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# Evolution of an Environmental Science College

Ted F. Andrews  
*Governors State University*

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EVOLUTION OF AN ENVIRONMENTAL  
SCIENCE COLLEGE

Ted F. Andrews

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Evolution of an environmental  
science college

Ted Andrews

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## PREFACE

Governors State University was established in July, 1969, by the State of Illinois as a free-standing upper division university with a mandate to develop a new model of higher education system. William E. Engbretson, the first and only President of GSU, invited me to join the administrative staff as Dean in September, 1969. I have had the opportunity to participate in planning all systems of the University during the past six years. As a biologist-ecologist I had had considerable experience in various science curriculum development and science teacher education projects. Hence, I was interested in developing a College of Environmental and Applied Sciences that was non-departmentalized and that included a truly interdisciplinary curriculum which would prepare various kinds of environmental generalists and specialists.

A survey of the literature in 1969, 1970 identified many books and articles dealing with problems of higher education in general, but the paucity of literature about the history and evolution of colleges and schools of science was astounding. No references were found concerning colleges of science in new upper division universities. The National Academy of Sciences, the National Science Foundation, and a few committees and commissions were just beginning to talk and write about interdisciplinary science curricular possibilities at the university level. And little, if any, consideration had been given to competency-based curricula in science at the college or university level. There were no colleges of environmental science in the U. S. To this date there is no definitive publication on the evolution of a college of environmental science.

The purpose of this book is to place on record the brief six-year history and evolution of a college of environmental and applied sciences in a new upper division university where the total curriculum is interdisciplinary and competency-based. It is my hope that this report on the brief six-year life of this experimenting college will be useful to scientists who in the future may plan and develop still other kinds of science colleges.

In the development of a new university and a different kind of science college, certain persons make major contributions. The College of Environmental and Applied Sciences and this book would be very different if it were not for the intellectual contributions of Peter Fenner, James Joseph Gallagher, Donald S. Douglas, and Robert A. Kloss who have worked as colleagues in the College since 1970. Bob Kloss died unexpectedly in January, 1975, prior to the completion of this book. Robert E. Tumelty was a member of the original "team of six" professional scientists who planned the College. He left the University after three years; all others of the original team are still helping to guide the College and University to maturity. William E. Engbretson, the first and continuing President of Governors State University, contributed significantly to my thinking about alternative curricula, strategies and modes of instruction, and needs of the commuting student. Without his support during the past six years, it would have been impossible to develop an experimenting environmental science college. He was also responsible for encouraging me to write this book during a six-month sabbatical leave which he endorsed.

It is not possible to place a value on the advice, counsel and support given to me and the College by Keith Smith, the first Vice President for Administration. Smitty joined the University in the fall of 1969 and strong leadership until his unexpected, sudden death in the spring of 1974. During the past two years Mary P. Endres, Vice President for Academic Affairs, has provided stimulating advice and counsel to me and my colleagues in the College. In many ways, she has influenced the College as it matures.

A very special note of appreciation and gratitude to my wife, Betty, who typed and proofread the entire manuscript for this book. Her penchant for clear, straightforward use of language has greatly improved the book.

Ted F. Andrews

Park Forest South, Illinois

October, 1975

## FOREWORD

This book has double import both for the College of Environmental and Applied Sciences and Governors State University because CEAS has been GSU's leader in collegiate planning and programming, and Dean Andrews has exerted more positive instructional leadership than any other single person at Governor's State.

William E. Engbretson  
President

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## DEDICATION

This little book is dedicated to my wife and sons: Betty, Kenneth, Glen, Dwight and Dwayne, and to my former students and colleagues, each of whom has made my personal and professional life richer and more worthwhile.



## EVOLUTION OF AN ENVIRONMENTAL SCIENCE COLLEGE

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## CHAPTER ONE--THE UNIVERSITY

### Introduction

During the 1950's and 1960's, higher education flourished and the need for improvement in education in all fields in colleges and universities was recognized. Numerous articles and books were written, pointing out the weaknesses in higher education and some ways it could be changed (Frankel, 1959; Sanford, 1962,; Wilson, 1965; Jacob, 1957<sup>6</sup>; Coombs, 1968; Hefferlin, 1969; Jencks and Reisman, 1968; Smith, 1970; Baskin, 1970).

Educational change in the sciences was given impetus with the establishment of the National Science Foundation in 1950. From 1950 to 1970 the Foundation supported numerous course content improvement projects, science curriculum development projects, and science teaching improvement programs in hundreds of colleges and universities. The high school science curriculum projects in biology, chemistry, earth science, mathematics, and the like, supported by the Foundation during the 1950's and 1960's, had the most significant impact on the teaching of science of any advent since the turn of the century. These high school science curriculum projects served as catalysts for the initiation of many science curriculum materials development projects for the elementary and intermediate grades and stimulated the establishment of college commissions in biology, chemistry, geology, mathematics, physics, and the like. These groups of research scientists, science educators, and learning theorists were funded primarily by the National Science Foundation and had as their goals the improvement of the curriculum in the sciences and the teaching of science in colleges and universities.

From 1952 to 1966, it was my good fortune to serve as director of many summer, in-service and academic year institutes funded by the Foundation, to function as a consultant to the Foundation from time to time, to serve on the staff of the Biological Sciences Curriculum Study, and to work with the Commission on Education in the Biological Sciences as a member of the Steering Committee, the Executive Committee, and as Associate Director ~~xxx~~ on the staff of the Commission. These assignments allowed me to visit many dozens of schools, community colleges, colleges, and universities throughout the United States and in other countries. It became apparent to me that some new and different models of higher education in the sciences should be initiated.

It was with this background of experiences and within the higher education ferment that I accepted an administrative appointment at Governors State University in September, 1969, about six weeks after the University was founded.

#### GSU Historical Background

The Illinois Board of Higher Education (BHE) was established in 1961. Since its inception, it has placed major emphasis on long-ranged planning. In 1965, the BHE submitted a Master Plan, later to be known as Master Plan--Phase I, to the General Assembly of the State of Illinois. The original Master Plan pointed the direction of higher education in Illinois. It recommended, among other things, an emphasis be placed on the development of commuter universities and a statewide junior college system. Thus, the Master Plan for Higher Education in Illinois, in July, 1964, resulted in the enactment of the Public Junior College Act and the organization of an Illinois Junior College Board by the 74th General Assembly.

In December, 1966, the BHE released "A Master Plan--Phase II for Higher Education in Illinois: Extending Educational Opportunity."

Phase II called for provision of educational opportunity through the establishment of new institutions. Among the 31 recommendations included in Master Plan--Phase II were these:

1. "In support of Master Plan policy to emphasize commuter institutions rather than residential colleges to accommodate future enrollments, the state begin in 1967 to plan for additional commuter colleges
  - a. to be located in the Chicago Metropolitan Area and
  - b. to be located in the Springfield area.
2. To the extent feasible, new colleges authorized be developed to offer programs initially for junior, senior, and first-year graduate students, thus strengthening the role of junior colleges and lessening the impact of new public senior institutions on nonpublic colleges."

An outgrowth of Master Plan--Phase II, the BHE produced a "Report on New Senior Institutions" that was adopted by the Board, February 6, 1968. The Report dealt with functions, location and governance of two new senior institutions in the State of Illinois, one to be located in the Springfield area and governed by the Board of Regents, and the other in the Chicago area and governed by the Board of Governors of State Colleges and Universities. The result was the establishment of Sangamon State University in Springfield and Governors State University in Park Forest South, Illinois. The University (GSU) was officially established on July 17, 1969, when Governor Ogilvie signed into law House Bill 666, of the 76th General Assembly, which said in part: "a new senior institution of

established, to be located in Monee Tounship, Will County, Illinois."

The "Report on New Senior Institutions" included a series of recommendations which were taken to be mandates:

1. ...to serve commuter students
2. ...programs blending liberal arts and sciences
3. ...emphasis on work and study
4. ...utilize community resources to train students
5. ...instruction commencing at junior-year level and extending through masters degree
6. ...no lower division work to be offered
7. ...any student with 60 credit hours of college work with C average or an associate degree shall be admitted
8. ...admission on first-come, first-served basis if restrictions need be imposed
9. ...free-standing institution with autonomy necessary to be flexible and responsive
10. ...innovative and experimenting educational programs and other systems

#### Educational Planning Guidelines

From July, 1969, until September, 1971, when the University accepted its first class of students, more than 40 professional and 20 support persons worked as teams to plan all systems of the University. Extensive, dynamic educational planning processes, involving faculty, students, lay persons and consultants resulted in a publication called the "Educational Planning Guidelines." The Guidelines have served as an aid in planning and developing

the physical plant, instructional programs, support services, and management systems of the University. The Educational Planning Guidelines state:

Since the fall of 1969 professional planners relating to nearly all aspects of university structure have been engaged. Evans Associates in conjunction with Caudill, Rowlett and Scott were selected as architects; Davis, MacConnell and Ralston Associates, a Division of Westinghouse, was chosen to assist in the development of educational guidelines and project initial space allocations; a library consulting team headed by Dean Robert Downs of the University of Illinois was engaged; planning for the wise equipping and utilization of educational technology came from Instructional Dynamics, Incorporated; and a wide variety of additional needed services have been obtained from legal counsel, soil engineers, and surveyors.

The Midwest Research Office of Educational Testing Service completed in the spring of 1970 a Delphi-like survey of educational needs, purposes, goals, and means which involved over 1200 persons in the Chicago metropolitan area, Illinois, and the nation. Almost 600 persons from all walks of life responded to the successive questionnaires by indicating what they thought Governors State University should be and should do as it undertakes its services to the people of the State of Illinois.

Because the process described above was so broad in scope and diverse in components, a unique effort was undertaken to correlate and integrate all the necessary team members' efforts. The services of McKee, Berger and Mansueto have been used to develop a Critical Path Movement (persistence scheduling) chart and the supporting computerized program which shows monthly progress and assures necessary decision-making at the appropriate times.

#### GSU Mission

The mission of the University was first stated on page 7 of the

#### Educational Planning Guidelines:

In its educational services to the people of the State of Illinois, Governors State University functions within the parameters prescribed by the State and is governed by the Board of Governors of State Colleges and Universities.

Governors State University is to be a future-oriented, service-minded institution constantly seeking academic excellence. It will explore new dimensions and seek unique solutions to the concerns of society and higher education; develop and evaluate innovative programs keyed to the rapidly changing career demands of our technological society; and will be, in effect, an experimenting institution. Because of the primary urban/suburban population area it will serve and the characteristics of students of the junior colleges in the area, the need to be provoking, innovative, and unique creates a challenging and exciting situation charged with serious responsibilities. The need for academic excellence relevant to community service and future-oriented utilitarian programs demands an institution that will be open, humane, and efficient.

As an open university, it will be perceived by students, faculty, administration, and the general community as their responsible agency for the identification and resolution of their educational needs. Part of this responsibility is assured by the distribution of decision-making and policy-recommending authority throughout the University so that each person affected may have a direct or representative voice in these processes. In addition, openness is assured through the maintenance of flexible, operational administrative/academic structures that enhance the University's involvement in new and pressing social issues. Finally, openness reflects programmatically in the continuous processes of curriculum appraisal with respect to its relevancy to mankind's deepest concerns.

As a humane University, its programs will be developed in a manner that mitigates against depersonalization and dehumanization frequently characterizing contemporary institutional life. It will develop, maintain, and enhance the humanistic, artistic, and esthetic aspects of education within the limits imposed by quantification and budgeting. The learning environment of Governors State University will reflect a deep, abiding, and pervasive concern for unique individual human beings and their inter-relationships with others in the most technologically complex society mankind has yet evolved.

Governors State University will be a model of efficiency in individualized learning, group learning, in program planning and budgeting, evaluation techniques, and in demonstrating that a high order of accountability and responsibility can be attained and maintained. All instructional, research and community service systems, and the necessary management and support systems are defined in terms of inter-related objectives consonant with the major goals of the University and its constituencies. Program planned budgets are the basis for a constant systems analysis relating resource allocations to the most direct and functional operational levels. Excellence and efficiency are to be maintained through a major commitment to research and evaluation on a constant cycle/recycle feedback basis. Every effort is made to

institutionalize change processes so that the University will be truly dynamic. The flexibility to initiate programs to answer society's needs and contend with society's problems is being created and protected. Obviously, freedom of inquiry is a prior condition for the true functioning of the University.

The concepts outlined above (open, experimental, flexible, humane, efficient, utilitarian, excellent) undergird the mission of Governors State University. They are the basis for development of an integrated urban/suburban, future-oriented, community service-minded institution. Students are to profit from their University experience in demonstrable ways with experiences related to objectives which, in turn, are directly related to humane values and societal needs.

### GSU Objectives and Characteristics

The Educational Planning Guidelines describe the objectives and characteristics of the University:

The following action objectives guide the planning, development, and implementation of the instructional, research and community service programs, and internal support systems of Governors State University. The most specific objectives of administrative units within the University are directly related to the action objectives and, thus, to society's needs.

1. Job Efficiency. Every student has a right and responsibility to expect that her/his full engagement in the higher education process will result in the acquisition and/or improvement of marketable skills, attitudes, and values, regardless of whether her/his occupational professional goals are immediate or long-range. Ours is an economic society and the road to participation within it and the power to change and improve it widen through higher education.
2. Functional Citizenship. Every student has a right and responsibility to participate directly, or through representation, in those systematic institutionalized policies and practices which affect her/his life and learning. The University is to provide an environment of participatory democracy that insures the student's full engagement in the University. This provides an opportunity to prepare for functioning in a wider community and is an expression of the human right to involve one's self in one's own destiny.

3. Intra- and Interpersonal Relationships. Every student has a right and responsibility to develop to her/his fullest potential. The sense of individual dignity and worth is to be cultivated by every action of the University. This requires a learning environment which strengthens open, accepting, and understanding human relationships. Since healthy self-concepts evolve in social settings, recognition of an individual's rights carries with it the responsibility to recognize and accept the rights of other individuals and groups.
4. Cultural Expansion. Every student has a right and a responsibility to seek an appreciation and use of the fine arts and humanities as a countervailing force to depersonalization and as an expander of the capacity to enjoy and enhance the quality of human life. The students and University serve each other and the community as culture carriers, studying and reflecting the intricacies, problems, joys, and expressions of all cultures and subcultures.

These objectives can best be achieved in a totally integrated University community.

The primary descriptor of the University's characteristics is Options. The scope of some of these options follows.

1. Insofar as is possible, barriers will be removed. Neither students nor faculty should be constrained by artificial boundaries, such as scholarly disciplines; they will be free to create new areas of study or to specialize. Students and faculty will work in an interdisciplinary fashion in one, two, three, or all four collegiate areas unhampered by departmental constraints.
2. The threat imposed by grades will be removed. Students' records will reflect accomplishments and abilities; they will measure changes effected. Students will be encouraged to work at their pace and toward goals they work out with their faculty colleagues.
3. Faculty and students will be encouraged to work as colleagues. The relationship of faculty to student is best defined as one of mutual participation in the learning process.
4. Within the parameters of the total institution and its colleges, students and faculty will have the opportunity to begin a given investigation and work unit whenever it is appropriate to their goals and convenient to their schedule.



5. The key to success and achievement is motivation and self-direction. The student may alter her/his program if needed in consultation with advisors; hence, it is the student who must set and achieve satisfactory goals that can be approved by her/his student and faculty colleagues--on essentially a flexible contract basis.
6. Research is encouraged in its broadest sense--methodologic development and evaluation; specialized research; self, peer, and community investigation; and so on. This goal will be facilitated through the University's cooperative education and work-study programs and through the on-site field work that will be relevant for some studies.
7. Emphasis on community relations will be reflected in the nature of cooperative education programs. The cooperative relationships will be real and functional, and every effort will be expended to remove the unnecessary distinction between the "real world" and the University.
8. Societal gains will far outweigh the high per-student investment of dollars. Interdisciplinary programs in business, science, education, technology, arts, and health will lead to attainment of status as human beings; to acquisition of vocations, avocations, professions, interests, and skills; and to the necessary background for further graduate work. Further, continuing education programs will help the University to become integrated within its geographic area.
9. Modes of instruction will emphasize non-lecture situations such as audio-tutorial, colloquy, seminars, etc. Correlatively, a data bank is being developed to help expand the state-of-the-art in information storage and retrieval. Modern video interfaces, computer terminals, and the like will be commonplace in most instructional and research areas. Telecommunications linkages should exist between the community and the institution.
10. A systems view of education is envisioned, perhaps facilitated by what can best be described as a loose-leaf catalogue.
11. A constant concern for open communications must exist so the University family and its constituencies have multiple channels for participation.
12. Automatic change mechanisms are being planned so as to insure persistent responsiveness to experience, varying perceptions of needs and dynamically altering conditions of life. For example, it is proposed that the initial

collegial units split or combine into new units when reaching a finite size of 1500 headcount students. Also, for example, a finite life for courses is proposed.

13. Lastly, and especially in view of both the need for academic freedom for students and professional staff and the experimenting nature of the University and the communities it serves, protections are being built in. It is clear that this proposed educational system is not a panacea for everything and everyone; however, it is available to anyone who has two years of college with a "C" average or an Associate of Arts degree and a commitment to self-improvement.

#### GSU Postulates

The University is conceived to be primarily a teaching-learning institution of higher education at the junior, senior and Masters level of study. Although the Colleges function as semi-autonomous units, these postulates guide the planning, development, and implementation of the academic programs and all other components of the educational systems:

1. Any student who has successfully completed two years of collegiate study with a minimum grade of "C" or the equivalent can, if she/he has a personal commitment to do so, successfully complete instructional programs of study leading to a baccalaureate degree.
2. This university will provide a learning environment in which students will interact with faculty whose foremost concern is for the realization of the students' educational needs and goals.
3. The role of the faculty and administration of this University will be to involve the students meaningfully in the most stimulating, pleasant, and productive learning environment feasible.
4. Teaching, research, and community service are mutually compatible endeavors in which faculty members and students engage themselves during undergraduate and graduate study.

5. The most effective education occurs when the student has a primary voice in determining her/his instructional program of studies, rate of progress through the program, and readiness to have his achievement evaluated.
6. Educational performance objectives, expressed in behavioral terms that are readily assessible, prepared by the professor (or both the professor and student), and made available to the student, enhance the probability that the learning experience will be meaningful and rewarding.
7. The audio-tutorial mode of instruction is one of the most effective ways to individualize the teaching-learning process and enable the student to have a voice in determining the rate at which she/he progresses through a unit of study.
8. The concepts and processes of inquiry common to all fields of scholarship are of prime importance to all liberally educated persons whether they plan to become artists, historians, scientists, or whatever.
9. All concerns of the University are inextricably interrelated to the real world; hence, the curriculum in which the student engages should clearly reflect these interdisciplinary relationships through relevant educational experiences.
10. Interdisciplinary programs of teaching and research are more easily formulated and more likely to prove viable in a collegiate unit that is structurally organized on an interdisciplinary basis rather than departmentalized according to fields of specialization.
11. An individual's ability to use the processes of inquiry, skills and competence in demonstrating a functional awareness of the conceptual structure of knowledge, attitudes and behavior patterns as she/he deals with the scientific, social and humanitarian aspects of life and society are more useful criteria to judge whether or not one should be awarded a baccalaureate degree than is the accumulation of so many semester hours of credit with a specialized major and minor area of study.

(Educational Planning Guidelines, p. 13.)

### Teaching, Research and Community Service

These educational components are viewed as functionally interrelated and interdependent. The major and primary function of the faculty, staff and administration is to plan, develop, and implement instructional programs and to evaluate the results. Research about instruction and research as part of instruction are expected activities of faculty. Faculty and students from various disciplines team up to carry out research on educational, societal, environmental, and industrial problems that demand interdisciplinary expertise. Undergraduate students are heavily involved in investigations. Community service and involvement are inextricably related to the educational programs. Community persons serve on advisory groups to the University and on governance bodies within the University. Community persons cooperate with faculty and students on community-centered research projects. The traditional "wall" that frequently isolates a University from the body politic does not exist. Community persons are involved in teaching, research and community service throughout the University.

### Experimental-Innovative Practices

The University is viewed by faculty, administration, students, and community persons as an experimenting system of higher education. Many of the atypical practices have been described elsewhere:

Centralized-Decentralized Concept. Instructional support such as student services, counseling, academic advising, library services, research and evaluation, and cooperative education are centrally coordinated but are decentralized into the respective colleges to effect the most direct influence on and be responsive to the needs of students.

Learning Modules. Instructional materials are packaged into learning modules, which are vehicles for direct faculty-student contact. Learning modules vary in form, time for completion, credit, and mode of instruction. The instructional objectives of a module are expressed in performance terms that are measurable. The objectives may be faculty developed or student-faculty developed.

Competency-Based Instruction. All components of the instructional system have stipulated competencies that a student is expected to demonstrate before being awarded a degree.

Instructional Systems Paradigm. The university has developed the ISP to serve as a guide for all curriculum development and instruction in the university. The ISP assists faculty and students alike in relating the expected competencies in a learning module to the expected competencies of the area of emphasis; the area of emphasis competencies to those specified for the instructional program; and the instructional program competencies to the mandates, goals, and objectives of the university. (Governors State University, 1973, Instructional Systems Paradigm)

Interdisciplinary-Intercollegiate Study. All curricular elements are interdisciplinary. It is also expected that students take 20 to 25 percent of their work in colleges other than the one in which they are based.

Year-Round Calendar. The university has a 12-month academic year, consisting of six sessions, each of two months' duration. Students normally may enroll for up to eight units of credit each session. Six units is considered a full load.

Faculty Rank and Tenure. The university engaged in a five-year experimental faculty system in which all full-time faculty hold the rank of university professor, and may receive a seven-year cyclical tenure appointment after an initial one-year and a second two-year probationary appointment. (Governors State University, 1973, Professional Personnel Systems)

Professional Work Plan Agreement. Each university professor completes a PWPA in cooperation with the appropriate dean. The PWPA states the intention of the faculty member to participate in direct instruction, curriculum development, research activities, community services, and professional services. The PWPA is usually prepared annually in September, but may be amended any time during the year by mutual agreement of faculty member and dean. The PWPA is used as a guide in peer evaluation for annual salary increases and appointments to tenured positions.

Student Evaluation and Transcripts. Students are evaluated on essentially a continuing basis by their instructors, using many traditional and nontraditional means in order to verify that they have achieved the specified competencies. When the competency is achieved, it is recorded on the student's transcript. The transcript is a computer printout listing title of learning module, units of credit earned, and the competencies achieved. There are no grades on the transcript; no pass/fail notations; and no indications of work attempted, but not completed. (Andrews and Fenner, 1975)

### University Organization

The University is organized into four wings: academic, administrative, community service and research/innovation. Each wing is headed by a Vice President who reports directly to the President. The academic wing includes four Colleges, each headed by a Dean: (1) Business and Public Service, (2) Cultural Studies, (3) Environmental and Applied Sciences, and (4) Human Learning and Development. In addition, Student Services, Financial Aids, Admissions and Records, and Cooperative Education are components of the Academic Wing. The Research/Innovation Wing includes the library, instructional services (media), special projects and evaluation components. The Administrative Wing includes building and plant operations, personnel, business office, public safety, bookstore, shipping and receiving, and central duplicating. The Community Service Wing is just being developed by the newly selected Vice-President. This Wing will work closely with the Academic Wing as community service is viewed as integral to instructional programs. The University is a member of a computer consortium. The coordinator of computing services reports directly to the President. The University Assembly, a governance body, is comprised of 28 persons, including civil service personnel, faculty,

administration, students, and community persons. Most are elected; some are appointed.

As the University grows, it is anticipated that additional colleges and schools will be established so each college will have about 1500 students.

## CHAPTER TWO--CEAS: EARLY HISTORY

Having done my masters work in biophysics and my doctoral studies in ecology-limnology, I became highly interdisciplinary on my research and teaching. My professional education along with my experiences with the Commission on Undergraduate Education in the Biological Sciences and with the National Science Foundation started my conceptualization of an interdisciplinary science curriculum. The advent of national recognition of environmental problems convinced me that there was need for a college of environmental science offering baccalaureate and masters degrees in environmental science. The establishment of Governors State University in the summer of 1969 gave me the opportunity to begin to plan a new college in a new university, an opportunity few professional scientists have.

### Brainstorming Conference

On August 22 and 24, 1969, about twenty-five persons were convened for a three day brainstorming session. Bill Engbretson (President), Keith Smith (Vice President) and I (Dean) were the professional University staff. Others who participated in the conference were educational planners, media specialists, curriculum specialists, architects, site planners, learning theorists, curriculum researchers, needs survey specialists, and the like. The discussions were far ranging, including such topics as curriculum, instruction, physical facilities, community resources, commuting students, community college relations, mission, goals, university structure, collegial structure, built-in change mechanisms, learning resources, and the like.



## 2.2

In a memorandum from me to President Engbretson, I suggested that the conference participants consider these suggestions:

--Experimental groups of students with little or no college credit, but with considerable experiential background should be admitted and studied.

--Instructional materials (learning units) should be highly individualized and the time to complete each unit largely determined by the students.

--Learning units should be in "packages" of one-week to four-weeks (minicourses or microcourses) in duration. We should avoid the "text-book syndrome."

--Students should be encouraged to contract for a sequence of learning units and the records maintained by the computer in cooperation with an instructor.

--Students should be encouraged to enroll in minicourses which carry from one-tenth unit of credit in the course to 3 or 4 units of credit.

--Learning units should utilize all available media; programmed instruction, computer assisted, audio-tutorial, single concept loop films, audio tape, simulation experiments utilizing time sharing computer terminals, games, pamphlets, video tapes, and the like, so that students may select different routes through a program of studies.

--Students should learn from students and instructors. To this end a major undergraduate student teaching assistantship program should prevail.

--Students should be actively and meaningfully involved in planning curriculum, establishing university policy, and in university-community affairs.

## 2.3

--The instructional program should be societal based throughout. University-industry-business learning centers; university-community college-school system teacher preparation centers; political-social-economic-subculture learning centers, and the like should be established at the outset.

--The instructional program should be designed as to encourage and in many circumstances mandate interdisciplinary studies.

--Seminars and colloquia that are interdivisional should be an integral part of the program of most students. These seminars should be coordinated by teams of instructors representing various fields and disciplines.

--The preparation of school teachers should be the responsibility of all colleges in cooperation with two-year colleges and school systems. The study of subject matter specialty, theory of instruction and learning, and practice with students in grades K-12 should extend over a three year period whenever feasible--the last year in the community college and two years in the university.

--An Institute for Curriculum Research and Evaluation should be evolved as the Colleges develop. Faculty members should be encouraged, if not required, to work in the institute to research, develop and evaluate the learning units and the courses of study they oversee.

--The budgets of the University and Colleges must be flexible, thus planned and administered differently than conventional college budgets, if interdivisional seminars, intercollege seminars, and faculty involvement in curriculum research, development and evaluation are to have a chance to be successful.

## 2.4

--Conventionally structured facilities will not adequately meet the needs of a truly innovative and experimental university that places emphasis on flexibility in the curriculum, individually guided learning, instruction by teams, seminars and colloquia, interdisciplinary studies, and university-business-industry-school-community learning centers.

--The evaluation of student achievement and progress should consist of written statements by each instructor and the assignment of a grade of Pass or Fail (an alternative would be Honors or Superior, Pass, or Fail). A portfolio of instructor evaluations would accumulate in the records office of the University.

The College of Environmental and Applied Sciences (CEAS) had its beginning at this conference. It was believed initially that a College of Education, a College of Business and a College of Arts and Sciences would be established. My first appointment to the University staff was as Dean of Arts and Sciences. At the August conference, it was generally agreed that an experimenting University that was to develop interdisciplinary programs of instruction should structure itself atypically. Hence what was to be a College of Arts and Sciences was divided into a College of Cultural Studies and CEAS. My appointment as Dean of Arts and Sciences lasted only a few weeks. By September, when I assumed full time duties, I was Dean of CEAS, a position I still hold.

Concurrent with and following the August brainstorming conference a variety of other groups were engaged to assist in the planning efforts.

### Planning Agencies and Groups

All systems necessary to sustain the operation of an institution of

higher education had to be evolved and the institution ready to receive students in September, 1971. This was a major undertaking when one considers that we didn't even own all the university land, water and sewer lines were at least two miles from the campus site, and all systems had to be supportive of an atypical model of higher education. To accomplish this enormous task a large number of organizations and groups were involved simultaneously and the progress of each group's efforts and their influences on each other were overseen by an agency that specializes in program management service (Table 1).

Although these groups were primarily planning university-wide systems, each decision made in the planning process influenced directly or indirectly the detailed planning and evolution of CEAS.

#### Planning Publications

The planning agencies and groups generated a wide variety of working and position papers, each of which was revised several times. Some of the planning papers that were influential throughout the two year planning period were:

McKee-Berger-Mansueto. Program analyses, design development, economic studies, construction costs estimates, and monthly planning progress reports.

Davis, McConnell, & Ralston. Planning matrices and educational planning guidelines (several drafts).

Morton, Daniel. Governors State University Needs Assessment Survey. Evanston, IL: Educational Testing Service. April, 1970.

Table 1. Primary agencies and groups involved in planning Governors State University--1969-71.

Agencies	Generic Functions
1. Coordinating Planning Agencies Planning Commission, Park Forest South Will County Engineers Illinois Highway Department	University-village relations; access routes; village- university transportation, water, sewage, etc.
2. Caudill, Rowlett, Scott	Architectural design of Phase I of physical plant
3. Davis, MacConnel, & Ralston	Educational program and space consultants
4. Evans Associates	Architectural design and construction of Phase I
5. Educational Testing Service	Educational, community needs assessment
6. Governors State University	General, over-all management and planning of all systems
7. Illinois Building Authority	Financing, construction Phase I physical plant
8. Illinois Board of Governors of State Colleges and Universities	Budget planning and approval; program approval
9. Illinois Board of Higher Education	Operating, capital budget control, program approval
10. Instructional Dynamics	Educational technology and media consultants
11. Johnson, Johnson & Roy, Inc.	Site and landscape design
12. Joseph Schuete & Associates	Campus site grounds engineering
13. McKee-Berger-Mansueto, Inc.	Planning management coordination services

Governors State University. Educational Planning Guidelines.

Park Forest South: July, 1970.

Johnson, Johnson and Roy, Inc. A Guide for Physical Development.

Ann Arbor: September, 1970.

Westinghouse Learning Corporation. Space Summary and Educational Specifications, Phase I, Governors State University. Palo Alto: Davis, McConnell, & Ralston, A Division of W. L. C. September, 1970.

Instructional Dynamics, Inc. GSU Proposed Communications and Learning Systems. Chicago: January, 1971.

Phase I of the permanent physical plant was planned and construction started \_\_\_\_\_ with a projected construction period of \_\_\_\_\_ days. The University was to receive its first students in September 1971. Therefore an interim physical plant also was planned during 1969-70 on an off-campus site in cooperation with the developer of Park Forest South. A rectangular warehouse-type structure with about 67,000 square feet of net assignable space was converted into a "University" for use while Phase I was constructed. The CEAS physical facilities utilized during the first six years is treated in Chapter 8.

### "Squatters" Conferences

It was our strategy to involve as many faculty and administrators as feasible with participants from the various planning agencies. One of the tactics used was the so-called "squatters" conferences. Two "squatters" conferences were held in 1970, one in April and the other in May. About forty faculty members and administrators that had been employed to join

the GSU staff in the summer or fall of 1970, representatives from the planning groups and several special consultants were convened for three-day conferences. All plans for educational, management, support and physical systems were considered and revised many times. The Educational Planning Guidelines, which by this time had been revised several times, were re-considered by all persons who were to help implement them during 1970-71, as educational programs were initially developed. Also the planning groups, especially the architects in cooperation with the faculty and administration, were asked to design a facility to support kinds of flexible, responsive educational programs envisaged. We believed that involvement of faculty and administrators who were to come on board later to implement and manage the instructional programs was important and should take place during early planning stages.

Since I joined the GSU staff at a very early date, I had recruited and employed five professional scientists who would serve as consultants during the winter and spring of 1970, and who would come on board as full time <sup>faculty</sup> planners during the summer of 1970. The six of us participated in each of the "squatters" conferences. The goals for the CEAS, the interim physical facilities, Phase I of the permanent facilities, and the relationships of CEAS to all other University units were considered at length and in depth during the "squatters" conferences.

#### CEAS Guidelines

The initial CEAS faculty of six were called Directors of Academic Development (DAD's). The six functioned as a team to plan all systems of

the College during the spring, summer, and fall of 1970. The following collegial guidelines were evolved and published in the Educational Planning Guidelines to aid us in our current and future planning and in recruitment of additional faculty:

1. Instruction will be aimed toward helping students attain two major goals--capability of life-long learning and capability of inquiry and action on problems related to improving environmental quality.
2. Instruction will be interdisciplinary, encompassing broad areas of the life, physical, earth and health sciences, mathematics and computer sciences, applied science and technology, and science education.
3. Instruction will be individualized, oriented toward helping students acquire mastery of knowledge, attitudes, skills, and techniques for effective learning, inquiry, and action.
4. A wide variety of instructional modes will be employed including:
  - a. student-faculty problem-focused study groups
  - b. laboratory and field work
  - c. seminars
  - d. audio-tutorial
  - e. computer simulation
  - f. independent study
  - g. informal faculty-student and student-student interactions
  - h. projects
  - i. research problems
  - j. cooperative education
5. Faculty and students will cooperate in the design, development, and evaluation of instruction.
6. Undergraduate and graduate students will be engaged in specified activities in instructional, research, and community service programs. They will be financially compensated when possible.
7. Educational experiences involving the expertise of the faculty, specialists in business and industry, and students will be regular components of the instructional programs.



8. Theory and practice will be interrelated through gainful employment of students in the world of work whenever feasible.
9. The instructional facilities will be open, flexible, and student-oriented so as to provide an inviting learning environment.
10. Field stations will be established in a variety of environments to be utilized by students in cooperation with faculty, civic leaders, and representatives of other agencies.
11. Mobile Learning Resource Centers will be developed and used extensively both in field and community programs of the College
12. Education objectives, expressed in terms that can be evaluated, will be developed for each instructional experience, and each student will be evaluated in terms of her/his performance relative to stated educational objectives.
13. Development and evaluation of materials, modes, and strategies used in instruction will be a legitimate research activity and continuing process involving all instructional staff in cooperation with the Office of Research and Innovation.
14. The College organization and curriculum will be continually evaluated and changed as needed to insure that the interdisciplinary nature of science is obvious, that programs remain faithful to student needs, and that faculty and students deal with environmental and applied sciences in the real world where science, technology and man's society regularly and continuously influence each other.

It will be evident in other Chapters of this book that these guidelines have had significant influence in the evolution of all systems in CEAS. After five years of experience with students, faculty, curriculum development, community service and instruction, I am convinced that these guidelines are still valid.

## CHAPTER THREE--CEAS: STUDENTS

The College of Environmental and Applied Sciences (CEAS) and Governors State University were established in 1969, near the phasing down of student activism in higher education. The students' voices in colleges, universities and the community had been listened to by many and as a consequence a great deal was written about student problems, higher education's "neglect" of students, student participation in governance, students' role in planning their education, and the need for institutions of higher education to respond to better meet student needs (Feldman and Newcomb, 1969; Foster and Law, 1970; McGrath, 1970; Smith, 1970; Martin, 1968, 1969; Pace, 1966; Shaw, 1970; Astin and Panos, 1969; Taylor, 1969; Dunham, 1969; Hazen Foundation, 1968; Chickering, 1969). Missing from the literature are any significant data on commuting students in upper division universities. Nisula and Dressel, 1966, made extensive and intensive comparisons of commuting with non-commuting students in four-year colleges and universities. The Wayne State University study of facilities for commuting students gives some notion of the problems that are faced by commuting students in higher education (Ward and Kurz, 1969). Our best source of information on the commuting student in upper division universities came in personal communications from persons at Florida Atlantic University, Old Westbury, Richmond College, Monteith College, and from persons in other institutions that had experience with commuting students. It was apparent to me in 1969, and now, six years later, I am convinced that far too little is known about the commuting student in upper division higher education. It's a field in dire need of research.

## 3.2

### Career Orientation

A specific objective of the University is Job Efficiency (see Chapter One) which in part says that a student should expect to acquire new marketable skills, attitudes and values or to improve on existing attributes through higher education experiences. It is the intent of the University and CEAS to provide a blending of career-oriented educational experiences with studies in the liberal arts and sciences. We are committed to the view that career related studies need not be the antithesis to liberal education studies at the upper division and masters level of study. Thus the guideline that students register for about 25% of their studies outside of CEAS and that to the extent feasible each student should have practical on-the-job experiences as an integral component of his education.

Most of the more than 600 students registered in CEAS in the spring of 1975 are employed. They have careers in nursing, allied health, science teaching, business, industry, state agencies, federal agencies, municipalities, and the like. They are in fact career-oriented. For the most part they are working toward a baccalaureate or masters degree with the intent of changing to a more responsible position, with their present employer, upgrading their knowledge and skills for their current position, or are changing from less needed positions to newly established positions.

### Student Characteristics

The median age of all students in CEAS is about 32. The median has varied from 29 to 35 during the various enrollment periods (Sessions)

### 3.3

In the past five years. The median age for undergraduate students is about four years less than for all students. More than 75% are married and have families. About 85% work at least part-time; the majority are employed full-time. Since the initial enrollment in CEAS, the male students have slightly outnumbered the female. In general about 45% of our students are female. About 50% of the students are in health science, 15% in science teaching, and 35% in science; (Chapter Five gives details on the CEAS curriculum). On the average, minority students comprise about 25% of the CEAS student population. During the past four years about half of our students have been undergraduate and half working towards a masters degree. At any given time about 15% of the students are "sitting out" a Session. Students may register for zero units (called "Zero Registration") for two consecutive two-month sessions in order to complete unfinished assignments, take vacations, accept out-of-town work assignments by their company, etc., without having to apply for re-admission. An important aspect of the University's mission is to serve middle and low-income students. Most of the CEAS students are middle to low income, hence some of them occasionally interrupt their education for several months in order to hold two jobs and recharge their fiscal reserves. The academic preparation of our students in the sciences ranges from truly superior to inferior. Those whose academic preparation in a given field such as chemistry or mathematics, usually attend one of the community colleges in the area while concurrently taking coursework in CEAS that does not demand background in chemistry or advanced mathematics. Many kinds of self-guided learning materials packages are in the CEAS faculty offices

and in the University library. A large percentage of our students use these materials and with some aid and advice from faculty, fill in voids in their academic backgrounds.

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#### Attitudes and Behaviors

A salient attribute of the older, experienced, commuter student is a desire to learn. They are willing to study hard and long to achieve their goals and to make extraordinary economical, social, and domestic sacrifices to obtain an education.

Upward mobility is a desire that seems to characterize our students who have worked and supported a family for 5-10 years while earning an associate degree from a community college. They usually are seeking a higher level, perhaps supervisory, position or preparing themselves for newly established positions for which a degree in environmental science will qualify them. Large numbers of students in the health sciences are preparing themselves for supervisory positions. Many businesses, industries, municipalities are establishing new positions for environmental analysts, planners, managers, conservationists, and the like. And these agencies are encouraging those good employees who are in positions that are not critical to come to CEAS to prepare themselves for a new role as environmental specialist in the agency. Elementary and secondary school teachers in the Chicago metropolitan area are coming to CEAS to pursue graduate study in environmental education and environmental science. In general, the in-service teachers are re-educating themselves.

