11-1-1980

Faculty Senate Monthly Packet November 1980

Portland State University Faculty Senate

Let us know how access to this document benefits you.
Follow this and additional works at: http://pdxscholar.library.pdx.edu/senateminutes

Recommended Citation
http://pdxscholar.library.pdx.edu/senateminutes/14

This Minutes is brought to you for free and open access. It has been accepted for inclusion in Faculty Senate Monthly Packets by an authorized administrator of PDXScholar. For more information, please contact pdxscholar@pdx.edu.
The Senate will hold its regular meeting on Monday, November 3, 1980, at 3:00 p.m. in 150 CH.

Agenda

A. Roll

B. Approval of Minutes of the October 6, 1980, Meeting

C. Announcements and Communications from the Floor
   1. IFS Report--Sugarman

D. Question Period
   1. Questions for Administrators
      a. Question to Robert Tufts from Ansel Johnson: "What would prevent implementation of the new 'W' and 'I' grading policy Winter quarter 1981?"
      b. Question to John Gruber from the Senate Steering Committee: "What is the basis for allocation to various departments of money for wage sections, especially this year?"
   2. Questions from the Floor for the Chair

E. Reports from Officers of the Administration
   1. Registration up-date--Blumel

F. Unfinished Business
   *1. Constitutional Amendment, Final Reading--Karant-Nunn

G. New Business
   *1. Curriculum Committee Program Proposals--Newborg
   *2. Graduate Council Program Proposals--Newberry

H. Adjournment

*The following documents are included in this mailing:

   B  Minutes of October 6, 1980, Senate Meeting
   F1 Constitutional Amendment**
   G1 Curriculum Committee Program Proposals**
   G2 Graduate Council Program Proposals**

**Included for Senators and Ex-officio Members only.

REMINDER

Senators unable to attend the meeting should pass this mailing on to their alternates. Senators who have not named their alternates should do so at once. Use form below.

My name ________________________________ My alternate for the 1980-81 Senate is ______________________________

Please send to Ulrich H. Hardt, Secretary, P.O.
Minutes:
Faculty Senate Meeting, October 6, 1980

Presiding Officer: Marjorie Enneking
Secretary: Ulrich H. Hardt


Members Absent: Bentley, Burns, Dreyer, Dueker, Hales, Heflin, Moor, Piper.

Ex-officio Members Present: Blumel, Corn, Forbes, Gard, Gruber, Hardt, Harris, Heath, Hoffmann, Howard, Morris, Nicholas, Parker, Pfingsten, Rauch, Ross, Schendel, Todd, Urman, Vant Slot, Guy, Erzurumu.

APPROVAL OF THE MINUTES

The minutes of the June 2, 1980, Senate meeting were approved as distributed.

ANNOUNCEMENTS AND COMMUNICATIONS FROM THE FLOOR

M. Enneking announced that reports of the Committee on Academic Organization and the Committee on Research at PSU are available for check-out from the Secretary of the Faculty.

The resignation of Michael Fiasca as Presiding Officer Pro Tern was relayed. Dawn Dressler and Al Sugarman were nominated for the position and Sugarman was elected on the ballot.

It was also announced that there would be a campus-wide run-off election between John Dart and Dawn Dressler to fill the position on the Interinstitutional Faculty Senate which Vic Dahl resigned.

Question Period

1. Questions for Administrators

To the question regarding faculty consultation for interim administrative appointments, Blumel responded that no formalized procedure now exists. He pointed out that consultation with affected faculty members or groups does take place, and that he views that as important. Bunch queried whether it might be important to develop a procedure. Blumel was not sure if this was necessary for interim appointments, and Dobson added that department heads should formalize a procedure of consultation for these kinds of issues.

On the question regarding the semester system at the UO, Blumel pointed out that the Committee on Instruction of the State Board had received a request from the
university. The institution has been interested in an "early semester" system, one that would minimize the number of transfer students. So far this request is only at the Committee level. If PSU believed that there would be adverse effects by the change, input can be given to the Board when the issue reaches it.

