacterial metabolism and biochemical reactions used in the identification of bacteria which cause disease in man, an introduction to immunology, an introduction to antibiotics and microbiological aspects of public health.

**PSB453 Microbiology IVB**

An extension of the core course in microbiology (PSB450) with emphasis on the applications of microbiology in industry. Topics studied include the enzymic capabilities of microorganisms and their applications in laboratory identification of bacteria and in industrial fermentations; an introduction to the microbiology of foods from the viewpoint of spoilage and public health problems; bacteriological control of water and sewage.

**PSB454 Microbiology IVC**

An extension of the core course in microbiology (PSB450) with emphasis on the applications of microbiology in industry, public health and the environment. Topics studied include the enzymic capability of microorganisms and its application in laboratory identification of bacteria and in degradation of industrial waste; water and sewage microbiology; soil microbiology and biodegradation; an introduction to food microbiology from the viewpoint of spoilage and public health problems.

**PSB753 Microbiology V**

A study of clinical bacteriology (80 semester hours) dealing with the characteristics, isolation and identification of bacteria implicated in human disease, the collection and examination of clinical specimens and antibiotic sensitivity tests on laboratory isolates. An introduction to virology (25 semester hours) includes characteristics of viruses commonly causing disease in man and methods used in laboratory diagnosis of human viral diseases.

**PSB754 Microbiology VI**

A study of parasitology (85 semester hours) directed towards the laboratory diagnosis of parasitic disease in man. It consists of a systematic study of identification, life history, incidence, modes of infection, epidemiology and control of the parasites of man. Emphasis is placed on parasites evident in Australia and on those most likely to penetrate the quarantine barrier. A study of clinical mycology (20 semester hours) including characterisation of fungi responsible for systemic and superficial infections in man.

**PSP151 Microbiology of Food**

An introduction to microbial spoilage of foods; preservation; fermentation; hygiene; microbiological standards.

**ESB613 Mineragraphy and Mining Geology**

Methods of mineral search, ore prediction, exploratory drilling and mining geology. The study of minerals in polished sections and the megascopic and microscopic examination of suites of ore and associated rocks.

**ESB313 Mineralogy**

An extension of the chemical and structural study of mineral groups and mineral paragenesis. The examination of additional mineral species and the use of advanced methods of mineral identification. The theory and methods of optical mineralogy; the study of minerals as grain mounts and thin sections.

**ESB310 Mineralogy III**

Introduction to crystallography and its application to mineral identification. Systematic treatment of mineral groups, covering aspects of structure, chemistry, properties, and uses.

**ESB410 Mineralogy IV**

Introduction to the theory and methods of optical mineralogy. Mineral relationships as shown by igneous, sedimentary, and metamorphic petrology. Introduction to geochemistry.

**ESC510 Mineralogy V**

Fundamentals of crystallography including crystal systems, forms, and symmetry. Stereographic projection of crystals. Systematic treatment of mineral groups, covering aspects of structure, chemistry, properties and uses. Introduction to ore genesis. Techniques of mineral identification.



**ESC610 Mineralogy VI**

Introduction to the theory and methods of optical mineralogy and mineragraphy, including a practical study of thin and polished sections. Prospecting geochemistry, sampling and reserve calculation. Elementary ore beneficiation. X-ray crystallography.

**MAB309 Modern Algebra**

Logic; set theory; operations; relations; functions; mathematical systems; groups; rings; integral domains; fields; polynomials over a field.

**MAB601 Multivariable Calculus A**

Real valued functions of several variables, Taylor series, maxima and minima, Lagrange multipliers, Jacobians, approximations, multiple integration; change of variables; Beta and Gamma functions; calculus of variations, extrema of an integral, the Euler equation.

**MAB602 Multivariable Calculus C**

Vectors in three dimensions; vector functions of a real variable; differential vector calculus, directional derivative, gradient, scalar and vector fields, divergence, curl, orthogonal curvilinear co-ordinates; integral vector calculus, line, surface and volume integrals, Green's theorem, the divergence theorem, Stokes' theorem.

**PHA503 Nuclear Medicine & Allied Techniques**

An introductory discussion on physics and instrumentation of nuclear medicine and allied techniques.

**MAB613 Numerical Analysis IA**

Computing aids; use of tables, calculating machines, computers; types of error and propagation of errors; solution of non-linear equations, acceleration of convergence; interpolation and approximation, numerical quadrature; numerical solution of ordinary differential equations.

**MAB655 Numerical Analysis IA**

A course in numerical methods developed and evaluated from the standpoint of efficiency, accuracy and suitability for high speed digital computing. Computing aids, errors, solution of non-linear equations, interpolation and approximation, numerical quadrature and numerical solutions of ordinary differential equations.

**MAB614 Numerical Analysis IB**

Systems of linear equations, solution by Gaussian elimination and by compact methods; row interchange; iterative methods of solution; matrix inversion; ill-conditioning; accuracy of solution; measure of work; eigenvalues and eigenvectors, power method, matrix deflation for subdominant roots and vectors.

**MAB656 Numerical Analysis IB**

An extension of MAB655 covering systems of linear equations and further experience with the eigenvalue problem.

**MAB913 Numerical Analysis II**

Interpolation and approximation; ordinary differential equations; partial differential equations; eigenvalue problem, symmetric matrices, Tridiagonalisation and Jacobi methods.