### 3.4a

In the September-October Session, 1972, the Undergraduate Program (UP) Aptitude Examination was administered to 203 entering Juniors who volunteered to take the examination. Forty-seven of the CEAS entering Juniors took the examination. The mean score on verbal ability was 383 and on quantitative ability 403. When compared to a national norm established by 4115 Juniors who have taken the UP Aptitude Examination, the CEAS students' mean scores were 30 to 50 points lower (Research and Evaluation Report No. 7-72). This preliminary study suggests that the open admission policy encourages students with widely varying backgrounds and abilities to begin study in CEAS. Small unpublished surveys conducted more recently indicate much higher mean scores both on verbal and quantitative components of the examination. Beginning in fall 1975, all entering undergraduate students will be required to take the UP Aptitude Examination and all graduate students must take the Graduate Record Examination prior to admission to degree candidacy which may occur after completion of eight units of graduate credit.

### 3.5

Our students tend to be highly pragmatic and goal-oriented. Having worked for several years to support a family, our students come to us, for the most part, with reasonably specific, practical goals and objectives. Of course, some non-degree students register for study largely for their general education and interest. A primary objective in CEAS is to interweave theory and practice in all of our offerings. One of the main theory-practice integrators is cooperative education, an experience for which the student receives both credit and pay. (See Chapter Five for additional information on Cooperative Education in the curriculum.)

The CEAS curricula are much more flexible than typical science curricula. Most of our students enjoy the unstructured flexible nature of the curricula. But some students are initially frustrated when they are obliged to select among several alternative pathways to achieve their goals. We have not been successful in predicting which students will like structured and which ones will like unstructured curricula. If one could identify indicators in students' attitudes and behaviors that would allow one to predict whether or not a student would have difficulty in an unstructured curriculum, we could do a better job of advising and teaching. It is obvious to me after five years' experience with our students in a competency-based, relatively unstructured curriculum that intensive and extensive studies of attributes of the commuting student in the upper division universities is greatly needed. We simply do not have enough data on the older, work experienced, commuter student for use in the decision making, advising and teaching processes.

### 3.6

A great deal has been said about the role of the student in university and collegial governance and advisory capacities. But "the literature dealing with the sociology of the commuting student is very small" (Wayne State University study of The Commuting Student).

According to McGrath, 1970, "The experience of a few American institutions and some Canadian universities suggests that a governmental structure which assembles all the constituent parties in some organization like a Senate, including the Board, the Administrators and the students in policy discussion is better than one which provides for reconciliation of opposing views after the constituent groups have taken independent action." To this end students are invited to serve on all councils, groups, committees and task forces in the University and hence in CEAS. This is great experience for a very few students in a commuting student population. Students are appointed or elected to every organized group in CEAS. But experience has shown us that 15-20 students participate actively in a wide variety of groups and that the other 580 participate very little, if at all. In reality, far less than one percent of the CEAS students have an active voice in collegial and university affairs. This can hardly be considered adequate, fair, or just representation!

A position of Student Assistant Dean (S.A.D.) was established in CEAS in the fall of 1971 when we registered our first students. It is a "salaries" position and the S.A.D. is appointed by the Dean. The S.A.D. is our attempt to provide a real live communication linkage among faculty and students. (See Chapter Six for additional information.) The S.A.D. works closely with the Assistant Dean for Student Affairs and actively



### 3.7

participates in the CEAS Administrative Council, the Collegial Assembly, and other groups in the College. The S.A.D. has good communication with the small number of students who participate actively in CEAS affairs, but communication with most students in the College is remote. We have not found ways to interest the commuting student, who has to hold a job, support a family, and complete his collegial studies, in becoming active in collegial affairs. Here again, very little data are available on the views of upper division, commuting students in participation in collegial policy making processes. My experience with our students is that most give highest priority to family and job and are willing to leave the policy making to faculty and administration. However, they do demand that open lines of communication are available in the event that they want to feed an idea into the system. The S.A.D. helps to provide an avenue of communication.

Most of the CEAS students would not be in college were it not for Governors State University being located within commuting distance of their homes and/or place of employment. In a very real sense, GSU is a regional university with an enormous population within a 25 mile radius of the campus. There are more than 60,000 community college students in this "service region." Some students from Chicago, other states and other counties move near to the campus so that they can commute short distances. Planning field trips, cooperative education experiences, and the like for our students is difficult, and sometimes impossible. It is mandatory that faculty and administration provide flexible, responsive planning of instruction and related activities if we are to serve the CEAS clientele. Many of our students will use their day(s)

off work to participate in a field trip or some other educational event. Hence both the commuting student and the faculty in a commuter institution share an extra burden if good quality education is to be provided.

#### Research on Student Characteristics

During the second year, 1972-73, that the University had students, the Research and Innovation wing of the University conducted a "Survey of Student Characteristics" (Research and Evaluation Report No. 9-73). Sixteen per cent of the CEAS students (89 persons) registered for the May-June 1973 Session responded. Their responses to a five-part item, "What attracted you to GSU" are shown in Table 3.1, taken from the above survey.

Table 3.1 Primary Reason for Attending GSU. The number represent the mean results on a scale of 1-5 with 5 most important.

Cost	Curriculum	Eight-Week Calendar	Innovative Environment	Location
2.48	2.89	2.60	2.71	2.47

The competency-based, interdisciplinary science curriculum leading to degrees in environmental science was the most influential factor and an innovative teaching-learning environment second.

Small unpublished surveys conducted by the CEAS suggest that the curriculum is still the primary factor attracting students into the College. It is extremely difficult to obtain valid and reliable longitudinal data on commuting students in GSU. Because of the eight-week session and our policy of allowing students to "zero register" for two consecutive sessions,

students "drop in" and "drop out" regularly to suit their academic and financial needs. Hence we always have a student body of "X" number of students but the composition changes from session to session. Faculty interviews with their advisees just prior to graduation suggest that graduating students still rate the curriculum and the atypical (innovative) teaching-learning environment as the most rewarding and attractive attributes of the CEAS.

The Research and Innovation Wing of the University and Assistant Dean for Research and Evaluation in CEAS are working with the CEAS faculty in an attempt to design longitudinal studies of characteristics of CEAS students when they enter, when they graduate, and at a later date.

## CHAPTER FOUR--CEAS: FACULTY

An academic institution is known by the quality of its faculty and the qualitative performance of its students after graduation. This generalization has always guided me in building a faculty and it continues to guide the faculty and administration of CEAS as it adds new faculty to the system. Since CEAS was to develop an interdisciplinary competency-based curriculum leading to degrees in environmental science, we have always searched for faculty who were broadly educated in the sciences, interested in developing new instructional materials, concerned about curricular design, and highly motivated to become superior college instructors. In addition, faculty who were educated in a science discipline and also a specialist in educational research, curriculum design, instructional theory, and/or curriculum theory were sought after as CEAS faculty members. This group of faculty is referred to generally as the science teaching faculty. These faculty members are charged with three primary roles: first, to plan, develop and implement an environmental science teacher preparation program; second, to work as team members with basic scientists to design instructional materials and develop curricular patterns; and third, to provide liaison with the other three colleges in the University to plan teacher preparation programs. This latter role was in support of the University plan to have teacher preparation programs in each college where the discipline-oriented faculty are located rather than to have a college of education responsible for all teacher education programs.

## Academic Credentials

During 1969-70, I, a biologist-ecologist with considerable experience in curriculum development and college teaching, was the only CEAS faculty member. During this period five new faculty were employed to begin full time duty in July or September, 1970, and to serve as consultants during the winter and spring, 1970. The five held doctoral degrees, representing various fields and institutions (Table 4.1).

Table 4.1

Name	Degree	Institution	Discipline and Experiences
Donald S. Douglas	Ph.D.	Duke University	Physiology-ecology; several years college teaching & research
Peter Fenner, <i>Herpetologist</i>	Ph.D.	U. of Illinois	Geology; curriculum planning and administration
James Joseph Gallagher	Ed.D.	Harvard Univ.	Physics, Science Education; Curriculum development and administration
Robert A. Kloss	Ph.D.	U. of Wisconsin	Biochemistry; many years college teaching and administration
Robert E. Tumelty	D.P.H.	U. of Calif., Berkeley	Public Health Administration, several years practice and college teaching

In the fall of 1971, when the first class of students registered, seven new faculty were employed making a total of 14 faculty, including the Dean. The new faculty each held a Ph.D. and from a University not represented by the original six. Their fields of expertise were biogeochemistry, electrical engineering-mathematics, nursing-higher education, animal behavior, analytical chemistry, health education, and biology-science education.

### 4.3

There are, in 1975, forty faculty members, thirty-one of whom have a doctorate, eight a masters, and one a bachelors degree. They represent twenty-four doctorate granting universities. In addition to those whose expertise are in the physical, biological, earth, mathematical and health sciences, we have faculty in CEAS whose specialties are in such fields as sociology, urban planning, anthropology, communications, health economics, mental health, computer science, and the like. It is a truly interdisciplinary mix of college professors who work individually and in teams to design and implement three major instructional programs: health science, science, and science teaching. There is no departmental organization of faculty (See Chapter Six for CEAS organization).

#### Recruitment

The singular most important function of an administrator and faculty in a new, evolving college is recruitment of faculty. It is safe to generalize that starting a new upper division university with new, experimenting systems is high risk for everyone concerned. Therefore, it is important that prospective faculty know very early in the process what is expected of them and what they can expect from the institution. To this end, I developed a list of "faculty expectancies" which were modified and edited by university administrators and the initial five CEAS faculty. The "Faculty Expectancies" used in the 1974 and 1975 recruitment processes state that persons who form the faculty of this (CEAS) College will be expected to:

work cooperatively with colleagues to develop competency-based Learning Modules that are interdisciplinary in nature and consistent with the educational objectives and goals of the University.

work as a member of instructional teams with student groups studying problem-focused issues that are interdisciplinary and concerned with the improvement of the quality of life.

individualize instruction as much as feasible utilizing contemporary educational technology such as computer simulation, games, audio-tutorial, and videotape, in cooperation with instructional support units.

cooperate with the University's Office of Research and Innovation to study the effectiveness of her/his instructional materials and modes in producing expected educational changes in students and to design and develop research proposals.

engage in continual assessment of the curriculum to ensure that the interdisciplinary nature of science is obvious, that instruction is consonant with the goals of the college, and that needs of the students are being met.

contribute to the cooperative education program of the College wherein the expertise of faculty is joined with that of specialists in the professions, government, business, and industry to plan and implement instructional work experiences.

teach in open, flexible laboratories, that are planned for open-ended, student-centered interdisciplinary studies.

promote growth as a teacher in her/his ability to develop interdisciplinary instructional materials and utilize a variety of instructional modes.

teach in on-campus or off-campus situations, such as schools, clinics, hospitals, industries, at night and on weekends to meet needs of students who are fully employed during the daytime.

assist in maintaining an intellectual environment that promulgates innovation and experimentation in curriculum, instruction, and research.

assist the College in maintaining efficient and responsive management by working cooperatively with the administration to develop schedules of Module offerings, requests for library holdings, and other tasks needed for effective operation of the College.

work with various teams of faculty to improve and integrate instruction both within the College and throughout the University.

work cooperatively with faculty and administration to implement and to improve the University's Instructional Systems Paradigm and the Professional Personnel systems.

participate actively in various instructional processes, research and evaluation programs, student and faculty recruitment, community service activities, and in professional services to the University.

Two "recruitment packets" have been developed and used in CEAS recruitment activities. Packet No. 1 includes basic background information on the University and the CEAS and is sent to persons who have submitted their vitae along with a letter of inquiry about a position for which we are seeking applicants. If CEAS decides the person qualifies and the applicant decides she/he is still interested after perusing the background materials, a second packet of materials is sent along with an invitation to spend two days on campus for interviews. The "interview packet" includes a job description, the faculty expectancies, various CEAS working papers that are pertinent to the instructional program of greatest interest to the applicant, and a detailed interview schedule for the two days. As Dean, I have a breakfast interview each day and an exit visit near the close of the second day with each applicant. During the two days, the applicant visits with CEAS faculty and assistant administrators, faculty and administrators in the other colleges who have expertise in allied fields, with each Vice-President and the President. Each of the faculty in CEAS submits written evaluations and recommendations to the Dean who then works with a search and screening committee and assistant administrators in the final selection process. Ordinarily three or four persons are interviewed for each position.

These recruitment procedures are extraordinarily time consuming but experience has proven them to be very effective both from the standpoint of the prospective faculty, the College, and the University. Some candidates, after studying the recruitment materials, have decided to withdraw their applications. A few have not studied the materials thoroughly before arriving for the interview and were convinced by the



close of the first day of interview that CEAS was no place for them. Nearly every person who studied the recruitment materials carefully and who completed the two-day interview schedule said that they would accept an appointment if an offer were to be forthcoming. We have never had a faculty member join the staff and then decide she/he had been misled or the University or CEAS misrepresented to them. But, on the other hand, almost every person who has joined the faculty has said after a few months on the job that they had not fully appreciated prior to actual experience all of the demands that the atypical experimenting systems in CEAS would place on them. I have concluded that it requires at least one year, and in some cases two years, for a new faculty member to understand completely the burdens and risks one assumes when she/he takes on the task of planning, developing, and implementing new curricula in a new, evolving institution.

#### Orientation

Orientation of new faculty to numerous different roles they are to play in CEAS is a continuing process for several years, but is semi-formally planned during the first year of one's employment. No matter how much one reads about interdisciplinary science, competency-based curricula, individualized instruction, and the like, it requires actual experience with commuter students, experienced faculty, special consultants and administrative systems to understand and appreciate fully the new demands placed on one. As chief administrator of the CEAS, I employ a variety of tactics to assist faculty in orientation to all the systems in the College and the University. Each new faculty member is teamed for a year with a CEAS-experienced professor who serves as a "buddy," a "counselor," an "advisor." CEAS-experienced faculty team up with new faculty to plan,

#### 4.7

design, develop and teach a learning module (instructional package similar to a course syllabus). New faculty are asked to work with one or more of the science teaching faculty to examine the Instructional Systems Paradigm and to get some assistance in writing competency-based instructional materials. (See Chapter Five for details on CEAS Curriculum). Office assignments are made so that new faculty are physically located near to experienced faculty but in related disciplines rather than the same discipline. This physical relationship usually assists a great deal in promotion of interdisciplinary discussions of teaching, research, and curriculum planning. Many of the ad hoc committees in CEAS are appointed by the Dean or an assistant administrator. New faculty are placed on these committees with experienced faculty from time to time. (See Chapter Six for details of CEAS organizational structure.) Also, new faculty are encouraged to volunteer to serve on at least one of the standing committees of the University Assembly where they can participate actively in policy making decisions. CEAS-experienced faculty are encouraged to invite new faculty to accompany them to statewide science and other educational meetings. The CEAS faculty as a whole meet twice monthly to consider all affairs of the College. The entire faculty is convened twice each year in a one- or two-day retreat to which one or more consultants are invited to work with the faculty on curriculum planning, faculty personnel, and the like; Each new faculty member meets periodically with the Dean to consider any matter of concern to the faculty member. All faculty prepare annually a written self-evaluation and participate in a peer and student evaluation procedure. (See Chapter Seven for information on faculty records.)

#### Planned Professional Growth

Governors State University is primarily a teaching university although research is encouraged and to a limited extent fiscally supported. In CEAS it would be relatively easy to place so many teaching, advising and other demands on the faculty that their professional growth would be greatly hindered. Hence a variety of planned professional growth practices are necessary both on the part of the faculty and the administration. Workshops, conferences, and retreats are conducted either by the faculty, the administration, or, more often, both. Specialists in various fields are brought to the campus as consultants to participate in group activities and then to spend a second and sometimes a third day meeting with individual faculty about their teaching or research endeavors. Every available fiscal support and administrative encouragement is given to faculty to attend state and national meetings of scientific societies. CEAS is allocated a percentage of the overhead from grant funds received by the University through the efforts of a faculty member in CEAS. Some of these funds are used to support travel by faculty to visit the National Science Foundation, U. S. Department of Health, Education, and Welfare, National Institutes of Health and other places of special use to faculty in their professional growth activities.

Faculty in CEAS are strongly encouraged to write proposals seeking funds to support research or some other educational endeavor in which they have an interest. More than a dozen projects directed by CEAS faculty have been funded in excess of 800 thousand dollars during the past 5 years. In

addition, more than half the CEAS faculty have received "migrants" from the Research and Innovation Wing of GSU. "Migrants" are funded from overhead yielded by foundation grants and usually are awarded in amounts of less than \$1000. (See Chapter Nine for details of special projects.)

Scholarly writing is a great stimulus to professional growth. Since its inception, CEAS has had an internal publication system of Working Papers, Position Papers, and Occasional Papers. More than 200 such papers have been produced by CEAS faculty and administrators. Nearly every faculty member has produced one or more of these papers. Several faculty have published papers in journals in their fields of specialization. Three faculty have published books and several books are in manuscript form at this time.

#### Liaison and Leadership

A strategy in planning the University was to encourage and enhance communication and interaction among the colleges and the other units of the University. The CEAS dedicated itself to accomplishing this strategy through the tactic of naming "liaison faculty." The faculty who serve liaison functions accept the liaison function as part of their workload. Some serve for one year whereas others serve for several years. CEAS has a liaison faculty member who works with the Research and Innovation Wing of the University and the CEAS faculty on various projects. Another liaison faculty member works with CEAS faculty and the Cooperative Computing Center. Two CEAS faculty are cooperative education liaison persons. They work with the central Cooperative Education office, the CEAS faculty and students, and the employers of students registered in cooperative education.

Another tactic intended to improve communications and cooperative efforts is the appointment of "support staff" as University Professors in CEAS. A university science librarian holds a professor appointment and provides liaison between the CEAS faculty and the library staff and their resources. The Director of Admissions and Records is a mathematician who holds an appointment in the College and serves as liaison faculty in CEAS. The Coordinator of Special Projects in the Research and Innovation Wing is a specialist in science education who holds an appointment in CEAS and functions as liaison faculty member. The Instructional Communications Center employs a specialist in instructional technology who holds an appointment on the CEAS faculty and provides liaison function between CEAS faculty and the Center. The liaison faculty participate in teaching, research, committee work, social events, and the like along with all other faculty in the College. The liaison faculty concept has functioned very well in CEAS. It remains to be seen whether or not this important concept survives the retrenchment that is certain to accompany the budget reductions that are occurring.

Every faculty member has leadership potential, and, if given a wide variety of opportunities, leadership will manifest itself in any of several ways. CEAS faculty are encouraged to accept leadership responsibilities anywhere in the University or the community where they feel they have the expertise to function satisfactorily. Many of the CEAS faculty have chaired important college and/or university committees during the first year of their appointments. Most have been successful leaders. After six years of operation, the faculty of CEAS are recognized for the leadership roles they have assumed in the College, the University, the community, and elsewhere. I support the

hypothesis that most of the faculty employed during the first two years of the life of a new University overtly or covertly view themselves as future administrators in the system. There are many factors that could contribute to this phenomenon. The recruitment process may have a tendency to select persons with outstanding leadership qualities. Also, persons with latent leadership abilities may have a special desire to help build a new institution, hence seek such positions. In CEAS, I make an especial effort to employ faculty with obvious potential for leadership roles. A primary function of a College is to aid and abet faculty in preparation for future positions of leadership.

#### University Professors, Community Professors, and Tenure

During the first few months of planning the University, it was decided that the typical faculty ranking systems had many disadvantages and that some new approaches to faculty systems should be tried out in an experimenting institution such as GSU. The context in which the CEAS faculty system evolved is described in the Educational Planning Guidelines:

Criticisms of the way faculty conduct their multiple functions in American higher education, as well as criticisms of institutional faculty utilization, are observed with increasing frequency. Praise for the accomplishments of college and university faculty in all fields of human inquiry can also be found. It is the intent of Governors State University to develop new and changing systems (1) to support faculty growth, development and scholarly inquiry, and (2) to explore new dimensions of faculty interest, commitment to instruction, and realization of "self" as learner-responder, researcher, and community resource agent. . . .

The following features of an evolving and transforming system are postulated--Governors State University proposes to experiment by doing away with the customary faculty academic ranking system

which has historically developed in this country for reasons no longer considered valid. For an initial operational period of five years, the University proposes to make all initial faculty appointments as University Professors or Community Professors, the former to be full-time faculty, the latter to be employees elsewhere but serving the University in part-time capacities in a variety of paid or unpaid roles.

--Governors State University proposes to develop with its University and Community Professors, administrators and students, internally functional reward systems that enable each individual faculty member, within the frames of reference of his collegiate units and University needs, to select the proportion of the services he wishes to render (teaching, research and evaluation, or community service) and upon which he proposes to be evaluated. This will diminish the so-called "flight from the classroom" and the pressure to become solely and exclusively "educational entrepreneurs" concerned with grantsmanship. Rather, it places upon the individual, within the context of the institution, the primary choice of role and responsibility.

Since the CEAS is a non-departmentalized, interdisciplinary mix of faculty in basic, applied, social, and behavioral sciences and the curricula offered are interdisciplinary, there is not a "critical mass or number" of faculty in any given discipline as there are in a typical university. Experience has shown us that the community professor concept is one way to enrich the faculty expertise in a given discipline whenever it is needed. During the past five years, CEAS has employed more than 100 community professors for one or more two-month sessions. A few community professors serve on a year-round basis. Most receive a small fee; some receive no remuneration. Community professors are employed upon the request of a University Professor who wants to supplement his expertise in planning, development, and use of instructional materials or the planning and execution of a research project. Potential community professors <sup>live</sup> about within a 15 mile radius of the University. Many of

the villages near the campus serve as "bedroom communities" for professionals who are employed by such institutions as Argonne National Laboratories, Field Museum, the Museum of Science and Industry, Lincoln Park Zoo, University of Chicago, and <sup>of the like</sup> the like. In addition, research scientists who are employed in one of the businesses or industries in the Gary-Hammond petro-chemical complex <sup>of</sup> health scientists from major medical centers and hospital complexes live in the area. Professional persons in the area are quick and willing to serve as community professors in CEAS as a service to the University. Another important community professor resource in the area is the lay person who has gained valuable expertise through work and other life experiences. The CEAS faculty frequently team up with a community person on a teaching, research, or community service project.

In addition to eliminating the typical faculty ranking system, the University planners decided to try an atypical tenure system as stated in the Educational Planning Guidelines:

GSU further proposes to develop a system of cyclical tenure. The elements of the system will be developed during the five-year experimenting period and will contain the features of (1) annual evaluation (self, students, peers, administrators, and community personnel where appropriate) related to job efficiency and reward systems; (2) a probationary period following Board policies; (3) achievement of tenure in a period satisfying Board policies and AAUP recommendations; (4) continued annual evaluation related to job performance and reward systems; and (5) a five, six, or seven year cycle of full-scale tenure review. Consideration has been given to the "no tenure" concept such as the one adopted by Hampshire College or Evergreen College, but GSU feels a developed concept of cyclical tenure can utilize the best features of both tenure and non-tenure systems.



The operational cyclical tenure system has evolved and functioned since September, 1973. All University Professors are appointed for one year twelve-month contracts. A professor may apply for a seven-year cyclical tenure appointment after four years of teaching and/or research experience in higher education, three years of which must be at GSU. At this time (September, 1975) five persons, including the Dean, hold seven-year cyclical tenure appointments as University Professors in CEAS. As Dean, I serve at the will of the President, but I hold a tenured appointment as University Professor of Life Science. At this stage of our evolutionary history in CEAS, no one has become eligible for consideration for a second seven-year tenure appointment. (For details on faculty evaluation, tenure, etc., in CEAS, see faculty records, Chapter Seven.)

#### Cooperative Education

As has been stated elsewhere in the book, the University was planned to blend liberal arts and sciences with practical, career-oriented education. We considered this an important educational strategy. A variety of tactics have been placed in operation in an attempt to achieve this goal. The primary vehicle to weld theory and practice is Cooperative Education (CE).

As the Educational Planning Guidelines state:

Cooperative Education is an experimental program at Governors State University through which students are involved in the application of ideas, methodologies, and resources encountered in their programs of study. With the flexibility of sessions and learning modules, a variety of off-campus and on-campus cooperative education placement/study patterns are available and can be developed. Cooperative education is seen as an integral part of the educational offerings in each collegial unit as a means of supplementing income needed to meet

educational expenses, as a means of extending and complementing the specific resources of the University, and as a means of assisting students in making wise vocational choices. Though centrally coordinated, the functional conduct of the cooperative education program will be decentralized into the colleges.

In CEAS there are two persons who carry the title of University Professor of Cooperative Education and who function as the liaison faculty with the central C.E. staff, the students, all the other CEAS faculty, and employers of students registered in C.E. learning modules. Each CEAS faculty member is expected to work closely with students and the two C.E. faculty to engage students in appropriate C.E. experiences. Students always receive college credits for C.E. experience and usually they are also paid by the employer. Each schedule of learning module offerings carries a module title of "Cooperative Education in . . ." for 1-8 units. The students, faculty advisers, and the C.E. faculty member work with the student and an employer to describe the competencies the student is expected to achieve, the actual title of the work experience which will become a part of the learning module title, and roles each will play in the process. The student usually works independently with the employer to negotiate working hours, salary, and duration of the employment.

The C.E. work experience has served some of our CEAS students very well. Many of them have graduated and become full time employees in the position they held as a C.E. student. Such positions as health service administrators, urban or village planners, environmental analysts, <sup>and</sup> environmental education teachers, ~~and the like~~. We have not as yet evolved a C.E. model that is as satisfactory as we would like for married, employed, commuter students!

## CHAPTER FIVE--CEAS: CURRICULUM

### Rationale and Philosophy

It was decided at the outset that a new, experimenting college in a new, upper division university should evolve curricula that would not, for the most part, replicate existing curricula in the sciences. There was no need, in our opinion, to establish conventional departments such as botany, zoology, chemistry, physics, mathematics, etc., since most existing colleges and universities in Illinois had well established science departments and were graduating persons with majors in biology, chemistry, mathematics, and the like. The condition of the national and man-made environment was obviously in various states of disarray and deterioration. And many scientists, economists, and humanists were convinced that the environmental problems would worsen. We were convinced that there was need for a College of Environmental and Applied Sciences with a competency-based, interdisciplinary science curriculum that offered baccalaureate and masters degrees in environmental science.

It has often been said that curricula in colleges and universities are not based on an educational philosophy. Recently, Mayhew said, "Judged only by the content of the literature of higher education, programs of colleges and universities are eclectic affairs, rooted in no particular psychological-sociological or philosophical set of pre-suppositions." (Mayhew, 1971). GSU attempted to set forth its educational philosophy in the Educational Planning Guidelines. In CEAS the publications, aside from the University guidelines, that were most influential in our curriculum planning were: Bruner, 1966; Bloom, 1956; Gagne, 1965; Steinhart and Cherniak, 1969; Smith, Cohen and Pearl, 196 ; Weinberg, 1968; Orleans, 1968; King and Brounell, 1966; Krathwohl, et al., 1964; Inhelder, B. and Piaget, J.,

1958, and several Illinois Board of Higher Education documents. Other references that were useful but perhaps less influential on our plans were: Spurr, 1970; Dressel, 1968; Dressel and DeLisle, 1969; Mayhew, 1967; Schwab, 1969; Tussman, 1969; Bruner et al, 1966; Mager, 1962; Christenson, 1969.

It was in this setting that CEAS was established in the fall of 1969 with three instructional programs designated: (1) Health Science, (2) Science, and (3) Science Teaching.

#### Goals and Themes

Two broad, over-arching goals and four themes served as guides (1) to the faculty in curriculum development and instruction, (2) to students and faculty as they plan students' programs of study and (3) to researchers and evaluators who may assess the college's achievements of its stated objectives.

The CEAS Curriculum Handbook, 1975, states that two of the themes are broad goals:

- each graduate should be prepared for lifelong learning; and
- each graduate base actions on ideas that are substantiated by data.

The other four themes are general objectives that made these broad goals possible:

- each graduate should demonstrate both skill in and propensity for inquiry and problem-solving as a style of functioning in the field of professional interest.
- each graduate should demonstrate understanding of and ability to use conceptual knowledge that has significant bearing on the field of professional interest.

### 5.3

--each graduate should demonstrate ability to assess, interpret, apply and communicate information acquired through research, experience, and reflection of others.

--each graduate should demonstrate ability to formulate a value orientation reflecting the current state and changing nature of knowledge, and to be able to relate this value orientation to future professional activities.

The six themes represent a blending of traditional goals of liberal education and the pragmatic objectives of education in applied fields. This blending is deliberate and appropriate to the mission of the University. More important, this blending is a powerful one, in that the unifying themes are neither bound by time nor culture. They are valid now and have predictable validity for students in the decades to come regardless of where or how they will be living.

An overview of the content areas and the goals-themes is given in Table 5.1 which is modified and taken from the 1975 Curriculum Handbook.

Table 5.1

Theme	Content
Life-Long Learning	Conceptual Structure and Information Sources Inquiring in New Fields Attitudes for Self-Directed Learning
Basing Actions on Ideas	Conceptualizing Data and other Experience Planning and Implementing Actions
Inquiry/Problem Solving	Research Design and Methodology Measurement Investigative Skills
Conceptual Knowledge	Biological Sciences Earth Sciences Physical Sciences Mathematical Sciences Social Sciences Health Sciences (or Other Applied Sciences) Nature of Knowledge
Information Processing	Retrieval Techniques Analyzing and Interpreting Information Applying Information Oral and Written Communication
Value Set	Ethical Systems

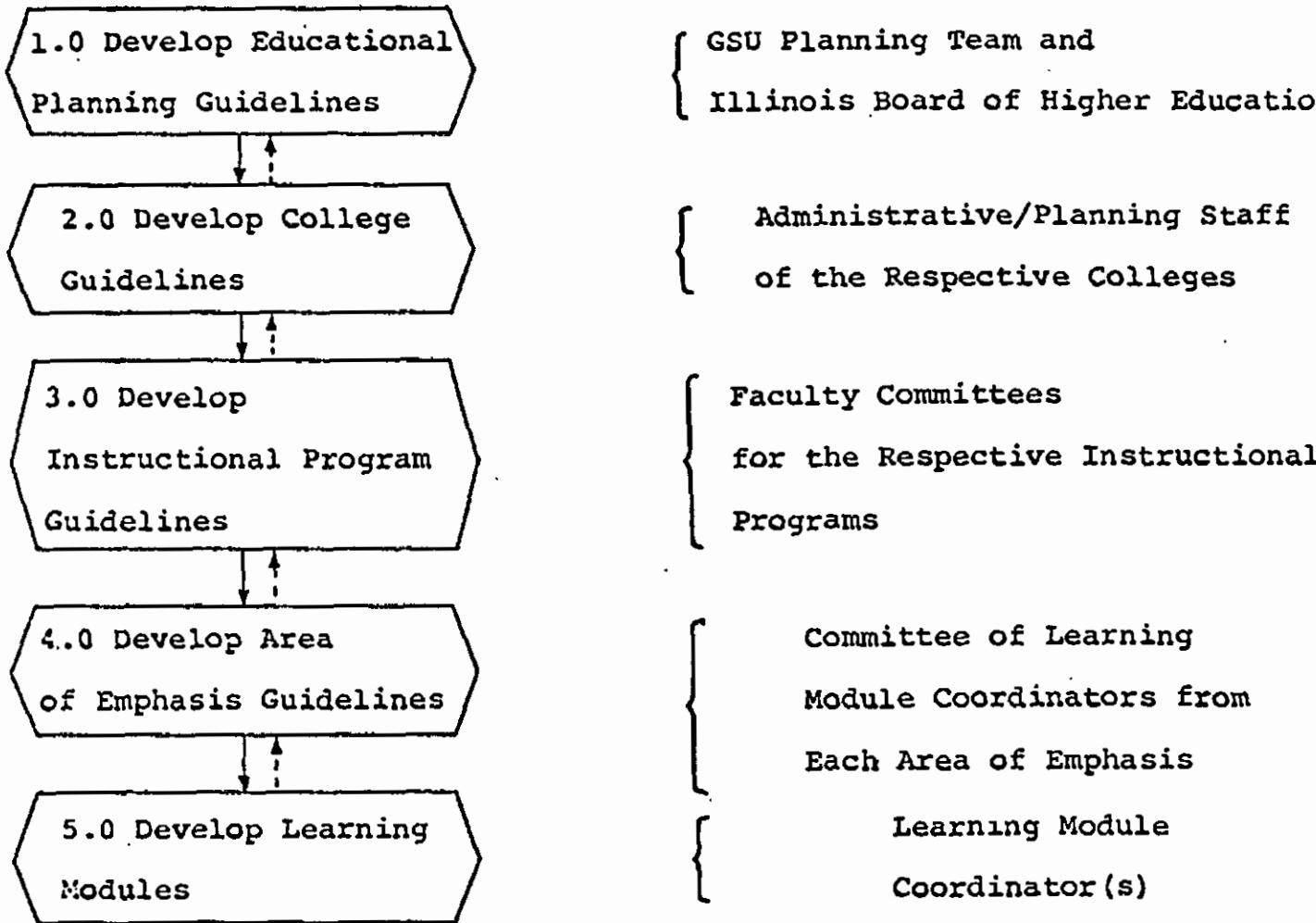
### The CEAS Curriculum Structure

There are no discipline-oriented departments in CEAS. The College is one budgeted unit in the University System. The usual major and minor systems found in most universities does not exist in CEAS. Students who graduate from CEAS with a B.A. in Environmental Science are less specialized than the typical college graduate with a major in a science discipline. Our students in a sense have an "interdisciplinary major." In order to have a systematic organizational scheme of curriculum planning, development, and implementation, the science teaching faculty of CEAS under the leadership of Thomas A. Cleaver developed a paradigm for use as a curriculum development guide. The "Cleaver paradigm" was later modified and approved by the University as an Instructional Systems Paradigm (Table 5.2) to be used as a guide to curriculum and instruction planning throughout the University. Terminology not typical in most universities was adopted to describe atypical instructional and curricular systems (See Glossary of Terms in Appendix \_\_\_).

Three primary taxonomic categories are used to describe the CEAS curriculum: (1) Instructional Program, the broadest, most general category, (2) the Area of Emphasis, a subdivision of the instructional program, analogous to an interdisciplinary area "major," and (3) the Orientation, an interdisciplinary area of concentration, less discipline oriented than the usual major in a discipline. The instructional program, areas of emphasis, orientation and degrees available in CEAS in 1975 are shown in Table 5.3. The B.A. and M.A. in Environmental Science are the only degrees offered.

Table 5.2. Graphic overview of the Instructional Systems Paradigm (ISP) which is used as a guide to curricular planning, development, implementation and evaluation throughout Governors State University. (Taken from ISP publication).

Governors State University  
Instructional Systems Paradigm  
(Overview)



Back Line - - - - ->

For additional details on the Instructional Systems Paradigm, see section on ISP later in this chapter.

Table 5.3. CEAS Curriculum summary. (Taken from CEAS Curriculum Handbook, 1975.)

Instructional Program	Area of Emphasis	Orientation	Degrees Available
Science	Interdisciplinary Science/Environmental Technology	Environmental Analysis Environmental Conservation Environmental Systems Management	BA MA
	Human Ecology	Human-Environment Planning	BA MA
Health Science	Health Science Practice	Nursing Restorative Nursing Medical Technology	BA MA BA
		Health Science Education	Nursing Teaching Allied Health Services Education
	Health Science Administration	Nursing Administration Health Services Administration	MA BA MA
Science Teaching	Elementary Science Teaching	Teaching Curriculum/Supervision	MA MA
	Secondary Science Teaching	Teaching Curriculum/Supervision Environmental Education	MA MA MA
	Community College Science Teaching	Environmental Science	MA
	K-12 Science Teaching	Environmental Science	BA MA

The relationships among the competencies specified for the (1) Learning Module, (2) Orientation, (3) Area of Emphasis, and (4) Instructional Program are carefully planned as the Curriculum evolves. And all of these competencies are related to and supportive of the goals of CEAS and the goals and objectives of the University. The Learning Module <sup>is</sup> a package of instructional



materials--something like a competency-based syllabus--which guides the student through a variety of learning experiences and the faculty member in her/his instructional activities so that the student will achieve the competencies specified in the Learning Module. (The components of the Learning Module (LM)<sup>one</sup> described in detail later in this chapter.) The LM competencies are the most specific, the Orientation competencies more general, the Area of Emphasis competencies still more general, and the Instructional Program competencies the most general of all.

A student may develop a Student Study Plan (see Chapter Seven, student records, for details), known as a "learning contract" in some institutions, at the Area of Emphasis or at the Orientation levels of "specialization." The competencies that a student is expected to achieve are specified at the instructional program, area of emphasis, and orientation levels.

#### Health Science Instructional Program

During the 1969 planning year many conversations were held with the health professionals associated with the Illinois Board of Higher Education and the Health Education Commission, and the Illinois Study Commission on Nursing. It was evident at the outset that the professional field of nursing should receive high priority (Illinois Study Commission on Nursing, 1968; Illinois Board of Higher Education, 1968). Hence emphasis was initially placed on development of a competency based curriculum to accept students who already are registered nurses with an associate degree or diploma and prepare them for nursing teaching, administration, or practice (Table 5.3).

There are literally dozens of allied health fields in which one could prepare persons. It was decided, after consultation with many health professionals in the area, to limit our efforts to the field of medical technology and allied health education. Persons entering these fields of study in CEAS are already certified or licensed practitioners (e.g., medical technicians, medical technologists, nurses, etc.). (Table 5.3).

It was clearly evident from conversations with management personnel in clinics, hospitals, and other health service facilities that middle management personnel for health delivery agencies were not being prepared adequately in Illinois. Therefore, health services administration was another health field given high priority. (Table 5.3)

During the past five years the competency-based Health Science Instructional program has evolved to level of sophistication that specifies five competencies that are common to all Areas of Emphasis and Orientations in Health Sciences. The CEAS Curriculum Guide, 1975, states that:

The Health Science Instructional Program is designed to prepare professionals in a wide spectrum of health fields that emphasize human services, by helping students:

--acquire skills that will prepare them to function effectively in current health professions roles, and at the same time...

--develop the intellectual resources needed to take leadership in improving health care delivery and health professions roles.

Offerings are designed to prepare people at the baccalaureate and masters degree levels for careers in administration, education, and practice in nursing and allied health fields. Over the next few years, additional fields of practice will be developed along with a more general offering in environmental health.

The Health Science Instructional Program is based on the following premises:

--before enrolling in the Health Science Instructional Program undergraduate students will have developed competence in nursing or an allied health profession at the lower division college level; graduate students will also have appropriate professional background on enrollment in masters level work;

--knowledge of biological, physical, and social sciences, and humanities, in addition to health science content, is essential to professional functioning in the health sciences.