REPORTS FROM OFFICERS OF THE ADMINISTRATION AND COMMITTEES

Blumel indicated that as of Friday, October 3, registration seemed to be up 14 percent. Course requests are up substantially above that. Tufts said that the head count was 18,575 -- up from last year's record enrollment. Some departments reportedly have turned away significant numbers of students.

OLD BUSINESS

Beeson presented the proposed constitutional amendment abolishing the Elections Committee and moving up the dates of the various stages of the elections. The new elections process would be handled by the Secretary of the Faculty. Tamblyn reiterated that the computer now does the ballot counting that was formerly done by faculty on the committee and that a clerk does the mailing of the ballots. He pointed out that there tends to be a lack of continuity in the elections process when it is handled by a committee and that the Computer Center has complained about that. Kimbrell wanted to know what kind of staff the Secretary of the Faculty had to carry out the work. Hardt responded that there was a half-time secretary. Chino moved that "under the supervision of the Senate Steering Committee" be added to the amendment that proposes to put the election in the Office of the Secretary of the Faculty. The amendment passed. E. Enneking moved to strike the adjective "regular" before faculty in Article V, Section 2, part 1, because the word is meaningless and tends to confuse. The amendment passed. Midson wanted to know whether the Senate Steering Committee would run the elections if the Secretary were indisposed. M. Enneking assured him that the Committee would appoint someone to do the work. Heath's question was whether it had ever been clarified whether research assistants vote in elections, and Tamblyn responded that only those with faculty rank vote. Howard inquired about staggering the terms of Senators from a given division, so that a unit may not come in with all new representatives every three years. Though it was agreed that this was a point worth discussing, it was ruled that it was not germane to the motion on the floor. The motion was passed at that point.

NEW BUSINESS

1. Midson moved the following: "Propose that the Senate adopt the policy for use of 'I' and 'W' marks as written in Senate mailing G1, and that it be put into effect in the same term for which it is published in the PSU term bulletin for the Schedule of Classes, and that the target date for printing and implementation be Winter Term 1981, or the soonest feasible term." He pointed out that there were divergent practices and wide-spread dissatisfaction with the use of "I" and "W" marks and that this had led to the joint draft of the proposed policy by the Academic Requirements Committee, the Graduate Council, and the Scholastic Standards Committee. Chino wanted to know if the catalog is binding and if counsel had been consulted regarding this change. Dobson replied that counsel had pointed to the disclaimer published in the catalog. Daily opposed the motion because it takes away her option of assigning "W" to students who are having trouble in her math classes. She moved that the two issues of "I" and "W" be voted on separately; the motion died for lack of a second. Dressler agreed that the "I" and "W" policy needed to be strengthened, but she saw problems with the "W" requirement in cases of courses that required concurrent enrollment. She also felt that self-paced courses on campus may have problems with the proposed policy and suggested that all teachers should have the opportunity to examine it. So that this could be accomplished, she moved that copies of the policy be sent to all departments for their consideration and that action by the Senate be
deferred till the November meeting. The motion failed. Urman, speaking for ASPSU, favored the tightening of "I" and "W" policy. Crowley said that the crunch for teachers came when some evaluated and failed students while other teachers were more lenient and gave "W" marks. R. Nussbaum agreed that Crowley's remark was much to the point and was addressing the accountability of the faculty. Griffiths, Scholastic Standards Committee chairperson, urged that if we have grades we should make them work for us and encourage students to be more responsible and accountable. Midson added that the important thing was to establish communication between students and teachers. Bunch was against the rationale stated, pointing out that the average age of PSU students was 27, and they needn't be taught how to be accountable.