**MAB956 Numerical Analysis II**

Interpolation and approximation, solution of ordinary differential equations, partial differential equations, numerical integration and quadrature, linear systems, iterative methods for obtaining eigenvalues and eigenvectors.

**PSP104 Nutrition of Specific Groups**

Study of food groups and tables of dietary allowances; limitations for age and ethnic groups; assessment of nutritional status. Neonatal, pediatric, obstetric, surgical, convalescent and geriatric dietetics. Feeding of patients in intensive care and those suffering from burns.

**PSP103 Nutrition Within the Community**

An investigation into community agencies supplying food and imparting nutrition information; role of the dietitian in society; study of food and drug regulations.

**PSD465 Ocular Anatomy**

A study of the prenatal and postnatal development of the human eye, followed by a consideration of the macroscopic and microscopic structure. The surrounding regions of the eye and the central nervous system connections are also dealt with. Comparative ocular anatomy including the eyes of vertebrates and invertebrates forms part of the subject.

**PSD766 Ocular Pathology V**

A series of lectures designed to equip the student with the ability to recognise ocular pathology, and to take the appropriate action. The visual and non-visual symptomatology of eye disease. The ocular manifestations of general disease. Congenital, degenerative, traumatic, inflammatory, and neoplastic anomalies. The pediatric and geriatric eye.

**PSD767 Ocular Pathology VI**

A series of demonstrations verifying the subject matter of PSD766.

**PSD466 Ocular Physiology**

A study of the vegetative physiology and biochemistry of the eye, including sections on the vascular circulation, the intra-ocular fluid and its pressure, the humours of the eye, the lens, the sensitive and nourishing layers and the protective mechanism of the eye.

**MAB627 Operations Research IA**

A course intended to introduce students to the techniques used in achieving a systematic and rational approach to the problems involved in the control of systems. Formulating the problem, measurement of efficiency and utility, data availability and model construction and linear programming.

**MAB657 Operations Research IA**

A course intended to introduce students to the techniques used in achieving a systematic and rational approach to the problems involved in the control of systems. Formulating the problem, measurement of efficiency and utility, data availability and model construction and linear programming.

**MAB628 Operations Research IB**

An extension of MAB627 covering networks, reliability, replacement, maintenance, inventory and queues.

**MAB658 Operations Research IB**

An extension of MAB657 covering networks, reliability, replacement, maintenance, inventory and queues.

**MAB927 Operations Research IIA**

A course containing advanced linear programming, integer and non-linear programming, dynamic programming and search problems.

**MAB957 Operations Research IIA**

A course containing advanced linear programming, integer and non-linear programming, dynamic programming and search problems.

**MAB928 Operations Research IIB**

An extension of MAB927 containing simulation and Monte-Carlo methods, corporate modelling techniques, industrial scheduling, artificial intelligence and heuristic methods.

**MAB958 Operations Research IIB**

An extension of MAB957 containing simulation and Monte-Carlo methods, corporate modelling techniques, industrial scheduling, artificial intelligence and heuristic methods.

**PSD167 Ophthalmic Dispensing I**

A series of lectures and demonstrations to give the student an understanding of mechanical optics and optical appliances from the dispensing and manufacturing aspects.

**PSD168 Ophthalmic Dispensing II**

An extension of the theoretical knowledge of PSD167 leading to practical application.

**PSD468 Ophthalmic Dispensing III**

The time allotted for this subject will be spent in practical sessions enabling the student to acquire some vocational skill.

**PSD469 Ophthalmic Dispensing IV**

The time allotted for this subject will be spent in actual workshop practice in optometry clinic perfecting a vocational skill.

**PHD140 Optics I**

Geometrical optics is developed from first principles to give a broad treatment of mirrors, prisms, lenses, optical instruments, and photometry. Colour theory and measurement are also covered.

**PHD141 Optics II**

More difficult aspects of geometrical optics than those treated in PHD140 are covered. These include the effects of apertures, the monochromatic aberrations and the general theory of paraxial optical systems. Basic theory is applied to the effects of form and design of ophthalmic lenses, and contact lenses. Physical optics is studied also the amalgamation of physical and geometrical optics.

**CHB150 Organic Chemistry I**

A course in the fundamental principles of the chemistry of simple organic chemicals, together with their industrial and biological importance. A reaction mechanism/functional group approach is used to promote comprehension of the way in which reactions occur. Modern spectroscopic and chromatographic techniques are emphasised. Topics include reactions of the carbon-hydrogen bond, carbon-halogen bond, hydroxyl group, ethers, thiols and thioethers, amino group and the carbon-carbon double bond.

**CHC150, CHC151 Organic Chemistry I**

An introduction to the formulae, analysis, atomic and molecular structure of carbon compounds. Nomenclature, preparation, reactions and properties of alkanes, alkenes, alkynes, aromatic hydrocarbons, alkyl and aryl halides. A 45 hour laboratory program complements the theory course.

**CHB250 Organic Chemistry II**

A continuing course in the fundamental principles of the chemistry of simple organic molecules. Topics include the reactions of the carbon-oxygen double bond (aldehydes and ketones), the acyl group (carboxylic acids and derivatives), carbon-carbon triple bond, carbon-nitrogen triple bond, the aromatic nucleus; petroleum, petrochemicals and coal.

**CHC250, CHC251 Organic Chemistry II**

This course follows directly from CHC150 Organic Chemistry I. It deals with the nomenclature, preparation, reactions and properties of alcohols, phenols, ethers, aldehydes and ketones, acids and their functional derivatives, amines and diazonium salts.