A degree recipient in the Health Science Instructional Program of the College of Environmental and Applied Sciences should be able to:

--demonstrate knowledge of influences of economics, manpower, organizational structure, legislation, societal demands and comprehensive health planning on delivery of health care;

--describe the influences of culture on human behavior and social life;

--define a personal and professional value system, describe their impact on his/her behavior, and be cognizant of other value orientations;

--demonstrate knowledge of current environmental and social problems and their relationships to health care;

--demonstrate an understanding of research theory and statistical concepts and apply these in analyzing health care issues.

These expected competencies apply to all Bachelor of Arts and Master of Arts degree recipients in the Health Science Program.

#### Health Science Practice Area of Emphasis

At present three Health Science Practice Orientations are in operation: Nursing, Restorative Nursing, and Medical Technology. Restorative Nursing is available to Masters students only and the other orientations only to undergraduates (Table 5.3).

A student receiving a B.A. in Environmental Science, with an Orientation in Nursing will have achieved the following competencies in addition to five competencies common to the Health Science Instructional Program:

- demonstrate understanding of concepts from disciplines other than nursing that provide knowledge of universal self-care norms and factors which influence self-care practice;
- utilize knowledge of the self-care theory as a conceptual frame of reference for nursing;
- demonstrate knowledge of nursing processes and the ability to apply this in helping situations;
- apply knowledge of teaching/counseling processes to facilitate instruction to client's families, groups;
- demonstrate understanding of structure of community and community health and apply this knowledge to the client in terms of assessment of health needs, assessment of community resources and referral to appropriate resources;
- utilize various communication patterns in communicating knowledge, and understand research and information retrieval systems;
- demonstrate understanding of change processes and ability to use these in carrying out the professional role of a nurse;
- perform basic management functions related to the provision of nursing;
- demonstrate a general knowledge in a selected nursing area or pattern and an ability to perform effectively in designing, implementing, and evaluating nursing systems of care.

Recipients of an M.A. In Environmental Science with an Orientation In Restorative Nursing will have achieved the following competencies:

- satisfy all of the B.A. nursing orientation competencies;
- demonstrate understanding of physiologic and psychologic principles of aging;
- correlate advanced knowledge of the psychosocial and physiological aging process with Orem's self-care theory in restorative nursing;
- demonstrate advanced knowledge of the physical and behavioral sciences that provide understanding of effects of self-care deficits/assets of middle adulthood and aging;
- assist older adults with their self-care agency and therapeutic self-care demands by utilizing concepts and techniques of rehabilitation to provide restorative nursing intervention;
- demonstrate understanding of research theory and techniques;
- demonstrate advanced knowledge and understanding of national and local health and social legislation and economic principles that affect the general welfare of middle and older adults;
- select/design and evaluate nursing care materials and techniques for restorative nursing care;
- demonstrate advanced knowledge of the behavioral and physical sciences through interdisciplinary study related to restorative nursing practice;
- apply the research process in a clinical restorative nursing environment;

--demonstrate independent practice in restorative nursing utilizing Standards of Practice (1973) established by the ANA.

A student who is awarded a B.A. degree in Environmental Science with an Orientation in Medical Technology will have achieved the following competencies:

- demonstrate knowledge of influences of economics, manpower, organizational structures, legislation, societal demands and comprehensive health planning on delivery of health care;
- describe the effects of environment, culture and values on human behavior;
- describe the impact on their behavior of the personal and professional value system they have defined;
- demonstrate knowledge of current environmental and social problems and their relationships to health care;
- demonstrate an understanding of research theory and statistical concepts and apply these in analyzing health care issues;
- demonstrate a detailed knowledge of, and performance and modification of complex clinical laboratory analyses that require fine-line discrimination through their many steps of operation, recognition and correction of a variety of errors, principles of operation, and the use and maintenance of complicated instruments;
- assume responsibility and accountability for the accuracy of clinical laboratory analyses, knowledge of the physiological conditions leading to the results of these analyses, and the ability to design and monitor applicable quality control programs;

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- make knowledgeable decisions and prepare criteria and strategies to assist subordinates in solving anticipated problems or in making routine decisions;
- structure analytical and personnel schedules, prepare budgets, develop and maintain appropriate records, and communicate ideas and facts to others;
- assume responsibility for personal work and decisions, accept an accountability for all work performed in an area of responsibility, and evaluate the work of others in that area;
- recognize the need for continued learning in areas such as educational methodology, managerial skills, evaluation techniques and planning;
- assume a responsibility for the teaching of others, including the design, implementation, and evaluation of teaching-learning experiences.

Many hospitals and clinics in the area provide clinical facilities for the nursing curricula. Some of the professionals practicing in the clinics serve as community professors working with the CEAS university professors to interrelate theory and practice. The medical technology curriculum is a joint effort of the staff of the clinical pathology laboratory of St. James Hospital, Chicago Heights, Illinois, and the CEAS faculty. A number of the hospital professionals hold annual appointments as community professors at no salary from the University, and some of the CEAS faculty hold staff appointments at the hospital at no salary. It is truly a jointly planned and implemented medical technology curriculum that is competency-based.

Health Science Education Area of Emphasis

This curriculum is planned to educate students to assume teaching positions in community colleges, institutional training programs, and in other settings where teaching is a primary function. The Nursing Teaching Orientation is available only at the masters level, the Health Services Education Orientation at both baccalaureate and masters levels. All students in the Health Science Education Area of Emphasis will already have had or will receive education in (1) basic biological, social and physical sciences that provide the underpinning for the health professions; (2) the health profession that the student will teach; and (3) instructional and curriculum theory and teaching techniques needed to teach health professionals.

The person receiving an M.A. in Environmental Science with an Orientation in Nursing Teaching will have achieved these competencies:

- satisfy competencies 1-7 for the Restorative Nursing Orientation, or show evidence of completion of a clinical major in nursing at the masters level;
- demonstrate knowledge of educationally relevant psychobiological and social sciences at a level appropriate for nursing teaching;
- demonstrate knowledge of contemporary theories and philosophies of education;
- select/design and evaluate curricular materials and techniques in instruction that are appropriate for nursing;
- demonstrate a repertoire of teaching strategies, select and use them in different educational settings in nursing;
- design and implement appropriate plans for evaluating student achievement and instructional effectiveness in nursing.



Students who receive either the B.A. or M.A. in Environmental Sciences with an Orientation in Allied Health Services Education will have achieved the following competencies, the graduate having achieved at a greater depth and higher level of sophistication:

- demonstrate knowledge of influences of economics, manpower, organizational structures, legislation, societal demands and comprehensive health planning on delivery of health care;
- describe the effects of environment, culture and values on human behavior;
- describe the impact on their behavior of the personal and professional value system they have defined;
- demonstrate knowledge of current environmental and social problems and their relationships to health care;
- demonstrate an understanding of research theory and statistical concepts and apply these in analyzing health care issues;
- demonstrate knowledge of the conceptual content and functional processes of a specific allied health discipline at a level appropriate for educating other professionals;
- demonstrate understanding of the basic physical, biological and social sciences that underlie content and processes of the specific allied health profession;
- access, interpret, use and communicate information related to advancements in health fields and education;
- demonstrate knowledge of contemporary theories of learning and apply these to instruction of allied health professionals;

- design, select, evaluate and use curricular materials and technology in instruction;
- demonstrate a repertoire of teaching strategies and select and use them appropriately in different educational settings;
- design and implement appropriate plans for evaluating student achievement and instructional effectiveness.

Community colleges, hospitals and other health care delivery agencies cooperate with CEAS to provide settings where theory and practice come together. Many of the professionals in the agencies serve as community professors at no salary, some receive a meager honorarium.

#### Health Science Administration Area of Emphasis

This field of study is designed to prepare professionals in nursing and allied health fields to function as middle management administrators in health care delivery agencies. Through formal class work and practical experience, students are prepared to plan, organize, actuate, evaluate and supervise in various health care agencies. The Nursing Administration Orientation is designed for nurses who hold a masters in a clinical nursing field and who wish to prepare for administrative positions, whereas Health Services Administration is planned both for undergraduates and graduates.

A nurse receiving the M.A. in Environmental Science with an Orientation in Nursing Administration will have achieved these competencies:

- satisfy expected competencies 1-7 for the Restorative Nursing Orientation, or show evidence of completion of a clinical major in nursing at the masters level;

- demonstrate advanced knowledge and understanding of the scope of nursing and health service administration theories and philosophies;
- demonstrate knowledge of the elements of management in planning and providing for delivery of nursing care in day-to-day management processes;
- demonstrate knowledge of contemporary theories of organization and management;
- assume middle management leadership positions in health care settings;
- conduct research investigations and plan, organize, and execute solutions to problems related to nursing or administration.

The College of Business and Public Service, professionals in health care delivery agencies and faculty in CEAS cooperatively plan and implement this curriculum. On the job experience through an internship or via cooperative education is usually an integral component.

A person who receives the B.A. in Environmental Science with an Orientation in Health Services Administration is prepared to assume middle management positions in various health care delivery agencies, comprehensive health planning groups and other health groups. The curriculum places emphasis on development of administrative skills, human perspectives, and environmental science concepts that underlie these areas. The College of Business and Public Service teaches many modules appropriate for this curriculum. About 30% of the students take work in economics, accounting, and labor relations.

The student who receives the B.A. in Environmental Science with an Orientation in Health Services Administration will have achieved these competencies:

- demonstrate knowledge of influences of economics, manpower, organizational structures, legislation, societal demands and comprehensive health planning on delivery of health care;
- describe the effects of environment, culture and values on human behavior;
- describe the impact on their behavior of the personal and professional value system they have defined;
- demonstrate knowledge of and skills in assessing the effects of current environmental and social problems and their relationships to health care;
- demonstrate an understanding of research theory and statistical concepts and apply these in analyzing health care issues;
- demonstrate knowledge and understanding of the legal environment of health care;
- understand himself well enough to utilize knowledge of personal strengths and weaknesses for maximization of administrative effectiveness;
- demonstrate knowledge of and ability to apply current organization theory and principles to the health care field;
- demonstrate understanding and skill in applying basic economic tools of analysis to health care delivery administrative problems;
- understand and practice "management by objectives" skills as they relate to policy setting and implementation within health services administration;
- <sup>demonstration</sup>  
--knowledge of essential planning concepts and techniques to formulate and evaluate plans for change;

- demonstrate knowledge of and ability to utilize principles of motivation theory to activate others;
- demonstrate knowledge of and ability to use public relations skills in health services settings;
- demonstrate knowledge and skills in collective bargaining and labor relations within the health field;
- understand and be able to apply principles of fiscal management in budgeting, accounting, and purchasing;
- understand and be able to apply principles of personnel management in delivery of health care;
- utilize managerial skills and basic principles of effective administration in the various health services settings comprising the health care system;
- integrate knowledge and skills from several management, social science, natural science, and human perspectives in conceptualizing health services administration.

Students earning an M.A. degree with an Orientation in Health Science Administration will have achieved the competencies specified for the B. A. degree and in addition the following:

- analyze and solve administrative and related problems through the design, conduct and evaluation of research;
- analyze and convey to others relevant epidemiological data pertaining to health care situations;
- utilize essential planning concepts and techniques to formulate and evaluate plans for change;
- demonstrate knowledge of and ability to utilize management skills including accountability and evaluation;

- pre-assess potential labor relations problems in a local institution using research and statistical methods where appropriate;
- utilize essential tools of economic analysis to solve or enlighten health care delivery administrative problems;
- prepare a detailed budget which takes into account relevant input and meets specific requirements of an agency;
- achieve advanced competency in one of the following areas of management: labor relations, finance, or planning;
- collect and analyze data in a health service setting; present these results in the form of an appropriate research report (field work);
- show integration of research skills in addition to advanced knowledge of labor relations, finance and planning (competency exam).

#### Science Instructional Program

The Science Instructional Program is designed to prepare a variety of scientists capable of effecting solutions to complex environmental problems. This program is not intended to prepare discipline-oriented majors, but rather interdisciplinary scientists who have the necessary competencies to improve the quality of man's environment. In 1970, in the initial statement of academic programs that were submitted to and approved by the Illinois Board of Higher Education, the CEAS statement said: "The rationale for the proposed Unit of Instruction is supported

by the underlying assumption that the University will be a unique educational institution, graduates of the College will contribute toward improvement of the quality of the environment and of man's existence; and graduates will be able to function effectively and responsibly in our technological society."

The Board approved three Areas of Emphasis which now include four Orientations (Table 5.3). The Interdisciplinary Science/Environmental Technology has been treated as one Area of Emphasis during the first five years. Environmental Technology will be evolved as a separate Area of Emphasis during the next few years.

The competencies achieved by the students graduating from the Science Instructional Program are:

- use fundamental scientific processes and concepts to interpret environmental systems and to identify environmental problems;
- apply scientific processes in the conduct of investigations related to environmental quality;
- plan and execute solutions to environmental problems through a synthesis of pertinent concepts and methods from the physical, biological and social sciences;
- retrieve information from scientific literature and use this information in designing, evaluating and interpreting environmental investigations;
- formulate a value orientation reflecting the current state and changing nature of knowledge and relate this orientation to scientific activities in which he/she becomes engaged.

Interdisciplinary Science/Environmental Technology Area of Emphasis

This Area of Emphasis provides "an excellent background for people planning careers in laboratory analysis, teaching, politics, law, public service, management and other occupations where breadth of background is an asset" (CEAS Curriculum Handbook, 1975). Students who receive a B.A. or M.A. degree in Environmental Science in this Area of Emphasis will have these competencies:

- use conceptual knowledge of the natural, mathematical, social and health sciences in the interpretation of environmental processes and interactions;
- plan investigations, based on proposed solutions to an environmental problem, utilizing concepts synthesized from the natural, mathematical, social, health and management sciences;
- retrieve information from the literature of science, after formulating a plan for investigating a particular environmental problem, and utilize this information in the further design of an investigation;
- collect, analyze and interpret data from field, library, laboratory and other sources as they relate to processes and associated problems in a particular environment;
- communicate the results of an investigation (in the form of reports, seminars, publications, etc.,) to the lay as well as the science community;
- consider environmental effects of technology, economics and population in relating people to natural cycles and the quality of life;



--relate a philosophical and socio-cultural perspective on environmental problems to the development of environmental ethics and a humanistic view towards problem solving.

The Environmental Analysis Orientation is designed for those students "who are interested in collecting, identifying, quantifying and reporting observations on various chemical, physical, biological, geological, or mathematical parameters of the environment. Environmental analysts have similar skills to those of a biologist or a chemist, and in addition, have greater breadth to give them a more thorough understanding of the complexities of the environment and the political realities that shape it." (CEAS Curriculum Handbook, 1975).

The student who receives a B.A. in Environmental Science with an Orientation in Environmental Analysis will have achieved these competencies:

- utilize information on the distribution, abundance, and interactions of constituents in the biosphere, lithosphere, atmosphere, and hydrosphere in interpreting environmental processes;
- correlate and interpret information concerned with environmental processes when planning an analytical investigation;
- use empirical methods to obtain and interpret environmental data;
- understand concepts, principles and theory of physical, chemical, and biological methods of analysis;
- select and apply accepted analytical techniques for qualitative and quantitative measurement of various environmental parameters;
- retrieve information from the scientific literature and use it in designing experiments and evaluating the quality, and relevance of data;

- use a variety of mathematical techniques to evaluate and interpret experimental data;
- Identify and relate pertinent concepts;
- relate people and the environment, especially in terms of the effects of technology, economics, and population on both natural cycles and the quality of life;
- argue the merits of an ethical and legal perspective and demonstrate commensurate behavior;
- communicate the results of a scientific investigation in a manner which is appropriate to the intended audience.

The graduate holding an M.A. with the Orientation will be competent to :

- demonstrate greater depth and/or breadth of understanding by means of independent study (research) or completion of advanced work of at least one of the following:

- . . . chemical, physical, and/or geochemical concepts and application to analysis of environmental samples;
- . . . mathematical analysis, including simulation and modeling of environmental systems;
- . . . biological analysis, including ecosystem studies;

- design an environmental investigation and plan a strategy for its implementation;
- direct the work of others in implementing an environmental investigation.

The Environmental Conservation Orientation is designed to prepare applied ecologists with special emphasis in land and water use, recreation, industrial development as related to agriculture and conservation, and

environmental education practices. The student who earns a B.A. In Environmental Science with an Orientation In Environmental Conservation will have achieved the following competencies:

--apply and evaluate techniques of observation and experimentation to conservation by:

- . . . using empirical methods of investigation, including the implementation of biometrical-experimental designs and associated techniques of observations, data collection, and statistical analysis;
- . . . retrieving information from the scientific literature and using this information as a data base for the design and execution of biological experiments;
- . . . describing the results of a scientific investigation in a coherent report presented as a technical publication;
- . . . generating and formulating and testing hypotheses;
- . . . recording observations of natural phenomena and synthesizing testable hypotheses;

--demonstrate understanding and ability to use principles and methods of ecology in the practice of conservation through:

- . . . utilization of information about the life cycles, behavior, anatomy and physiology of plants and animals to determine the mechanisms by which they adapt to their environments;
- . . . use of taxonomic keys and literature for the identification of plants and animals;

- . . . utilization of concepts of population dynamics and methods for sampling and estimating population size in the quantitative analysis of aquatic and terrestrial ecosystems;
  - . . . application of the principles and theory of techniques of chemical and physical analysis necessary for biomass estimations as related to thermodynamic analysis of ecosystems;
  - . . . use of a variety of devices and techniques designed for the quantitative analysis of various climatic environmental parameters (e.g., light intensity, soil moisture, relative humidity);
  - . . . relating principles of genetics, natural selection and evolution to processes of speciation and the organization of natural communities;
  - . . . engaging in field recognition of past human activities, successional phenomena, and soil types in natural areas;
  - . . . utilization of information about habitat factors affecting vegetational units, their origin and development in the conservation of natural areas;
- demonstrate knowledge of and ability to apply principles and practices of conservation to maintenance of natural populations by:
- . . . utilization of information on the habitat requirements of wildlife species in order to assess the ability of a region to support game populations;
  - . . . use of management techniques to improve the quality of wildlife habitat;

- . . . gathering information on the characteristics of wildlife populations, including size, age, structure, sex ratios, food habits, and causes of mortality;
  - . . . use of data on wildlife populations in making decisions regulating population sizes of game species in given environments;
  - . . . carrying out lake and stream surveys, identifying major factors affecting game fish populations;
  - . . . use of management techniques for improving lakes and streams as habitats for game fishes;
  - . . . gathering life history data on game fish populations, including information on sex ratios, year classes, food habits, reproductive requirements, and causes of mortality;
  - . . . use of knowledge of morphology, taxonomy, silvical characteristics, distribution and economic significance of the trees of the United States;
  - . . . use of knowledge of the ecology of forest tree seeds and seedlings in the artificial establishment of forests;
- apply knowledge of legal, tax, fiscal, and political systems related to conservation activities by:
- . . . relating legal systems and law making processes, property rights in land, water, and wildlife resources to jurisdictional problems in planning resources use;
  - . . . relating contemporary fiscal institutions in the United States to sources of public revenues and expenditures, incidence of major tax types, public credit, and intergovernmental fiscal

relations, use of information on State and local tax systems, economic aspects of growing versus stationary populations, and State-local fiscal relations in the preparation of budget requisitions and expenditure statements;

--apply concepts of demography, human behavior, economics, and community health to conservation activities by :

- . . . relating physical and socio-economic factors affecting spacial relations in human society as applied to ecological areas in urban and rural settings;
- . . . relating the interaction of man and his natural environment to aspects of demography and energy and material resources;
- . . . relating the impact of technology and conservation practices to general concepts of health planning and community health status;
- . . . relating the design professions and the behavioral/social sciences to human ecology and man's structural environment;

--describe ethical perspectives relating to the impact of technology on the environment and the quality of life by:

- . . . relating the impact of technology on the contemporary world, especially the ecological world to ethical perspectives of decision-making;
- . . . relating man and the environment, especially in terms of technology, population, economics, to the quality of life, and the impact on the environment;

--demonstrate understanding of the evolution of the human species and evaluate effects of technology and culture on people's relationship

to their environment by:

- . . . relating the evolution of human ecology and the evolution of the influence of technology on man's existence to the ecological implications of the production of industrial material and products;
- . . . relating the beginnings of human culture: primitive economic life, society, government, religion, and art to the evolution of man's capacity for culture and culture as an adaptive mechanism;

--apply communicative and instructional skills in interactions with the lay public through the

- . . . description of phenomena of natural areas and associated wildlife in writings suitable for popular consumption;
- . . . use of appropriate methods and materials for the development of recreation leadership with different age groups in a variety of school and community settings;
- . . . development of and supervision of interpretive services and other public outdoor educational and recreational programs;
- . . . provision of advice and aid in program planning and procedures necessary for the development of recreational campsites and outdoor recreational programs;
- . . . utilization of information about learning processes in the development of nature study centers and other environmental education endeavors associated with schools and wildlife preserves.

The recipient of the M.A. In Environmental Science with an Orientation In Environmental Conservation will have competencies as indicated for the B.A. and in addition will have achieved the following competencies :

- use of conceptual knowledge of the natural, mathematical, social, and health sciences in the interpretation of environmental processes and interactions;
- plan investigations based on proposed solutions to an environmental problem, utilizing concepts synthesized from the natural, mathematical, social, health and management sciences;
- collect, analyze and interpret data from field, laboratory, library, or other sources as they relate to processes and associated problems in a particular environment;
- communicate the results of an investigation (in a report, seminar, or publication) to the lay and to scientific and technical communities;
- retrieve information from the literature of science and utilize this information in the further design of an investigation;
- consider environmental effects of technology, economics and population in relating people to natural cycles and the quality of life;
- relate a philosophical and sociocultural perspective on environmental problems to the development of environmental ethics and a humanistic view towards problem solving.

The Environmental Systems Management Orientation is available only at the masters level. Its "primary focus concentrates on a synthesis of systematic scientific and managerial problem solving, with the development



of knowledge and skills in the techniques of systems analysis and environmental assessment." (CEAS Curriculum Handbook, 1975). Environmental managers are competent to advise municipalities, businesses and industries on complex ecological, managerial, and governmental interrelationships as technology and environmental quality are balanced against each other.

A person who receives an M.A. in Environmental Science with an Orientation in Environmental Systems Analysis has an undergraduate degree in science, mathematics, engineering or some other technical field and in addition will have achieved the following competencies:

- bring a systems perspective to bear on environmental decision making;
- utilize methods of systems analysis and environmental assessment;
- relate management problems to appropriate environmental, legal, and socioeconomic contexts;
- use knowledge of fundamental technological, economic, and financial principles to aid in analysis and solution of environmental problems;
- analyze, describe, communicate, and defend the results of a specific problem/application area (selected by student and Degree Committee) to an examining group.

#### Human Ecology Area of Emphasis

-----The CEAS Curriculum Handbook, 1975, states that:

The Human Ecology Area of Emphasis speaks to needs growing out of the recognition that: (1) humans exist today in a world far different than that in which they developed and spent nearly the entirety of their existence; (2) humans exist in 'ecological' systems (social, cultural, economic, psychological...) of their own design, in addition to their natural ecosystems.

Human survival may well depend upon holistic studies of human ecologic systems--studies that must relate cultural systems to Earth's life-support systems (natural resources). This Area of Emphasis, thus,

considers the human situation through consideration of humans as organisms, their adaptation to other humans and to the rest of nature, their ability to control and live with the environment, and the mechanisms whereby these factors relate to their biological and behavioral environment.

At present only the B.A. degree is offered and students who receive a degree in the Human Ecology Area of Emphasis will be able to:

- describe the continuous interactions that have occurred among biological, ecological, and social processes in human evolution;
- describe the variety of mechanisms by which individuals and communities adapt to the environment, and the nature of the interaction between culture and environment in human groups;
- describe the ecology of human communities in terms of interdependent biological, socioeconomic, cultural, and political systems, and how these systems affect and are affected by the physical environment;
- demonstrate an awareness of the ethical considerations, related to quality of life, that will confront humans in the near future as they plan their physical and social environments;
- demonstrate the ability to use an interdisciplinary perspective based on concepts and methods from the sciences, social sciences, and humanities, to interpret and describe contemporary and future human-environment relations;
- demonstrate the ability to conduct and evaluate interdisciplinary research and apply it to the understanding of human-environment problems and their solutions.

Only the Human-Environment Planning Orientation is currently available at the baccalaureate level. A masters curriculum in this Orientation is under development.

Recipients of the B.A. in Environmental Science with an Orientation in Human-Environment Planning will be prepared to function in a wide variety of professional roles in planning and planning-related disciplines. This curriculum is based on the assumption that decisions regarding the built environment must be arrived at in a manner that is responsive to the needs of humans, and sensitive to the human and natural ecological forces of which we are a part. To this end, the curriculum is organized to provide the student with a liberal education in the social and natural sciences, the humanities, and the arts, and to provide specialized instruction based upon these disciplines in human-environment planning." (CEAS Curriculum Handbook, 1975.) Degree recipients will have achieved these competencies:

- identify humans' place in an ecological framework and demonstrate their relationships to other species and the physical environment;
- describe the physiological, psychological, and cultural variables which mediate between humans and the built environment;
- demonstrate an awareness of the ethical and aesthetic considerations that will confront humans in the near future in planning their physical and social environments;
- analyze and describe the political and socio-economic context within which the planning process occurs;
- use synthesis techniques of systems analysis such as mathematical modeling, operations research, and simulation/gaming in environmental assessment and planning;

- trace the historical development of the built environment professions;
- demonstrate an understanding of concepts and methods from the behavior and social sciences and apply them to the planning design process;
- understand and apply the principles and practices of urban/environmental planning;
- demonstrate understanding of and ability to apply the concepts and methods of the environmental design and planning process.

#### Science Teaching Instructional Program

In keeping with the general objective of the University to develop innovative and experimenting educational programs, the CEAS planned a science teaching program that did not replicate other teacher preparation programs in Illinois. In the 1970 statement of academic programs approved by the governing boards we said, "The program will be designed for prospective and practicing teachers who hold a baccalaureate degree and wish to acquire greater professional expertise in teaching and in environmental science." The statement went on to say that, "It is evident that secondary teachers of environmental science will be needed. Support for preparation of them is being provided on a national base through such programs as the Biological Sciences Curriculum Study, with support from USOE (in an extensive project to produce small modules of environmental science instructional units for secondary schools), and the NSF-supported Environmental Studies Project, an American Geological Institute project that is closely related to the Earth Science Teacher Preparation Project."

During the past five years the Science Teaching Instructional Program has evolved to include four Areas of Emphasis and seven Orientations, only one of the latter being available at the baccalaureate level. This program focuses primarily on the re-education of In-service teachers as opposed to the preparation of additional new teachers since there appears to be an adequate supply of certified teachers. As stated in the CEAS Curriculum Handbook, 1975, "The Instructional Program in Science Teaching is designed to meet the needs of:

- a. teachers who are currently certificated, but who wish to improve their capabilities as teachers by adding to their knowledge of environmental sciences, gaining competence in professional education disciplines, and strengthening their cultural and humanistic backgrounds;
- b. those who wish to earn an Illinois certificate as a School Science Specialist; and
- c. those who wish to gain competence in the theory and practice of environmental education outside of formal educational settings.

Competencies of the Instructional Program in Science Teaching are broadly interdisciplinary, providing background in the environmental sciences, professional education, and related social sciences and humanities."

Students who graduate from the Science Teaching Program will be able to:

- demonstrate knowledge of and ability to apply concepts of the environmental sciences, including biotic, abiotic, and interactional concepts, as well as computational techniques, in teaching;

- describe and utilize inquiry processes in generating, testing, and applying knowledge;
- demonstrate knowledge of and ability to retrieve information from organized storage systems;
- demonstrate knowledge of the nature and evolution of scientific thought and its interactions with society;
- demonstrate knowledge of and ability to apply contemporary concepts of learning processes in diagnosing students' learning needs and in planning and implementing instruction;
- describe and apply contemporary concepts of curriculum development in planning and organizing curriculum;
- demonstrate advanced skills in integrating knowledge of students, curricula, and strategies for decision-making in teaching and skill in interactive processes in the teaching and community roles;
- demonstrate knowledge of and ability to apply a variety of techniques in assessing student learning and in evaluating the effectiveness of his/her own teaching behaviors;
- demonstrate knowledge of school, social, political, and other human systems and the ability to apply this knowledge to effective interactions with individuals, groups, and institutions;
- demonstrate knowledge of variation of cultural and intellectual backgrounds and apply it to effective interaction with individuals;
- describe and apply knowledge of modes of inquiry or expression from various non-science disciplines to decision-making and the interdisciplinary perspective; and

--describe and act upon a value set based on contemporary science and humanistic thought.

The Curriculum Handbook goes on to describe the Science Teaching Instructional Program by stating that, "These competencies speak to skills and knowledge whose focus lies in (a) environmental science: content, investigative ability, information retrieval, and the history and philosophy and sociology of science; (b) professional education: learning theory, curriculum development, teaching skills, and evaluation; and (c) interdisciplinary aspects: cultural diversity, humanistic perspectives, and values.

"This interdisciplinary curriculum draws together the content and processes of science as applied to, and evidenced in, environmental studies. Its design integrates those elements of professional education which provide the greatest probability of enhancing learning, theories derived from the social sciences, and practical methods--especially from the field of science education. The humanistic, ethical, and philosophical elements provide a variety of frameworks in which the world and its problems can be examined and solutions sought.

"The Instructional Program in Science Teaching draws its conceptual framework from that of the College as a whole, but with its central focus on issues and problems relating specifically to environmental education and the quality of life. Teaching science in a way that meets the needs related to these issues must emphasize the development of skills at inquiry, the active involvement of these skills in problem-solving, the relating of scientific processes and knowledge to meeting the needs of society, and

the recognition of human and humane aspects of science. Science Teaching curricula and structures are constantly changing in attempts to accomplish these goals more effectively."

Since the founding of the University, it has been assumed that the problems of the environment for man are here to stay and that some problems are destined to get much worse as some lessen in their severity. It was decided early on that re-education of elementary and secondary teachers in environmental education and environmental science would have both short-term and long-term payoff for our society.

#### Elementary Science Teaching Area of Emphasis

This Area of Emphasis includes two Orientations: (1) Teaching, and (2) Curriculum/Supervision. The curriculum is based on the premise most elementary teachers need additional preparation in science and need especially studies in environmental education and environmental science. Each of the Orientations use the elementary school setting for learning activities (internship), and a terminal integrating experience in research and/or application of knowledge in the elementary school is an integral component of the curriculum.

The in-service teacher who receives an M.A. in Environmental Science with an Orientation in Elementary Science Teaching: Teaching or Curriculum/Supervision will have achieved six common competencies:

--demonstrate knowledge of and ability to apply concepts of the environmental sciences, including biotic, abiotic, and interactional concepts, and computational techniques, in teaching;



- describe and utilize inquiry processes in generating, testing, and applying knowledge in science and education;
- demonstrate knowledge of and ability to retrieve information from organized storage systems;
- demonstrate knowledge of and ability to communicate in teaching the nature and evolution of scientific thought and its interactions in society;
- demonstrate knowledge of and ability to apply contemporary concepts of learning processes in children in evaluating instruction and planning instructional programs;
- demonstrate and apply contemporary concepts of curriculum development in the planning, design, and formative and summative evaluation of science curriculum for elementary schools.

In addition, the Teaching Orientation graduate will have achieved the following competencies:

- demonstrate advanced skills in selecting and implementing teaching strategies and methods appropriate to cognitive, affective, and psychomotor goals, and skill in interactive processes in the teaching and community roles;
- demonstrate knowledge of and ability to apply a variety of techniques in assessing student learning and in evaluating the effectiveness of their own teaching behaviors;
- demonstrate knowledge of and ability to apply interdisciplinary perspectives to effective interactions with others and to decision-making;

- demonstrate knowledge of the variation of cultural and intellectual backgrounds, and the ability to apply it to effective interactions with individuals in the classroom;
- describe and act on a value set based on contemporary science and humanistic thought.

The Curriculum/Supervision graduate will have achieved these competencies

In addition to the six core competencies:

- demonstrate skill in selecting, implementing, and evaluating teaching strategies and methods appropriate to classroom and curriculum goals, and skill in interactive processes in the supervisory and community roles;
- demonstrate knowledge of a variety of techniques in assessing teaching effectiveness and student learning and the ability to apply this knowledge in evaluating the effectiveness of teaching environments and personnel;
- demonstrate knowledge of and ability to apply interdisciplinary perspectives to effective interactions with others and to decision-making;
- demonstrate knowledge of the variation of cultural and intellectual backgrounds, and the ability to apply it to effective interactions with individuals in the classroom;
- describe and act on a value set based on contemporary science and humanistic thought.

Secondary Science Teaching Area of Emphasis

This curriculum is available only at the masters level. It is intended to re-educate in-service teachers by improving their knowledge and skills in science, professional education, and related social sciences and humanities. While the opportunity exists to go deeply into science content, students will be expected to gain breadth so as to gain environmental perspective. (CEAS Curriculum Handbook, 1975.)

There are three Orientations: (1) Teaching, (2) Curriculum and Supervision, and (3) Environmental Education. A baccalaureate degree and teaching certificate are required for admission to the first two Orientations. The Environmental Education Orientation is a more broadly concerned curriculum and is available to in-service teachers, but also prepares persons to function as environmental educators in museums, outdoor recreation areas, public service groups, governmental agencies, youth groups, and the like.

Graduates with the M.A. in Environmental Science with an Orientation in Secondary Teaching: Teaching or in Curriculum/Supervision will have achieved six common (core) competencies:

--demonstrate knowledge of and ability to apply concepts of the environmental sciences, including biotic, abiotic, and interactional concepts, and computational techniques, in teaching;

--describe and utilize inquiry processes in generating, testing, and applying knowledge in science and education;

--demonstrate knowledge of and ability to retrieve information from organized storage systems;

--demonstrate knowledge of and ability to communicate in teaching the nature and evolution of scientific thought and its interactions with society;

--demonstrate knowledge of and ability to apply contemporary concepts of learning processes in adolescents to the diagnosis of students' learning needs and abilities, and in planning and implementing instruction;

--describe and apply contemporary concepts of curriculum development in evaluating, adapting, and designing curriculum for disciplinary and interdisciplinary settings.

In addition, the Teaching Orientation students will have achieved the following competencies:

--demonstrate advanced skills in selecting and implementing teaching strategies and methods appropriate to curricular goals, and skill in interactive processes in the teaching and community roles;

--demonstrate knowledge of and ability to apply a variety of techniques in assessing student learning and in evaluating the effectiveness of their own teaching behaviors;

--demonstrate knowledge of and ability to apply interdisciplinary perspectives to effective interactions with others and to decision-making;

--demonstrate knowledge of the variation of cultural and intellectual backgrounds, and the ability to apply it to effective interactions with individuals in the classroom;

--describe and act on a value set based on contemporary science and humanistic thought.

The Curriculum/Supervisory graduates will have achieved the following competencies in addition to those in the core:

--demonstrate skill in selecting and evaluating teaching strategies and methods appropriate to classroom and curricular goals, and skill in interactive processes in the supervisory and community roles;

--demonstrate knowledge of a variety of techniques in assessing teacher effectiveness and student learning, and the ability to apply this knowledge in evaluating the effectiveness of teaching environments and personnel;

--demonstrate knowledge of and ability to apply interdisciplinary perspectives to effective interactions with others and to decision-making;

--demonstrate knowledge of the variation of cultural and intellectual backgrounds, and the ability to apply it to effective interactions with individuals in the classroom;

--describe and act on a value set based on contemporary science and humanistic thought.

The student who receives the M.A. in Environmental Science with an Orientation in Environmental Education will have achieved these competencies:

--demonstrate knowledge of and ability to apply concepts of the environmental sciences, including biotic, abiotic, and interactional concepts, and computational techniques;

--describe and utilize inquiry processes in generating, testing, and applying knowledge;

--demonstrate knowledge of and ability to retrieve information from organized storage systems;

- demonstrate knowledge of and ability to apply contemporary concepts of learning theory to planning and implementing environmental education in formal and informal settings;
- describe and apply contemporary concepts of instructional design in planning and organizing formal and informal educational experiences and programs;
- demonstrate skill in delivering educational experiences to learners in formal and informal settings;
- demonstrate knowledge of and ability to apply a variety of techniques in assessing and evaluating effectiveness in achieving desired objectives;
- demonstrate knowledge of social, political, and other human systems, the ability to apply this knowledge in effective interactions, and the ability to produce change;
- demonstrate knowledge of the variation of cultural and intellectual backgrounds, and the ability to apply it in planning and delivering environmental educational programs;
- describe and act on a value set that integrates contemporary science and humanistic thought, and is directed toward improving the quality of life.

#### The K-12 Science Teaching Area of Emphasis

The Environmental Science Orientation is the only curriculum available in this Area of Emphasis. It is the only science teaching orientation open both to undergraduates and graduates. The recipient of the B.A. or

menting instruction;

--describe and apply concepts of curriculum design in planning and organizing disciplinary and interdisciplinary curricula in science;

--demonstrate advanced skills in selecting and implementing teaching strategies and methods appropriate to curricular goals, and skill in interactive processes in the teaching and community roles;

--demonstrate knowledge of and ability to apply a variety of techniques in assessing student learning and in evaluating the effectiveness of their own teaching behaviors;

--demonstrate knowledge of school, social, political, and other human systems, and the ability to apply this knowledge to effective interactions with individuals, groups, and institutions;

--demonstrate knowledge of the variation of cultural and intellectual backgrounds and the ability to apply it to effective interactions with individuals in the classroom;

--describe and apply knowledge of modes of inquiry or expression from various non-science disciplines to decision-making and interdisciplinary perspective;

--describe and act on a value set based on contemporary science and humanistic thought.

#### Community College Science Teaching Area of Emphasis

The need to prepare instructors for community college teaching positions was stated by the "Committee on Preparation of Junior College

Teachers, June, 1969," a committee of the Illinois Board of Higher Education: ". . . we will need 10,000 teachers of liberal arts and general education subjects over the next twelve years." The Committee's report went on to say, ". . . recommends new programs at the intermediate level designed especially for junior college teachers . . ." In addition community colleges are in dire need of teachers in nursing and the allied health fields. In 1970, the University received approval from its governing boards to offer the M.A. in Environmental Science with an Area of Emphasis in Community College Science Teaching.

In cooperation with administrators and science faculty in Community Colleges in the University's service area, CEAS has developed during the past five years the initial plans for this curriculum which is yet to be fully implemented. It is anticipated that this curriculum will be enlarged and functioning well during the next few years. As stated in the CEAS Curriculum Handbook, 1975, the recipient of the M.A. in Environmental Science with an Orientation in Community College Science Teaching: Environmental Science will have the following competencies :

- demonstrate knowledge of and ability to apply advanced and generalized concepts of the environmental sciences, including biotic, abiotic, and interactional concepts, and computational techniques, in teaching and research;
- describe and utilize inquiry processes in generating, testing, and applying knowledge;
- demonstrate knowledge of and ability to retrieve and use information from organized storage systems;
- demonstrate knowledge of the nature and evolution of scientific



thought and its interactions with society;

--demonstrate knowledge of and ability to apply contemporary concepts of learning in adults in diagnosing students' learning needs, and in planning and implementing instruction;

--demonstrate knowledge of and ability to apply contemporary concepts of curriculum development in planning and organizing disciplinary and interdisciplinary curricula;

--demonstrate skill in selecting and implementing teaching strategies and methods appropriate to community college students and curricula, and skill in interactive processes in the teaching and community roles;

--demonstrate knowledge of and ability to apply a variety of techniques in assessing student learning, and in evaluating the effectiveness of their own teaching behaviors;

--demonstrate knowledge of the orientation, organization, and curriculum of the community college, and the ability to apply this knowledge to the needs of the students and problems of the community;

--demonstrate knowledge of individual variations in cultural and intellectual backgrounds, in the goal orientations of community college students, and in the ability to apply this knowledge to effective interactions with individuals;

--demonstrate knowledge of the historical and philosophical foundations of the community college, and apply this knowledge in the selection of psychological, pedagogical, and curricular emphasis for instruction;

--describe and act on a value set based on contemporary science and humanistic thought, and that enable them to cope with change.