Beeson spoke in favor of the policy with the exception of the 2 terms to make up an "II"; he noted that labs are sometimes only offered once a year, and this new timeline would necessitate giving the courses more often. Midson, however, pointed out that the policy included provisions for exceptions. Heath observed that if the policy is adopted it would become a guideline for students to follow; no enforcement procedure is mentioned. He added that teachers still could line out students on the grading register rather than giving "I" or "W". Bates urged that students should come to professors to discuss withdrawals between weeks four and eight. Daily wanted to know how many "D" and "F" grades are issued. Tufts replied that these grades were very rare; Fall term 1979 had 1.9 percent "F" and 3.3 percent "D". Howard wondered whether a grade "in progress" would not help to eliminate part of the problem being discussed, and Swanson observed that the "W" was still not addressed for audit students. Chino asked if the committee had considered an option like "WP" and "WF", and Midson replied that the committee felt that "W" is a prerogative of the student not the teacher. Chino moved that "WP" and "WF" be made teacher options. No second. Dressler moved to amend the second sentence of the third underlined paragraph on page 2 to read: "The student must notify the instructor concerned of the intended withdrawal." The amendment failed. Bates moved to amend the second underlined paragraph on page 2 by adding "Withdrawal between then and the eighth week requires instructor approval" (the end of the eighth week intended). The amendment passed. White moved that the one-year deadline for removal of "I" be retained. The amendment passed. In response to the question of whether the proposed policy, if accepted, could be implemented in mid-academic year as suggested, Tufts said that he saw some problems. Midson pointed out that the motion was for "implementation... Winter term 1981, or the soonest feasible term." He also offered the following amendment for page 4, under Walkaway Students, after the first underlined sentence: "This also applies for the removal of audit designation," thus substituting the use of "W" sanctioned by the Senate in 1979 and which, by this new policy, will have been made illegal. The amendment passed. The main motion with its three amendments was then passed.

2. R. Nussbaum presented the new grievance procedure for PSU faculty and said it represented great improvement over what currently exists. He spoke highly of the cooperation between the AAUP and the administration during the drafting stage and moved acceptance. Howard inquired about the 120-days limit for presenting a grievance (Section IV, A), pointing out possible problems during summers, for instance, when faculty may not even be here. He was told that summer session would account for only 50 days. L. Nussbaum asked about Section C, 2, c (page 3) and whether the dean must be in attendance at the hearing. Corn replied that that was up to the hearing committee. The grievance procedure was accepted unanimously.

ADJOURNMENT

The meeting was adjourned at 4:53 p.m.
Article IV. Organization of the Faculty.

Section 4. Faculty Committees.

4) Standing Committees and their Functions.

f) Elections Committee.

Delete in its entirety.

Article V. Senate.

Section 2. Election of the Senate.

1) Determination of Divisional Representation. By the first Monday in March of each year, the chief administrative officer of each division (see Article V, Section 1, Paragraph 2) shall report to the Secretary of the Faculty the name of each faculty member, and the number of full-time equivalent faculty assigned to each division. At the same time names of faculty and the number of full-time equivalent faculty in academic programs not in any "division" shall be reported by the chief academic administrative officer to the Secretary of the Faculty. These faculty shall be assigned by the Senate Steering Committee to divisions as prescribed in Article V, Section 1, Paragraph 2. The Secretary of the Faculty, under the supervision of the Senate Steering Committee, shall then determine the number of senators to be allotted to each division, apportioning one senator for each multiple of ten full-time equivalent faculty or fraction thereof. A newly instituted division shall elect its senator(s) in the next regular senate election.

2) Nomination. Six weeks prior to the date of Senate elections, the Secretary of the Faculty shall obtain from each divisional administrative officer an approved list of the faculty members assigned to his division. This list will be circulated with the directions that any potential candidate may delete his or her name if he or she does not wish to be a candidate for a Senate position. No later than four weeks before the Senate election, the Secretary of the Faculty shall submit a list of eligible candidates to every faculty member in the divisions, and request the nomination of a number of names equal to twice the number of Senate vacancies occurring in that division at the end of the school year. The total number of nominees shall equal twice the number of Senate vacancies in that division. Those persons on this ballot who are nominated the greatest number of times shall be the nominees. All persons tied for the final position shall be declared nominees.

3) Election. On the last Monday in April the Secretary of the Faculty, under the supervision of the Senate Steering Committee, shall mail ballots containing the names of final nominees for Senate election to faculty members of the respective divisions. Each divisional faculty member shall vote for no more than a number of candidates equal to the number of Senate vacancies occurring in his or her division for that year. The person or persons receiving the greatest number of votes shall be elected. In case of ties for the final position, run-off elections shall be held.