A 45 hour laboratory program complements the theory course.

**CHB350 Organic Chemistry III**

A continuing course in the fundamental chemistry of more complex organic molecules together with their industrial and biological importance. Increasing use is made of modern spectrographic and chromatographic techniques. Topics include the reactions of polyfunctional compounds, stereochemistry and instrumental techniques in organic chemistry

**CHB351 Organic Chemistry III**

A course in fundamental aspects of chemistry of complex organic molecules. Multifunctional compounds, their stereochemistry and the use of spectroscopic techniques in structure determination are covered.

**CHC350 Organic Chemistry III**

A course in organic chemistry which assumes knowledge of fundamental principles. Covers stereochemistry, polyhydric alcohols, oils, fats, soaps and detergents, sugars (monosaccharides and disaccharides), polycyclic aromatics.

A 45 hour laboratory program complements the theory course.

**CHB450 Organic Chemistry IV**

A continuing course in the chemistry of more complex, organic molecules. Topics include, aromatic chemistry and aromaticity; heterocyclic, organometallic chemistry and organic chemical technology.

**CHB451 Organic Chemistry IV**

A continuing course in the chemistry of more complex organic molecules. Aspects of aromaticity, heterocyclic and organo-metallic compounds, together with the chemistry of organic industrial processes are covered.

A 24 hour laboratory program complements the theory course.

**CHC450 Organic Chemistry IV**

A course in organic chemistry which assumes knowledge of fundamental principles. Covers hydroxy- and amino-acids, proteins and peptides, poly-functional carbonyl compounds, chemistry of polymers.

A 45 hour laboratory program complements the theory course.

**CHB550 Organic Chemistry V**

A course of three sub-units of advanced chemistry in physical organic chemistry, polymer science and technology, and food process chemistry. The course includes units of laboratory work in each of these areas.

**CHC550 Organic Chemistry V**

A continuing course in organic chemistry which provides an introduction to heterocyclic chemistry, carbohydrates and polysaccharides.

A 30 hour laboratory program complements the theory course.

**CHB650 Organic Chemistry VI**

A course in advanced chemistry dealing with complex organic molecules of biological importance. The involvement of these molecules in biosynthetic, metabolic and reproductive processes are emphasised. Topics include: proteins, nucleic acids, nucleotides, vitamins, carbohydrates, alkaloids, terpenes, steroids, food and nutrition chemistry.

**CHB651 Organic Chemistry VI**

A course in the chemistry of complex organic molecules and their involvement in biosynthesis, metabolic and reproductive processes. Topics include proteins, nucleic acids, nucleotides, vitamins, carbohydrates, alkaloids, terpenes, steroids, food and nutritional chemistry.

**CHC650 Organic Chemistry VI**

A course consisting of a study of industrial processes selected from the following industrial areas: sugar processing, milk processing, oil fats and waxes; brewing; plastics; food preservation; petroleum.

A 30 hour laboratory program complements the theory course.

**PSA456 Parasitological Techniques III**

The accent in this course is on the techniques used by the parasitologist in the diagnosis of protozoan, helminth, and arthropod parasites of man. Brief mention is made of the parasites affecting domestic animals.

**ESB623 Petroleum Geology**

Drilling techniques applied to petroleum geology. Oil well logging: Geophysical methods, lithologic and drilling time logs. Sedimentary basin analysis in petroleum exploration; well log correlation, the use of regional geophysical surveys, preparation of different types of palaeogeographic maps from surface and sub-surface data. The recognition of specific types of petroleum traps from sub-surface data.

**ESB413 Petrology IV**

The principles and theories relating to the occurrence, genesis, and diversification of igneous rocks, with particular reference to the major igneous rock groups. A detailed study of metamorphism and metamorphic facies. Megascopic and microscopic examination of igneous and metamorphic rocks.

**ESB543 Petrology V**

Extension of the concepts studied in ESA413 Petrology IV with emphasis on the more exotic rock types. Assignments form an integral part of this unit. Practical work includes the study of selected rock suites.

**CHC380 Physical and Inorganic Chemistry III**

The topics in this stage of the continuing course in chemistry include: atomic and molecular spectra, ultraviolet and visible spectrophotometry; flame photometry, atomic absorption spectrophotometry; nephelometry and turbidimetry, chromatography including column thin layer and gas chromatography. The topics covered

are illustrated by experimentation with particular emphasis on the development of good instrumental techniques.

#### **CHB482 Physical and Inorganic Chemistry IV**

The co-ordination chemistry of biological systems, dyes and stains. Thermodynamics and kinetics of biological systems.

#### **CHC480 Physical and Inorganic Chemistry IV**

The topics in this stage of the continuing course include: galvanic cells; potentiometric titrations, electrodeposition and coulometry, surface chemistry and colloids. The topics are covered to a depth suitable for a technician in training for a position in a chemical laboratory. The topics are well illustrated by experimentation with emphasis on the development of good experimental techniques.

#### **CHC580 Physical and Inorganic Chemistry V**

The topics in this stage of the continuing course include: chemical kinetics; transference numbers; infrared spectroscopy; phase equilibria. The topics are treated at a depth suitable for a technician training for a position in a chemical laboratory. The principles and techniques are illustrated by a series of suitable laboratory experiments.