CEAS professors and Community College Instructors will cooperatively plan and supervise an extended Internship in a Community College. Also, the curriculum will be reviewed and monitored cooperatively.

### Learning Modules

The Learning Module (LM) is a basic instructional packet of materials (see Glossary). This name was invented in 1969 because the terms course, minicourse, syllabus, and similar names were thought not to be appropriate. The term Module was being used by the Biological Sciences Curriculum Study, the Commission on Undergraduate Education in the Biological Sciences, and the Education Division of the American Institute of Biological Sciences. In CEAS the Learning Module (LM) came to be characterized by most of the following:

- interdisciplinary;
- individualized and self-paced;
- varying in completion time and credit;
- competency-based with specified instructional objectives;
- structured to emphasize mastery;
- open-ended and variable credit;
- often involving more than one professor;
- often being cross-collegial;
- dealing with content and its social and humanistic consequences;
- interrelating the two broad goals and four general objectives of the College;
- interrelating science, technology, and society;

- laboratory and field-oriented;
- issue-centered and problem-oriented;
- inquiry-oriented and student-oriented; and
- application or career-oriented.

Every LM in CEAS has the same format . . . and is made available to students prior to the Session, either sold through the University Bookstore or distributed without charge, if the LM is small, from the CEAS office. The primary components (sections) of the LM format in order of occurrence are:

- title of LM and date written (e.g., Evolution and Man, June 12, 1975)
- name of Coordinator (the Instructor)
- name of Assistant Coordinator(s). Many LM's are team planned and taught by two or more professors.
- amount of credit available (e.g., 2-4 units, and the Session the LM is offered, e.g., JA-75 indicates July-August Session). Most LM's are available for varying amounts of credit.
- undergraduate, graduate, or both undergraduate and graduate credit. LM's may be for graduates only, undergraduates only, or both for undergraduates and graduates.
- rationale. One or more introductory paragraphs intended to tell the student where this LM fits into the curriculum and why it is justifiable study.
- competency statements, identified with a "U," "G" or "UG" to indicate undergraduate, graduate credit, or both. (e.g., U1. Use ecosystem concepts and terminology in discussions and writings on man-environment relations; G1. Apply ecosystem concepts to

advanced readings in human ecology.) Usually the undergraduate competencies deal with lower levels in the cognitive domain (Bloom, et al, 1956) and the graduate at higher levels in both cognitive and affective domains (Krathwohl, et al, 1964). The LM competency statements are designed to lead the student to the achievement of Orientation competencies and subsequently Area of Emphasis and Instructional Program competencies.

--pre-evaluation. Many LM's describe rather intensive and extensive tests, interviews, etc., that study must participate in. The results of this pre-evaluation aid both student and professor in knowing what background base the student is starting with. Sometimes students need to make up deficiencies, whereas others sometimes do so well on the pre-evaluation that they are awarded at the outset one or more units of credit.

--topics. Most LM's are comprised of two to six topics (e.g., a three topic LM: 1. Fundamental Ecological Concepts, 2. Theories of Inheritance and Evolution, 3. Human Ecology, Evolution, and Ecological Issues.)

--instructional objectives. There are usually two to four instructional objectives within each topic. These indicate behaviors students perform, demonstrate, engage in, etc., that will lead them to achievement of specified LM competency(s). (e.g., Considering the events that take place as sunlight impinges on the atmosphere and surface of the earth, derive an ecosystem concept.)

This is one of several instructional objectives that aids and abets the student in achievement of undergraduate competency 1, above.

--student activities. Such things as field trips, laboratory exercises, readings, written reports, seminar presentations, and similar student-centered events are described. Oftentimes students accomplish these out-of-class. The purpose of the activities of course is to guide the student through some projects that will guide her/him to accomplish the instructional objectives, hence achieve the competencies.

--evaluation. Most LM's describe in generic terms the ways that assessment of student achievement (tests, papers, practicums, etc.) will be accomplished (e.g., students enrolled for two units will demonstrate achievement of competencies by successfully completing in class evaluations provided by the professor.)

--texts. Usually two or more paperbacks and/or hardcover books are purchased by the student. For some LM's only reserve library references serve as "texts."

--references. From a few to dozens of books, periodicals, articles, films, video tapes, etc. are listed in an LM. All are available in the University library or in the professor's office. Some of the more pertinent and salient articles, chapters, etc., are usually referenced in the LM. The unreferenced titles are often used by the avid-reader-student.

The examples used to illustrate the LM components were taken and modified from an LM on Evolution and Man, prepared June 12, 1975, by

Dr. Peter P. Gunther and taught in the JA75 Session.

### Self-Instructional Materials

Self-Instructional materials (packets, minicourses, packages, syllabi, modules) are intended to assist students in achievement of LM competencies "at their own pace and at flexible times and places" (See Glossary). This concept of self-instruction is in keeping with the University's aim to provide as many self-paced and individualized learning activities as feasible for our population of commuting students. In CEAS programmed materials, video tapes, audio tapes, computer aided, computer guided, computer interactive, 16mm films, loop films, filmstrips, slides, laboratory manuals, field manuals, among other things, have been used to produce self-instructional materials which aid and abet self-guided learning at a rate commensurate with one's time, ability, interest, commitment, etc., etc. Some of the self-instructional materials are used in the College laboratory, especially if instruments are involved, whereas some are used elsewhere.

I support the proposition that there are few if any totally self-instructional materials. Our experience suggests that the self-instructional materials are not faculty-free, rather the professor is regularly involved on an individual basis interacting with the student. Self-instructional materials are not the professor's time saver as believed by many! The professors in CEAS devote an enormous amount of time working with individual students who are using the so-called Self Instructional Materials, in evaluation of achievement, clarification of concepts, encouraging the student to move ahead at the pace she/he is capable of, and so on ad infinitum.

Several LM's in CEAS have self-instructional components intended to aid the student in self-guided learning. A few LM's are called "Self-Instructional Modules." These are as professor-free as we believe we can design them and still provide high quality upper division education in the sciences.

In the 1975 schedule of Learning Modules, 19 LM's were listed as self-instructional :

- Ascent of Man
- Assessing Educational Outcomes
- Computer Assisted Learning Workshop
- Computer Programming
- Computer Supported Education
- Curriculum Development
- Curriculum Models
- Environmental Earth Science
- Evolution and Man
- Health Care Economics I
- Health Services Administration : Principles
- Inquiry Processes in Science Teaching
- Learning Processes: Children and Adolescents
- New Communities Development
- Nursing : Distributive Nursing I
- Researching Science Information
- Statistics : Non-Parametric
- Teacher Behavior in Multi-Ethnic and Inner City Environments
- Teaching Elementary School Science

The titles of all Learning Modules offered in CEAS during 1975 are listed in Appendix B.

Some of these LM's have certain self-instructional components whereas others are intended to be mainly self-instructional.

#### Learning Module Review and Scheduling

A CEAS professor may plan, design, develop and coordinate (teach) a LM without prior approval of anyone or any formal group. Each faculty member has access to the Instructional Systems Paradigm, the Educational Planning Guidelines, the CEAS Curriculum Guide and various working papers to provide background information pertinent as a guide to LM development. Hence she/he knows the goals and philosophy of GSU and CEAS and the format specified for LM's ("Revised Format for CEAS Learning Modules," CEAS Position Paper No. 16, James Joseph Gallagher, September, 1974). Each faculty member is encouraged to visit with his colleagues about the need for various LM's that will satisfy competencies in the Instructional Program, Area of Emphasis and Orientation and to team up with one or more colleagues to produce and teach the LM the first time. Even though the Instructional Systems Paradigm could give the impression that professors are locked into a system that stifles creativity, ingenuity, and cooperation in LM development and curriculum planning, our experience has shown the exact opposite to be true. The paradigm, when properly used and managed, serves as a guide that makes LM development and curricular change easier, faster, and much more systematic.

After an LM is developed and taught for the first time, it undergoes a formal reviewing process ("Learning Module Review Procedures for CEAS," Working Paper No. 55, James Joseph Gallagher, July, 1973). An interdisciplinary faculty group with expertise in the subject matter area



treated in the LM and an instructional development team consisting of learning/curriculum theorists, educational researchers, and specialists in media/technology for instruction review the LM with the professor who developed it and make written recommendations for improvement. Most professors accept and incorporate most of the suggestions for improvement. In the event a professor and the review groups found themselves at loggerhead, the Assistant Dean for Curriculum and Instruction and the Dean would help negotiate a decision. Only once in my five years of experience with this system have I had to negotiate a decision on LM review recommendations.

The nature of the student body in GSU demands that about 50% of the LM's should be scheduled late afternoon, nights, and week-ends. Experience has shown that Mondays and Fridays, including late afternoon and night, are not acceptable class times for our students, whereas Saturdays and sometimes Sundays are appropriate. The most popular times are 4-10 p.m. Tuesday through Thursday, and Saturday morning. It is therefore mandatory that the LM schedule for the year and for each session be carefully established and monitored. In September of each year, each professor in CEAS is asked to list the LM's he plans to teach and when he would like to teach them during the next calendar year. The faculty for each Instructional Program work with the Coordinator of that Program to develop a tentative LM schedule for each of the six two-month sessions (See Chapter Six for more on Program Coordinators). The Assistant Dean for Curriculum and Instruction convenes the entire CEAS faculty for a one-day retreat to review the LM schedules developed by

the faculty of the three Instructional Programs. Major overlaps, voids and other problems are identified and most are resolved at the retreat. Following the retreat, the Assistant Dean and the three Program Coordinators complete the LM schedule, incorporating all suggested changes, and send a copy to each faculty member to review and to suggest "last minute" changes which are then negotiated with the Assistant Dean. Final copy of the schedule is prepared by the Assistant Dean and forwarded to the Dean of CEAS, the Registrar, and the Vice President for Academic Affairs. The Registrar develops the University schedule of LM's for the year (called Schedule Six) which is published in December each year. It is a schedule of all LM's to be offered during the six (6) Sessions in the calendar year. In order to accommodate changes in offerings and to make it easier for students and faculty to carry out the registration processes, three additional LM schedules (called Schedule Two) are published during the year. The first Schedule Two covers JF, MA Sessions and is published in December; the second covers MJ, JA, and the third SO, ND Sessions.

It is the intent of CEAS to provide a flexible and responsive educational system. To this end it is imperative that we have flexible and responsive scheduling systems. The latter is very difficult and often-times impossible to accomplish because of limitations of physical facilities and demands made on faculty time and energy. In CEAS at GSU we have developed a daytime, night-time, and week-end educational program that makes extra-ordinary demands on faculty who are highly committed to high quality education for commuting students in the sciences. We have not identified appropriate ways to meet the educational needs of our students

without placing undue energy-consuming duties on the faculty! Since one of the major responsibilities of the CEAS faculty is to plan, design, and develop curricula that are interdisciplinary and competency-based, it is necessary that a considerable amount of time is spent in meetings, writing materials, and the like. Curricular materials planning and writing are usually done in mornings when few classes meet and between class meetings. During the past five years between 40 and 50% of the faculty work load has been devoted to LM development, review, and scheduling and to science curriculum planning.

#### Instruction and Research

In CEAS, the faculty is committed to student research as an integral component in each Instructional Program. This is evident in the competencies specified for each Orientation. Every LM schedule lists these titles:

"Special Projects in . . . 1-8 Units"

"Readings and Investigations In . . . 1-8 Units"

The faculty member when consulting with a student about his/her Student Study Plan (See Chapter Seven for more on student records) or about registration for a given Session, special projects, investigations, research problems, special studies, etc., of special interest to the student and pertinent to her/his educational goals are identified. The professor and the student oftentimes design a LM stating the competencies the student is expected to achieve and the work (field work, clinical work, library work, etc.) that is to be done. For example, a nursing student may register for "Special Projects in Nursing Curriculum Design, 3 Units," a LM which

was planned and written by a nursing professor and the student; a science student might register for "Readings and Investigations in Aquatic Chemistry, 6 Units;" or a science teaching student might register for "Readings and Investigations in Piaget's Theory, 8 Units." In each instance the student's advisor, often, also, the student's professor who will coordinate the LM and the student will have planned the LM so that it assists the student in achieving needed competencies. It is not uncommon for the competencies originally specified in the LM to be re-written when the research studies are completed, because the investigation may have lead the student in unanticipated directions. Nonetheless, the competencies achieved during the research are specified and the title of the LM, the credits, and the competencies achieved are recorded on the student's transcript (See Chapter Seven for more about student records).

Every CEAS faculty member is engaged in curriculum planning and development, some are engaged in curriculum research, and still others are carrying out field and laboratory research, some of which is funded by outside agencies. Many students work cooperatively with faculty on curriculum and basic science projects as student assistants. This arrangement usually results in a student registering for "Readings and Investigations in . . ." a topic in the field in which she/he is assisting. Since most of our students are employed, it is often feasible for a professor to cooperate with a professional in a clinic, business, industry, or school to plan a "Special Project In . . ." or "Readings and Investigations In . . ." that can be accomplished while the student is on-the-job. Any avenue that

has the possibility of engaging a student in Investigative studies that requires using the literature, gathering data, tabulating and interpreting data, and use of written word to describe the study is explored by every CEAS professor. We are committed to the notion that research will be an integral component of the upper division and masters level study in the competency-based Instructional Programs of CEAS.

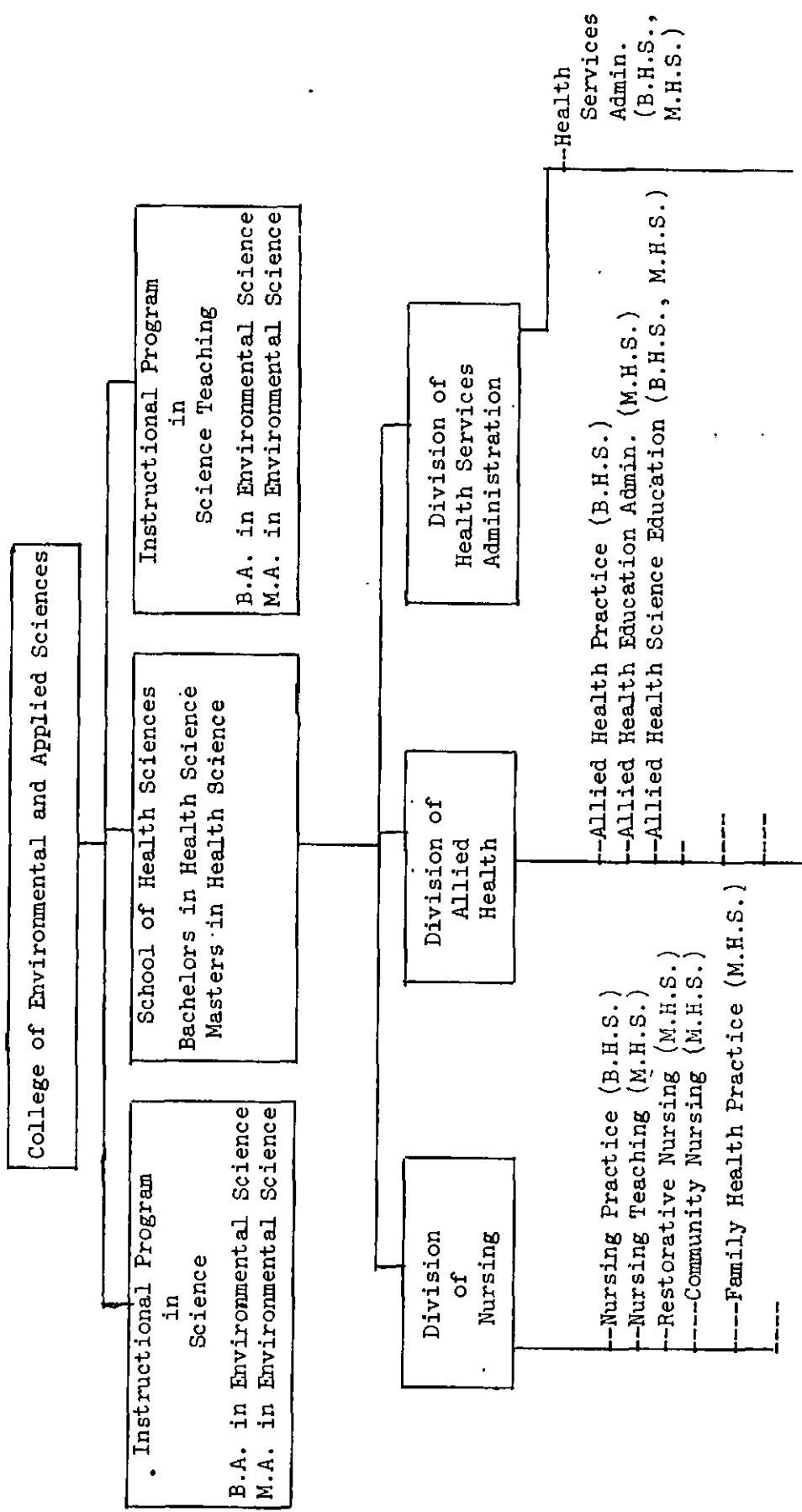
#### Future Changes In CEAS Curricula

The most immediate changes will take place in the Health Science Instructional Program. In the fall of 1974, the University submitted to its governing boards a request to establish a School of Health Sciences within the College of Environmental and Applied Sciences. Within the School there would be three Instructional Programs: (1) Allied Health, (2) Health Services Administration, and (3) Nursing, and two new degrees would be offered: the Bachelors in Health Science and the Masters in Health Science. In the Nursing program, approval was requested to provide study in two new Areas of Emphasis: Community Nursing and Family Health Practice (Table 5.4).

The School of Health Sciences would be headed by a Director and each of the Instructional Programs which would be organized into three divisions would have a Program Coordinator. The School would be supported by its own budget within the CEAS budget.

In July, 1975, the Board of Higher Education approved the establishment of the School, its structure, and academic program except for the Areas of Emphasis in Community Nursing and Family Health Practice (Table 5.4), but the Board did not approve any additional funding to support the School

Table 5.4. A diagrammatic representation of the organizational structure, instructional Programs, Areas of Emphasis, and new degrees proposed for the School of Health Sciences in the College of Environmental and Applied Sciences.



## CHAPTER SEVEN--CEAS : COMMUNICATIONS AND RECORDS

### Rationale and Philosophy

A new experimenting upper division University with four semi-autonomous Colleges and Educational Planning Guidelines that proposes the development of a new model of higher education must have a communications and records system that is reliable, efficient and effective. Inadequate provision, storage and retrieval of important information by faculty and administrators leads to distrust, lack of confidence, anxiety, and inefficiency. I am firmly convinced that honest, open communications systems are essential to support a rapidly evolving new College in a new University. To this end a wide variety of information generating, storing and retrieving methods and procedures were established in CEAS during the first year and subsequently.

The most salient communications documents are Working Papers, Position Papers, Occasional Papers, Newsletter, Handbook of Policies and Procedures, each of which is number coded and subject title indexed for easy retrieval. The records systems for CEAS students, faculty and civil service are extensive.

### Collegial Papers

The CEAS collegial papers have proved to be essential in dissemination storage and retrieval of information by all staff members. Experience has shown that the faculty attracted to CEAS are highly productive and want to have efficient and effective ways of communicating with each other, the administration in CEAS, and others in the University. The rate and magnitude of change in CEAS demands a carefully orchestrated communications system.

Working Papers

The first W.P. was prepared in May 1970 ("Proposed Instruction Programs for 1971 in the CEAS at GSU," Ted F. Andrews, May 5, 1970). During the past five years, seventy-one W.P.'s have been written by faculty and administrators in CEAS. Each W.P. has a cover page with the same format which includes W.P. number, title, author(s), and date. Any individual faculty member, committee, or administrator in CEAS may prepare a W.P. of any length and on any subject. WP's vary in length from a few pages to as many as eighty. The W.P.'s are assigned numbers chronologically in the CEAS office. When a faculty member has a paper prepared, she/he calls the CEAS office for an assigned number. The title of the W.P., the author, and date are recorded in the master chronological list in the CEAS office. A master file of extra copies of all W.P.'s is maintained for future reference in the CEAS office in chronological order. Each faculty member, the Deans of the other three Colleges, the Vice Presidents and the President receives a copy of each W.P. Copies of W.P.'s are frequently mailed to others in the University upon request. Periodically, each CEAS faculty member receives a chronological list of all W.P. titles. Some faculty maintain a complete file of W.P.'s.

Working Papers run the gamut of subjects as indicated by these sample titles: "Student Records," "Recommendations for Phase I Space Utilization in CEAS Node," "General Instructional Objectives," "Faculty Evaluations," "Human Ecology Area of Emphasis," "CEAS Operation Budget, FY73." Frequently a W.P. recommends policies and/or procedures and after



### 7.3

being considered by various faculty groups, may be rewritten into a Position Paper which then serves as an interim guide to operational policy.

#### Position Papers

Position Papers (P.P.) are very similar to Working Papers in that anyone or a group can author a P.P.; the cover page format is common and includes P.P. number, title, author(s), and date; the length varies from a few to many pages. The first P.P. was prepared in December, 1971 (CEAS "Guidelines to Planning and Development of Learning Modules," Ted F. Andrews, December 17, 1971). During the past five years, seventeen Position Papers have been written and distributed to the same audience as the Working Papers. The most recent P.P. was a legal document distributed by the University President with a covering memo ("Family Educational Rights and Privacy Act of 1974," William E. Engbretson memo dated December, 1974). Since this presidential memo could have far-reaching implications and we wanted it in a retrieval system, it was made into Position Paper No. 17. Sample titles of other P.P.'s are: "Sample Format for CEAS Learning Modules," "Evaluation of Dean's Performance in CEAS," "Tenure Consideration Policies for Support Staff with University Professor Appointments in CEAS." The contents of P.P.'s usually are concerned with tentative policies, procedure, guidelines, and the like. The advantage of placing evolving policies and procedures in the hands of

faculty and administrators in the form of a P.P. is that it provides everyone with the same information at the same time in a retrievable form. This process saves a great deal of misunderstanding, conflict, distrust, and other human relations problems. And it reduces the communication gap between faculty and administration which so readily develops in colleges and universities.

#### Occasional Papers

As the CEAS evolved, it became apparent Working Papers and Position Papers were not inclusive enough to cover the broad range of information that we wanted in a systematic storage and retrieval system. Thus the generic category of Occasional Papers was established to include results of some studies done in CEAS, reports of visits by faculty to other institutions, and results of certain pertinent studies done at other institutions. The first O.P. was released in July 1973 ("A Look Into the Future in CEAS," Ted F. Andrews, July 5, 1973). During the past three years thirty-four O.P.'s have been distributed to the same audience as the W.P.'s and P.P.'s. Some sample titles of O.P.'s suggest the diversity of topics covered: "Report on Visits to Evergreen State College, Huxley College of Environmental Studies, and the University of Washington Institute of Environmental Studies," "CEAS Productivity Report JF74 Session," "The Colorado College Plan: An Experiment That Is Working," "Computer Managed Instruction," "Background Paper on the Recommendations of the Committee on Non-Traditional and Cooperative Programs," "Delphi Study of Undergraduate Education, at the University of Texas, Dallas."

CEAS Reports

In 1973, we realized that a variety of announcements, notices of meetings, reminders of deadlines, and the like were being distributed by memoranda. Faculty and administrators alike were being over-burdened by the flow of papers. So intense was the flow that many persons were missing important meetings because they had quit reading the memos. I prepared and distributed one Friday in the fall of 1973 a one-page "newsletter" to the CEAS staff. It included all the meeting times, dates, and places of the various organized bodies in CEAS and a variety of announcements. The faculty read the "newsletter" and most thought it could reduce greatly the flow of memos.

Since the fall of 1973, the "newsletter" called the CEAS Reports has been distributed to all CEAS faculty and staff each Friday. The Reports are dated and numbered and a master file retained in the CEAS office. Any CEAS staff member may enter an announcement, notice, etc., in the CEAS Reports, which is prepared under the supervision of the administrative secretary in the CEAS office. In an attempt to keep the Reports short (one or two pages) and to make the information easily retrievable, the Reports are now organized into a few categories of information pertinent only to the following week, such as CEAS meeting times and places, important University events, consultant visits, and the like. General announcements not restricted to next week's events are included but limited to brief statements. The CEAS Reports continues to provide an important communications link among the faculty. As long as it is easily read, brief and punctual in its distribution, it will be an important vehicle of communication.

### Chronological File

A "Chron File" (CF) was initiated in 1970 and has continued without interruption. A copy of all written materials (letters, memos, papers, modules, etc.) typed by CEAS secretaries is accumulated during the week and each Friday these materials are arranged in chronological order by date into a three-ringed notebook that is available to all CEAS staff for perusal. Only letters and memos considered personal and confidential are not included in the CF. The author makes the decision whether or not a letter or memo goes into the CF. Many of the faculty regularly peruse the CF, whereas others use it only occasionally. As Dean, I read it every week. It is a good source of information for all the administrative staff as well as the faculty and secretarial staff. During the past five years, the CF has provided on several occasions the only retrievable copies of letters and memos that faculty members were hunting. The CF for each week of the year are retained in order in the central CEAS files for two years and then discarded. The CF has proved to be an important information storage and retrieval system as well as providing inservice educational materials for all concerned.

### CEAS Handbook of Operational Policies and Procedures

In 1969 when the University was established all of the policies and procedures were established externally by the State of Illinois and our governing boards. During the first three years of GSU's existence, numerous unwritten policies and procedures came into being through practice. Nearly everything we did established a precedent, thus an inferred policy and/or procedure. It is my conviction that professional

persons function most effectively, efficiently, and productively when they know the "ground rules" even though they may not agree with some of them. During 1969-70 and 1970-71, I assembled notes on a wide array of State, governing boards, and GSU policies that I thought the CEAS faculty should know about as soon as they were hired or sooner if feasible.

In July, 1971, I prepared a loose leaf three-ringed notebook called "Handbook of Operational Policies and Procedures in CEAS." A Handbook was given to each of the faculty then on board and subsequently each new faculty member receives a Handbook when they report for duty. The Handbook is organized in alphabetical sections and each entry in a section is numbered, e.g. all entries in section A start with the number one, those in section B with a two, and so on. The entries of section C of the Handbook in 1975 are: 3.0 CEAS Central Files, 3.1 Central Duplicating Charges, 3.2.1 CEAS Organizational Structure and Function, 3.3 Civil Service Personnel: Secretarial Expectancies in CEAS, 3.4 College Community Council, 3.6 Communications, 3.7 Community Professors: Employment Policies, 1971-72 (amended 12/7/71) (Revised 9/5/72), 3.75 Consultant Services Request Form (1/20/74), 3.8 Contractual Services, 3.85 Credit for Prior Learning Experiences, 3.9 Curriculum Development: Procedure for Planning and Development of Free-Standing, Self Instructional Packets.

The Handbook in 1975 is large and undergoing extensive revision to eliminate policy statements that are now available in governing board or GSU documents. At least once each month and oftentimes more frequently, one or more entries of University or CEAS policies and procedures are added to the Handbook. The faculty are clustered in various locations in

the new physical plant, therefore a Handbook is available at the secretarial desk of each faculty cluster instead of in each faculty office. This saves a great deal in duplication costs and allows the clerical staff to keep the Handbooks updated. The CEAS Handbook of Operational Policies and Procedures is a most valuable communications vehicle that is used regularly by the faculty, administration, and civil service personnel in CEAS. The Handbook will be continued until we find a better way to keep everyone informed of up-to-date policies and procedures.

#### Budget Documents

The budget documents of the University and CEAS are prepared annually and the CEAS Operating Budget and Capital Budget is distributed by the Dean to the CEAS faculty. It is important that the CEAS faculty know the degrees of freedom and also the number of constraints that an Operating Budget allows and imposes. The State of Illinois stipulates the budget categories and many bodies external to the University, as well as the University administration, specify policies and procedures to follow in managing the budget. There are five primary categories in the CEAS Operating Budget: (1) Personal Services, (2) Commodities, (3) Contractual, (4) Travel, and (5) Equipment.

Each spring the Assistant Dean for Fiscal and Physical Affairs works with the Dean to prepare a draft of the CEAS Operating Budget with numerous subsets in each of the five primary budget categories and circulates this to the CEAS faculty for suggestions. The suggested modifications are then considered by the entire faculty at one of the

regular monthly business meetings. The faculty recommendations are discussed by the Dean and the CEAS Administrative Council and a revised Internal EAS Operating Budget established and distributed to faculty. This budget is monitored daily, examined carefully each month, and usually modified each quarter. These procedures encourage faculty to study carefully the budgeting processes, to have a say in the internal budget allocations, and to have enough budget information to allow them to monitor to their own requests for expenditures. There are no hidden agendas, pockets of hidden monies, and the like in the management of the CEAS Operating Budget. A monthly computer print-out of expenditures and balances remaining in each of the five primary categories is received in CEAS from the University Business Office throughout the year. In addition, the Assistant Dean for Fiscal and Physical Affairs prepares a budget sheet showing encumbrances, expenditures and balances in each of the subcategories of the CEAS Operating Budget. All of these fiscal records are open to faculty perusal and the option is frequently exercised by many faculty.

The budgets for Grant Funds are managed in essentially the same way as the state-appropriated funds. At any given time about ten grants and/or contracts are in operation in CEAS. The "Project Director" usually has negotiated a budget with the CEAS, the University and the funding agency prior to funding. (See Special Projects, Chapter Nine, for more details on grants and contracts.) Once the Operating Budget for the Grant or Contract has been established by the award-granting document from the funding agency, the University Business Office and the CEAS

Assistant Dean for Fiscal and Physical Affairs monitor expenditures, prepare monthly reports, and assist the Project Director in every way possible to achieve her/his objectives. Grant and Contract funds are subject to the same State, University, and CEAS policies and procedures as are state-appropriated funds. Hence the University Business Office submits each month to the Dean of CEAS and the Project Director a report of expenditures and balances in each budget category. In addition, the Director of Special Projects (see Chapter Nine), the University Business Manager, the Dean of CEAS, and the Assistant Dean for Fiscal and Physical Affairs work with the Project Director and the funding agency to modify grant and contract budgets so as to best meet the needs of the Project Director. Monitoring expenditures and maintaining valid records on Grants and Contracts is a time and energy consuming task for the CEAS administration, but the budget management system works well and is an important component of our communications and records system.

#### Student Information System

The interdisciplinary, competency-based curriculum, self-paced and self-guided learning and individualized instruction in a new experimenting upper division university requires a carefully planned and orchestrated student information and records system both at the University and at the Collegial levels of organization. Both the University and CEAS underestimated the complexity of the needs in this area of our communications systems! The Assistant Dean for Student Affairs is primarily



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The interdisciplinary, competency-based curriculum, self-paced and self-guided learning and individualized instruction in a new experimenting upper division university requires a carefully planned and orchestrated student information and records system both at the University and at the Collegial levels of organization. Both the University and CEAS underestimated the complexity of the needs in this area of our communications systems! The Assistant Dean for Student Affairs is primarily

responsible for the student information and records system in CEAS. In February, 1974, CEAS Position Paper No. 15, "Student Records and Systems In the College of Environmental and Applied Sciences" was prepared by Peter Fenner, Assistant Dean for Student Affairs, and Richard Pollak, University Professor of Science Teaching, whose specialty is use of the computer in instruction and administration. This 60-page paper describes a total system of student records and procedures from pre-application for admission to post graduation, including alumni records. The flow diagram depicting this system runs linearly and includes nearly 100 entries.

The EAS Student Information System (EASIS) calls for generation of ten reports produced by the computer center: (1) alphabetical list of students, (2) current class roster, (3) alphabetical list of alumni, (4) mail box list (each student in CEAS is assigned a mail box with a number at registration time), (5) alphabetical list of students by Orientation, Area of Emphasis, Instructional Program, (6) list of students by adviser and by Orientation, (7) list of students by adviser, (8) student Learning Module Information by adviser, (9) student Learning Module Information by adviser, by Session, and (10) student Learning Module Information by Coordinator (Instructor), by Session. The EASIS was adopted in principle by the University and with modifications is now known as the Student Information System (SIS). The SIS is not yet functioning as smoothly, efficiently, and accurately as we had hoped, but it is steadily improving.

CEAS Admissions

During the first three years, students were interviewed individually and/or in groups to acquaint them with the unusual curriculum in CEAS and the variety of opportunities that were available in the three Instructional Programs (Health Science, Science, Science Teaching). A CEAS bulletin or catalog had not as yet been prepared, as many components of the curricula had not been adequately described. The curriculum was in a very rapid state of evolution! The Assistant Dean for Student Affairs with the aid of some faculty did the interviewing. This process became so burdensome in the third year that it was abandoned as a formal step in the admissions process. The CEAS Bulletin/Catalog, 1974, describing the academic programs, student systems, and the like, was distributed in December, 1973, to all CEAS students and all faculty and staff in the University. This publication enabled the Office of Admissions to admit most students without having the student interview a CEAS faculty member first. In January, 1974, a CEAS Curriculum Handbook, 1975, replaced the 1974 Bulletin/Catalog. The Instructional Programs, Areas of Emphasis, and Orientations are described. The Competencies for each of the Orientations and titles of several Learning Modules that would aid and abet the student in achieving these competencies are listed. This publication enables the prospective student and admissions staff of the University to understand clearly the competency-based curriculum. In January 1976 the University Bulletin/Catalog will be distributed. It will carry information for all four Colleges and eliminate the need for a special CEAS bulletin.

Students are admitted to CEAS on a first-come, first-served basis if there is available space in the curriculum of the student's choice. Undergraduates are eligible for admission if they have an earned Associate degree, 60 semester hours or more of college work with a C grade or better, or their equivalent in an ungraded system or in experience. A student may prepare a documented proposal to receive some credit for experience, or petition for admission with only 58 units of credit. Only nurses (RN's) are admitted to the nursing curriculum. Those RN's who have graduated from a hospital-based diploma program are admitted after completion of 6 semester hours each of sociology and psychology with a C average or better from an accredited college or university.

Students admitted for graduate study must have an earned baccalaureate degree or its equivalent. All students admitted to the Science Teaching curriculum must hold an Illinois teaching certificate, except those who enter the one Area of Emphasis (K-12 Science Teaching) in which undergraduate study is offered.

Once a student is admitted, her/his folder of admission credentials is forwarded to CEAS where the Assistant Dean for Student Affairs assigns the student to a CEAS faculty member who will serve as the student's adviser. The adviser receives a duplicate of the student's official file folder. The original student file folder goes into the official CEAS student records file.

#### CEAS Student Advisers File

Every faculty member is an academic adviser of students. Sometimes the student selects a faculty member he knows as his adviser, others are

assigned to faculty advisers by the Assistant Dean for Student Affairs. It's a relatively easy process for a student to change academic advisers; as a result, the student usually ends up selecting her/his adviser. Both the University and CEAS place high priority on instructional faculty serving as academic advisers. The CEAS faculty are exceptionally student-oriented, hence student advising is as important to them as teaching, research, and community service. The student, soon after admission and meeting his adviser, prepares a statement of goals and a historical background statement for the student and the academic adviser to use in evolving a program of study. Since the average age of the CEAS student is about 30 years, the goals and background statements of the student take on genuine significance. In many instances the student and his adviser will select one or more additional faculty members to form a Degree Committee. This committee provides academic advising and counseling to the student as the Student Study Plan (SSP) (called Learning Contracts by some) is developed and approved. The SSP assists the student, the academic adviser and the Degree Committee in attainment of the student's and CEAS' goals in an efficient, systematic way. The student adviser's file includes Student Study Plan, all official documents of registration, Learning Modules completed, list of competencies achieved and recorded on transcripts in the registrar's office, interview notes, and the like. It is a complete official portfolio that the student may take with him/her upon graduation, if so desired.

### Student Study Plan

One of the primary goals of the academic programs at the University is to individualize learning and instruction to the extent feasible in an upper division University with competency-based curricula. Some form of student study agreement, plan, or contract is used in each of the four Colleges at GSU. The Student Study Plan (SSP) evolved in CEAS might be called a "learning contract" by some. Learning contracts are relatively new in the field of higher education, primarily coming into operation during the last decade. A recent publication states that:

Individualized education for students through learning contracts is a concept which has gained increased prominence in higher education in recent years. Probably most educators would agree that the individualization of learning is a good ideal but that also it is extremely difficult to accomplish. This issue includes both the philosophical rationale and the practical realities of individualization by various approaches to contract learning. The articles provide the particular and detailed information needed by educators who are contemplating the use of learning contracts in their own institutions. (Berte, 1975)

CEAS has evolved an Undergraduate Student Study Plan and a Graduate Student Study Plan. As soon as a student is admitted to CEAS and assigned an adviser, the student in concert with the adviser and the Degree Committee start a Student Study Plan. An SSP is usually nearing completion for an undergraduate student during the second Session or after 12-18 units of credit are earned and for a graduate student after 8 units of credit. The SSP functions as a guide and a plan used by the student and the adviser until the student is graduated. It relates the goals of the student to the expected competencies for graduates of the University, the CEAS, the Instructional Program, the Area of Emphasis and Orientation selected. The SSP for most students is modified several times in minor ways in order

to better meet the needs of the student's goals and to take advantage of the continually evolving curriculum. The SSP describes ways each expected competency can be achieved, either by Learning Modules, self-Instructional materials, cooperative education jobs, readings and investigations, transfer credit, course work to be taken elsewhere, or prior non-academic learning experiences. In most cases the SSP includes 20-25% academic work outside CEAS. Once the SSP is completed and signed by the student and the adviser, it enters a review process within CEAS.

#### CEAS Review Committee

The signed SSP is studied by the Degree Committee and approval indicated by the signature of each member of the Degree Committee. Oftentimes the student, the adviser, and the Degree Committee meet together to discuss the SSP. This discussion usually results in minor changes or recommended alternatives that are mutually acceptable. One must remember that our CEAS students are older, work experienced persons, most of whom have reasonably specific educational goals in mind. Therefore the student has the primary voice in determining what routes she/he may take to achieve the specified competencies. Once the Degree Committee approves the SSP, it goes to the Collegial Review Committee which consists of the Assistant Dean for Curriculum and Instruction, Assistant Dean for Research and Evaluation, and an appropriate faculty member from the Instructional Program involved. The function of the Review Committee is to examine the total SSP to see that it is congruent with University, collegial, and Instructional Program goals and competencies. The Review

Committee indicates its approval by signature of committee members on the SSP. If the SSP is questioned, the adviser meets with the Review Committee to adjudicate differences. The SSP signed by the student, the adviser, the Degree Committee and the Review Committee becomes in fact a "contract" which serves as a guide to all future study until graduation. At least two months prior to graduation, the SSP (contract) is reviewed by the Assistant Dean for Student Affairs to make certain the student has met degree requirements.