4) Terms and Limits of Membership. Senate members shall be chosen for three-year terms. These terms shall be so arranged that approximately one-third of the Senate shall be elected each year. The Secretary of the Faculty shall inform each division as to the number of vacancies and length of term of each position to be elected each year. No members shall be eligible for re-election until one year...
has elapsed following his or her term of office or resigna-
tion. No personal shall be eligible to represent more
than one division.

5) Interim Vacancies. Interim vacancies that occur in
the Senate shall be filled by appointment by the Secretary
of the Faculty, who shall designate to fill the unexpired
term the non-elected nominees who in the immediate past
Senate election had the greatest number of votes in the
division in which the vacancy exists. An interim appointee
shall be eligible for election at the end of his term.

Article VI. Advisory Council.

Section 1. Election. The Faculty shall elect during spring
term by secret ballot, three members of an Advisory Council of
six members, from the membership of the faculty other than ex-
officio members of the Senate (see Article V, Section 1, Paragraph
1). The election shall be administered by the Secretary of the
Faculty, under the supervision of the Senate Steering Committee.
The Secretary of the Faculty shall circulate a list of all
eligible full time faculty members to members of the faculty
with the directions that any potential candidate may delete
his or her name if he or she does not wish to be a candidate
for an Advisory Council position. Names of current Advisory
Council members are to be excluded, since no member may succeed
himself or herself.

No later than four weeks before the Senate election, the
Secretary of the Faculty shall submit the list of valid nominees
to every member of the faculty, and request the nomination of
no more than six eligible candidates. The six persons named
the greatest number of times shall be declared the nominees
for election to the Advisory Council. All persons tied for the
final position shall be declared nominees, and all nominees
shall stand for election.

On the last Monday in April, ballots bearing the names of those
faculty. Each member shall vote for no more than three candi-
dates; ballots not so marked shall be declared void. The
three persons receiving the greatest number of votes shall
be elected.

In case of a tie vote for the final position or positions, an
additional ballot listing only the nominee involved in the tie
vote shall be taken. All such election procedures shall take
place before June 1.

Section 3. Vacancies.

2) Vacancies that occur on the Advisory Council shall
be filled by appointment by the Secretary of the Faculty
who shall designate the nominee who in the immediately
past Advisory Council election has had the greatest number
of votes, provided that his or her designation does not
result in more than four holdovers from the preceding
council. The interim appointee shall complete the regular
term of office.

Article VII. Election of the Interinstitutional Faculty Senate.
The faculty shall elect during spring term by secret ballot one
institutional representative to the Interinstitutional Faculty
Senate, from the membership of the faculty other than ex-officio
members of the Senate. The election shall be administered by
the Secretary of the Faculty, under the supervision of the
Senate Steering Committee, concurrently with the selection
of the Advisory Council, and according to the same procedures
as described in Section 1.
To: Faculty Senate  
From: University Curriculum Committee  
Committee members: Gwen Newborg (Chair), Carl Abbott, Alma Bingham, David Gusman, Nan Teh Hsu, Alice Lehman, Tom Morris, Earl Rees, Nancy Tang, Walter Shold.

The Curriculum Committee recommends the Faculty Senate approve the following:

<table>
<thead>
<tr>
<th>Changes in Existing Programs</th>
<th>Major nature of changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. BA/BS in Speech Communication</strong></td>
<td>Provides for departmental degree in Speech Communication with option in General Speech or Speech and Hearing Sciences. Adds one required new course. Hours increased slightly.</td>
</tr>
<tr>
<td><strong>B. BA in Computer Science</strong></td>
<td>Corrects 1979 oversight, adds BA degree in Computer Science.</td>
</tr>
<tr>
<td><strong>C. BA/BS in Engineering and Applied Sciences</strong></td>
<td>Upgrades Electrical Engineering option to provide for more specialized curriculum and to meet ABET accreditation standards. Adds 13 new courses. Mechanical and Electrical Engineering options substantially changed by reorganizing course content, renumbering course sequences, modifying electives and requirements.</td>
</tr>
<tr>
<td><strong>D. Certificate in Public Health Studies</strong></td>
<td>Changes two course requirements to broaden scope of program and to meet national standards. Adds two new courses.</td>
</tr>
<tr>
<td><strong>E. BA/BS in Geography</strong></td>
<td>Changes one course requirement.</td>
</tr>
<tr>
<td><strong>F. BA/BS in Health Education</strong></td>
<td>Creates Community Health Education option. Requires 57 credits in addition to core curriculum. Adds three new courses. Designed to meet guidelines of National Center for Health Education and Society for Public Health Education.</td>
</tr>
<tr>
<td><strong>G. BA/BS in Business Administration</strong></td>
<td>Changes course requirements in Marketing and Finance Law options. Adds two new courses.</td>
</tr>
</tbody>
</table>
The Curriculum Committee recommends that the Faculty Senate not approve the following:

<table>
<thead>
<tr>
<th>Change in existing program</th>
<th>Reasons for non-approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Certificate in International Business Studies</td>
<td>Completion of a 3 month AIESEC traineeship may be substituted for the current 2 year foreign language requirement. Reduces Social Science electives from 24 to 3 credits.</td>
</tr>
</tbody>
</table>
Request for the following changes in baccalaureate degree in SPEECH COMMUNICATION.

The proposed changes in the program are set forth by showing the changes that would be made in the language which occurs in the 1980-81 catalogue. Deletions from existing language are bracketed, new language is underlined.

SPEECH COMMUNICATION

23 Neuberger Hall
229-3531

B.A., B.S.
Secondary Education Program
Speech-Language Pathology and Audiology Program

M.A., M.S.
M.A.T., M.S.T.

UNDERGRADUATE PROGRAMS

The Department of Speech Communication offers programs leading to degrees at both the undergraduate and graduate levels. A student is expected to gain a broad background in the field, but may emphasize work in either general speech communication or the speech and hearing sciences.

The courses offered by the Department of Speech Communication are based on the premise that an educated person should be able to communicate effectively in a variety of settings: interpersonal, small group, and public. The effective communicator has an understanding of communication processes as well as a sense of responsibility for utterance, a secure intellectual grasp of ideas, a mastery of rhetorical and listening skills, and the ability to adapt communication to people of varied backgrounds and abilities. In addition to theory and practice offered through classes, the Department of Speech Communication provides experience for students through the cocurricular speech communication activities program and the speech communication laboratory. It also provides opportunities for internships in the community.

In the Speech and Hearing Sciences program at the undergraduate level, course work in normal speech, language, and hearing development is emphasized. Study in these areas is necessary preprofessional training for graduate work leading to professional certification by the American Speech-Language and Hearing Association. Courses of instruction include training in speech-language pathology and/or audiology. Practicums in speech and hearing include experiences in the University clinic, the public schools, and the several clinics in the greater Portland area. The speech and hearing science laboratories provide special experiences for the science and research-oriented student.
In addition to meeting the general University requirements, the speech communication major will meet the special requirements listed below.

1. Complete Sp 100 Basic Speech Communication (5 credits) or Sp 111 and 112 Fundamentals of Speech (6 credits) equivalent course or studies and Sp 400 Communication Theory (3 credits). In lieu of Sp 100, Speech and Hearing Sciences Program majors will complete Sp 220 Public Speaking (4 credits).