#### **CHC680 Physical and Inorganic Chemistry VI**

This is the final stage of a continuing course and the topics include the first law of thermodynamics and thermochemistry; the second law of thermodynamics and its application to chemical equilibrium and galvanic cells; radioactivity and nuclear chemistry and co-ordination chemistry.

#### **CHB170 Physical Chemistry I**

This is the first stage of a continuing course in the fundamental principles that underlie chemical transformations. The topics dealt with include: the kinetic theory of gases including compressibility factors and the Lennard-Jones potential; chemical equilibrium and reaction kinetics; thermochemistry and introductory thermodynamics.

#### **CHC170 Physical Chemistry I**

This is the first stage of a continuing course in the basic principles of chemistry. Some of the topics are: properties of gases, chemical equilibrium; equilibrium electrolyte solutions with emphasis on buffer solutions, indicators and titrations; solubility product. The topics are covered to a depth suitable for a technician in training for a position in a chemical laboratory. The principles are exemplified by experimentation in the laboratory.

#### **CHB270 Physical Chemistry II**

This subject continues the introduction to physical chemistry started in CHB170. The topics dealt with include: Equilibria in solutions of electrolytes – pH, buffers, solubility product, conductance, transport numbers; the properties of dilute solutions – Raoult's law and the phase rule; Galvanic cells – the standard hydrogen electrode, reversible electrodes, the Nernst equation.

**CHC270 Physical Chemistry II**

This is the second stage of a continuing course in the principles of chemistry. Among the topics covered are the following: laws of dilute solutions, heterogeneous equilibria, colligative properties; solution chemistry; properties of liquids; conductance of solutions; oxidation and reduction. The topics are covered to a depth suitable for a technician in training for a position in a chemical laboratory. The principles and techniques involved are well illustrated by laboratory experimentation.

**CHB370 Physical Chemistry III**

This subject introduces more advanced physical chemistry than CHB170 or CHB270 and covers the properties of matter; expands the treatment of reaction kinetics and deals with molecular spectroscopy and surface chemistry.

**CHB371 Physical Chemistry III**

This course expands the treatment of the properties of matter and of reaction kinetics given in CHB141 and CHB241 and introduces the subjects of molecular spectroscopy and surface chemistry. A 24 hour laboratory program complements the theory course.

**CHB470 Physical Chemistry IV**

The introduction to thermodynamics given in CHB270 is enlarged on and expanded in this course and the three laws are covered in detail. The phase rule is derived and discussed at length and illustrated with many practical applications.

**CHB471 Physical Chemistry IV**

In this course the subject of thermodynamics is treated in some detail. A detailed derivation and discussion of the phase rule is illustrated by numerous practical applications. The theory course is complemented by a 24 hour laboratory program.

**CHB570 Physical Chemistry V**

In this subject, more detailed thermodynamics are discussed with particular reference to partial molar quantities and the concept of statistical mechanics. Phase equilibria in application to such practical examples as petroleum reservoir fluids and the cement and ceramic industries are studied in detail. Electrochemistry and corrosion, with particular reference to practical applications are also studied in this subject.

**CHB670 Physical Chemistry VI**

This final undergraduate course in physical chemistry deals with reaction kinetics including chain and branched chain reactions, and experimental methods of determining fast reaction rates. Surface and colloid chemistry also taught deals with the stability of suspensions, foams and emulsions. Heterogeneous catalysis is discussed in regard to the catalytic activity of metals, metal oxides and semiconductors and to the kinetics and mechanism of typical reaction.



**CHB671 Physical Chemistry VI**

This course deals with reaction kinetics including solution kinetics, chain reactions and experimental methods of determining fast reaction rates. The treatment of surface and colloid chemistry is extended to deal with the stability of suspensions, foams, emulsions. The subject of heterogeneous catalysis is introduced and covers the catalytic activity of metals, metal oxides and semi-conductors. The kinetics and mechanisms of typical heterogeneous reactions are also discussed.

**PHB612 Physical Methods of Analysis**

A course of lectures and associated practical work on a range of physical techniques of analysis, including X-ray fluorescence, X-ray diffraction, electron microscopy, electron microprobe analysis, neutron activation analysis, infrared spectroscopy, and mass spectroscopy. Emphasis is on the physical principle, instrumentation and nature of information available from each technique.

**PHB101 Physics IS**

A course of lectures on linear and rotational mechanics, properties of matter, D.C. electricity, fields, thermometry, thermodynamics and geometrical optics.

**PHB120 Physics IT**

A course of lectures, demonstrations and laboratory work in basic physical measurements, mechanics, properties of matter, heat, sound, AC and DC circuit theory, fields, waves and optics.

**PHB201 Physics IIS**

A course of lectures on electricity and magnetism, SHM, waves, polarization, physical optics, crystals and X-ray diffraction, microscopic physics and semiconductor theory.

**PHB121 Physics IIT**

A course of lectures, demonstrations and laboratory work in elementary quantum principles, atomic structure of matter, nuclear physics, radioactivity, fluids, heat, particle motion in fields, instrumentation.

**PHB304 Physics III**

A study of the AC and solid state theory, and of vibrations, waves and optics.

**PHB303 Physics IIIC**

A study of AC theory and electronics. Also includes laboratory work.

**PHB401 Physics IVA**

A study of statistical mechanics, thermodynamics and vacuum physics.

**PHB402 Physics IVB**

A study of relativity and particle physics.

**PHB403 Physics IVC**

A study of statistical mechanics, thermodynamics and vacuum physics. Also includes laboratory work.