Graduate students have one additional step in the SSP process. After completion of 8 units of credit and prior to completion of 16 units, the graduate student makes application for Admission to Degree Candidacy. Prior to admission to candidacy the student must have taken either the Graduate Record Examination or its equivalent. The results of the graduate examinations are used for academic counseling and advising as the SSP is evolved. The Degree Committee and the Adviser, using the data available from the graduate student's study in CEAS or elsewhere, and the results of the graduate examinations, assist the student in deciding on the pace at which he might expect to accomplish successfully the competencies of the Orientation, Area of Emphasis, Instructional Program in which she/he wishes to do graduate study. Some potential graduate students withdraw after meeting with the Degree Committee, but most are admitted to candidacy and proceed towards a masters degree. Of those graduate students who begin graduate study in CEAS, about 75% complete degree requirements. Some graduate students who decide not to apply for admission to degree candidacy continue graduate study, as a non-degree student, a practice we encourage.



Student Achievement Records

The CEAS competency-base curriculum includes competencies to be achieved in the Learning Module, at the Area of Emphasis and the Instructional Program levels. The Learning Module competencies achieved, the title of the LM and the number of units of credit awarded are recorded on the student transcript. Grades are not recorded on the transcript, hence the necessity to record the competencies achieved. As competencies are achieved by the student and credit awarded by the coordinator (instructor) of the LM, the information is sent to the registrar's office where an accumulative record of competencies achieved is maintained in the computer. Competencies achieved by the close of the Session in which the student was registered are recorded in the registrar's office within two weeks. Since students are allowed to complete unfinished work anytime within 16 weeks following the Session in which they were registered, great difficulty is encountered in trying to record accurately and later to retrieve lists of completed LM's, achieved competencies and earned credits. The registrar's office sends to the student, the adviser, the LM coordinator (instructor) and the CEAS office a print out of competencies achieved for each LM. In this manner lists of LM titles, competencies achieved and credits awarded are accumulated by the student and her/his adviser, among others. The CEAS office of the Assistant Dean for Student Affairs regularly receives print outs of accumulative academic records of students. When the student completes degree requirements, the transcript she/he receives is a print out of LM titles, the competencies achieved in each LM and the credits awarded in each LM.

The student records keeping system presents a near-insurmountable task for the registrar, the adviser, the LM coordinator, and the CEAS office. We often find ourselves wound up in piles of inaccurate and inconsistent print outs. The errors may have been caused by any one of the participants in the process. It's at these times that faculty sometimes say "wouldn't it be easier just to record a grade?" But we are committed to the academic validity of a competency-based curriculum and competency-statement transcript. Therefore, we are determined to whip the logistics problems which we encounter with monotonous regularity!

The CEAS students are encouraged to build a portfolio of papers (research, assigned writings, etc.) photographs, newspaper clippings, and personal notes. This portfolio, along with the student's file maintained by the student's adviser and which the student may take with her/him upon graduation, makes a good professional reference source for the student as various employment and other opportunities are considered in the future.

#### CEAS Alumni Records

The Assistant Dean for Student Affairs is charged with the responsibility of maintaining alumni records on CEAS graduates. The Student Assistant Dean, working closely with students and individual faculty members, assists the College in maintaining up-to-date records on alumni. Information on alumni is maintained in the computerized Student Information System discussed earlier in this chapter. There is no formally organized CEAS alumni group. But the nature of the curriculum, instruction and advising in CEAS brings the student and faculty in very

close communication. Thus the faculty of CEAS receive most of the information on former students and they feed this information to the Assistant Dean via forms prepared for this purpose.

The University in 1975 formally established a GSU Alumni Association with elected officers. The CEAS alumni records are made available to the Association and it may not be necessary in the future to maintain a CEAS alumni file in the computer. It's probable the University Alumni Association will maintain alumni records on all former students whether or not they are dues-paying alumni.

#### CEAS Faculty Records

The faculty systems established at GSU (see University Professors, Community Professors, and Tenure, Chapter Four) require intensive and extensive systems for faculty records. An experimenting university with no past experience with a faculty without rank, with a cyclical tenure plan, and with a commitment to engage in annual faculty evaluations by peers, administrators, students, community persons, and civil service personnel is faced with a wide array of logistics and record-keeping problems. Faculty systems have been evolving since 1969. The Educational Planning Guidelines state that the faculty "system that evolves will prescribe student evaluation, peer evaluation, community evaluation where appropriate, and administrative evaluation . . . all leading directly to the primary goal of individual faculty self-evaluation and self-redirection. The University's Research and Innovation unit will assist the faculty, students, administrators, and community personnel

Initially to develop and continuously to redevelop the criteria for and instrumentation necessary to such an evaluation program. This program will apply to all professional personnel."

The Guidelines go on to say that "Some of the criticism of current higher education institutions relate directly and importantly to existing faculty ranking which has resulted in internally rigid status systems wherein control aspects of internal governance are vested in the hands of relatively few persons. Eliminating the customary ranking system and relating evaluated performance to the accomplishment of institutional goals and societal needs should enable GSU to be far more 'open,' responsive, and flexible in answering changing educational needs."

During the first three years of GSU's existence (1969-73), various groups, task forces, administrators, and finally the University Assembly devoted a great deal of time and energy to the preparation of a statement on faculty systems. On January 4, 1973, the Professional Personnel Systems (PPS) was adopted by the University. The preface to the PPS states:

This report on Professional Personnel Systems is seen as an interpretation of the mandates given to Governors State University to be an open and experimenting institution and as a reflection of our growth as a new institution. It seeks to ensure consistency and to reinforce systems relationships among the elements of staff responsibilities, Work Plan Agreements, evaluation, cyclical tenure, and appeals and grievances. In addition, the report reflects the conviction that all professional staff in the institution shall be treated equally on a performance basis in an atmosphere characterized by mutual trust among all parties involved.

This report seeks to explicate policies and find means for implementation consistent with the document on Proposed Professional Personnel Systems approved by the Board of Governors of State

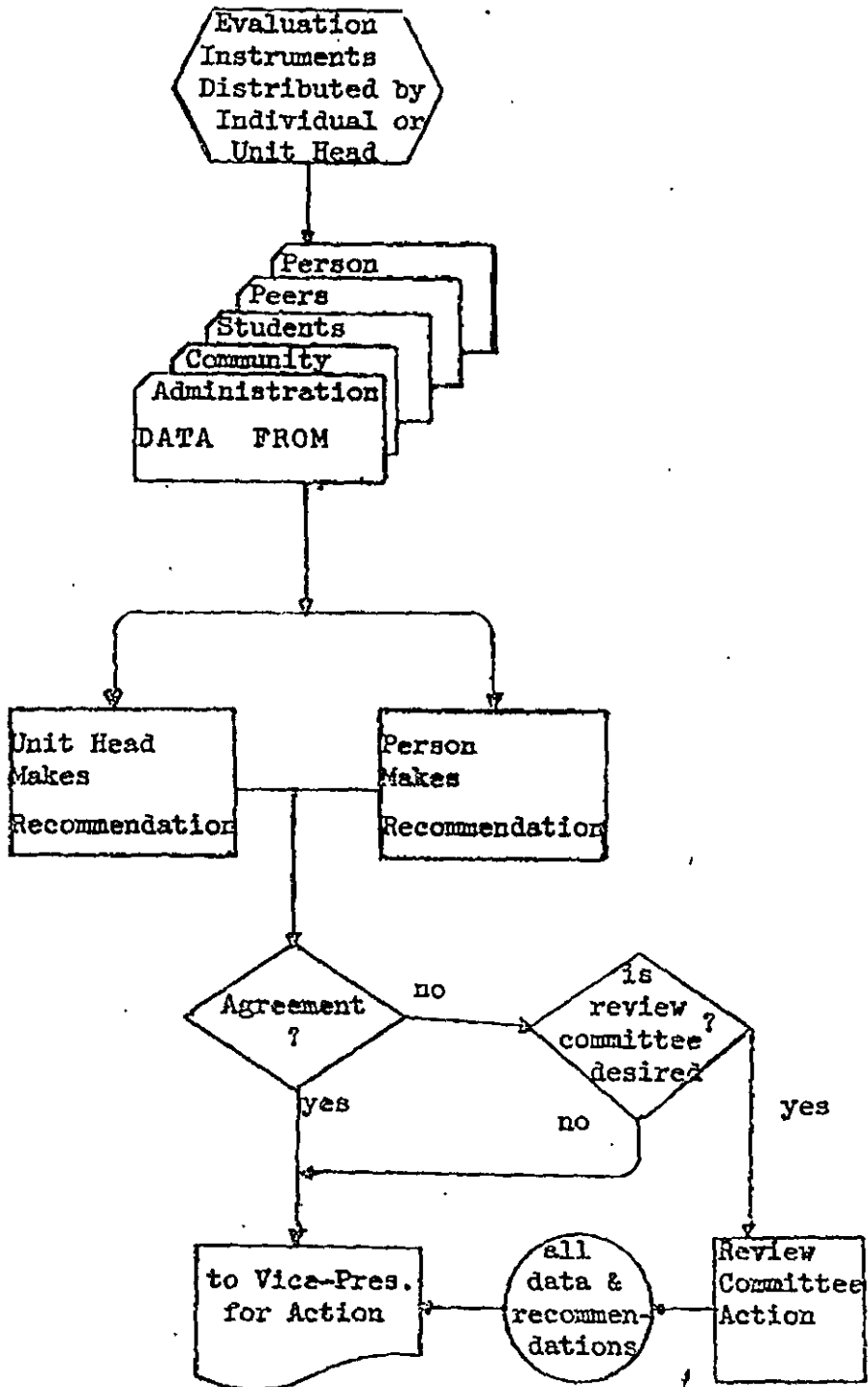
Colleges and Universities in October, 1970. It is our intention to utilize and refine these policies and procedures during the remainder of the Board-approved five-year experimenting phase, with the hope that this proposed professional personnel system will serve as a model for continuing growth here and at other institutions of higher education.

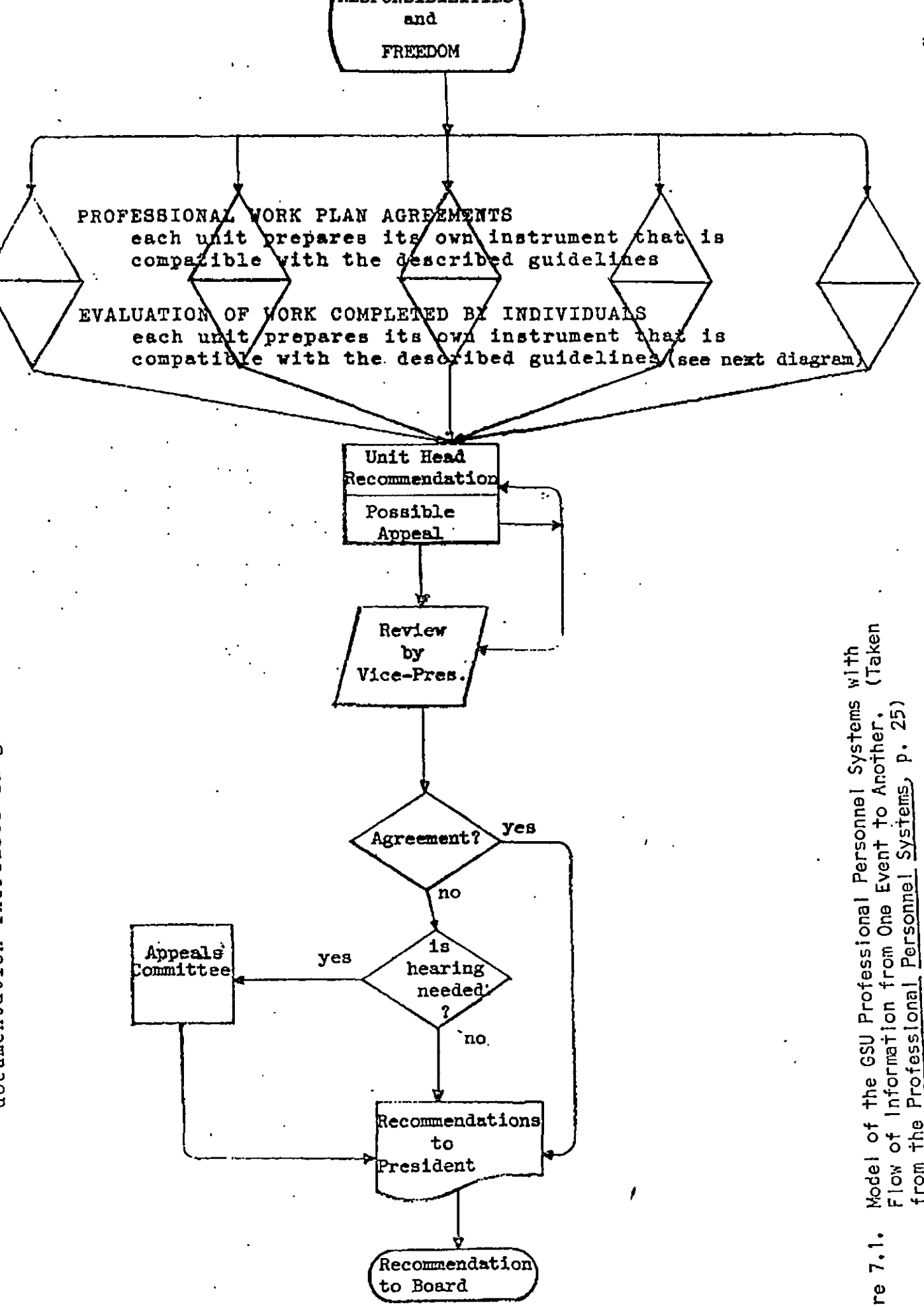
Since adoption of the PPS, it has been amended seven times and it will undoubtedly undergo additional changes. But the amendments made only minor modifications of the basic statement.

The flow chart (Figure 7.1) depicts the model of the PPS for GSU. Early in the evolution of CEAS, a faculty evaluation plan was put into operation in keeping with the goals and guidelines of the University. The CEAS plan was included as a model in the University Professional Personnel Systems (Figure 7.2).

The PPS charges the "Unit Head," the Dean of CEAS, with the maintenance and security of faculty records. Since 1970, I have maintained two file folders on each CEAS faculty member. A "Red" file includes confidential information available only to the faculty member concerned and to me, the Dean, and a "Green" file which includes information available to evaluation committees, review committees, tenure committees, and the like. In addition, I maintain a "notebook of professional data" on the faculty. The date of employment at GSU, previous employment data, dates of annual evaluations prior to tenure, date when tenure was awarded, annual evaluations during seven-year tenure cycle, annual salary, annual salary increase increments, and special comments. These data on a particular faculty member are available to that faculty member and to the Dean. Even though all of the information on these faculty data sheets are of public record, I make available a faculty member's data only to her/him

Figure 7.2. The CEAS Model of Faculty Evaluations with Flow of Information from Event to Event. (Taken from the Professional Personnel Systems, p. 26)





re 7.1. Model of the GSU Professional Personnel Systems with Flow of Information from One Event to Another. (Taken from the Professional Personnel Systems, p. 25)

unless the faculty member concerned requests in writing that the data be released to a specific other person.

### The Professional Work Plan Agreement

The Work Plan Agreement is a significant document at GSU. The PPS states:

Work Plan Agreements for all professional staff shall be based on the educational needs of students, the administrative and program needs of the staff member's college or unit, the University, and the needs of the community as all of these are continually being identified by appropriate groups within the University, the colleges and other units.

The professional Work Plan Agreement indicates a staff member's plans for (1) instruction; (2) research and innovation; (3) community services; (4) professional services; and (5) administrative and support services in each session.

A tentative plan should be submitted in consultation with the unit head at the beginning of each contract year. Details of this plan should be reviewed and considered negotiable for each Session as circumstances dictate. The plan should indicate the approximate proportions of time to be allotted to each of the five areas of responsibility enumerated above and should describe: (1) the kinds of activity proposed; (2) a brief rationale for each activity; (3) objectives and the time frame for each activity; and (4) the basis for evaluation for each activity. Activities should be described in performance-based terms where appropriate.

Each unit is expected to develop and utilize a Work Plan Agreement that can be used as a source document for processes involved in evaluation, appeals, grievances and cyclical tenure.

The CEAS Professional Work Plan Agreement (PWPA) has undergone many permutations resulting in the 1975 edition (Appendix C) which will be used again in 1976. The PWPA is completed in November for the upcoming calendar year, after the Learning Module schedule for the calendar year has been prepared. The PWPA after negotiations is endorsed by the Assistant Dean for Curriculum and Instruction who oversees the Direct



Instruction component, signed by the faculty member, and approved by the Dean. The original copy of the PWPA goes into the faculty member's "Green file," a copy to the faculty member and a copy of the page on Direct Instruction to the Assistant Dean.

A flexible, responsive instructional program must be supported by flexible, responsive management systems. To this end the PWPA easily and readily changed usually at the request of the faculty member but occasionally as a result of an administrative request. The PWPA with all of its amendments are used as a source of reference by the faculty member when she/he prepares an Annual Progress Report, Annual Self-Evaluation, and Application for Tenure, by the CEAS Faculty Evaluation Committee, and by the CEAS Administrators during the annual evaluation processes.

The PWPA in CEAS functions very effectively. It has never become an area of conflict between the faculty and me. Because I believe the PWPA must remain easily amended by the faculty in a rapidly evolving and changing institution and curriculum, the PWPA for some faculty becomes rather bulky with amendments and hence not too useful to evaluation committees. Each year we learn how to manage better our professional work in CEAS. The PWPA is an important vehicle in this process!

#### Staff Effort Reports

The Research and Innovation Wing of the University gathers institutional data on staff effort at the close of each session. A Staff Effort Report (SER) form is completed by each faculty member, forwarded to the Dean for signature, and in turn forwarded to R and I

Office. The form requests the faculty member to indicate the number of hours per week (based on the best estimate for an average week) during the Session devoted to each of the following activities: (1) direct student contact instruction, (2) indirect instruction, (3) instructional support, (4) committee work, (5) research, (6) administrative assignments, (7) community service, and (8) professional services. These are the same activity categories on the PWPA in CEAS, thus the activities proposed on the PWPA and those actually reported on the SER are congruent in most instances. A copy of the completed and signed SER's are accumulated for the year in the faculty member's "Green file."

#### Student Evaluation of Instruction

Formal evaluation of instruction by students is made each Session. Each student registered in a Learning Module is given an SEI form to complete and return to the Research and Innovation Wing for processing. The SEI form is intended to provide formative evaluation data to the faculty member in order to assist her/him in improvement of performance as an instructor. The ratings on a five point scale (5, highest) for each CEAS faculty member, for all CEAS faculty, and for the CEAS faculty as compared to faculty in the other three Colleges are mailed to the Dean about six weeks after the close of the Session.

The individual faculty member's data retrieved from the SEI reports are accumulated in the faculty member's "Green file" along with the PWPA and SER's for use in the evaluation processes.

### Annual Self-Evaluation

The PPS requires that "a formal self-appraisal shall be submitted by each professional staff member" each year. . In CEAS the following self-evaluation guidelines are used by each faculty member:

Each EAS faculty member is expected to submit to the Dean's office a Self-Evaluation statement between January 1 and February 17 each year. The Self-Evaluation statement will be used only by the Dean in the annual evaluation process.

The Self-Evaluation should be organized into the following sections: (a) Personal Commentary, (b) Collegial concerns, (c) University concerns, and (d) others.

**Personal Commentary:** This section should include commentary resulting from in-depth introspection and on analysis of anticipated professional and personal expectations and outcome as compared to realized expectations and outcomes. Comment especially on activities you have done to your satisfaction and upon those that you believe were done unsatisfactorily or not at all.

**Collegial Concerns:** Comment on the college strengths and weaknesses that either assisted or hindered you in achievement of your professional and personal expectations.

**University Concerns:** Comment on the university strengths and weaknesses that either assisted or hindered you in achievement of your personal and professional expectations.

The Annual Self-Evaluations are accumulated in the faculty member's "Red file" and are available only to the Dean and the faculty member. The self-evaluations in CEAS are very informative and useful documents both to the faculty member and the Dean. These evaluations enable me to better understand the faculty member's perceptions of the weaknesses and strengths of the CEAS administration policies and procedures, the strengths and frailties of the University systems, and last, but certainly most importantly, to gain insight into the faculty member's self-perceptions.

The self-evaluations, when carefully prepared, are the most important and constructively useful documents that I receive in the evaluation processes in CEAS.

### Annual Progress Report

The PPS of the University requires peer, student, community, and administrator evaluation, but it does not require a faculty member to prepare a Progress Report. I made the administrative decision after many discussions with CEAS faculty that each faculty member should be required (allowed the opportunity) to interpret her/his accomplishments in terms of her/his PWPA so that evaluation committees and administrators could better understand the faculty member's perceptions of her/his accomplishments. Each faculty member in CEAS uses the following guidelines in preparation of her/his Annual Progress Report:

The purpose of the Annual Progress Report is to provide each faculty member with the opportunity to systematically describe the progress she/he had made in achievement of activities described in the Professional Work Plan Agreement. It is anticipated that the Progress Report will be written with updated Work Plan Agreement at hand. The Professional Work Plan Agreement and the Annual Progress Report will be used in the CEAS annual evaluation processes, February 18 through March 18 each year.

1. Each CEAS faculty member is expected to submit to the Dean's office an Annual Progress Report between January 1 and February 17. The Annual Progress Report along with the Work Plan Agreement will be used in the annual evaluation processes.
2. The Annual Progress Report should be organized in sections consistent with the Work Plan Agreement: (a) Direct instruction, (b) Indirect Instruction, (c) Instructional Support, (d) Committee Assignments, (e) Research Assignments, (f) Administrative Assignments, (g) Community Service,

(h) Professional Services, and (i) other. In each section, the progress made toward achievement of anticipated objectives and goals stipulated in the Work Plan Agreement should be described and documented wherever appropriate.

3. Direct Instruction: List titles of modules taught, DIN's generated, and comment on quality of instruction as evidenced by SEI data and any other data you may have gathered. Include any other information you deem pertinent to your direct instructional efforts.
4. Indirect Instruction: List new modules developed, old modules revised, papers written on curriculum development, indicate number of undergraduate and graduate students advised, and estimate the percentage and/or amount of time devoted to indirect instruction per session. Cite Working, Position, and/or Occasional Papers written. Indicate source and amount of grant funds received to support indirect instruction.
5. Instructional Support: Describe your efforts in each of the following areas: (a) scholarly development, (b) CEAS and GSU committee work, (c) faculty recruitment, (d) student recruitment, (e) in-service assistance to other professional staff, (f) student clubs, organizations, etc., and (g) care of instructional equipment and facilities.
6. Research Assignments: Describe all research activities, including citation of papers published, in press, or in preparation, comment on quality and quantity of student involvement in research with you, indicate the source and amount of fiscal support you received for research.
7. Administrative Assignments: Assistant Deans, Coordinators and Administrative Assistants should comment extensively on their administrative duties and accomplishments.
8. Community Service: Delineate the kinds and amount of community service functions you rendered, indicate the amount of time you devoted each session and the quantity and quality of student involvement.
9. Professional Service: Chairpersons of committees, councils, groups in CEAS, chairpersons of University and University Assembly Committees and task forces should indicate this involvement and comment on amount of time devoted to the effort and cite the major accomplishment; indicate kind and amount of work contributed to state, regional and national professional organizations, e.g. committee work, editing, etc.

10. Other: Comment on activities included in your Work Plan Agreement but that are not treated elsewhere on this report. Include any other information that you believe would be useful. Do not include your Self-Evaluation in this report; there is another set of guidelines for preparation of evaluation of one's self.

The Annual Progress Report is an extraordinarily important document. It is especially useful in helping evaluators interpret achievements in terms of PWPA's that may have been amended many times. The faculty member has an opportunity to discuss on his own terms what she/he intended to accomplish and what actually was accomplished. In many cases much more is accomplished and documented than was predicted in the PWPA.

The Annual Progress Reports are accumulated in the faculty member's "Green file" and is used by the evaluation committee and CEAS administration in the evaluation processes.

#### Annual Summary Evaluations

Each spring written and signed evaluations by peers, administrators, students, community persons, and civil service personnel are requested by each faculty member. The signed evaluations are mailed to the Dean who prepares an "evaluation folder," which includes the PWPA, Annual Progress Report, SEI data, Staff Effort Reports, the signed evaluations, and any other data that would be useful to the CEAS Faculty Evaluation Committee. The Faculty Evaluation Committee consists of two persons appointed by the Dean after which three faculty members at large are elected. This committee examines all the materials in the "evaluation folder" and prepares an evaluation statement that is returned to the Dean

along with the "evaluation folder." A copy of the committee's evaluation statement along with copies of the solicited evaluations from which signatures have been removed is sent to the faculty member.

The Dean solicits evaluation statements on each faculty member from various persons, including the Assistant Administrators, and places these evaluations in the "evaluation folder." It is the Dean's responsibility to prepare an "Annual Professional Staff Summary Evaluation and Recommendation Form" (Professional Personnel Systems, pp. 16, 17) using the data in the "evaluation folder," the Dean's personal evaluation, and the Self Evaluation prepared by the faculty member concerned.

In CEAS, I organize the summary evaluation statements into two categories: (1) salient performance attributes, and (2) areas for possible improvement. Usually there are four to eight statements in each category. A copy of my Summary Evaluation is sent to the faculty member along with a personal note asking her/him to visit with me about the Summary Evaluation. If the faculty member agrees with my evaluations, we both sign the forms and send them to the Vice-President for Academic Affairs and President for signature and return to the Dean. The faculty may attach additional comments to the Summary Evaluation if she/he disagrees with my statements or wishes to elaborate on any item. In the four years I have prepared Summary Evaluations of faculty, no faculty member has elected to attach a statement of disagreement, hence we have had no reason to use the appeal processes available to faculty who feel they have not been evaluated fairly or accurately.

The "Annual Professional Staff Summary Evaluation and Recommendation Form" bearing all signatures is returned to the Dean by the President. A copy is sent to the faculty member. The CEAS copy is attached to the bundle of signed evaluations and placed in the faculty member's "Green file" along with the Annual Progress Report, PWPA, Staff Effort Reports, SEI data, etc., where they remain until the next annual evaluation period. The signed summary evaluation and recommendation forms are accumulated in the faculty member's "Green file" from year to year until a change of appointment occurs, e.g. a person in a seven-year tenure pattern would have accumulated in her/his "Green file" at least six annual summary evaluations and recommendations forms. At the beginning of each annual evaluation period, the peer, student, administrator, evaluations of the previous year are discarded.

These processes necessitate a carefully monitored and systematic record-keeping system in the Dean's office. The faculty evaluation system inundates the faculty, the Dean, and University administrators with heaps of paper annually!

### Cyclical Tenure

Early in the history of the University, it was decided that a new, experimenting institution of higher education should try out a different kind of tenure system (see Chapter Four for more on tenure).

The University Professional Personnel System states that:

All full time professional staff at Governors State University are eligible to receive cyclical tenure in their professional appointments. Persons employed in administrative positions



may not receive cyclical tenure in those capacities. Applications for cyclical tenure must be initiated by the professional staff member.

Cyclical tenure is granted by the Board upon recommendation of the University. Such recommendation will be made by the unit head utilizing adopted and approved means, by the appropriate vice-president, and by the President to the Board. Appropriate appeals procedures shall be utilized if necessary, and where disagreements exist, the President shall so report to the Board.

All faculty in the University are appointed for one year terms and are eligible to apply for a cyclical tenure appointment after four years' experience in higher education, three years of which must be at GSU. In CEAS each faculty member follows the following tenure application guidelines and procedures:

CEAS faculty are expected to follow these guidelines in the preparation and documentation of their tenure applications, which are to be submitted to the Dean between January 1 and February 17 (p. 3, Occasional Paper No. XVI). A CEAS Tenure Committee will evaluate the applications and submit written recommendations to the Dean between February 18 and March 18.

Applicants for their first 7-year cyclical tenure appointment should submit as documentation in their Annual Progress Report for the current year plus a summary of the salient accomplishments during their three years of probationary appointments at GSU.

Applicants for second and subsequent 7-year tenure appointments should submit as documentation with the Tenure Application the Annual Progress Report for the current year and a summary of the important accomplishments and contributions during their period for cyclical tenure. A CEAS Tenure Committee will review the applications and make written recommendations to the Dean.

The Dean will review the Tenure Applications and the recommendations of the Tenure Committee and will prepare a written set of Dean's recommendations to be forwarded along with the Tenure Committee's recommendations to the Vice President for Academic Affairs.

The Vice President for Academic Affairs reviews the collegial recommendations and submits her/his recommendations along with the collegial recommendations to the President.

A CEAS Tenure Application form has been prepared to assist faculty in following the guidelines and procedures, all of which are designed to make the total process for the faculty member, the Tenure Committee, and the administrators as easily and efficiently handled as feasible. The Tenure Application form requests such information as: (1) educational background and history, (2) employment history, (3) direct instruction, indirect instruction and instructional support efforts, (4) research and scholarly articles written, (5) professional and university services rendered, (6) community service rendered, and (7) other documented information. The Annual Progress Report, if carefully prepared, will document most if not all the data requested in the Tenure Application. Although no one has been on the CEAS faculty long enough to apply for a second cycle of seven-year tenure, I believe that Annual Progress Reports for the seven years in the first cycle, along with other data, should provide a Tenure Committee with most of the data needed with an application for renewal of a tenure appointment.

The Dean is charged by the University's Professional Personnel Systems to maintain the records necessary to support a highly accountable evaluation and cyclical tenure system. The annual evaluations and the evaluations for tenure are inextricably interrelated and require extraordinary record keeping systems in the CEAS office. Thus far the Tenure Application and records maintenance system to support it have functioned successfully. The genuine test of the CEAS records system will occur three years hence when first tenured faculty apply for a second seven-year tenure cycle!

CEAS Archives

The Archives files of CEAS are loaded with information on all facets of the University since the first GSU Brainstorming Session in May, 1969. Some of the more important archival files are: applicants for faculty positions, former employees, operational budgets, capital budgets, student records, faculty records, Learning Modules, Working Papers, Position Papers, Occasional Papers, CEAS Reports, Minutes of CEAS meetings, governing board's papers, chron files, grant records, and the like. The CEAS archives have been used by several doctoral candidates in higher education at various universities.

The communications and records systems in CEAS are extensive and time-energy demanding. The competency-based curriculum, individualized and semi-selfpaced learning, open admissions in undergraduate study, faculty advising both undergraduate and graduate, study plans, flexible responsive management systems, regular and extensive student and faculty evaluation procedures, and experimenting faculty personnel systems require systematic, open communications and accurate, reliable, valid records systems. The CEAS communications and records systems are functioning very effectively but not without loads and piles of papers to shuffle, file, and retrieve!

## CHAPTER EIGHT--CEAS: PHYSICAL FACILITIES

### Rationale and Philosophy

The physical facilities for the College of Environmental and Applied Sciences were designed and constructed to support the academic programs, the educational goals of the University, the academic, social, and personal needs of commuting students, and the professional needs of the faculty in CEAS. As stated in the Educational Planning Guidelines: "A commuter campus has a built-in element of separateness and sometimes even alienation which some students feel towards this type of institution. . . . the potential for desirable involvement in the academic process is enhanced if each student feels that she/he belongs to the institution and that she or he has a place in it." And I would add that each faculty member's professional contributions are enhanced when she/he has physical facilities with which she/he identifies and enjoys inhabiting.

The Educational Planning Guidelines publication remains the basic guide to the provision of physical facilities to support the academic programs and to meet the instructional needs of students and faculty. According to the Guidelines,

The decisive influence of the commuter campus will be to overcome in part by the provision of physical facilities which enhance opportunities for students to identify psychologically with the University environment. Governors State University will provide a physical attraction for its students which will immediately predispose them to spending increasing portions of their time on campus. As in the provision for the several climates for instruction (i.e., individual, small groups, large group areas), spaces must be designed for student-student and faculty-student communication in a variety of climates:

- a. individual study areas strategically placed throughout the campus;
- b. locker and storage areas, central and dispersed;
- c. lounge and food service areas deliberately dispersed in relationship to instructional areas and time spent in such areas;

- d. the campus center--food services, recreational facilities, lounges, work areas, and offices for student activities; (The University library might well be located to relate to this center.)
- e. commercial shops and services contiguous to the campus;
- f. outside recreational, study, and socializing areas;
- g. commons and study areas related to the instructional outposts which extend the University program into the community.

The planning of the University by the staff, the architects, consultants, students, and community have been described by Caudill, Rowlett, Scott, Houston, in 52-page book titled, " . . . No other University has ever been built in quite this way," and in an article called "Revolution on the Campus" in the November, 1971, issue of the periodical, Consulting Engineer.

### The Setting

The 753 acre campus site is located in Will County, Illinois, about 35 miles south of the "loop" in Chicago. About 80% of the campus was corn and soybean farm land, the remainder grassland. A good share of the campus site remains under cultivation. Through some strategic planning and to some extent by chance, the University came into being at a fortunate time and in an advantageous location. The University is incorporated into Park Forest South, one of 15 model cities supported by \$30 million HUD authorization in loan guarantees. Thus a new University and a new community are jointly planning and evolving together. In addition, a "transportation center" is being built by the Illinois Central Gulf Railroad at the corner of the campus. This will provide rail commuter service from the City of Chicago to the University and Park Forest South. A medical services center is planned to be located near the transportation center, both contiguous with the University. And an industrial research park, a part of the new

community of Park Forest South, is adjacent to the campus. All of these agencies have been engaged in planning processes at various times with the University and have influenced the kinds and locations of physical facilities on the campus site.

### Planning History

The plans for CEAS physical facilities had their beginnings in August, 1969, during the brainstorming sessions that brought together consultants, architects, educational planners, and GSU staff. (See Chapter Two for more on early history of planning.) As the Instructional Programs in Health Science, Science, and Science Teaching evolved, many agencies (See Chapter Two, Table 2.1) were involved in the planning of the University's physical plant, known as Phase One. Phase One construction was to begin in the spring of 1971 and be ready for occupancy in the fall, 1973, with a period of 570 construction days. During 1972 while Phase One was under construction, Phase Two was to be designed with construction starting in 1974 and ending in 1976. Funds for planning Phase Two have been deleted from each capital budget in 1973, 1974, and 1975. The future of Phase Two remains uncertain. Phase One was started in 1971 but the total building was not ready for occupancy until early 1975, nearly 24 months after the projected completion date. It appears now that all construction of Phase One will be completed by the fall, 1975, more than 30 months after it should have been completed.

Since the first class of about 500 students were to be admitted in the fall, 1971, it was necessary to plan an interim physical plant ("Mini-campus") during 1969-70. The developer of the new community of Park

Forest South built a warehouse in the industrial park adjacent to the campus site which the University leased and designed the interior to accommodate the University while Phase One was under construction. Most of the interior partitions, office furniture, laboratory furniture, special equipment, and the like in the "Mini-campus" were planned so that they could be moved into Phase One. A variety of ideas concerning the "open space concept" were implemented in the "Mini-campus". The University was to have occupied the "Mini-campus" for two years (fall 1971 to 1973), but the lease was extended until March 1974 at which time the University moved into Phase One even though about one-half of the building could not be inhabited. From February, 1974, until September, 1974, the CEAS faculty carried out their instructional duties in temporary offices and classrooms without any laboratory facilities. CEAS facilities remained under construction during 1974-75. It is anticipated that the construction and installation of specialized equipment, such as the electron microscope, will be completed before 1976.

During this planning and development history of at least five years, the Assistant Dean for Fiscal and Physical Facilities worked daily with the architects, building contractor and interior design agents to make certain that the physical facility structures would support the CEAS Instructional Programs. To a large extent we succeeded, but at a tremendous cost of time and energy of the CEAS faculty and a sacrifice of laboratories to support science instruction for many months!

#### Phase One: Structural System

Phase One building is 1137 feet long with an "academic street" extending from end to end. Faculty offices, classrooms, conference rooms, student

study carrels, lounge areas, student lockers, are located along the "academic street." The basic structural component of the building is a concrete tree that forms a 24 foot square modular unit. A six foot energy space (electricity, heating, etc.) runs between each modular unit making a 30 foot square area that is repeated throughout the building. Around the perimeter of the building permanently sealed windows are located at the ends of the 6 foot energy space (Figure 8.1). The concrete tree provides a structural unit that allows extension of the building by 30 foot units in any direction as future expansion is desired and can be funded.

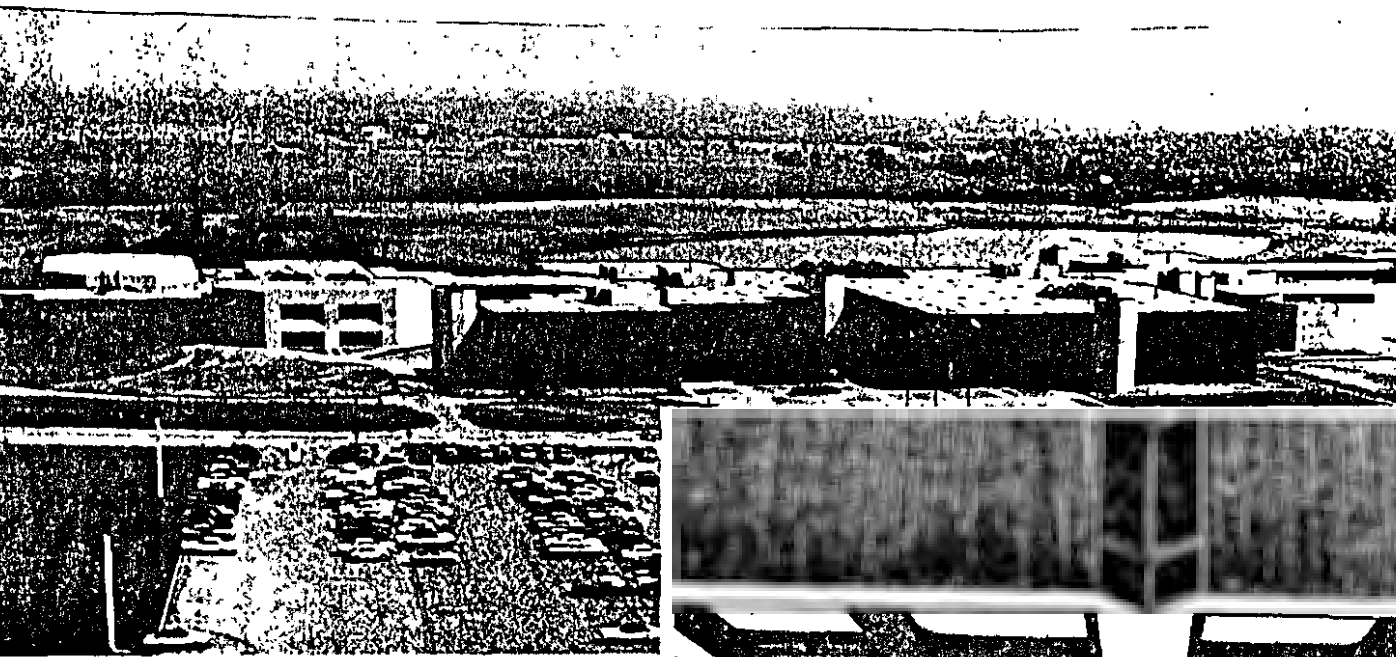


Figure 8.1. Aerial view of Phase One building, looking north. The external silos are stairwells for emergency exit only. The cor-ten steel structure, the concrete tree, and window locations are shown in the inset. The CEAS wing is at the extreme east end of the building.