2. Complete 40 additional credits in speech communication selected in consultation with a departmental adviser, with at least 3 credits in each of the areas within the department. These areas include: rhetoric and public address, communication theory, speech arts, and speech and hearing sciences. Courses chosen to fulfill this requirement may be lower or upper division, and related areas (maximum 12 credits from related areas) in one of two concentrations: 1) General Speech Communication and 2) Speech and Hearing Sciences. The program must include at least 24 credits in upper division Speech Communication courses.

a. General Speech Concentration

(1) Complete three courses in Communication Skills (Sp 112, 140, 210, 220, 235, 310, 311, 321, 324, 326, 328, 330, 415, 430, some 407).
(2) Complete three courses in Applied Communication Theory (Sp 301, 323, 329, 426, 427, 428, 440, 450, 460, 461, some 407).
(3) Complete one course in Speech and Hearing Sciences (212, 493, any other).
(4) Complete a minimum of two and a maximum of four courses from a list of related courses offered by other departments and approved by the student's adviser.

b. Speech and Hearing Sciences Concentration

(1) Complete all of the following: Sp 212, 301, 321, 370, 371, 380, 409, 410, 471, 481, 483, 487, 488.
(2) Complete six credits from the following: Sp 477*, 482, 484*, 489, 490. (*Note: 477 and 484 require 25 hours of confirmed clinical observation as part of the courses listed as prerequisites.)

3. Complete a minimum of 24 credits in upper division courses in the Department of Speech Communication.

4. A maximum of 18 credits in theater arts, film, radio, television and/or journalism may apply to a speech communication major's requirements.

Secondary Education Program

Co-Advisers: F. P. Gibson, R. W. Vogelsang

Persons who wish to prepare to teach speech in secondary schools must be accepted into the program in the School of Education. To fulfill the basic subject norm, specific courses in education, speech communication, and English must be completed. A minimum GPA of 2.75 in speech communication is required. The following courses in speech communication and English are required:
It is imperative that the prospective teacher be in contact with his speech communication adviser from the beginning of the program because it is in constant change.

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY PROGRAM


In addition to the University and department requirements for the baccalaureate degree, the following preprofessional courses are available as part of the degree program which, along with student teaching, are required to fulfill the basic subject matter norm in speech impaired. State licensure in speech pathology and ASHA certification requires additional course work. Academic preparation for Oregon certification in industrial hearing conservation is also provided. The following preprofessional courses are required for the area of speech-language pathology, including the basic norm for speech impaired:

in the Speech and Hearing Sciences concentration, majors who wish to fulfill requirements for the Speech Handicapped basic norm must be accepted into the School of Education and fulfill education certification requirements. Additional courses in the Department of Speech Communication required to fulfill basic norm requirements include:

Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sp 200 Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>Sp 201 Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>Sp 202 Speech Science</td>
<td>3</td>
</tr>
<tr>
<td>Sp 203 Introduction to Normal Language</td>
<td>3</td>
</tr>
<tr>
<td>Sp 410 Instrumentation Lab</td>
<td>1</td>
</tr>
<tr>
<td>Sp 471 Advanced Speech Science</td>
<td>3</td>
</tr>
</tbody>
</table>
Sp 481, 482, 483 Speech Pathology ................................................................. 9
Sp 482 Speech Pathology ................................................................. 3
Sp 484 Clinical Speech Therapy ................................................................. 9
Sp 487, 488 Audiology ................................................................. 7
Sp 409 Audiometry Practice ................................................................. 1
Sp 490 Aural Rehabilitation ................................................................. 3
Sp 495 Seminar: Student Teaching in Speech Pathology (concurrent with Ed 409 Practicum) ................................................................. 3
Sp 583 Speech, Language, and Hearing in the Schools ................................................................. 3

Total 48-51

The following preprofessional courses are required for preparation in the field of audiology, for which there is no basic norm:

Sp 212 (elective), 370, 380 ................................................................. 9
Sp 371, 410, 471 ........................................................................ 7
Sp 481, 483 Speech Pathology ................................................................. 6
Sp 484 Clinical Speech Therapy ................................................................. 3
Sp 487, 488, 489 Audiology ................................................................. 10
Sp 490 Aural Rehabilitation ................................................................. 3
Sp 477 Clinical Hearing Therapy ................................................................. 3

Total 38-41
Rational for proposed program change:

For some time it has become apparent that it is extremely difficult for students to complete the preprofessional program in Speech and Hearing and at the same time meet the requirements for a major in Speech Communication which is oriented to a broad study of speech. The result has been that most speech and hearing majors take their degree as a general studies, rather than a departmental degree, although a degree in speech communication would more accurately have reflected their academic background and interest.