**PHB501 Physics VA**

A course of lectures on quantum mechanics and theory of spectra.

**PHB502 Physics VB**

A course of lectures on electromagnetic wave theory. Includes wave equation, plane and spherical wave solutions, properties of plane waves, reflection, refraction, wave guides, cavity resonators and radiation theory.

**PHB503 Physics VC**

A course of lectures on physical techniques and instrumentation.

**PHB601 Physics VIA**

A course of lectures on the physics of materials, including mechanical, thermal and electrical properties.

**PHB602 Physics VIB**

A course of lectures on applied nuclear physics, neutron physics and reactor technology.

**PHB603 Physics VIC**

A course of lectures on acoustics, ultrasonics and geophysics.

**PHB614 Physics Education**

A course of lectures and practical exercises relating to aspects of physics education. Consideration of teaching techniques (individualized instruction, etc.), laboratory work (objectives and assessment), use of computing, course assessment.

**PHA102 Physics for Radiographers I**

An introductory unit largely reviewing material presented in secondary school. Electricity, magnetism, the physics of radiation and mathematics are discussed with an emphasis on the relevance to radiography.

**PHA202 Physics for Radiographers II**

An introductory unit dealing with X-rays; their interaction with matter and their measurement with an emphasis on relevance to radiography.

**PSA433 Physiological Techniques III**

The objectives of the course are to give the student theoretical and practical training in the application of instrumentation to the management of the intensive care and renal unit patient, and to provide a foundation for the utilization of modern techniques in the evaluation of pulmonary function and electroencephalography.

**PSC430 Physiology III**

An introductory theoretical and practical course in human physiology including the structure and function of the cell, excitable tissues and the transport system of the body.

**PSC431 Physiology IV**

An extension of the systematic physiology of PSC430 continuing the study of systematic physiology to include the respiratory, digestive, urinary, endocrine and nervous systems. Elementary nutrition.

**BEB322 Plant Diversity**

Introduces students to the characteristic morphological, anatomical and reproductive features of the major plant taxa as a basis for subsequent studies, and to complement a parallel session in plant physiology. The student is expected to develop a critical attitude to the investigation of plant species and to become familiar with relevant literature. Current aspects of research within plant groups are discussed.

**BEB321 Plant Physiology**

The processes that support the life of plants are discussed and form the basis of experimental study. Application of statistics is encouraged wherever applicable. Nutrition, adaptation, respiration, photosynthesis, transpiration, translocation, morphogenesis are among topics covered.

**BEC321 Plant Physiology III**

The physiology of unicellular plants, and of cells and cell components from plant tissues. Microbial nitrogen fixation and the physiology and behaviour of photosynthetic lamellar systems, chloroplasts, and other cell components will be studied and relevant methods of fractionation of plant tissues and techniques of investigation will be emphasised.

**BEC421 Plant Physiology IV**

A course of study of the structure and function of plant organs, the germination and viability of seeds, and postharvest physiology.

**PSD423 Podology III****PSD424 Podology IV**

The foot in health and disease. The development of the foot, detailed anatomy, functional anatomy – standing, locomotion, conditions necessary for normal function, foot wear, foot care. Podiatric materials.

**BEB553 Population Dynamics**

Appreciation of population processes, influence of environment and self-regulation on population growth. History of consequences of the growth of human populations. Pest control and harvesting. Population sampling methods, predictive value of computer simulation.

**BEB535 Population Genetics**

The objective is to illustrate through a quantitative approach the part played by such processes as mutation, genetic drift, inbreeding and outbreeding, etc., in evolutionary development.

**PHA105 Preliminary Radiotherapeutic Practice**

An introductory unit dealing with beam directing devices and mathematics pertinent to the use of such devices.

**PSP132 Practice in Large Scale Feeding**

Practical experience and seminar presentations relevant to PSP131. The course will be conducted in institutions off campus.

**PSP122 Practice in Therapeutic Dietetics**

Practical experience and seminar presentations relevant to PSP121. The course will be conducted in institutions off campus.

**PSP135 Principles of Catering**

This unit emphasises the importance of design, equipment, budgeting in institutional kitchens and is complementary to Large Scale Feeding; standardized recipes, menu planning, convenience foods.

**BEB350 Principles of Ecology I**

This and its companion unit form a broad introductory course for non-biology majors who wish to acquire insight into the relationship between organisms and their environment. The history of ecology is studied; the concepts of succession, habitat, ecological niche are considered. The autecology of important species and their place in ecosystems is discussed. Field practice is included.

**BEB450 Principles of Ecology II**

Global energy, the biosphere, food webs, productivity, impact of mankind and conservation are among topics covered. The relationship between resource utilisation and long term stability of ecosystems is discussed. Australian examples are employed where possible.

**PSP171 Principles of Education**

Learning theories; the teaching process; readiness for learning; organization of instruction – group and individual methods; teaching techniques; audio and visual aids; and place of evaluation in educational process. Practice of principles of education will be incorporated in the practice of diet therapy when students will practise instructing patients with their therapeutic diets.

**PHA204 Principles of Pathology**

An introductory unit dealing with elementary pathology, the biological effects and clinical aspects of radiation.

**ARS104 Principles of Town Planning**

The principles governing town planning, especially at regional and local levels; factors affecting town growth; interaction of industrial, residential and service requirements; zoning and residential neighbourhood development.