The interior of Phase One is highly flexible. Most of the floor to ceiling partitions are non-bearing, hence can be moved to provide different sized spaces. A major limiting factor is the fixed space sizes that result from the concrete tree. A room can be 15' x 30' or 15' x 15' without having a concrete tree within it; a room 30' x 30' has a concrete tree in the middle of it, a troublesome feature in a classroom or laboratory.

#### Phase One: CEAS Wing

The east end of the building consists of two floors arranged in wings extending north and south from the academic street (Figure 8.2). The two

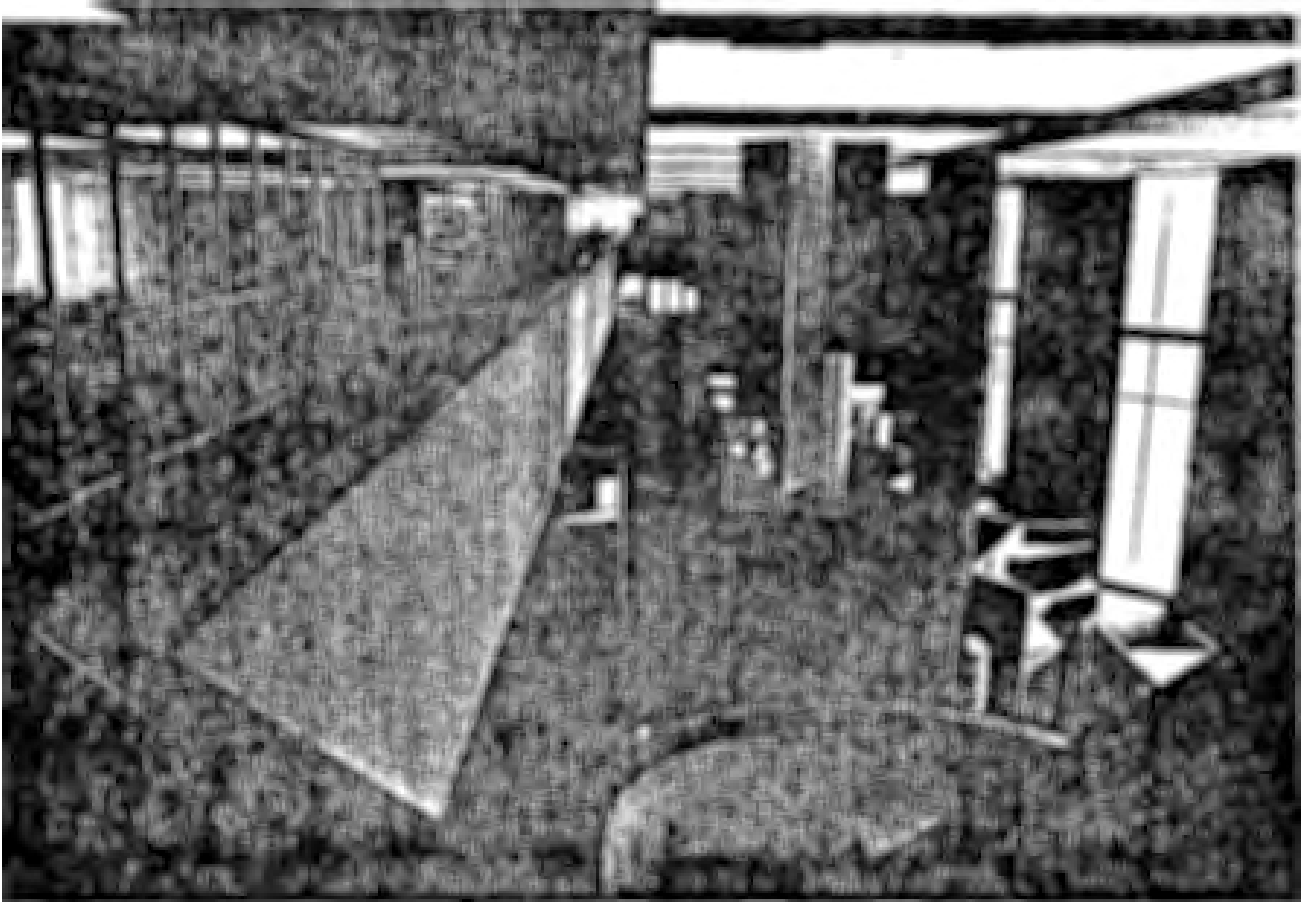


Figure 8.2. The "academic street" in CEAS with glass walled classroom closeup on second floor and faculty offices in the distance. On the lower floor student study carrels, lounge areas, and student lockers are scattered along the academic street. Glass walled faculty offices are

floors of the south wing house the open science laboratories, special laboratories, stockrooms, animal rooms, a green house, and clusters of faculty offices. The north wing has a student commons, CEAS reference library, student assistant dean's office, other student offices, student study carrels and student mail boxes on the lower floor. The CEAS office and Dean's office are on the second floor. Clusters of faculty offices are located along the "academic street" that extends from the east end of the building to the north (Figure 8.2). All of these physical arrangements give a real sense of open space and accessibility to space and people.

#### Open Interdisciplinary Science Laboratories

In the early planning (1969-71) of the CEAS academic program, it was decided that the curricula would be interdisciplinary, that instruction would be as individualized as feasible, that learning would be, for the most part, self-paced, that faculty would be accessible to students and the facilities, and that faculty would devote considerable amount of time to cooperative curriculum planning and development of instructional materials (See Chapter Five for more on curriculum). The laboratory facilities of Phase One needed to support these functions were to be flexible and multipurpose, yet provide safety of students and faculty and security of equipment and instruments. The basic layout that evolved consists of a large open area with 15 laboratory stations. Around the perimeter of the two open laboratories are located clusters of faculty offices, specialized laboratory rooms, and an open-self, self-service stockroom.



Figure 8.3. The open laboratory with one of the 30 laboratory stations in the foreground. The laboratory tables electrically connect to the laboratory bench. The specially designed tables have a drop-leaf at one end. In the background is a faculty office cluster, separated from the open laboratory by a glass partition that is non-bearing.

A laboratory station consists of a specially designed laboratory bench with a sink, hot and cold water, electricity, gas, towel dispenser, and the like (Figure 8.3). The water, sink drain and energy sources may be disconnected in a floor well beneath the bench, so that the bench can be removed and the space used for other purposes if necessary. A metal lid covers the floor well when the bench is not in position. As many as four specially built laboratory tables may be connected to the laboratory bench

by electrical plugs that lead to plug molds on each table. Eight students can work at a laboratory station at one time. Thus the open laboratory on both floors could accommodate 240 students at any given time. However, it is seldom that more than 3 or 4 students work at the same time at a given laboratory station. Students often conduct investigations in teams and may utilize a laboratory station for one or more sessions.

The open laboratory allows students in the health science, science, and science teaching instructional programs to work side by side and often times cooperatively on their laboratory studies. It is not uncommon to see students in the open laboratory conducting studies in environmental planning, plant systematics, environmental earth science, human physiology, environmental organic chemistry, animal behavior, microbiology, and the like, at the same time at different stations in the open laboratory. Much of the student laboratory work required in a Learning Module is accomplished by the student at her/his convenience. This allows the student to work at his/her pace, learning independently. Some group laboratory work is formally scheduled, but most is not. Students have access to the open laboratory from 8:30 a.m. to 10 p.m. Monday through Friday, and 9 a.m. to 5 p.m. Saturday and Sunday. The stockroom supervisor and student assistants attend the stockroom during the above hours. Many of the smaller commodities needed in the laboratory are stored in open, self-service bins that form the wall of each of the storerooms (Figure 8.4).

### Special Laboratory Rooms

A wide variety of laboratory rooms housing specialized instruments and equipment are arranged around the perimeter of the open laboratories



Figure 8.4. Open, self-service bins of commodities form the wall of the stockroom, as viewed from the open laboratory. The bins open directly into the stockroom through doors and are stocked from inside the stockroom.

on each floor. Examples of special laboratory rooms are: computer simulation, electron microscope, spectrometry, chromatography, photography, plant growth chambers, microbiology, greenhouse, animal behavior chambers, radiology, small instruments, and the like. Each special laboratory room is under the supervision of a faculty member who is especially qualified in the use of the equipment housed in the room. Students have access to any of the special rooms through the faculty supervisor/of the room. All CEAS students are provided hands-on experience with highly sophisticated

scientific instruments and equipment.

A clinical laboratory for nursing is being constructed in the fall of 1975 near the CEAS student commons. When Phase One building was planned, it was anticipated that all clinical experiences for nurses could be conducted in hospitals and clinics in the area, especially the hospital proposed for construction adjacent to the campus site. But delay in construction of the hospital and limitations of other clinical facilities in the area have caused us to rearrange the interior of Phase One to include a nursing clinic even before the contractor has finished the building. The architectural flexibility of Phase One enables reasonably quick changes in interior space arrangements, through the erection of floor to ceiling non-bearing partitions, even though access to water and electricity in some areas is a major limiting factor.

#### Faculty Office Clusters

There are four clusters of faculty offices with 8 - 10 faculty and at least one clerical person in each cluster. The faculty members are assigned office space by the Assistant Dean for Fiscal and Physical Resources, often in consultation with the Dean and always in consultation with the faculty member concerned. An attempt is made to satisfy the wishes and needs of the faculty member and at the same time meet the goals of the University and CEAS. Because the curricula are interdisciplinary, faculty are arranged for the most part in interdisciplinary clusters. This physical arrangement enhances cross-discipline communications and encourages cooperative curriculum planning and module development. One cluster, for

example, houses an ecologist, biogeochemist, plant ecologist, urban planner, educational technologist, science educator, analytical chemist, animal behaviorist, physiologist and an environmental educator. The nursing faculty are clustered more by discipline than any other faculty group in CEAS. This is due largely to the fact that there are more faculty in the nursing discipline (8) than in any other single discipline in the College.

Two of the faculty office clusters are located in the "academic street" (Figure 8.2) on each level and two are located adjacent to the open laboratories (Figure 8.3) along the south wall of the wing. Those faculty whose areas of specialization are associated with the special laboratory rooms are located in the faculty cluster nearest to the special laboratory. Most, but not all, of the science teaching and health sciences faculty are housed in offices in the "academic street." The faculty office clusters are separated from the contiguous areas by glass walls (Figure 8.2); within the cluster most faculty office areas are delimited by semi-partitions seven feet high. The semi-partitions consist of three by seven foot panels bolted together to form the size and shape of office desired. Book shelves, chalk board, and other office support items are hung on the partitions, which have permanently installed hangers. The physical flexibility provided by these do-it-yourself semi-partitions is laudable. One major problem that is of concern to most faculty is the noise level caused by typewriters, telephones, and people, and, in a sense, the lack of privacy for writing, reflecting, and visiting with colleagues about curriculum and instruction and with students about academic and personal problems.

In each of the faculty clusters there are two seminar-conference rooms 15 by 15 feet. These rooms are used for instruction of small groups (10-15

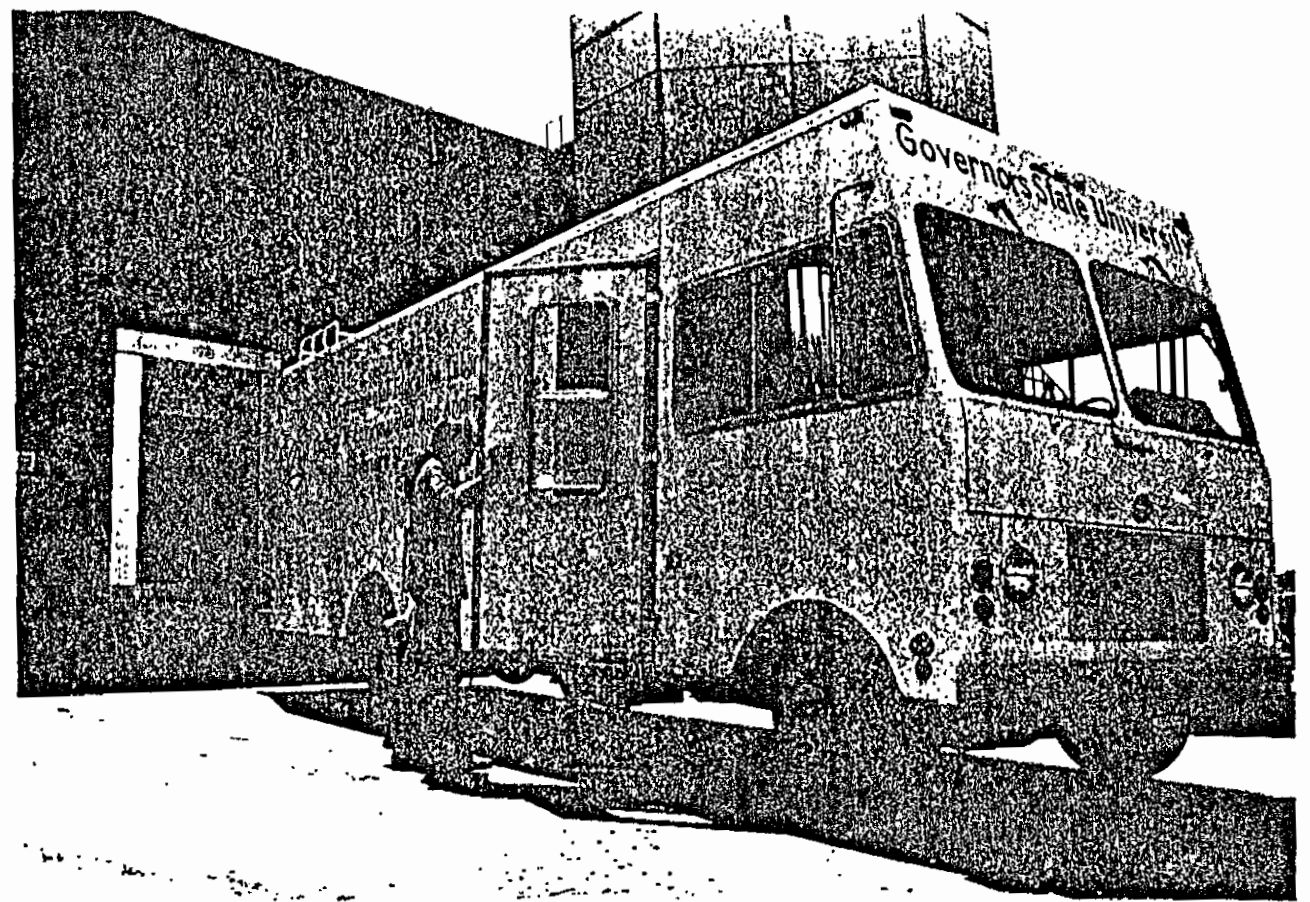
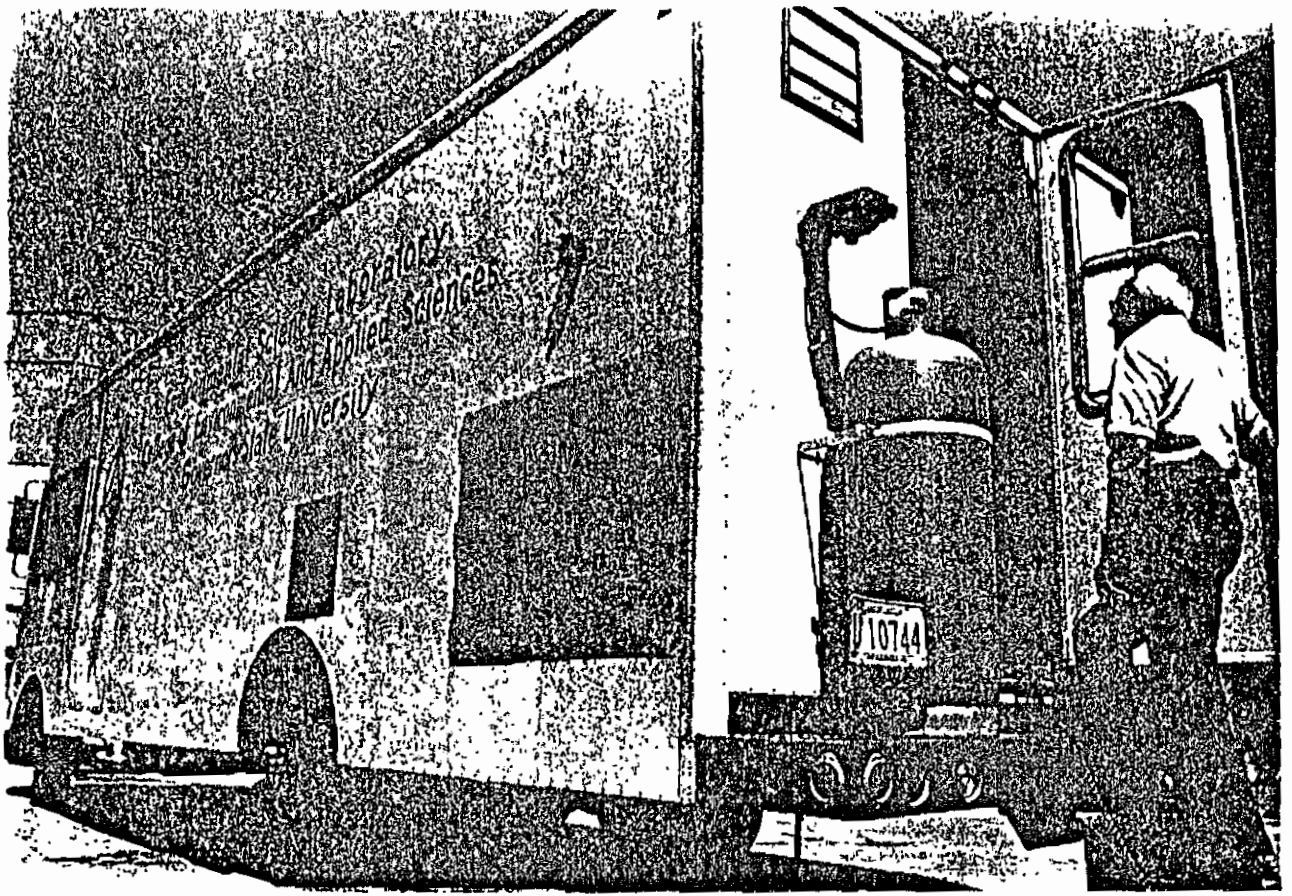
students), student seminars, faculty committees, curriculum design meetings, writing areas, and similar functions. Students often work in the open laboratory and then move to seminar-conference rooms to read and write.

### Mobile Laboratory Units

During the initial curriculum and building planning stages, the concept of mobile laboratories to support field work in air, water, and soil studies and environmental education projects was endorsed by faculty, administration, and the architects. The intent was to have mobile laboratories that were always functional whether in the field or on the campus. In the field, each would have its own energy sources. When not in the field, the mobile labs were to be connected to the building by backing them to a loading dock-like area and connecting them to the building's energy sources by cables and accordion-like flexible walls. This arrangement would have provided functional mobile laboratories at all times. During the planning of Phase One building, the facilities for connecting the mobile laboratories to the building were not installed. Therefore, we have three especially designed and custom built mobile laboratories, but we cannot connect them to the building as initially envisaged. It is our intent to modify the CEAS loading dock area to accommodate connection of the mobile laboratories once Phase One is completed and additional funds are made available.

The environmental science and the environmental education mobile laboratories (Figure 8.5) are self-propelled. In addition, the environmental science laboratory has auxiliary power supplies so that it can function in any location. The environmental education laboratory has heavy duty





extension cables that enable it to plug into external power sources.\* The environmental science mobile laboratory is used extensively for field work in the Science Instructional Program. The environmental education mobile laboratory is used in the Science Teaching Instructional Program. A semi-mobile air monitoring laboratory is stationed on the campus site most of the time where it serves as an instruction and research unit primarily for the Science Instructional Program but also for the Science Teaching Instructional Program. The air-monitoring laboratory is dependent upon another vehicle to pull it from one station to another and it is also dependent upon an external electrical supply.

The CEAS mobile laboratories are widely used by faculty and students. We are pleased with the enrichment these mobile units add to the instruction and research activities. Additional mobile laboratories to support the Health Science Instructional Program and to support field studies in the curriculum on human environment planning will be designed and custom built as soon as funds are available.

#### Other Physical Resources

The Health Science, Science, and Science Teaching Instructional Programs have access to and use of numerous physical resources outside of the Phase One building. The Health Science Program makes use of hospitals, doctors' offices, clinics, health planning agencies, municipal health centers and the like to provide on-the-job clinical education for students and refresher clinical experience for the faculty. The Science Teaching Program regularly uses elementary, secondary, and community college facilities and environmental

education facilities in nature centers, scout camps, and the like are also utilized.

The Science Instructional Program in the education of environmental analysts, environmental managers, environmental conservationists, and environmental planners make use of the campus site and many physical resources off-campus. Lakes, ponds, streams, woodlands, prairies, cultivated fields, municipalities, businesses, industries, research laboratories, museums, planetaria, aquaria, zoos and the like are regularly utilized in the instruction and research activities of students and faculty. The greater metropolitan area of Chicago is richly supplied with major research facilities, museums, zoos, petro-chemical industries, and national laboratories (such as Argonne). Most of these agencies work cooperatively with the CEAS faculty to make available their facilities, and oftentimes their professional staff serve as Community Professors working cooperatively with the CEAS University Professors and the students. Thorn Creek Woods, an oak-hickory-maple timberland of about 800 acres that is contiguous to the campus, is a rich teaching and research resource that is used daily by students and faculty.

The CEAS physical facilities and resources seem to be supporting the instructional and research programs as envisaged. The faculty office clusters are functioning very well for some faculty but very poorly for others. The strengths and frailties of the physical facilities will become evident after we have lived in them for a few years. Since the Phase One building is not yet complete, we cannot appreciate the real strengths of the open office

space, academic street, semi-open office, open laboratory and specialized laboratory concepts. The weaknesses are exacerbated because all the specialized equipment cannot be used as yet and construction personnel are still banging around!

## CHAPTER NINE--CEAS: SPECIAL PROJECTS

The University was conceived and continues in an academic atmosphere that encourages experimenting with unusual processes, procedures, physical facilities, instructional programs, management systems, personnel systems, community services, continuing education, and a variety of special projects. Early in GSU's history an Office of Special Projects was established in the Research and Innovation Wing of the University. This office is in keeping with a policy of the Board of Governors of State Colleges and Universities that states: "It is the policy of the Board of Governors of State Colleges and Universities and of the Universities entrusted to its administrations to encourage participation in research, workshops, institutes, and other sponsored programs on the part of all persons within several faculties. Such encouragement includes the endorsement and support of acceptable proposals for funds from outside organizations. The Board further encourages each University to establish a position to perform the function of coordinating all research projects." The Coordinator is the primary liaison person between funding agencies and the University, and assists the faculty, students, and administration in the preparation of proposal budgets consistent with University, State, and Agency policies. To this end, the Coordinator provides a "Grants and Contracts Handbook: Policies and Procedures," Third Edition, January, 1975, for use by faculty in preparing grant proposals and in managing funded projects. The Coordinator of Special Projects holds a University Professor appointment in Science Education in CEAS.

Special projects in such areas as community service, grant fund supported activities, contracts with local, state, and federal agencies, cooperative arrangements with businesses, zoos, museums, schools, etc., and

## 9.2

applied research projects started in CEAS in 1971 and have increased geometrically thereafter. The educational opportunities of students are enhanced, the professional growth of faculty stimulated and the needs of the community served by the special projects in CEAS.

### Community Services

Three major functions of a University are teaching, research, and community service. In CEAS, I view these three domains as interlocking and always involving both students and faculty and oftentimes community persons. The community service, research and teaching functions in CEAS enhance and enrich each other. As stated in the Educational Planning Guidelines, ". . . the University must respond to the health, industrial, educational, and business needs expressed by the community through deliberate cooperative plans for service, through indirect contributions of academic programs, and through applied research efforts." CEAS faculty engage in a wide array of services to the community. However, community service must be directly related to one of the three instructional programs in CEAS and should involve students in the process if the activity is to be included as a component of the community service category on the faculty member's Professional Work Plan Agreement (see Chapter Seven for more on the PWP). The faculty are encouraged to engage themselves and their students in community service activities in their field of expertise and to record these activities on their PWP. Examples of some of the CEAS community service projects are: (1) consulting and advisory work with the Will, Kankakee, Grundy Comprehensive Health Planning group, (2) cooperative efforts with the nursing faculty of the Thornton Community College to plan competency

based curricula, (3) curriculum consulting and advisory work with Crete-Monee School System, (4) advising on and overseeing the construction of a nature trail in Thorn Creek Woods, (5) advisory and consulting activities with the Northern Illinois Planning Commission, (6) cooperation with Park Forest South developers in planning water and sewage treatment and disposal system, (7) preparation of check lists of fauna and flora of Thorn Creek Woods and vicinity, (8) cooperation with communities contiguous to the campus site to plan intercommunity bicycle paths. Literally hundreds of other kinds of services are rendered that do not fit the Community Service definition. Nearly every faculty member serves on one or more committees, task forces, etc., in the community in which they live, some faculty serve on school boards, dozens of speeches are given to knife and fork groups by faculty, and many faculty serve as paid consultants to various projects locally and throughout the nation.

#### Grant and Contract Supported Projects

CEAS faculty are encouraged to prepare proposals seeking outside funds to support basic research, applied research, curriculum development, and the like in their area of expertise.

As Dean of the College, I consult with each faculty member on a draft of his/her proposal to consider the extent of the project director's involvement, to note the amount of student involvement, to identify space, facilities and energy requirements, to determine the relationship of the proposed project to the CEAS academic program, and to examine the budget in terms of CEAS policies. The Coordinator of Special Projects works with

the faculty member to prepare the budget that they believe will meet the needs of the proposed project. After examination of the draft proposal and the budget, both of which are sometimes negotiated, I give approval of the project for the College. The Special Projects office then prepares final copy, obtains all University clearances and mails the proposal copies to the funding agency and to appropriate offices in the University.

The University has developed a policy that calls for dividing the indirect costs (overhead costs) obtained from a funded project three ways: 40% is made available to the College out of which the proposal originated, 40% to the Research and Innovation Wing, and 20% to the Administrative Wing. All of the indirect costs in the three units are intended to provide support for additional special projects such as contracts, grants, and the like.

#### Grants and Contracts

The faculty members in CEAS have been successful in procuring a significant number of grants to support basic and applied environmental research, nursing curriculum development, environmental education, and science teaching improvement. During 1971-72, six proposals were submitted and three were funded to support projects in 1972-73 for a total of about \$100,000. About \$72,000 in grant funds were received to support projects in 1973-74 and more than \$260,000 was granted to support six different projects during 1974-75. Funds have been received from the National Science Foundation (NSF), Office of Education (USOE), Public Health Service, Health Education and Welfare (HEW) and Fund for Improvement of Post Secondary Education (FIPSE). Twelve CEAS faculty have submitted proposals to various



funding agencies. About 60% of the proposals submitted have been funded. This is an exceptionally good record for a new, relatively unknown faculty in a very atypical College that is trying out a variety of different instructional and research programs.

The University, through the Research and Innovation Wing, has established a "Minigrant" program whereby faculty or faculty and students can apply for small amounts of money (usually up to \$500) to carry out special projects. Since the inception of the "Minigrant" program in 1971-72, 16 CEAS faculty have received "Minigrants" totaling more than \$5100. A "Minigrant" often provides seed money that enables a faculty member to develop a base for a proposal to an outside funding agency. Oftentimes "Minigrants" are used to support undergraduate and graduate assistants in a research or curriculum development project. The share of indirect costs allocated to the Research and Innovation Wing from funded projects provide some of the funds used to support the "Minigrant" program that is managed by the Coordinator of Special Projects.

During the past four years, contracts amounting to more than \$450,000 have been awarded the University through the efforts of CEAS faculty. The agencies that have contracted with us are: Park Forest South Utilities, Armour-Dial Corporation, Argonne National Laboratory, Illinois Department of Mental Health. The services contracted for range from planning and designing water treatment-water recycling operation to curriculum development. The largest contract in operation is with the Department of Mental Health to develop an Alcoholism Science curriculum (See Chapter Five for more details). The contract calls for about \$200,000 annually for three years.

Both faculty and students are involved in all contracts and grants, a policy that will be continued for the foreseeable future. This policy keeps the faculty, the administration, and the students conscious of the necessary interrelatedness of the curriculum with grants and contract supported projects.

### Cooperative Projects

A wide variety of cooperative ventures have been engaged in by CEAS. At one time or another cooperative projects have been undertaken with Morton Arboretum, Thorn Creek Woods Association, New Community Enterprises, several hospitals and clinics in the area, most of the villages contiguous to Park Forest South, numerous businesses and industries, many elementary and secondary schools, and community colleges. The cooperative projects do not involve exchange of funds, rather they involve CEAS faculty and students working cooperatively with their counterparts in another agency to accomplish goals that are mutually beneficial. In some instances the cooperative project is covered by a written agreement, but in most cases common goals and objectives are reached through discussion and the project carried out with only a "persons agreement."

One of the most extensive and on-going cooperative project is with the American Society for Ecological Education (ASEE). In 1974 the ASEE moved its headquarters to the University. CEAS provides space and facilities for the ASEE staff and the President of the society holds a salaried appointment of University Professor of Environmental Science in CEAS. The ASEE and CEAS are jointly seeking funds to support environmental education workshops, institutes, and the like for elementary and secondary school teachers in

the U. S. and in other countries. During 1975 discussions have been underway with UNESCO concerning the role ASEE will play in environmental education overseas. During the first year of these cooperative efforts the synergistic effects were very positive. The ASEE is a young society, incorporated in the State of Michigan, with about \_\_\_\_ members. Its goals and objectives are congruent with those of CEAS. It is the conviction of ASEE and CEAS that the two professional groups are mutually supportive and together will greatly enhance environmental education.

## CHAPTER TEN--OBSTACLES TO ATYPICAL HIGHER EDUCATION

It is genuinely difficult to overcome the impediments to the development of a new and different model of higher education. People in higher education have, by and large, experienced traditional, conservative educational systems from kindergarten through graduate school. Thus the faculty, administrators, students, and governing boards participate in management systems, records systems, fiscal systems, personnel systems, and physical facility systems that are steeped in traditional, conservative practices that have evolved historically through past experiences. In addition, certification, accreditation, and funding agencies have developed guidelines, policies and procedures aimed primarily at the conventional institution of higher education. And the body politic has stereotyped universities as bastions of conservative systems; it is expected that each university should be very much like every other one that exists.

Governors State University, for the most part, attracted professional persons who were eager to try to plan, design, develop and implement a new model of higher education in which all systems were atypical or non-traditional for the most part. But even the most future-oriented, liberal thinking professional person in a new, experimenting, upper division university must remain attuned to the conventional expectations of the various constituencies in higher education both within the institution and elsewhere.

Governors State University has been reasonably successful in establishing a new model of higher education in which nearly every system is a mixture of traditional and non-traditional with a heavy weighting toward the non-traditional in most systems. I believe that at least 75% of the non-traditional practices, procedures, etc., that were described in the

Educational Planning Guidelines and in Chapter One are operating successfully. But numerous obstacles to non-traditional higher education have been encountered and have had their influence.

In considering these obstacles, the College of Environmental and Applied Sciences is used as a reference, but the obstacles and impediments identified apply to the entire University, as well as CEAS, in most cases.

#### Students

I estimate that about 50% of the CEAS students are, at the outset, comfortable with all of the non-traditional systems encountered. The other half of our students endure an "educational shock" initially. Most overcome the shock and can successfully cope with all the non-tradition after a few months. Some never adapt and hence leave CEAS for a more traditional setting. Many students have great difficulty in disciplining themselves to use effectively self-instructional materials. For most of their 30 years of life they have been educationally programmed by a teacher, starting with elementary school and continuing through the first two years of college. It is not easy then to shift to a system wherein you can manage a good deal of your learning at your own pace. Originally a student could register for a Learning Module and take as long as he/she desired to complete the work. Many students got so hopelessly behind in completion of LM's that it was necessary to impose limits on the length of time a student could "self-pace." The lack of a grade of A, B, C, etc. for each LM recorded on the student transcript is difficult for some students to accept. An extraordinarily high level of confidence is

### 10.3

placed in a letter grade as an indicator of educational achievement by some students. For some a letter grade appears to provide a higher degree of self-satisfaction. The competencies achieved in each LM are recorded on the transcript along with the title of the LM and the number of units of credit awarded, and most students like this system after they have experience with it for a few months. (See Student Records, Chapter Five; Curriculum and Instruction, this Chapter.)

#### Faculty

The CEAS faculty were carefully recruited. Each was well aware and supportive of the GSU goals, mandates, and philosophy as stated in the Educational Planning Guidelines and of the CEAS faculty expectancies, proposed curricula, instructional modes and strategies and general philosophy. (See Chapter Four for more on faculty.) Nonetheless the lack of discipline-oriented departments with departmental heads and budgets, the competency-based, interdisciplinary nature of the curriculum, and the team approach to curriculum development and instruction are from time to time areas of concern to some faculty. Past experience of most faculty in higher education did not provide contact with most of the systems extant in CEAS. The mere act of a CEAS faculty member trying to explain to a colleague in another university the very different CEAS systems may become a major undertaking because the listener has very little in her/his past experience with which to compare the non-traditional systems.

The identification and recruitment of CEAS faculty, whose educational aims and objectives are congruent with those of CEAS is a never-ending

struggle. Most graduate schools do not prepare scientists to function effectively as professors in an interdisciplinary non-departmentalized setting such as is found in CEAS. And prior experience in a science department in another university usually does not equip a faculty member to function easily in CEAS, at least at the outset.

Evaluation of faculty performance in terms of stated objectives and plans on a Professional Work Plan Agreement (See Chapter Seven) is a continuing process. Nearly all CEAS faculty endorse the concept of evaluation of faculty performance, but the process continues to cause frustration and anxiety especially each spring when the evaluation processes reach their peak. Some faculty are beginning to ask if the emphasis on faculty evaluation may not be an obstacle to implementation of non-traditional educational systems.

#### Energy Demands on Personnel

The development and implementation of the wide variety of systems necessary to evolve a new model of higher education places enormous demands on time and energy of the staff. The student advising, student study plans, record keeping, and faculty evaluation systems, among others, in CEAS requires extraordinary energy of faculty (See Chapter Seven for more on records). The competency-based, interdisciplinary science curriculum to lead to baccalaureate and masters degrees in environmental science involves a great deal of extra time and effort of faculty. Designing, writing, and teaching Learning Modules that are competency-based places additional major energy demands on faculty. Faculty in CEAS ordinarily cannot select a commercially published laboratory manual and a textbook, then build a

## 10.5

schedule of class and laboratory meetings as most of us have done in the past at other institutions. The complete LM is developed (See Chapter Five) and made available to the student before the class meets. Since we have 6 two-month Sessions, LM's are developed from scratch or old ones revised every two months. It is quite reasonable then to expect faculty from time to time to ask, "Why are we doing all these things that require such large amounts of time and energy?"

The demands that the CEAS systems place on faculty is a very real obstacle to the continued experimentation with curricula and instruction, which is a major commitment of CEAS and the University. A non-competency based, discipline structured college with majors, minors and letter grades for transcripts would require much less time and energy of faculty per pupil registered in CEAS!

The nature of the students in CEAS (See Chapter Three) require that at least half of our classes are scheduled between 4:00 and 10:30 p.m. and on weekends. Cooperative curriculum and instructional planning and other group efforts require the CEAS faculty to work together during the daytime when classes are not scheduled. In a genuinely real sense, then, the CEAS faculty are: curriculum planners, instructional developers, classroom instructors (daytime), continuing education instructors (night-time and weekends), educational research participants, applied researchers, community service functionaries, and University committee-persons at least 6 days a week, twelve months a year. This extraordinary time and energy demand is manifesting itself in many ways, most of which are obstacles to maintaining non-traditional educational endeavors or to planning yet-untried non-traditional ventures.



## Support Personnel

Support personnel is here defined to include civil service, graduate assistants, and undergraduate assistants who provide services that assist CEAS faculty in carrying out the myriad of functions necessary to keep all the non-traditional systems operational. The personal services category in the GSU budgeting system includes professional personnel (University Professors, Civil Service persons (secretaries, clerks, bookkeepers, stockroom supervisor)), and student assistants (graduate and undergraduate).

The curriculum, instructional, and student records systems in CEAS demand a great deal more clerical work than traditional systems do in conventional settings. Many external pressures and policies cause CEAS to have <sup>only the</sup> numbers and kinds of Civil Service personnel that are available in traditional settings. The results are that CEAS faculty devote a significant percentage of their time performing clerical functions demanded of the educational system we have evolved. Even though the ratio (a term that governing boards and administrators are enamerate of) of civil service to professional staff in the University is relatively higher than in other conventionally structured and functioning universities, the number and kinds of civil service persons in CEAS is inadequate to support the functions demanded of the faculty to carry out the non-traditional educational services. This is a real obstacle to the effective use of University Professors' time and energy. A major industrial or governmental enterprise would not allow their professional staff to divert their energies to clerical tasks. But higher education is notorious for providing inadequate civil service support for the instructional faculty, the persons who actually provide the delivery of education to students! It is becoming increasingly difficult for me to

convince faculty that we should continue to try other non-traditional systems that might lead to more effective education of our students. Each new system that is put into operation brings with it a myriad of clerical and other support needs. And the faculty believe they can ill afford to devote a higher percentage of their time and energy to more clerical functions.

Self-paced learning and individualized instruction in a competency-based, interdisciplinary curriculum leading to baccalaureate and masters degrees in environmental science require student assistant support seven days a week the year-round in CEAS. The open laboratories (See Chapter Nine), the special laboratories, and the self-service stockrooms are available to students daily throughout the year. Since much of the laboratory and field work are done at the student's pleasure outside of the regularly scheduled laboratory meetings, students need graduate assistants to consult whenever faculty are not available and either graduate or undergraduate assistants to guide them to special laboratory equipment, instruments, and science commodities. In addition, the stockrooms need attending every day the year-round to support the educational delivery systems established in CEAS.

The state appropriated funds available to support graduate and undergraduate assistants is limited, usually less than \$6,000 annually. Because GSU is primarily a teaching University, funds to support graduate assistants, for practical purposes, do not exist. The University has bundles of dollars to support work-study students and other economically disadvantaged students. But most of the students who qualify for these financial supports are not

science-oriented. As a result of these conditions, the CEAS faculty regularly carry out each day a wide variety of functions that a graduate or undergraduate assistant could accomplish under the guidance of a faculty member. The diversion of faculty time and energy to student assistant functions, largely logistic support services for students, presents an obstacle to maintaining among the faculty an experimenting, non-traditional approach to higher education in the sciences. There is an over-riding need for paraprofessional personnel in non-traditional higher education in the sciences (See Chapter Eleven).