**PHA305 Principles of Treatment I**

After consideration of biological and physical principles, the treatment of cancer at various sites in the body are discussed in detail.

**PHA405 Principles of Treatment II**

A continuation of the detailed discussion started in PHD305.

**BEB659 Productivity and Trophic Levels**

A field-based intensive course in quantitative and qualitative analysis of feeding and energy conversion by organisms.

**CMB103 Professional Communication**

Students will participate in single and group activities relating to English expression, public speaking, debating and discussion groups. The course covers business procedures, office aids and written expression. Students will receive oral and written assignments.

**CMB101 Professional Communication A**

A course aimed at providing vocationally useful material and experience in the fields of oral and written communication. Special forms of communication. Effective communication. Logic and evidence. Tone in writing. Use of a library.

**CMB102 Professional Communication B**

Introduction to practical vocational speech situations. Theory and practice of the conduct of meetings, seminars and other conferences. Evaluation of effectiveness of communication.

**PHA506 Programming & Data Handling I**

An introductory discussion on the principles of computing and computers.

**PHA606 Programming & Data Handling II**

An introductory discussion on data acquisition, evaluation, retrieval and storage.

**MAB654 Programming Languages**

This course surveys the significant features of existing programming languages with particular emphasis on the concepts abstracted from these languages. Structure of simple statements, structure of algorithmic languages, list processing and string manipulation languages, topics in programming languages.

**ESB563 Project V**

Students are required to produce an original detailed geological map of an area, collect and collate samples and information including a geochemical survey. Some preparation of samples for further analysis is required.

**ESB663 Project VI**

The detailed analysis of samples and information resulting from work done in ESA563 Project V. Interpretation of these results. The preparation and presentation of a thesis representing original work by the student.

**BEB590 Projects in Terrestrial and Aquatic Ecology**

This unit in which students pursue in depth one or more projects selected in consultation with a staff member, has the following aims –

1. To develop skills in laboratory and field practice;
2. To utilize biological research, literature and library resources;
3. To develop skills in written communication.

**MAB960 Project Work**

This unit requires a student to work and project under the guidance of a specified supervisor. It involves approximately 150 hours of work of which about 20 hours would be spent in writing a report on the results of the work carried out. In addition each student is required to deliver a short seminar describing his project and the progress made.

**ESB683 Property Evaluation for Geologists**

Valuation acts in Australia. Methods of valuation on industrial and mineral properties, sampling, testing. Methods of acquisition and compensation. Valuation reports.

**PHB609 Radiation Physics A**

A course of 15 lectures and associated laboratory work dealing with the basic principles of ionizing radiations and their use.

**PHB610 Radiation Physics B**

A course of 15 lectures and associated laboratory work dealing with the applications of X-rays and radioactive isotopes in the industrial and biological fields, and including an introduction to health physics.

**PHA404 Radiobiology & Protection**

An introductory discussion on radiobiology and protection relevant to diagnostic radiography.

**PHA302 Radiographic Equipment I**

Detailed discussion of the design, rating and circuitry of X-ray generator components.

**PHA402 Radiographic Equipment II**

Completion of topics discussed in PHA302; discussion of complete X-ray generator. Discussion of equipment used for beam collimation, reduction of scatter and fluoroscopy.

**PHA502 Radiographic Equipment III**

Discussion on technology of radiographic equipment and techniques of correct use in advanced radiographic procedures, including recent developments in specialized equipment

**PHA602 Radiographic Equipment IV**

Discussion on technology of radiographic equipment and techniques of correct use in advanced radiographic procedures, including recent developments in specialized equipment.

**PHA103 Radiographic Technique I**

An introductory subject in which the photographic process, processing, materials, techniques and equipment relevant to radiography are discussed.

**PHA301 Radiographic Technique II**

Detailed discussion of elementary positioning for radiographic techniques and procedures including care and management of the patient.

**PHA401 Radiographic Technique III**

Detailed discussion of elementary positioning for radiographic techniques and procedures including care and management of the patient.

**PHA501 Radiographic Technique IV**

An amplification of materials in PHA301 and PHA401 in relation to more extensive procedures necessary for specialised radiographic examinations.

**PHA601 Radiographic Technique V**

An amplification of materials in PHA301 and PHA401 in relation to more extensive procedures necessary for specialised radiographic examinations.

**PHA505 Radioisotopes, Principles and Practice I**

Principles of radioisotope physics and instrumentation. Brief discussion of principles of thermography and ultrasonics.

**PHA605 Radioisotopes, Principles and Practice II**

Discussion on clinical and practical applications of radioisotopes plus discussion on biological effects and protection relevant to handling of unsealed sources.

**PHA306 Radiotherapeutic Physics I**

Detailed discussion of therapeutic X-ray generator components, the equipment and principles of megavoltage and telecuric therapy and rotation therapy.

**PHA406 Radiotherapeutic Physics II**

Measurement and dosimetry of external beam x- and  $\gamma$ -radiation relevant to radiotherapy. Technical aspects of sealed radio-active materials used in radiotherapy. Protection relevant to therapeutic radiography.

**PHA307 Radiotherapeutic Practice I**

Detailed consideration of planning procedures and principles, including mathematical and technical applications.

**PHA407 Radiotherapeutic Practice II**

Detailed consideration of planning procedures and principles, including mathematical and technical applications.

**PHA504 Radiotherapeutic Practice III**

This unit covers full details of techniques and procedures used in treatment with emphasis on practical consideration.

**PHA604 Radiotherapeutic Practice IV**

This unit covers full details of techniques and procedures used in treatment with emphasis on practical considerations.

**CHB600 Research Project**

A laboratory orientated investigation under the supervision of a member of staff. The project will require a literature search, further study, continuing discussion with the project supervisor and a laboratory research programme. The literature search, study and discussion component of CHB600 is aimed to develop student competence in search techniques and experience in experimental design. The laboratory programme is aimed to develop student competence in the use of experimental techniques as a basis for problem solving. Completion of the project requires the submission of a written technical report.

**ESB323 Sedimentology**

Processes of formation of sedimentary rocks; weathering, sediment transportation by different media, deposition. Relationships between tectonics and sedimentation. Sedimentary structures and the textures of sedimentary rocks. Sedimentary provenance; lithification and diagenesis. Sandstones; principles of classification, petrology and concept of maturity.

**BEB500 Selected Topics in Biology**

This Biology unit is specifically to allow advanced students to develop interests and skills not otherwise catered for in formal course work. Preparation and presentation of seminar material, mutual evaluation and cultivation of skills in discussion of a broad range of topics of biological and social importance form the basis of the unit. Guest specialist lecturers are involved in the programme.

**CMA211 Social Community II**

An introduction to human relationships and recognition of factors operating in the social environment of the health surveyor. The recognition of groupings that exist in the community and methods of identifying their problems. Study of factors affecting the social environment.



**PSA401 Social Community III**

An extended study of the characteristics of various groups within the community and identification of their needs e.g. consideration of groups by age or by special characteristics such as migrant groups or the physically disabled. A study of government and voluntary agencies engaged in social services in the community and their integration in a total community health programme.

**CMD411 Sociology**

Definition, field and scope. Social organisation and structure of a changing society. Social survey. Sociological concepts.

**CMP111 Sociology and Communication**

This course introduces the student to the study of sociological and rhetorical theories of human communication. Phenomena of interpersonal, group and mass communication will then be studied in terms of these theories.

**CMP112 Sociology and Psychology**

A discussion of the social determinants of behaviour. The course deals with different types of leadership which the cultures provide and methods of overcoming these problems.

**MAB252 Statistics**

A course in basic statistical methods including elementary probability; discrete and continuous probability distributions; sampling, t-distribution; statistical inference and estimation theory; regression and correlation.

**MAB257 Statistics**

A course in statistical methods involving elementary probability; discrete and continuous probability distributions; sampling theory;  $t$ ,  $\chi^2$  and  $F$  distributions; statistical inference; regression and correlation and experimental design.

**MAP251 Statistics**

A non-theoretical course on statistical problem solving related to data collected from surveys.

**MAB157 Statistics A**

A course in statistical methods involving elementary probability, discrete and continuous probability distributions; sampling theory;  $t$ -distribution and estimation theory.

**MAB158 Statistics B**

A course in statistical techniques involving statistical inference;  $\chi^2$  and  $F$  distribution; regression and correlation and experimental design.

**MAA251 Statistics & Data Processing**

A basic course in statistics, including statistical terminology and organization of data, elementary probability, binomial and normal distribution, sampling theory, regression and correlation.

**MAA253 Statistics & Data Processing**

A basic course in statistics, including statistical terminology and organization of data, elementary probability, binomial and normal distribution, sampling theory, regression and correlation.

**ESB423 Stratigraphy & Sedimentary Petrology**

Stratigraphic subdivision and nomenclature. Facies relationships; transgression and regression. Use of fossils in stratigraphy; principles of correlation and the application of palaeontological zones. Stratigraphy of Australia based on the tectonic evolution of the continent from the Precambrian to the present day.

Limestones; composition, classification, and environments of deposition of recent and ancient carbonates. Diagenesis of carbonate sediments. Dolomites and other carbonate rocks. Characteristics and origins of other biogenic and chemical sedimentary rocks such as cherts, phosphorites, and ironstones. Pyroclastic rocks. Techniques in sedimentology. Marine geology; topography and structure of the continental margins, deep ocean floor topography and sediments. Organic reefs; composition, morphology, and origin. **Composition and origin, of petroleum and the nature of the source beds. Migration and accumulation of petroleum and natural gas.** The formation of structural, stratigraphic, and combination forms of petroleum traps.

**ESB353 Structural Geology III**

Stress-strain relationships, rock deformation by brittle fracture, petrofabrics; geometric, kinematic and dynamic analysis of folded rocks.

**ESB643 Structural Geology VI**

Geotectonics. Structure of the earth's crust. World structural patterns. Salt tectonics. Deformation of lineations in folded rocks. Folding of inclined surfaces, unconformities, superimposed folding. Structural methods for exploration.

**ESB343 Surveying**

Theories of surface and sub-surface surveying techniques; their application and practice. The principles of photogrammetry and photointerpretation and methods of photogeological mapping.

**MAB651 Switching Theory**

This course is concerned with the theoretical foundations and mathematical techniques associated with the design of logical circuits. Development of switching algebra. Simplification of combinational networks. Modes of sequential circuit operation. Synthesis of sequential circuits. Delays.

**MAB951 Systems Programming A**

A course consisting of batch processing systems programs, multiprogramming and multiprocessor systems, addressing techniques, process and data modules and job scheduling.

**MAB952 Systems Programming B**

An extension of MAB951 containing file system organisation and management, explicit input-output references, real time systems and virtual memory.