#### Curriculum and Instruction

A scientist who accepts a faculty appointment in a traditional university would ordinarily hold the rank of an assistant professor, would be assigned to teach an introductory course and a graduate course, and perhaps conduct seminars in his area of research. In addition, he would advise some undergraduate students. By and large, she/he would be totally independent of most all other faculty to select a textbook and laboratory manual and to teach whatever content she/he believed worthwhile. The class would likely be scheduled to meet for two one-hour lectures and two three-hour laboratory periods that would be managed by graduate assistants. At the close of the semester, letter grades would be turned in to the registrar's office and for all practical purposes the books on that course are closed.

The scientist who accepts an appointment on the CEAS faculty encounters an academic environment that is substantially different. The CEAS faculty member is charged with working with colleagues to design and write a

Learning Module according to a prescribed format that includes among other things statements of competencies the student is to achieve upon completion of the LM. The LM must be complete and available to students prior to the first class meeting. To accomplish these ends effectively, the new faculty member must examine the Instructional Systems Paradigm, the competency statements for the Instructional Program and the Area of Emphasis in which his/her specialty lies, <sup>and</sup> study the content of existing LM's in allied fields (See Chapter Five for more on curriculum). The LM is offered for the first time in one 2-month Session, then evaluated by students and peers, and revised. While teaching the first LM, one or more additional LM's are under development in preparation for future sessions. And so it goes, Session after Session, for the faculty member teaching in the CEAS setting.

The Instructional functions in CEAS are also atypical. Since most of the students commute to the University before or after work, a class meets only once or twice each week, usually for a two- or three-hour block of time. The balance of the work is done more or less independently in the open laboratory, the field or the library, or all three places (See Chapter Eight for more on open laboratories). A given student is likely to contact the faculty member for assistance on several occasions outside of regularly scheduled class times during the two-month Session. Since the Instructional systems encourage self-learning and self-pacing, many students achieve the competencies more slowly than others. Hence some students achieve all competencies (complete the LM) at the close of the Session, whereas others may continue to work independently on the LM for one or two additional Sessions. This means that the faculty member rarely, if ever, closes the

books on an LM at the close of the Session in which it was formally scheduled. It is not uncommon for a faculty member to be maintaining records on dozens of students who are completing work in LM's she/he taught two or three Sessions past. When students achieve the specified competencies for a LM, either at the end of the Session or later, the faculty member submits to the registrar a list of those competencies the student has achieved and the number of units of credit to be awarded. Most LM's are offered for variable units of credit (e.g. 1-4 units, 2-3 units). Therefore, a student may elect to achieve competencies only for two units of credit even though she/he registered for four units. The faculty member then submits to the registrar only those competencies and the units of credit to be recorded on the student's transcript.

Academic advisement of students, including the overseeing of Student Study Plans (See Chapter Seven for more on student records) is an integral component of the instructional system in CEAS. Each faculty member has 20-40 students to advise. In most instances faculty advise both baccalaureate and masters level students. There is no graduate school or specially designated graduate faculty.

Most scientists who join the CEAS faculty have not had prior academic preparation or professional experience that prepares them adequately to cope with competency-based curricula, Learning Module development, self-paced and self-guided learning, and academic advising as conceived in CEAS. Many faculty find the curriculum and instructional systems that we believe are vital in the new model of higher education to be real obstacles. They

are obstacles not because faculty disagree with the concepts, but rather because the systems require enormous amounts of time and energy in addition to handling piles of papers in a systematic retrieval system in order to insure accurate student records.

### Student Services and Records

One of the atypical practices built into the design of the University was a centralized-decentralized student services and student records system. Both the CEAS and the Admissions and Records Office have responsibility for student records and the Student Services Office and CEAS each have responsibility for services to CEAS students. The decentralized records and services, those in CEAS, are intended to provide records and services at a place in the University with which the student most closely identifies, thus will view the services and records as personalized. The intent was to have the academic student records and services overseen by academic faculty in the College. In CEAS the Assistant Dean for Student Affairs is the administrator primarily responsible for coordinating CEAS student records and services.

Maintenance of valid and reliable student records is almost an insurmountable task without an efficient and effective computer service, a service we have yet to achieve at the University. The student, the student's advisor and the Assistant Dean each contribute to the CEAS student records system. The competency-based curriculum, instructional system, student advisory system, Student Study Plan (contract) and a variety of other factors make student academic record keeping a complicated and intricate undertaking. (See Chapter Seven for more on student records.) There are a variety of

never-ending events involving the student, the advisor, the Admissions and Records Office, and the Assistant Dean in an attempt to store, retrieve, and validate academic student data. The amount of time and energy devoted to this activity is unbelievable. Unless the student records system becomes more efficient and more effective, it will probably flounder and fall under masses of paper.

Student services for commuting students whose average age is about 30 years, married, and fully employed remains a mystery. I believe that no one knows what, if any, student services are needed for our clientele in CEAS at GSU. (See Chapter Three for more on students.) At GSU there is an office of student services with a director and an office of financial aids with a director that provide centralized student services. But most of the CEAS students have little or no contact with centralized student services largely because the students are too busy with managing a home, holding down a job, and commuting to attend classes.

In CEAS we have a Student Assistant Dean (See Chapter Six) whose primary responsibility is to aid and abet the faculty and administration in CEAS in providing services to students. There is a Commons area (See Chapter Eight) in the CEAS wing of the University building that houses the office of Student Assistant Dean, student mailboxes, a large lounge area with a fire place, and vending machines. The number of students who have used the lounge area is very small. The student mail boxes are used by most students. Perhaps after the Commons Area in CEAS is fully operational for a couple of years the student usage will increase.

We know so little about the services needed or desired by commuting students in an upper division university that it's a serious obstacle to

providing non-traditional student services for non-traditional students. A variety of social events have been well planned by the Student Assistant Dean and a few "resident-type" students, but only a small percentage of students participated. At present the GSU and CEAS student services are very traditional because we do not know what else to do! Perhaps traditional student services, either centralized or decentralized, are not needed in an upper division university serving commuting students.

#### Research and Evaluation

The University is committed to the thesis that we will evaluate everything that we do in an attempt to provide formative data useful in improving our performances and to provide summative data useful in assessing the worth of our accomplishment of stated objectives and in evaluating our product. The Research and Innovation Wing of the University is charged with gathering institutional data and with cooperating with the Colleges to evaluate the academic programs. Each of the four Colleges has a research and evaluation liaison faculty member that works with the R and I Wing staff in an advisory capacity. In addition to the liaison faculty member, we have an Assistant Dean for Research and Evaluation who works cooperatively with R and I to design and implement studies.

Most of the studies conducted by R and I and by CEAS are traditional data gathering primarily to assemble data that can be used to answer traditional questions posed by external agencies and those of us in administrative positions within the University. We have developed a University with non-traditional academic programs which we believe are



functioning successfully, but we have not been successful in designing non-traditional research and evaluation studies that are so badly needed. This poses a serious obstacle to non-traditional academic programs in higher education. Past experiences of most persons have not prepared them to research and evaluate non-traditional higher education. We mostly know how to ask traditional questions. And traditional questions, asked about non-traditional educational endeavors will almost certainly continue to render invalid and often bastardized data that are not very useful.

The Assistant Dean for Research and Evaluation has recently taken the initiative in cooperation with the staff of the R and I Wing to design and carry out a 12-month study to assess the achievement of the stated competencies for the three CEAS Instructional Programs (Health Science, Science, and Science Teaching) by students who have completed their studies in the program. The competencies the student is expected to achieve before receiving a degree are specified (See Chapter Five). The research team working with the faculty will identify criteria to be used as evidence to indicate students have achieved the competencies, then data will be gathered using especially designed instruments, interviews, practicums, etc., and the data analyzed, interpreted and made available to faculty and administration. These data will be useful in curriculum planning and design and in improvement of delivery of instruction. We should be conducting a number of similar studies simultaneously if we were to evaluate adequately the non-traditional academic program in CEAS. But the time, energy, and money needed to conduct non-traditional research on non-traditional academic

programs is much greater than it is to support the conduct of traditional studies.

Perhaps one of the most serious threats (obstacles) to non-traditional academic programs in higher education is our inability to mount a sophisticated non-traditional research and evaluation program. In CEAS, we are determined to find ways to provide both intellectual and fiscal support to continue non-traditional curriculum and instructional research that is congruent and commensurate with the non-traditional academic programs of the College. This will require additional funding, and with our economy being what it is, this presents an obstacle!

#### Communication and Terminology

Every group of professionals evolves terminology that enhances communication among the professionals involved. The ecologists, molecular biologists, nurses, space scientists, medical doctors, lawyers, and the like, each has their special terminology, or "language," useful to them. Members of one of the professions are likely to view the "language" of the other as being filled with jargon. We scientists are especially prone to label the professional educator as one who is loaded with jargon.

Those of us who were active in founding GSU and in establishing and writing the Educational Planning Guidelines decided that we should use non-traditional terminology to describe the non-traditional educational systems of GSU. (See Appendix A for more on terminology.) The traditional terms such as courses, majors, minors, instructors, letter grades, etc., do not occur in the CEAS terminology (jargon to some), rather Learning Modules, Areas of Emphasis, Orientations, Coordinators, and Competencies are terms used

to denote similar information.

During the first two or three years the GSU terminology (jargon) caused considerable questioning by nearly everyone who was confronted with our communications. It was our intent that the GSU terminology would cause the reader (prospective faculty, students, lay persons) to reflect and question what the terms meant. We wanted everyone to know that GSU was not the typical, conventional university that most people had in mind. Our terminology was so very different that it was an obstacle to our non-traditional efforts, especially in CEAS during those initial years. Scientists have their own terminology (jargon), but are not overly sympathetic to new terminology describing knowledge and processes in higher education.

After five years of dealing with the GSU terminology, leaders in businesses, industries, health professionals, educational professionals, governing board members, and lay persons in the community find it relatively easy to communicate with us using the terminology freely. Nonetheless, from time to time we have to explain what our terms mean. And there is regular questioning by some faculty, students, lay people, and professional persons of the usefulness of our special GSU terminology.

In my opinion one of the greatest obstacles to non-traditional higher education is the old established terminology (jargon) that most people think they understand. Most persons would not question a statement that said, "She has a Bachelor of Science with a major in chemistry and a minor in mathematics and she was an A student," even though that statement applied to a graduate of one institution as compared to a graduate of another carefully selected institution would actually describe two persons with disparate

capabilities. In CEAS a graduate could be described as follows: "She has a Bachelor of Environmental Science with an Emphasis in Environmental Analysis." The transcript supporting the degree would show the titles of Learning Modules taken, the competencies achieved in each Module, and the units of credit awarded. This presents the reader of the transcript with a batch of new terms, a long list of competencies possessed by the student, but there are no letter grades. To some graduate school administrators and a few employers, the GSU transcript presents a real challenge to their past experiences.

It remains to be seen whether or not a truly non-traditional educational system described with non-traditional terminology can survive the attitudes of the traditional educational establishment!

### Management Systems

Non-traditional academic programs require support of non-traditional management systems. In GSU nearly all systems have some non-traditional components. The curriculum and instructional systems are mostly non-traditional and the structure of Phase One physical facility (See Chapter Eight) is atypical of higher education facilities. Most other systems in the University are a mixture of traditional and non-traditional with some systems being more non-traditional than others.

The academic programs of GSU are designed to be flexible and responsive to human needs. Hence the management of all systems that support the academic program (that turns out to be all other systems) should be equally flexible and responsive. This is a goal towards which we have worked very hard for more than five years with some limited success. It is extremely

difficult to establish flexible and responsive management systems in higher education, where numbers of faculty, students, credit hours generated, dollars available, faculty workload, and the like are usually used in formulae by governing boards and other more traditional institutions.

Phase One physical facility has interior structures that are highly flexible, thus partitions can be moved about to accommodate a variety of needs. But how does one develop a management system that is responsive to human needs without producing chaotic conditions. Human needs and academic needs change rapidly in an institution with curricula and instruction such as GSU's. Physical facility changes to meet these needs come about at glacial speed. There are many obvious reasons for this. One reason that may not be so obvious is that persons who have had experience in managing physical facilities tend to view the facility as fixed, and they are used to having human beings respond to fit whatever environment the facility provides. The philosophy of the designers of the University was that the human environment was critically important and that the physical facilities should be built and managed in a flexible and responsive manner. A large number of persons and fiscal support are needed to support flexible management of a physical plant. Since both person power and dollars are in short supply, we do not have, as yet, a physical facilities management system to support the flexibility designed into the curriculum and Phase One facility.

In CEAS we have made an extraordinary effort to try to provide a satisfactory human environment for students, faculty, and civil service personnel. But, even so, we have not responded to needs as promptly and as adequately as the personnel, curriculum, and instruction systems require.

The CEAS administration does not know how to solve this dilemma. And I am convinced that facilities managers, in general, do not know how to cope with continuing change. It is much easier to hope that the curriculum, instruction and people will change and adapt to a fixed environment than it is to evolve a management system that will provide changing environments as needed. The Assistant Dean for Fiscal and Physical Resources in CEAS works very closely with facilities management personnel at GSU. This arrangement assists the physical plant managers to better understand the CEAS curricular and instructional needs as well as the needs of the CEAS personnel. This cooperative planning arrangement between CEAS and physical plant personnel functions smoothly. However, the various management systems that have to respond to the planning and execute the physical changes react far too slowly. In short, no one seems to know how to evolve a flexible, responsive management system that can react fast enough to accommodate rapidly evolving and changing curriculum and instruction systems!

Computer, student records, financial aids, business affairs, instructional support, and other systems in the University are intended to be flexible and responsive. When the management systems of these support services are compared to those in traditional Universities they are, indeed, flexible and responsive. But when compared to the flexibility needed to support the GSU curriculum and instruction, they react too slowly. Even though a great deal of time and effort have been devoted to attempts to develop flexible, responsive management systems, we have not succeeded very well.

The lack of management systems to support adequately the flexible, responsive instructional and curricular systems extant at GSU is an obstacle

to continued non-traditional academic practices. If management systems in higher education remain rigid and relatively unresponsive to the needs of non-traditional academic systems, it is predictable that the academic systems will respond by retrogressing to the traditional.

### External Agencies

Certification, accreditation, granting, and other external agencies have a major direct and indirect impact on the non-traditional educational systems at GSU and specifically in CEAS.

The Health Science Instructional Program in CEAS (See Chapter Five) are interdisciplinary and competency-based with emphasis on self-guided and self-paced learning and individualized instruction, as are the other instructional programs in CEAS. The nursing and allied health professions certification and accrediting agencies produce guidelines and policies that strongly suggest departmentalization, budgeting and management by disciplines within the health fields, practices that the GSU systems do not support. These policies and guidelines have caused CEAS to establish a nursing faculty committee with a coordinator, a medical technology committee with an education coordinator, in order to have nursing graduates certified by the State of Illinois and to prepare for National League of Nurses accreditation and to have the medical technology curriculum eligible for accreditation. We have tried to retain as many of the GSU curriculum goals and objectives as possible and yet meet the requirements of these agencies, but because of the external pressures it is a continuing struggle for the faculty to refrain from returning to traditional education in these fields. Although some of

the certification agencies in the health fields say there's a need for new and different curricula, the stated policies and guidelines set the stage for highly traditional educational systems. A faculty that is evolving non-traditional higher education systems in some allied health fields and in nursing is confronted with many obstacles that make it much easier to resort to the traditional educational practices than to continue to try to produce new curricula and try out new instructional systems.

Funding agencies (private, corporate and federal) often include in their guidelines to preparation of proposals policy statements that render a non-traditional higher education program ineligible for support. GSU was ineligible to receive nursing capitation grants until 1975, because there was not a department of nursing with a director and a budget in CEAS. With the establishment of a School of Health Science which includes a Division of Nursing within CEAS, the University became eligible and received its first capitation grant in the fall of 1975. Had we not established a Division of Nursing, presumably the University would never have been eligible to receive capitation grants.

Some agencies stipulate that eligibility to apply for grant funds depends on the number of baccalaureate degrees awarded in specific science disciplines such as physics, chemistry, physiology, etc. An institution, such as GSU, awarding degrees in Environmental Science from a College without discipline-oriented departments is automatically ineligible. Some grant funds are available to support purchase of equipment or improvement of curriculum within departments of science; interdisciplinary, non-departmentalized curricula may be eligible for support only under exceptional circumstances. It is understandable that funding agencies have these sorts



of guidelines and policies as they fit the traditionally organized university with traditional educational programs. Nonetheless they present genuine obstacles to funding of proposals submitted by CEAS with its non-traditional organizational structure and academic program. The CEAS faculty logically question whether or not it's worth the effort to seek funds to support non-traditional academic programs from agencies geared to support traditional programs. The dilemma is never-ending, but there are some indications that external agencies are beginning to develop policies and procedures that may be supportive of non-traditional higher education programs.

#### Governing Boards and Legislators

The Board of Governors of State Colleges and Universities (BOG) oversees the operation of GSU and four other universities, and the Illinois Board of Higher Education (BHE) oversees all of higher education in Illinois. Thus GSU reports to the BOG and BHE on academic programs, operating budgets and capital budgets. The non-traditional organizational structure and especially the academic programs of GSU are a continuing problem for the BOG and the BHE staffs and particularly the members of the boards. Most of the guidelines, policies, formulae and the like that are used by the BOG and BHE have evolved through years of experience with traditional educational systems. As a result, CEAS specifically and GSU generally encounters a variety of obstacles to the furtherance of the existing non-traditional academic programs to say nothing of evolving new and better atypical educational programs that are needed.

The competency-based, interdisciplinary Health Science, Science and Science Teaching Instructional Programs in CEAS require extraordinary time, effort, and money to plan, design, implement and maintain. Our organizational structure, instructional systems and physical facilities are so atypical that it is difficult to explain and document the special needs for faculty and support personnel, commodities, rolling stock, and the like. In CEAS, we have been unable to evolve formulae that account for faculty effort in planning interdisciplinary curricula, designing and writing Learning Modules, team teaching, individualizing instruction, and maintaining student advisor records. These efforts are enormously time-consuming, but do not increase the number of student credit hours generated, the number of baccalaureate degrees awarded annually, or the ratio of the number of students to faculty. On the other hand, these faculty efforts do produce an educational delivery system that meets the specified goals and objectives of the students, the College, and the University, and fulfill the mandates given the University by its governing boards. The number of credit hours generated, degrees awarded, and students per faculty served are important "numbers" and are part of the criteria to be considered in assessing an institution's productivity and accountability. But there are many other criteria, such as characteristics of students being educated, the nature of the curriculum, the instructional delivery, the achievement by the College or University of its specified objectives, and the quality of performance of the student after graduation that should also be considered along with the "numbers" when institutional productivity, budgets and the like are being considered.

Many of the obstacles we now face in CEAS would be greatly reduced and in some instances eliminated if we were to shift to a traditional organizational structure with conventional curricula and instruction. But we are unwilling to do this, and our governing boards do not want us to become less non-traditional. So the governing boards and the University find themselves in a variety of situations with which neither is satisfied. It is incumbent on the University and the governing boards to make an extra effort to encourage and support the existing non-traditional higher education efforts and to promote additional experimenting with new and different higher education delivery systems in Illinois.

The 76th General Assembly of the State of Illinois enacted laws in 1969 establishing Governors State University and the BHE mandated the University to be innovative and experimenting with flexible and responsive educational programs for commuting students at the junior, senior, and masters levels (See Chapter One). Most of the legislators are graduates of higher education institutions that have traditional organizational structures and academic programs. Therefore, it is not easy for legislators to understand GSU and its non-traditional systems, even though the BHE and the University administration make an extra effort to describe in understandable terms our atypical systems. My experience with Illinois legislators suggests that they endorse in principle the concept of experimenting with new and different approaches to higher education as exemplified by GSU, but that they do not have an operational understanding of the University and its non-traditional systems. Neither the University nor its governing boards have found ways to describe adequately the characteristics of GSU's non-traditional systems.

## CHAPTER ELEVEN--GENERALIZATIONS AND RECOMMENDATIONS

### Introduction

Not many persons in higher education have the opportunity to participate in planning, designing and implementing all systems of a new, upper division University that is mandated to evolve an atypical or non-traditional institution of higher education. Since July, 1969, when GSU was founded, I have had the privilege of assisting in the initial plans and design of each of the many systems of GSU. And I have assisted in the management of the implementation of many of the systems. These six years of experience with the evolution of an upper division university to serve commuting students with non-traditional educational systems have allowed me to reflect on the Educational Planning Guidelines, the various processes and structures involved in implementation of the guidelines, and to identify what I believe are strengths and weaknesses in some of the non-traditional systems.

Most of the non-traditional systems that are in operation at GSU are achieving the goals and objectives of the University, the Colleges, the students, and the faculty. If I were to assist in planning, designing, and placing into operation another new upper division University with non-traditional systems to educate commuting students at the junior, senior, and masters levels, I would change some of the components of some of the systems now operating at Governors State University.

There are numerous subsystems and systems that must function in efficient, integrated manner if a total University system is to operate effectively and productively. There is no intent in the following generalizations and recommendations to comment on all of the systems of this

Idealized University, but rather to comment on certain aspects of the following systems: (1) planning and designing, (2) organizational structure, (3) academic program, (4) personnel, (5) physical facilities, (6) management, and (7) communications.

### Planning and Designing Phase

A period of 30-36 months would be required to plan the University. During the first year, a President, Vice President for Academic Programs, Vice President for Administrative Services, four or five Academic Deans, and ten to fifteen professors would comprise the plan and design team. The Vice President for Academic Programs and the Academic Deans would be charged to take leadership in planning for the academic programs which would be pivotal in the total planning process. The academic administrators and the professors would work with consultants, community persons, community college faculty, students, and administrators, leaders from business and industry, and other future-oriented thinkers to prepare position papers on the mission, scope, goals, and functions of the University.

#### Academic Program Guidelines

The position papers developed by the academic staff would be merged into a publication, much like the GSU Educational Planning Guidelines, which would serve as the guide to future curriculum development and instructional program planning. The Academic Program Guidelines would be published by the end of the first year of planning. All other planning documents or guidelines would be developed to support the

### 11.3

Academic Planning Guidelines.

#### Administrative Planning Guidelines

During the first year the Vice President for Administrative Services would work closely with the President, the professors, and consultants known for experience in developing flexible and responsive management systems, to develop a series of position papers describing an administrative system that would be congruent with and supportive of the Academic Program Guidelines. The Administrative Planning Guidelines would be comprised of the position papers and would be published about three to six months after the Academic Program Guidelines. The Administrative Guidelines would serve as a guide to all University personnel as the University evolved.

#### Handbook of Operational Policies and Procedures

The President, using the Vice Presidents as advisors, would develop during the first two months a Handbook of Operational Policies and Procedures for use by all University personnel. These policies and procedures would provide all personnel with the same information and would remain in effect until new operational policies and procedures were recommended by the University staff and approved by the President. Within the first year the Handbook of Operational Policies and Procedures would be revised to include policies and procedures developed by faculty and staff and approved by the President and would incorporate new administrative policies and procedures reflecting the President's points of view and, also, the policies mandated by the governing boards.

### Organizational Structure and Function

During the first two months, the President, in concert with his administrative staff, would distribute to all University personnel a description of the organizational structure of the total university and the functions for which each unit is responsible. The University's organizational structure described by the President would be in effect during the first year, after which it would be modified in view of one year's experience and in accordance with recommendations made by the other University administrators and faculty. At the close of the second year of planning the organizational structure and function would again be reviewed and, if necessary, modified. These processes would provide the University personnel at all times with an organizational structure with clearly described functions and would enhance efficiency and productivity of the staff.

### Professional Expectancies

In a non-traditional University, administrators and faculty are expected to meet many non-traditional as well as traditional professional responsibilities. During the first six months, the President and other administrators would prepare and distribute to all University personnel a statement of Administrator Expectancies. The professors would study these expectancies and recommend improvements to the Administration which would revise the Administrator Expectancies at the end of the first year.

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During the first six months, the professors in concert with the Vice President for Academic Programs would prepare a statement of Faculty Expectancies in a non-traditional University. The Faculty Expectancies statement would be supportive of the Academic Program Guidelines and it would be an important faculty recruitment document. The President and other Administrators would review and recommend improvement in the Faculty Expectancy statements which would be revised during the second year of planning.

### Physical Facilities Guidelines

The Vice President for Administrative Services in concert with the President would assume the Administrative leadership role in preparing guidelines to physical facilities. During the first six months facilities experts, consultants, and University personnel would develop position papers on the quantity and quality of physical facilities needed to support the academic programs described in the Academic Program Guidelines which would be in preparation. During the last six months of the first year, the Vice President for Administrative Services with the assistance of the writers of the academic programs would publish Physical Facilities Guidelines for use by all University personnel, the architects, and the contractor.

At the close of the first year of planning and designing, there would be publications serving as guidelines to: (1) academic programs, (2) administrative systems, (3) operational policies, and procedures, (4) organizational structure and function, (5) professional expectancies,



## 11.6

and (6) physical facilities. These publications would provide all persons involved in development of the University with a cohesive package of guidelines, not only during the three planning years, but for several years thereafter. All of these planning documents would be used in recruitment of professional staff for at least five years after admission of the first class of students.

The second year of the planning and designing phase would be devoted to further development and design of all systems with especial emphasis on academic programs. During the <sup>second and</sup> third years the number of professors would be increased to 30 and they would place major effort in academic program development.

### Organizational Structure and Function

The University would be comprised of three wings, each managed by a Vice President: (1) Academic Programs, (2) Administrative Services, and (3) Human Services. (See Appendix D.)

#### Administrative Council

The President, three Vice Presidents, and two Academic Deans would comprise the Administrative Council (AC) for the University. The AC would function according to Policies and Procedures for Administration that would be developed by the AC and made available to all University personnel, and the Council would concern itself only with the highest order of University affairs.

### Advisory Groups

The Academic Wing would have an advisory group of faculty, support personnel from the other two Wings of the University, and students. The advisory group to the Administrative Services Wing would consist primarily of faculty members with some representatives from the other two Wings. The Human Services Wing would have an advisory group consisting primarily of faculty, students, civil servants, and community persons. The advisory groups would meet regularly with administrators to advise, react and critique all University systems. Minutes, position papers, and the like developed by advisory groups would be made available to all staff and stored in a retrievable system.

### Academic Programs Wing

The Vice President for Academic Programs would be assisted by three Vice Presidents: (1) Collegial ~~Academic~~ Programs, (2) Academic Support Services, and (3) Curricular, Instructional, and Institutional Research. The Assistant Vice President for Collegial Academic Programs would be supported by an academic dean of each college, a coordinator of intercollegiate and interinstitutional studies, a coordinator of *continuing* experiential ~~and continuing~~ education, and a coordinator of special projects. The Assistant Vice President for Academic Support Services would be assisted by a coordinator of library <sup>is</sup> services, coordinator of instructional media services, coordinator of academic computer services, coordinator of student admissions, coordinator of student records, and a coordinator of community college relations. The Assistant Vice President

for Curricular, Instructional and Institutional Research would be assisted by a coordinator of curricular studies, coordinator of Instructional studies, and a coordinator of Institutional studies.

The colleges would be central to Academic Wing operation. Each collegial dean would be assisted by four administrators: (1) Assistant Dean for Academic Programs, (2) Assistant Dean for Student Affairs, (3) Assistant Dean for Research, and (4) Assistant Dean for Facilities and Budget. There would be two Student Assistant Deans in each college who would provide liaison among students, faculty, administrators, and university student services.

This proposed organizational structure places within the Academic Wing those units of the University most directly responsible for the education of students and academic support of faculty who are the direct overseers of the curriculum and instruction. This organization would enhance efficiency, productivity, and cohesiveness of effort in the Academic Wing.

#### Administrative Services Wing

The Vice President for Administrative Services would be assisted by three directors: (1) Budget<sup>S</sup><sub>N</sub>, (2) Special Operations, and (3) Physical <sup>Facilities</sup>~~Plant~~. The Director of Budgets<sub>A</sub> would be assisted by a coordinator of special funds, coordinator of operating budget, coordinator of capital budget, and a coordinator of administrative computer services. In the Special Operations unit the Director would be supported by a coordinator

of the bookstore, coordinator of food service, and coordinator of University press. The Director of Physical Plant would be assisted by a coordinator of maintenance, coordinator of security, coordinator of physical services, and coordinator of physical planning. This organization places the fiscal and physical affairs of the University under the management of the Administrative Services Wing that works closely with an Advisory Group comprised primarily of faculty who would keep the academic program needs prominent in the management of the affairs of the Administrative Services Wing.

#### Human Services Wing

The Vice President for Human Services would be assisted by four directors: (1) Student Services, (2) Faculty Services, (3) Civil Servant Services, and (4) Community Services. The Director of Student Services would be assisted by a coordinator of health services, coordinator of student publications, coordinator of student placement, and coordinator of financial support. Faculty Services would be concerned with insurance, retirement, annuities, group travel, health services, and grievances, and would be managed by a Director. The Director of Civil Servant Services would provide liaison with State Civil Service Commission, maintain rosters of eligible civil service persons, oversee insurance, health, vacation, leave, and other benefit programs, and serve as an advisor to University units on civil servant affairs.

Services to the community are provided by faculty, students, and staff of the University. The Director of Community Services would

serve as the overseer of all community services, maintain liaison between the community-at-large and the University personnel, and provide liaison among all University units concerning community services.

This organizational plan for the Human Services Wing places faculty, students, and community services in one unit which places emphasis on those human needs that are not directly academic but that are closely supportive of the academic programs of the University.

The proposed organizational structure and function for the University places the major functions of a University in three Wings: (1) Academic Program, (2) Administrative Services, (3) Human Services. The inter-relationship among teaching, research, community service, and management systems would be encouraged in this organizational scheme.

#### Academic Programs

During the first two years of the planning and design phase, the Vice President for Academic Programs and the professors would develop a master guide to curriculum development and instruction.

#### Curricula

The curricula would be competency-based, interdisciplinary, flexible and with a mixture of liberal education and career oriented education. The basic curriculum and instruction syllabus would be called a course and would be available for variable credit, usually one to four units or semester hours. Each course would consist of instructional packages, called modules, each available for one unit of credit. Thus a four credit

course would be comprised of four one-unit modules. Each module would specify two or three competencies to be achieved at the mastery level. Mastery would be determined by a variety of evaluation methods and quantified at the 80% level to justify awarding of credit.

The undergraduate and graduate curriculum would be a continuum but with the graduate competencies being more sophisticated and with more emphasis on higher levels in the hierarchy of Bloom's taxonomy of educational objectives. Any student with a baccalaureate degree could begin graduate study, but admission to degree candidacy at the close of the first session (semester, term, or trimester) would depend upon performance in courses during the first session and graduate examinations and would require sponsorship by two faculty.

The curriculum would be designed to educate people for the future. Conventional majors and minors would not be available, rather broad area studies with some focus on careers of the future would be emphasized. The curricula would include a core of courses common to several career oriented studies. Faculty teams would plan, design and teach courses and modules.

Intercollegiate curricula would be budgeted and overseen by the coordinator of Intercollegiate and Institutional studies in the office of the Vice President for Academic Programs. The coordinator would have funds to hire faculty from the colleges for a session to instruct in the intercollegiate curriculum. Faculty would be encouraged to design intercollegiate and interinstitutional curricula to provide special educational programs for students.

### Evaluation

Major emphasis would be placed on quantitative measurement of student achievement of specified objectives in modules, courses and area studies. All sorts of evaluative methods and procedures would be used to ensure that students achieved the competencies at the 80% level of mastery. The primary indicator of achievement would be the recording of the competency, the title of the module, the title of the course and the units of credit awarded on the student's transcript. No grades would be recorded on the student transcript, but a variety of grades would be used by the professor during the course of study by the student to assess achievement at mastery level.

Student evaluation <sup>of</sup> instructors performance would be commonplace. Each faculty member would be required to conduct a formal evaluation of his/her teaching performance in each course. This evaluation would be confidential between the faculty member and the student and would provide formative evaluation for improvement of instruction. The Dean of the college and the Assistant Dean for Research would administer twice each year an instrument to evaluate instructional performance of faculty. These data would be confidential between a faculty member and the Dean of the college and would serve primarily for formative evaluation but also for annual summative evaluation. The <sup>instructing</sup> coordinator for instructional research working with the assistant deans for research in the colleges would assess the instructional performance of faculty once each year. These data would be used by the Vice President for Academic Programs and the Dean of the college primarily for summative

evaluation but also for formative evaluation processes.

On-the-Job experience for college credit, cooperative education, would be an integral component of the curriculum in each college. The assistant deans for academic programs in the colleges in cooperation with the coordinator of special projects in the office of the Vice President for Academic Programs would oversee the cooperative education program. The cooperative education courses and modules would be competency based, designed and managed as would any other courses and modules. Cooperative education experiences would be encouraged only for those students whose prior work and academic experience show that they need this kind of learning experience.

#### Continuing and Experiential Education

The coordinator of continuing and experiential education in the office of the Vice President for Academic Programs would work with the assistant deans for academic programs in the colleges to design and manage an extensive and intensive continuing and experiential education program.

The continuing education program would focus primarily, but not exclusively, on retired and old persons who may not have any interest in or need for college credits or a degree. But there's ample evidence that a great deal of competence exists in this segment of our society and by and large higher education has not served them well. Continuing education experiences would be validated by issuance of a "certificate of participation." If persons wanted credits, special competency-based



courses and modules would be designed. Or the persons would be awarded credit if these continuing education experiences allowed them to achieve specified competencies in existing courses and modules in the University curriculum.

Academic credit for non-academic experiences (experiential learning) would be given high priority by the coordinator of continuing and experiential education and the deans for academic programs in the colleges. Any persons admissible to the University would be eligible to apply for academic credit in a course or a module in a college's curriculum. For example, a person who could demonstrate the achievement of the two or three competencies specified for a given module could receive the one unit of credit for that module. Similarly, one could receive credit in courses. There would be no limit on the number of units of credit that could be awarded for experiential learning.

#### Instructional Support

The assistant deans for academic programs, and the assistant deans for research in the colleges would work closely with the Assistant Vice President for Academic Support Services and the coordinators in that office to evolve and manage instructional support services congruent with the needs of the curricula. Instructional support services would be a means towards the end--an efficient effective educational delivery system in the colleges. The library, instructional media, computer services, student admissions, student records, and community college relations would be decentralized to the colleges to the extent needed

to effectively educate commuting students most of whom are employed, have family responsibilities, and have been attending college part-time for several years. In addition to support services traditionally rendered, special support of development of competency based courses and modules and support of various modes of instruction would be required.

#### Curricular and Instructional Research

Instructional and curricular research would be the responsibilities of the colleges with university-wide support and coordination provided by the Assistant Vice President for Curricular, Instructional and Institutional Research. The coordinators for curricular and instructional studies in the office of the Assistant Vice President would work closely with assistant deans for academic programs and the assistant deans for research in the colleges to assist in the design and implementation of curricular evaluation and instructional improvement studies. Faculty in each of the colleges who have expertise in curriculum and instruction theory and research would work with collegial faculty to design and conduct studies of the curriculum and instructional modes and strategies. The curriculum and instruction faculty would also take leadership in planning, designing and implementing the college's teacher preparation programs.

#### University Bookstore and Newspaper

The Coordinator of the University Bookstore in the office of the Vice President for Administrative Services would be a professor in the college concerned with business, economics, business education and the like. A University Bookstore policy advisory committee consisting of

faculty and students would meet regularly to recommend management and fiscal policies that would ensure that the bookstore effectively augments the educational delivery systems in the colleges.

The University newspaper would be an integral component of the academic programs. The coordinator of student publications in the office of the Vice President for Human Services would be a professor in the college concerned with written communications and literature. Students would write, edit, and manage the newspaper. There would be a newspaper policy advisory committee comprised of faculty and students. The newspaper publication would be considered primarily as a mode of education of students in written communications, business management, public relations, literature, and the like. It would be a sophisticated publication representing the total university and the highest quality of student effort. The newspaper would be distributed widely throughout the region around the University.

#### Year-round Operation

The University would operate year-round with three sessions of 15 months each and six or seven weeks of curriculum development, faculty enrichment seminars, and University planning and development. Students who were not employed full-time could register for a maximum of 15 credits, those working full-time a maximum of 10 credits. Since each course would consist of 1 credit modules, faculty could at their discretion register students for 1 credit modules at any time. Not more than a 1 credit module could be taken in any two-week period.

Faculty would be appointed for 10 or 12 months. In a given college one-half of the faculty would hold 10 month appointments and the other half 12 month appointments in a given year. The following year those persons who had held 10 month appointments the previous year would hold a 12 month appointment. About half the University's faculty would hold a 10 month one year and a 12 month appointment the next. Those faculty holding 10 month appointments would have a 20 working day vacation period; those with 12 month appointments 24 working days. The faculty on 10 month appointments could rest, travel, conduct research, or engage in other scholarly pursuits at their leisure for two months prior to starting a 12 month appointment.

Faculty professional work load would be 36 hours per week, of which 8-10 hours would be devoted to formal teaching of classes, about 8 hours to informal teaching, about 4 hours to student advising and records, about 8 hours to curriculum planning, course and module preparation, and about 8 hours to research and community service. It is assumed in this workload description that working hours per week is a better measuring unit of professional effort of faculty than is the number of courses taught or the number of student credit hours generated.

### Personnel Systems

The University would have four kinds of personnel: (1) professional, (2) paraprofessional, (3) professional support, and (4) civil service.

### Professional Personnel

The professional personnel would carry the title of professor and would hold a full-time appointment in one of the colleges in the University. Professional persons holding part-time, short-term appointments in the colleges would be called adjunct instructors.

### Paraprofessional Personnel

Paraprofessional personnel would hold full-time appointments for not more than three years. These persons would have received a baccalaureate or a masters degree from the college in which they were to serve as paraprofessionals. The paraprofessionals would work directly with three or four faculty and the advisees (80-100 students) of these faculty in preparation of student study plans, consult with students engaged in laboratory and field work, and in general serve as a professional assistant to faculty and students in a competency based curriculum with individualized instruction.

### Professional Support Personnel

Professional support personnel would have advanced professional degrees and would hold appointments in one of the support units of the University. In some cases a professional support person could also hold a professional <sup>civil</sup> ~~professional~~ appointment in a college.

### Civil Service Personnel

Secretaries, typists, engineers, telephone operators, storekeepers, accounting clerks, and the like would be allocated and assigned according

to state, board, and University policies and procedures. Special emphasis would be placed on provision of adequate clerical personnel in the colleges to support the faculty efforts devoted to curriculum planning, course and module development, student advising and records, and individualization of instruction.

### Tenure and Contracts

The full-time professors would receive an initial appointment for one year. The second appointment would be for a two-year term and the third and unlimited subsequent appointments would be for five-year terms. Even though contracts could be awarded for fiscal year periods of time, a letter of intent to employ for an additional four years would amount to a five-year appointment. These term appointments would allow the faculty member job security for reasonable periods and the University the opportunity to assess its faculty needs and faculty productivity periodically.