**CMC125 Technical Speaking I**

An introduction to the techniques of effective spoken communication. Basic principles of communication theory. Causes of breakdown. Individual speech training. Meeting procedure. Group communication. Debating. Interviewing.

**CMC124 Technical Writing I**

An introduction to the techniques of effective written communication. Reasons for written communication breakdown. Essay writing. Roles of grammar and language. Comprehension. Newspaper articles. Business Reports. Letters. Short stories and essays as vehicles of communication.

**MAB933 Theoretical Electromagnetism**

Maxwell's equations; the electrostatic field, magnetostatics; electromagnetic waves; radiation.

**PSD723 Therapeutics V****PSD724 Therapeutics VI**

An introduction to the study of various methods and techniques of treatment used by the Chiropodist to relieve pain and to preserve or restore function. Elementary pharmacy includes a brief survey of pharmaceutical methods and prescription writing; materia medica includes a detailed study of drugs used for external medication.

**PSP121 Therapeutic Dietetics**

An extensive study of therapeutic dietetic regimes including those for obesity, cardiovascular disease, hyperlipidaemias, renal disease, diabetes mellitus and metabolic disorders; liquid feedings; infant formulae. The practical component incorporates nutrition education.

**MAB626 Topics in Mathematics I**

Economic statics; comparative statics; dynamic analysis; linear programming; graph theory and structural models in society; stochastic processes; theory of games.

**MAB615 Topics in Mathematics IIA**

Chronological development of mathematics to the middle ages; review of developments within major areas of elementary mathematics to the middle ages, number, computation, geometry; famous mathematicians from the middle ages.

**MAB616 Topics in Mathematics IIB**

Plane geometry; geometrics of dimension greater than 2; transformation; invariants; Euclidean geometry; non-Euclidean geometry.

**PHA308 Tumor Pathology**

An introduction to aetiology, incidence, classification and metastasis of tumours of man.

**BEB529 Vegetation Mapping**

An intensive field-based course in vegetation mapping having recourse to techniques acquired in BEB390 and BEB490 Field Methodology.

**PSA457 Virological and Mycological Techniques**

Virological techniques used in the isolation of viral pathogens of man and animals; cell culture procedures; use of small animals in viral isolation; the application of serological procedures and preparation of viral antigens. Techniques for the isolation and identification of fungi causing systemic and superficial infections in man and animals.

**MEB370 Workshop Technology**

A course of lectures and practical work on introductory engineering drawing, design, engineering materials, workshop tools and practices. One term will be spent in the drawing office and three hours per week in each of the other terms on practical work in the workshops.

**MASTER OF APPLIED SCIENCE – MEDICAL PHYSICS****SYNOPSIS OF SUBJECTS****STAGE I PHM100****Radiation Physics**

Deals with phenomena related to interaction of ionizing radiation with matter. Emphasis on aspects of actual or potential importance in a clinical environment.

**Safety: Ionizing and Non-Ionizing Radiation**

Deals with philosophy, protocol and practices necessary to minimise hazards associated with electrical, mechanical and biological techniques used in hospitals.

**Electronics**

Applications of electronics in medical field; component performance, systems design, biological applications.

**Computing Technology & Data Processing**

Application of analogue and digital systems, both dedicated and otherwise, to clinical problems. Emphasis on evaluation for acquisition, processing, storage and retrieval of data.

**Biomechanics**

Study of kinematics and dynamics of the musculo-skeletal components of human body leading to examination of design, development and application of prosthetic devices. Discussion of principles, construction and operation of artificial organs.

**Radio-isotope Techniques**

Introduction to the principles and techniques of the handling, preparation and clinical use of unsealed radioisotopes.

**Ionizing Radiation Dosimetry**

Study of principles and techniques of dosimetry of ionizing radiation with emphasis on aspects pertinent to actual or potential use in medicine.

**Physical Measurement of Biological Parameters**

Introduction to the principles and techniques of the direct and indirect measurement of physiological variables.

**Clinical Applications of Ionizing Radiation**

Considers the principles and techniques of clinical application of ionizing radiation for diagnostic and therapeutic purposes.

**Principles of Biochemical Measurement**

This course considers the principles of biochemical analysis used in clinical laboratories. Included are consideration of electrochemical electrodes, electrophoresis, dialysis, chromatography as well as the application of colorimetry, spectrophotometry, flame photometry, atomic absorption and fluorescence to clinical biochemistry.

**Medical Applications of Wave Physics**

Discussion of principles and techniques of using non-ionizing electromagnetic and other radiation for medical purposes. Dosimetry and hazards to be included.

**Radiobiology**

A comprehensive study of the interaction of ionizing radiation with biological material with particular emphasis on mammalian cells and systems. The latter part of the course will cover the philosophy and techniques associated with radiation protection.

**Anatomy and Physiology I**

The aim of this course is to give an understanding of the biological organization of body functions and is an integrated course directed towards clarifying the relationship between structure and function. Suitable laboratory demonstrations and experimentation complement the lecture programme.

**Anatomy and Physiology II**

This course extends the systematic approach of Anatomy and Physiology I, strong emphasis being placed on integration and adaptation to the environment. The inclusion of information on cellular reproduction embryology and comparative anatomy broadens the course to give greater understanding of the nature of man.

**Concepts in Biochemistry**

A course in modern biochemistry dealing with those concepts essential to an understanding of human biological functions. This course is designed to supplement that in Anatomy and Physiology I.

## NOTES