Lifetime tenure as practiced in conventional universities would not be a part of the professional employment system in the University. Tenure has largely become a job security insurance package, rather than a protector of academic freedom. Most professors and administrators in higher education have more academic freedom than can be effectively and productively managed; therefore there would be need for conventional tenure. Job security would be provided by multiple-year contracts.

Professional support staff would receive multiple year appointments similar to those awarded to the faculty, except that the initial appointment would be for a two-year term. Paraprofessional personnel would be

appointed only for one-year terms and for a maximum of three terms.

Civil service appointments would be for one-year terms.

Vice Presidents would be appointed to five-year terms, renewable for three terms. Assistant Vice Presidents would receive three-year term appointments renewable for four terms. Coordinators and Directors would receive one-year term appointments, renewable for ten terms. Deans of colleges would receive five-year term appointments, renewable for three terms. Assistant Deans would be appointed to one-year terms, renewable for ten terms.

#### Work Agreements and Progress Reports

Each faculty member, professional support person and administrator would prepare a Professional Work Plan Agreement (PWPA) similar to the one in Appendix C. The PWPA would serve as a guide both to the professional person and his administrator in terms of anticipated productivity and evaluation.

The faculty member in a college would prepare her/his PWPA in terms of the University policies concerning work load and in terms of her/his professional expectations and would submit it to the Dean of the college for endorsement. The PWPA would be subject to modification at anytime by mutual consent of the faculty member and the Dean. The agreement would be for the period of a calendar year.

Within two months following the termination of a PWPA, the faculty member would prepare an Annual Progress Report, in terms of her/his PWPA, and submit it to the Dean along with her/his PWPA with all amendments.

Professional support personnel and administrators would prepare Professional Work Plan Agreements and negotiate them with the administrator to whom each reports. Annual Progress Reports would be submitted, also.

### Evaluation of Faculty

Faculty would be evaluated formally each spring for purposes of improving performance and for consideration of salary increases. The Professional Work Plan Agreement, the Annual Progress Report, evaluations by other faculty, evaluations by students, and evaluations by the Dean and Assistant Deans would comprise a battery of documents that would be considered during the annual evaluation. The annual evaluation of a faculty member would consist of a private conference between the Dean and each faculty person during which time the battery of evaluation documents would be discussed. The Dean and the faculty member would reach a consensus on areas of performance that are superior and on areas in which performance could be improved and a salary increase recommendation. If the faculty member and Dean could not reach a consensus, an evaluation committee of five faculty (three selected by the faculty member and two by the Dean) would be selected to examine the battery of evaluation documents and submit a report to the Dean and the faculty member, both of whom would confer on the committee's findings and reach a consensus.

The Dean would submit to the Vice President for Academic Programs and to the faculty member an evaluation report and a recommended salary increase. A copy of the annual evaluation would be retained by the Dean



In confidential files. At the close of the five-year term appointment, the past annual evaluations plus the current year evaluation would be used in considering reappointment for another five-year term and annual salary increase.

This faculty evaluation system would assure the faculty member of an annual evaluation that considers her/his data and evaluation statements by peers, students, and collegial administrators in a private conference with the dean of the college. The evaluation would be confidential between the dean and the faculty member unless the faculty member believes she/he is not being fairly evaluated at which time a committee of peers evaluates the data. The system would be fair, efficient, and effective and it would reduce the stress, strain, frustration, and anxiety so often associated with non-confidential evaluations.

The dean of the college would be evaluated by the faculty, other deans, students, and the Vice President for Academic Programs would consider the dean's battery of documents with the dean. Salary increases and reappointments would be based on findings in annual evaluations.

### Physical Facilities

The physical facilities planning would begin during the planning and designing phase through the production of a publication of guidelines to the structure and function of physical facilities. It is a given that the physical plant would have one primary function: the support of the

academic programs and human needs. To this end at least two faculty with special capabilities and experience in planning physical plant to support academic needs would work full-time with the Vice President for Administrative Services and his staff, the architects, and the contractor, beginning with the initial planning and continuing until construction was complete. The faculty would make certain that the architect and contractor were continually aware of the academic program and the human environment needs as identified in the various documents produced during the planning and designing phase. The physical facilities would be designed to provide maximum flexibility and utility and would ensure warm, inviting, comfortable human environment conducive to high scholarly productivity.

#### Flexible Structures

The initial building would be designed so that most partitions would extend from floor to ceiling but would be movable, and non-bearing. The number of support pillars would be minimal throughout the net assignable and useable space in the building. Energy channels in the ceiling would carry such systems as: heating, cooling, watering, lighting, communicating, etc. It would be possible to access readily any energy system at any place in the building. There would be no energy systems in the floors, only drainage. All professional staff would have closed offices with lockable doors with some glass partitions and one or more small windows that could be opened and closed manually.

One wing of the building would consist of numerous seminar and class rooms of various sizes. The partitions would be soundproof but could be moved so as to alter room sizes as future needs demand. Another wing would consist of a series of four or five auditoriums of various sizes arranged as pieces of pie around a core space that would house all sorts of media and technological devices for support of instruction and community functions.

General purpose science laboratory facilities would be open and laboratory furniture and equipment moveable to the extent possible, much like the present open laboratories in CEAS at GSU (See Chapter Eight).

#### Mobile Laboratories and Classrooms

Each college would have a number of mobile classrooms and/or laboratories to support instruction, research, and community service both on and off-campus. The building would be so designed that each college initially would have two to four mobile units that would be connected to the building, energized from the building and used when the mobile unit was on campus. The mobile units would be self-propelled, contain their own energy sources, and especially constructed to carry out special functions of the college at off-campus locations.

#### Student Health Facilities

The student health facilities would be an integral component of the health sciences instructional facilities. A variety of clinical facilities (examination rooms, observation rooms, and the like) would

serve the needs of health services to commuting students and also some of the instructional needs of the health sciences faculty. The health science faculty would help design and would staff and manage the student health facilities. These clinical-instructional facilities would be as flexible as feasible and still provide desirable human environments for persons receiving health care and for those delivering services and instruction.

#### Student Center

Each college in the University would have a center for commuting students. A student center would provide a wide variety of student services: lounge area, music room, college library, food service, student reading room, small motel-like rooms, game room, display room, student assistant dean office, student representative office, and student services office. The Student Center in the college would be designed to accommodate older commuting students who have limited time to spend on campus and who need student accommodations close at hand and easily accessible. The student lounge would be small and attractively furnished with a centrally located fireplace and with ample leisure reading materials. A small soundproof music room that could accommodate a few persons and with extensions to earphone jacks scattered widely throughout the lounge and other areas in the center. The college library would support the curriculum of the College and would be staffed and managed by professional librarians as would those functions of the library that were carried out in the central library. The main libraries

would be in the college student centers. The central library would largely function as receiving, processing, cataloging holdings and overseeing library records and management of the central and collegial library systems. Food service would consist of high quality snack food easily accessible to students on the move! The food service would be overseen by the coordinator of food services for the University. A student reading area would be provided to accommodate only a few persons under conditions of quiet. A few motel-like or dormitory-like rooms would be available for students to rent for short term at low cost. These rooms would service the commuter student whose studies could more easily be accomplished if he/she spent two or three days and nights on campus near the literature, laboratories, or other special facilities. The rooms would be equipped so that nearly any instructional media (computer terminal, videoplayer, projector, microfiche reader, etc.) could be used as intensively as the student desired for a few days. A small game room to accommodate ping-pong, chess, checkers, card games, etc., would provide quick, easily accessed recreation for short periods before, between, and after classes. The game room would serve as a "change of pace" room.

A display room would have student products, trophies, special announcements, and other materials characteristic of the college curriculum and other special interests of the students and faculty. Some displays would be more or less permanent whereas others would be only temporary. The display room would indicate the "flavor" of interests and concerns of the College.

The offices located in the student center would support student affairs in general. The student assistant dean's office (see Chapter Six for more on Student Assistant Dean) would be central in the management of the Student Center. The <sup>+</sup> Student Assistant Dean in a given college would oversee the operation of all components of the Student Center, except the library and food service. The student representatives' office would house those students from the college who were elected or appointed student representatives to various University councils, committees, etc. The student services office would house a staff member, perhaps a counselor from the University student services offices, and at least one student news and public information representative from the College. These persons and the Student Assistant Deans would work closely with students and faculty and with the University newspaper to provide student services in general and specifically to provide news coverage for student and faculty activities in the college and the community.

#### Off-Campus Centers

Physical facilities would be leased or constructed on the campus of each community college in the service area of the University. The off-campus centers would provide educational extensions of the University into its service area. Most of the prospective students for this upper-division, commuter institution would have attended one or more of the community colleges in the region, hence the association of the University's off-campus centers on the campuses of community colleges would provide

a physical and Intellectual bond between the two-year colleges and the University which would have all sorts of advantages to the students, the community college, and the University.

An off-campus center would be cooperatively planned, designed, constructed and managed by the community college and the University. The Center facilities would be highly flexible so as to meet the needs of a variety of instructional programs extant in the University. The computer, communications, and instructional media facilities on campus would be directly connected to the off-campus centers, which would be operational on the same schedules as would those on campus. Each of the off-campus centers would be physically designed to accommodate the mobile laboratories and classrooms of the University.

#### Management Systems

All management systems would be as flexible and responsive to the needs of the academic programs as feasible. Each management system would be charged to provide efficient, effective, responsible policies and procedures ensuring maximum support of the academic programs and providing the best possible professional environment for all staff.

#### University Management

The President, Vice Presidents, and their Advisory Councils (see section on Organizational Structure) would evolve and oversee the University-wide management systems. Management policies and procedures would be described in <sup>the</sup> ~~the~~ University Handbook of <sup>the</sup> ~~the~~ Policies and Procedures. Each

of the three Wings of the University would produce a handbook dealing with policies and procedures within the Wing.

An unicameral university senate comprised of 15 faculty, four students, four civil servants, three administrators, and two community persons would be formed. Faculty, students, and civil servants would be elected. Each Vice President would appoint one administrator from her/his Wing. The President would appoint two community persons. The Vice Presidents and President would serve as ex officio non-voting members of the senate.

The University Senate would be charged to evolve a constitution and by-laws, to consider all existing management and operation policies and procedures that were established during the planning phase, and to recommend new University policies and procedures. All policies and procedures would be recommended to the University Administrative Council (President and Vice Presidents) for consideration with their advisory councils.

The University Librarian would be charged to develop a storage and retrieval system for all past, current, and future management and operational policies and procedures. A set of up-to-date handbooks of policies and procedures would be maintained in each budgeted unit in the University and in the archives.

#### Academic Program Management

The Vice President for Academic Programs, the three assistant vice-presidents and the deans of the colleges would comprise an Academic Council. The Vice President would be charged to evolve management and



operational policies and procedures and to oversee all functions of the academic wing. The academic programs of the University are central and pivotal, hence the Vice President for Academic Programs would take the leadership in establishing cooperative functions with the vice presidents and their councils in the other two wings. It would be abundantly clear that the prime objectives of the three wings would be to provide high quality education for the students and to make possible a scholarly human environment for the faculty and staff.

The Assistant Vice President for Collegial Programs would chair a Collegial Programs Council comprised of the assistant administrators in that unit. The Assistant Vice President for Collegial Programs would be charged with overseeing the management and operation of all collegial programs, the singularly most important function in the University. The other two Assistant Vice Presidents would have comparable councils. The three assistant vice presidents and their councils in the academic program wing would be charged to work closely with each other to ensure that all management and operation policies, procedures, and practices fully supported a quality education for students and a scholarly atmosphere for faculty and staff.

Each of the administrators reporting to assistant vice-presidents would produce for their unit a handbook of management and operation policies and procedures consistent with policies and procedures of the academic program wing and the University.

The Assistant Vice President for Academic Support Services and the coordinators in that unit would be charged to provide reliable, valid, flexible, and responsive academic support services.

During the early months of planning and designing phase, the University planners would contract with computer services agency to design and implement information storage and retrieval systems that would support both administrative services and academic programs that would be flexible and responsive. High priority would be placed upon the development of computer services to support the libraries, the competency based curriculum, computer-assisted and aided instruction, transcripts of courses completed, competencies achieved, and credit awarded, and registration and graduation of students any day of the year. These computer services would be fully operational prior to admission of students at the close of the three-year planning phase.

The Assistant Vice-President for Curriculum, Instructional, and Institutional Research and the coordinators who report to her/him would be charged to work with the other assistant vice-presidents and administrators to identify research studies that were needed. The coordinators of curricular and instructional research would be charged with development of research designs that were congruent with the competency-based curriculum, various modes of individualized instruction, attitudes, behaviors and objectives of upper division commuting students, the evaluation systems, personnel systems, management systems, and the like. The research would be conducted cooperatively with the colleges and other units in the academic wing with the primary objective being to improve the quality of the education of students.

The institutional research would be managed so as to gather quantitative data on such parameters as: students registered, units of

credit earned, degrees awarded, and the like. A management system that would make comparable institutional data available on a regular basis would be evolved and administered by the office of the assistant vice president.

#### Administrative Services Management

The Vice President for Administrative Services and the three directors would comprise an Administrative Services Council. The Vice Presidents and the Council would be charged to develop flexible and responsive management systems to support atypical academic programs in a non-conventional physical facility. During the first two years of the planning and designing phase, computer services to support administrative services (payroll, purchasing, inventory, etc.) would be contracted for. The coordinator of administrative computer services in concert with the other coordinators reporting to the Vice President for Administrative Services would plan the adaptation of the contracted computer support system to the University's computer, incorporating those flexible features necessary to support the non-traditional academic programs, faculty, and staff. The Director of Budget and the coordinators who report to him/her would work closely with heads of all budgeted units to make certain that the management of the budgets were flexible and responsive to the needs of the atypical academic and human services programs.

The Director of Special Operations would work closely with deans of the colleges with which the coordinator of the bookstore is associated and with the bookstore advisory body to establish management policies and

procedures that would ensure that the bookstore would be responsive to academic program needs and would also be a fiscally responsible operation.

The Director of Physical Facilities in cooperation with the coordinators of maintenance, <sup>physical</sup> planning, security and physical services would establish operational policies and procedures that would ensure that the management of the physical facilities of the University would support both the traditional and non-traditional needs of the curriculum, faculty and staff. The coordinators would work cooperatively with those administrators responsible for physical facilities in other units, especially those concerned directly with delivery of the educational program and with provision of scholarly environments for faculty.

#### Human Services Management

The Vice President for Human Services would be responsible for a management system to oversee the special services needed by students, faculty, civil service and other persons in the University, and, in addition, those services rendered to the community by University persons. The Vice-President and the four Directors who report to her/him would establish a Human Services Council that would regularly involve students, faculty, and civil service persons in advisory capacities.

The Director of Student Services and the four coordinators who report to her/him would evolve a management system that would provide services needed by commuter students who, for the most part, are older, married, fully employed, and spend limited amounts of time on campus.

## Communications Systems

It is a given that honest, reliable communications among all university personnel increases efficiency and effectiveness, infuses trust and confidence, and reduces unnecessary anxiety and frustration for everyone involved. An extensive communications system with many subsystems would be established among the faculty, students, staff and administrators within the University and between the University and various constituencies in the community. The coordinator ~~or~~ ~~director~~ of libraries would manage a storage and retrieval system for all University communications papers. The position papers, guidelines and handbooks prepared during the early part of the three-year planning phase would serve as basic communications papers for several years during the early history of the University. As the University evolves each unit would develop guidelines to operating policies and procedures.

### Guidelines to Communications Policies and Procedures

The planning staff during the first three years would prepare a handbook of University communications policies and procedures. The communications handbook would set forth plans for coding, distribution, storage, <sup>and</sup> retrieval, ~~and the like of~~ communication papers prepared by administrators, faculty, students, staff, and governing boards. The President and the Vice Presidents in concert with their advisory groups would regularly revise the communications handbook as the University evolved. The communications handbook would always remain an important reference for all University personnel.

Administrator Communications

The President would distribute monthly to all University staff a brief overview of his report to and actions taken by the governing board(s), and commentary on new developments in organization, management, functions of upper division Universities. Every six months the President would distribute a "state of the University" paper to all staff with special emphasis on future plans and developments. Periodically, at least every third year, the President would distribute to the University staff and the community a position paper on the future of the University. The President's monthly, biannual, periodic and board reports would be coded and stored in the library in a system where they could be easily retrieved by anyone.

The Vice President for Academic Programs in concert with the three Assistant Vice Presidents would prepare a handbook of policies and procedures for the Academic Wing. Each of the Deans and Coordinators in the Academic Wing would prepare a handbook of policies and procedures especially for her/his unit that would supplement the Wing's handbook. The academic vice president would distribute monthly to all administrative personnel in the University a brief report on academic program changes that are being planned <sup>and</sup> actions taken by governing board(s) on academic programs. Annually, she/he would release to the University staff and community an Academic Program report, including current status of academic programs, future plans for the Academic Wing, and commentary on academic frontiers in higher education. Every third year the Vice President for Academic Programs would distribute to the University staff a position

paper on the future of academic programs at the University and trends in academic programs in other upper division universities.

The deans of the colleges and the coordinators in the Academic Wing would distribute annual progress reports to their respective staffs, the Assistant Vice Presidents, and Vice President for Academic Programs. Periodically the deans of colleges and coordinators would distribute to their staffs working papers and position papers concerned especially with communications, organization, management, finances, staffing, and potential academic program changes.

All reports, working papers, position papers and other documents prepared by administrative persons in the Academic Wing would be coded and stored in a retrieval system in the library.

The Vice Presidents in the other two Wings and the administrators who report to them would prepare reports, working papers, position papers, and the like similar to those prepared by administrators in the Academic Wing. The papers prepared by the Administrative Services and Human Services Wings would be distributed, coded, and stored as all other papers prepared by University administrators.

#### Professional Staff Communications

Communications between faculty and administrators, among faculty, and between faculty and students would be vital to the success of this upper division University serving commuting students.

The faculty in the colleges would function in an organizational structure similar to the one described in chapter six. Such an organizational structure, if properly managed, would allow, in fact almost

ensure, oral and written communication among faculty and between faculty and administrators. A communications system such as the one outlined in chapter seven would be established and the faculty would be encouraged to write working papers, position papers, occasional papers, and other papers stating their ideas. The minutes of the meetings of faculty councils, groups and committees and the papers produced by faculty would be distributed to all administrators in the Academic Wing and to the President and Vice Presidents. The administrators outside the college receiving the collegial communications would distribute them to professional staff concerned. It would be imperative that every faculty member would have a variety of modes and routes via which she/he could communicate.

Each college would have a handbook of policies and procedures which would include all administrative and operational policies and would be available to each professional staff and civil service person in the college. As policies are modified or new policies evolved and approved by the faculty organization, they would be coded and entered in the handbook.

The faculty and administrators of each college would develop a statement of professional expectancies for faculty and for administrators which would serve as a guide to professional behavior of all professional staff in the college. The professional expectancies statement would be an important document for use in recruitment of new faculty.

Most of the faculty records system currently functioning in CEAS and described in chapter seven would be used as vehicles of communication.



The evolution of reliable communications between faculty and students would be given high priority. Each faculty member would serve as an academic advisor of about 30 students. The Student Study Plan (Chapter Seven) would serve as a vehicle for continuing oral and written communications between the student and his/her advisor, the members of a faculty advisory committee and a faculty review committee. Students would serve on various committees in the college organization and the Student Assistant Deans (Chapter Six) would provide liaison between students and faculty.

Because communications with commuting students, most of whom are married and employed, is not easily accomplished via methods characteristic of most institutions of higher education, an intensive effort would be made to investigate ways and means of eliciting student-faculty-administrator communications. Research on communications of faculty and administrators with commuting students would be given high priority at all levels of University organization with special emphasis in the academic wing.

Communications among professional staff and between professional staff and students would receive high priority consideration in all units of the University. The coordinators and directors in the three wings of the University would work with their staffs to establish reliable, effective communications processes and procedures much like the collegial faculty.

### Student Communications

The Coordinator of Student Publications and the Director of Student Services would work with Student Assistant Deans, Assistant Deans for Student Affairs and special student task forces to develop guidelines to policies and procedures for student publications.

A Student Handbook would be prepared by the professional staff and distributed to the first class of students. During the first two years, the Handbook would be revised based on student and faculty experience with the first edition.

The Coordinator of Student Publications would oversee the production and distribution of a monthly Student Newsletter comprised of a section for each college and the student services unit, and a miscellany section for other units. The University Newspaper (see page 11.16) would be the primary communications instrument for students, faculty and community. The Coordinator would oversee a variety of other relatively inexpensive publications for commuting students as special communications needs would be identified by experience and/or research.

The Coordinator of Student Publications would work with appropriate persons in the colleges, student admissions, student records, student placement, student financial support, and other offices to plan special student publications. And the Coordinator of Institutional Research would design studies to evaluate effectiveness of student publications.

The Coordinator of Student Publications, in cooperation with other University persons associated with student publications, would hold two student-faculty retreats each year to assess impact and usefulness of

current student publications and to identify ways and means of improving student communications.

### University Senate Communications

All transactions of the University Senate would be coded and distributed to all professional staff and the library for storage in the University communications retrieval system. Senate recommended policies, approved by the President, would become coded University policies and mailed to all units for inclusion in the University Handbook of Operational Policies and Procedures.

Oral and written communications<sup>routes</sup> between the Senate, the professional staff, the students and the civil service personnel would be mandatory. Communications would be encouraged by open Senate meetings, open hearings on special issues, invited position papers from all constituencies, and by maintaining accurate records of all Senate transactions.

### Civil Service Staff Communications

Civil Service personnel would have active avenues of communication with professional staff, administrators, and students. The Director of Civil<sup>Servant</sup> Services working in cooperation with the Vice Presidents, the Civil Service supervisor in each unit, and the professional staff administrator in each unit would plan a communications system. The Director of Civil<sup>Servant</sup> Services would oversee the preparation of Civil Service Communications Guidelines, which would be distributed to every Civil Service person and to unit heads.

A Civil Service Newsletter would be distributed monthly by the Director of Civil <sup>Servant</sup> Services. Each unit would organize its Civil Service persons so that they could recommend policy and procedural changes. In each college the administrative secretary would participate in faculty meetings and administrative council meetings as described in Chapter Six. Civil Service persons would serve on the University Senate and on other University committees.

In general, Civil Service personnel would be actively engaged in oral and written communications with all constituencies in the University.

#### Public Communications

An experimenting upper division University with systems that are, for the most part, non-traditional would need to judiciously and systematically inform the body politic what the University was all about. The President's and Vice Presidents' reports to the public *and the University Newspaper* would be components of a well-planned public communications system. News releases would be prepared regularly to inform the public about the aims, goals, objectives of the University, always placing non-traditional policies, procedures, curricula, and the like in perspective using language understandable to everyone. Research results on non-traditional systems would always be carefully and accurately interpreted in the context of the non-traditional and the traditional systems of higher education.

A P P E N D I X A

## APPENDIX A--GLOSSARY OF TERMS

Many new terms have been used to describe the non-traditional characteristics of the various systems in operation at Governors State University. The definitions marked with an asterisk (\*) were taken from the GSU Instructional Systems Paradigm.

- \*AREA OF EMPHASIS--A concentration of related competencies within an instructional program. An Area of Emphasis differs from a traditional "department" in that it is defined by a specified list of competencies that students are expected to attain.
- \*COLLEGE--The only academic division in the University. At the date of this report, there are four relatively autonomous colleges, each to be limited in size to approximately 1500 students. The absence of departments is intended to promote interdisciplinary studies within and between the colleges. Each college is defined in terms of a unique set of College-Level Objectives.
- \*COLLEGE-LEVEL OBJECTIVES--A general statement of objectives/goals that have been derived from the Educational Planning Guidelines, and that serve as parameters for curriculum development within the respective colleges.
- \*COMPETENCY--A behavior or pattern of behaviors related to real world knowledge, skills, and/or attitudes that the student will demonstrate he has acquired. The specificity and breadth of a competency statement depends on whether it is for an instructional program, Area of Emphasis, or Learning Module.
- \*COORDINATOR--This is the term given to faculty members who are involved in instruction within a learning module. The term "coordinator" is used instead of "professor" or "instructor" and indicates the new role a faculty member assumes in the learning process at Governors State.
- \*EVALUATION--A comparison of expected outcomes with actual outcomes, and the incorporation of appropriate revisions to bring the two closer together.

GSU UNIT--An amount of academic credit equivalent to a semester hour of credit. A full academic load is 8 units per 8-week Session.

- \*INSTRUCTIONAL OBJECTIVE--A behavior, contributing to a competency, to be attained through a specific series of instructional events, and to be exhibited at a level and under conditions indicated by specified criteria.
  
- \*INSTRUCTIONAL PROGRAM --A major subdivision within the College that contains the following characteristics: (1) It has been approved by the Board of Governors, (2) It consists of one or more related Areas of Emphasis, and (3) It is defined by competencies that its students will attain.
  
- \*INSTRUCTIONAL SYSTEM--A set of learning experiences designed to enable a specified population to attain stated competencies. It is developed according to the instructional development process outlined in the Instructional Systems Paradigm.
  
- \*INTERCOLLEGIAL--The concept whereby students are encouraged to register for Learning Modules across Collegial lines. The Educational Planning Guidelines state that faculty and students in different collegiate units will cooperatively plan, develop and execute learning experiences of this type.
  
- \*INTERDISCIPLINARY--The concept of organization that prevails within the Colleges. This approach does not recognize the departmental system nor rank faculty according to academic discipline. The Educational Planning Guidelines refer to "interdisciplinary" as an emphasis on programs of study that encourages the synthesis of knowledge from the disciplines within a collegiate unit.
  
- \*LEARNING MODULE--The Learning Module is a set of experiences which brings the student to the achievement of one or more specific and discrete competencies. Ideally, it is the smallest "package" of instructional strategies and materials in which all aspects of an individualized, performance-based, criterion referenced instructional model can be identified. Such a model will include instructional objectives, materials, and strategies for instruction and evaluation. A Learning Module will include topics or concepts belonging to a larger subject-matter context. A Learning Module at GSU, under current administrative procedures, will yield one or more GSU units of credit. (Learning Modules may include Self-Instructional Materials.)

OPEN CONCEPT--Physical and psychological openness is enhanced by elimination of walled hallways, minimizing the number of walls, using glass walls whenever feasible, arranging physical facilities so that entry is invited, and locating faculty and administrative offices where they are readily accessible.

OPEN LABORATORY--The science laboratories consist primarily of two large rooms with moveable laboratory furniture located at more than 50 stations. The only walled-in laboratories are small rooms around the perimeter of the open laboratories where specialized equipment is housed. There are no special physics, chemistry, geology, zoology, etc., laboratories.

\*SELF-INSTRUCTIONAL MATERIALS (SIM)--A set of learning experiences designed to enable a specified population to attain stated competencies. They employ self-instructional strategies (under the guidance of a Coordinator) that enable students to learn through the use of pre-programmed materials and tests and that provides feedback as to whether or not the objectives are being met. The materials enable students to attain module competencies at their own pace, and at flexible times and places. (These materials may be part of a Learning Module.)

SESSION--A time period of approximately two months. There are six Sessions during the calendar year with four Sessions comprising the equivalent of a traditional academic year.

TRIMESTER--Three 16-week periods and three 1-week evaluation periods comprise the twelve month academic calendar, beginning September 1975. The trimester replaces the six 2-month Sessions which comprised the academic calendar from September 1971 to 1975. A TRIMESTER consists of three BLOCKS: Block One=16 week period, Blocks Two and Three=8 weeks each.



A P P E N D I X B

APPENDIX B--1975 Learning Module List  
College of Environmental and Applied Sciences  
Governors State University

Aggression in Animal and Human Society

Air Analysis

Air Quality Research

Alcoholism III: Mental Health Aspects of Alcoholism

Alcoholism: Legal, Judicial and Law Enforcement Aspects

Alcoholism: Nursing Management

Alcoholism I: Biology of Alcoholism

Alcoholism II: Behavioral Implications of Alcoholism

Alcoholism: Occupational Programs in Industry and Government

Alcoholism: Pathology and Medical Aspects

Alcoholism: Primary and Secondary Prevention

Alcoholism Sciences: Applied Research

Alcoholism Sciences: Monitoring, Evaluating and Upgrading

Alcoholism Treatment Modalities: Introduction to Clinical Practicum

Allied Health Practice: Recent Developments

Applied Calculus

Aquatic Biology I

Aquatic Biology II

Aquatic Chemistry

Assessing Educational Outcomes

Assessment of Clinical Instruction

Assessment of Health Status I

Atmospheric Physics and Meteorology

Basic Ecology

Behavior of Animals : Early Experience and Development of Behavior

Behavior Setting Analysis: Seminar

Biochemistry

Biochemistry: Elementary

Career Paths and Life Style Choices I and II

Chemical Techniques for Environmental Studies

Chromatographic Techniques for Environmental Analysis

Classroom Care of Plants and Animals

Clinical Laboratory Science - Medical Technology I-XII

Communication Concepts: Advanced

Community Health Problems

Community Health Nursing Administration

Community Mental Health Nursing

Comparative Health Care Systems

Comprehensive Health Planning I

Comprehensive Health Planning II

Computer Assisted Learning: Workshop (for Teachers)

Computer Programming

Computer Supported Education

Concepts of Independent Practice (Nursing)

Conceptual Bases of Nursing Practice

Conflict Resolution

Continuing Education for the Health Professions I and II

Cooperative Education In . . .  
Coop Ed In Alcoholism: Clinical Practicum Internship  
Cooperative Education In Health Sciences Administration  
Creative Problem Solving I  
Creative Problem Solving II  
Culture and Communication  
Curriculum Development  
Curriculum Models  
Design for the Human Environment I  
Design for the Human Environment II  
Distributive Nursing I  
Distributive Nursing Practicum  
Ecological Methods  
Ecology Seminar  
Economics of Health Care I  
Economics of Health Care II  
Economics of Health Care: Problems I  
Economics of Health Care: Problems II  
Electrochemical Techniques for Environmental Studies  
Energy, Resources and Society  
Environmental Assessment  
Environmental Earth Science  
Environmental Education  
Environmental Education Institute  
Environmental Education Workshop  
Environmental Law

Environmental Organic Chemistry I  
Environmental Organic Chemistry II  
Environmental Organic Chemistry III  
Environmental Organic Chemistry IV  
Environmental Psychology  
Environmental Psychology: Communication Perspective  
Environmental Psychology: Physical Settings and Behavior  
Environmental Science  
Environmental Systems Analysis I  
Environmental Systems Analysis II  
Environmental Systems: A Simulation  
Environments In Transition  
Epidemiology: Principles and Analysis of Data I (Undergraduate)  
and II (Graduate)  
Ethics & Environment  
Evaluating Nursing Practice  
Evaluating Science Process Learning  
Evaluation: Formative & Summative  
Evolution & Man  
Experimental Botany  
Family Health & Illness Behavior  
Family Life Styles & Cycles  
Field Biology I and II  
Financial Management for Health Service Administration  
Forest Management Practices

Futures Forecasting

Futures Forecasting Workshop

Gerontology

Health Care Delivery: Values and Issues

Health Care in Africa

Health Care Organization

Health Care Research: Introduction

Health Professions Education: Current Trends and Issues I and II

Health Professions Education: Values Clarification Techniques

Health Service Administration: Advanced Topics

Health Services Management Theories

History and Philosophy of Science

Human Ecology Seminar

Human Environment Planning

Human Environment Planning Comprehensive Studio

Human Heredity

Human Sexuality

Inquiry Processes in Science Teaching

Instrumentation Electronics I

Instrumentation Electronics II

Land Use Law Seminar

Land Use Design and Planning

Learning Processes: Adults

Learning Processes: Children and Adolescents

Legal Environment in Health Services Administration

Life Experience Workshop

Limnology

Local Flora I and II

Maintenance of Science Labs

Managing Learning Environments

Management of Client/Patient Care

Medical Technology: Current Trends and Issues I and II

Microbial Ecology I

Microbial Ecology II

Natural Regulation of Populations

Natural Regulation of Animal Populations: Laboratory

New Communities Development

New Communities Seminar

Nursing Didactics for Clients/Families

Nursing Futuristics Seminar

Nursing Leadership

Nursing Practicum

Nursing Service Administration Theories

Organic Chemistry: Special Topics

Organismic Biology

Ornithology

Personnel Administration and Labor Relations in Health Service Administration

Physical Environments: Characteristics and Development

Physiologic Systems I

Physiologic Systems II

Physiology of Aging

Planning: A Communication Perspective

Planning Process: A Systems View

Planning Retrospective

Plant Microenvironments: Early Summer Phenophases

Plant Microenvironments: Late Summer Phenophases

Plant Microenvironments: Spring Phenophases

Plant Propagation

Poisonous Plants and Animals

Pornography, Censorship and Society

Practicum In Health Professions Education

Principles of Health Services Administration

Probability and Statistics

Productivity

Psychosocial Aspects of Aging

Public Finance and Systems Analysis for Public Sector Administrators

Quantification & Experimentation

Radioisotope Techniques I: Basic Principles

Radioisotope Techniques II: Applications

Reaction Rates and Processes

Readings and Investigations In . . .

Research Administration

Research In Simulation Games

Research Projects In Restorative Nursing

Researching Science Information

Research: Theory, Design, Implementation



Restorative Nursing Seminar & Practicum I and II  
School Nursing: New Dimensions  
Science: A Human Endeavor  
Science Teaching Equipment: Make-It-Yourself  
Science, Technology and the Quality of Life  
Self-Instruction: Management  
Seminar American Institutions and Values: Environmental Control  
and the Heritage of Reform  
Sex and the Healing Professions  
Simulations and Games  
Social Intervention  
Soil Analysis  
Special Projects In . . .  
Spectrochemical Techniques for Environmental Analysis  
Statistical Analysis Using Computer Package Programs  
Statistics: Non-Parametric  
Student Teacher Orientation  
Student Teaching  
Survey of Instructional Techniques  
Teacher Behaviors in Inner-City and Multi-Ethnic Environments  
Teaching Elementary School Science  
Teaching Secondary School Science  
Thanatology: Death and Dying  
Theoretical Foundation of Restorative Nursing  
Theories of Nursing Education

Theory of the Photographic Process

Thermodynamics

Transportation Systems

Urban Aesthetics

Urban Environments: Introduction to the City

Urban Geology

Urban Neighborhood

Urban Planning--Principles and Practices

Variables of Behavior In Health Care Settings

Water Quality Research

Water Quality Research Seminar

Water Quality Research Strategies

Women's Health Concerns

A P P E N D I X C

C E A S   P R O F E S S I O N A L   W O R K   P L A N   A G R E E M E N T

College of Environmental and Applied Sciences  
Governors State University  
Park Forest South, Illinois

The EAS Professional Work Plan Agreement is to be completed and approved between November 1 and 15 for the next calendar year (JF through ND Sessions). Page one of the WPA includes all Direct Instruction. It is to be completed and submitted to the Coordinator of Curriculum and Instruction for endorsement prior to being submitted to the Dean's Office.

The Direct Instruction component of the WPA should be updated each time we prepare the MJ-JA and SO-ND Learning Module schedules to reflect accurately all Direct Instruction.

Other faculty activities should be organized under the following headings, which are consistent with the attached Staff Effort Report form: (1) Indirect Instruction, (2) Instructional Support, (3) Committee Assignments, (4) Research Assignments, (5) Administrative Assignments, (6) Community Service, (7) Professional Services, and (8) Other.

Name: \_\_\_\_\_

Period Covered by Agreement: \_\_\_\_\_

SUMMARY STATEMENT OF OBJECTIVES

Endorsement:

\_\_\_\_\_  
Signature of Faculty Member

\_\_\_\_\_  
Signature of Dean

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

CEAS PROFESSIONAL WORK PLAN AGREEMENT

DIRECT INSTRUCTION

Faculty name: \_\_\_\_\_

Date: \_\_\_\_\_

See reverse side of this page for guidelines and procedures

SECTION	MODULE TITLE(S)	UNITS CREDIT	PRIMARY COORDINATOR	ASSISTANT COORDINATOR	TO D
4					
4					
4					
4					
4					

Endorsement: \_\_\_\_\_

Coordinator of Curriculum and Instruction

Date: \_\_\_\_\_

Approval: \_\_\_\_\_

Dean of College

DIRECT INSTRUCTION GUIDELINES FOR WORK PLAN AGREEMENT

Revised September, 1974

University Policy on Faculty Workload: "The faculty teaching load for full-time teaching faculty will be 30-32 instructional units per calendar year. For full-time administrative and support personnel who also hold a University Professor appointment in a College, the normal teaching load will be 3 to 6 instructional units per calendar year."

In order to administer the above policy, EAS has adopted the following administrative policies. Direct Instructional Numbers (DIN) will be used to indicate the amount of Direct Instruction generated by a Module Coordinator(s), according to the Table of Direct Instructional Numbers (DIN):

<u>Function</u>	<u>DIN</u>
One-person Coordinator (Lecture-Discussion)	1.0/GSU Unit
One-person Coordinator (Laboratory, Clinical, Field Modules; enrollment limited to 15)	1.5/GSU Unit
One-person Coordinator (Readings & Investigations in..., Cooperative Education in..., Special Projects in...)	
Undergraduate Students	0.15/Student/GSU Unit
Graduate Students	0.30/Student/GSU Unit
Two-person (or more) Coordinators (Team taught Modules)	0.80/Coordinator/GSU Unit
Primary Coordinator (Record keeper, etc.)	0.5
e.g., Three (3) Coordinators team teach a 3 GSU Unit lecture-discussion Module: Coordinator generates $3 \times 0.8 + 0.5 = 2.9$ DIN; Assistant Coordinators each generate $3 \times 0.8 = 2.4$ DIN	
Assistant Coordinator with a Community Professor	0.5/GSU Unit

1. Direct Instruction. Complete Page One of WPA entering appropriate date in every column.
2. Teaching Faculty. Faculty with full-time teaching responsibility should expect to generate 30-32 DIN per year (12 months).
3. Administrative Faculty. Persons appointed to the position of Assistant Dean, Coordinator, or Administrative Assistant, should expect to generate not less than 15 DIN per year (12 months).
4. Support Faculty. Persons whose fiscal support is in another budgeted unit and who hold an appointment of University Professor in EAS should expect to generate 6 DIN per year (12 months).
5. Substitute Functions. Faculty wishing to increase the amount of time spent in other areas -- i.e., indirect instruction, community service, research, etc., -- should negotiate the DIN with the Dean and the Coordinator of Curriculum and Instruction.
6. Vacation. If a non-teaching Session is planned so that a vacation can be taken, the estimated dates of the vacation should be indicated. When the Vacation Request Form is submitted for the non-teaching Session, it should be accompanied by an addendum to the WPA which describes the university work to be done during the non-teaching Session and how the Dean can evaluate it.

ACTIVITIES

TIME LINE

EVALUATION

(this category should include criteria, mechanisms and evaluators, where appropriate)

A P P E N D I X D



APPENDIX D  
 Organizational Structure Showing Most Components of the University Described in Chapter Eleven.