The proposal being recommended provides for a departmental degree in Speech Communication with an option either in General Speech or in Speech and Hearing Sciences.

The proposal increases the required number of credits in courses taken in the Department of Speech Communication from the present 45-46 to 46-48 for the General Speech Concentration to over 50 for the Speech and Hearing Sciences Concentration (although six to twelve can be satisfied with courses from "related areas"). In addition, Sp 400, Communication Theory, becomes one of the core courses required of all majors. Both of these changes are designed to insure that majors will have a firmer academic preparation in the discipline of speech communication.

The changes proposed in the present degree requirements, which now become essentially the General Speech option, are designed primarily to clarify present requirements. The new program spells out a more functional grouping of the courses from which the student's program must be drawn.

The changes proposed in our existing program require no new courses, budgetary support, or staffing requirements.
Request prepared and submitted by [Signature] Date 2/20/80
Approved by Department Head [Signature] Date 2/20/80
Approved by College/School Curriculum Committee [Signature] Date 3/3/80
Approved by College/School Dean [Signature] Date MAR 21 1980
REQUEST FOR B.A. IN COMPUTER SCIENCE

Department of Mathematics

In 1979 the State Board of Higher Education approved a B.S. program in Computer Science. Due to what is probably best described as an oversight a companion or combined request for a B.A. degree was not requested by the original proposers.

Recently a request by a student for a double major in German and Computer Science has initiated the above request for the B.A. degree. Since:

1) a student cannot receive a double degree at the same time, e.g., a B.A. in German and a B.S. in Computer Science (there would be other examples as well)

2) the Computer Science program requirements would not change for the B.A. degree, and

3) the change is consistent with all other degree offerings in the College of Science

the above request is made at this time.

Request prepared by Eugene A. Lammersing Date 10/30/79

Approved by Department Eugene A. Lammersing Date 10/31/79

Approved by College of Science Curriculum Committee

Date 2/15/80

Approved by Dean of Science George C. Parks Date 2/24/80
PORTLAND STATE UNIVERSITY

Proposal for Change in Existing Program

The Division of Engineering and Applied Science requests the following changes in its present program. These changes are indicated by underlining or lining-out in the proposed catalog statement.

Existing catalog statement: (80-81 catalog)

ENGINEERING AND APPLIED SCIENCE CORE CURRICULUM

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 111, 112 Engineering Concepts and Problems</td>
<td>6</td>
</tr>
<tr>
<td>ASE 115 Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>Ch 201, 202, 203 Chemistry for Engineering Majors or equivalent</td>
<td>12</td>
</tr>
<tr>
<td>Mth 200, 201, 202 Calculus</td>
<td>12</td>
</tr>
<tr>
<td>Ph 204 Physics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>Ph 207 Physics for Students of Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Wr 121 English Composition</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; letters or social science</td>
<td>6</td>
</tr>
<tr>
<td>Health or physical education</td>
<td>3</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 211 Statics</td>
<td>4</td>
</tr>
<tr>
<td>ASE 212 Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>ASE 213 Properties of Materials</td>
<td>4</td>
</tr>
<tr>
<td>Mth 203 Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Mth 321 Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>Ph 205, 206 Physics Lab</td>
<td>2</td>
</tr>
<tr>
<td>Ph 208, 209 Physics for Students of Engineering</td>
<td>6</td>
</tr>
<tr>
<td>Approved upper division math</td>
<td>3</td>
</tr>
<tr>
<td><strong>Approved engineering courses</strong></td>
<td><strong>6-12</strong></td>
</tr>
<tr>
<td>Arts &amp; letters or social science</td>
<td>6</td>
</tr>
<tr>
<td>Health or physical education</td>
<td>3</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>45-51</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 311 Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>ASE 321, 322 Engineering Thermodynamics</td>
<td>6</td>
</tr>
<tr>
<td>ASE 354 Fundamentals of D-C Electrical Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ASE 355 Fundamentals of A-C Electrical Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ASE 356 Principles of Electromagnetic Energy Conversion</td>
<td>3</td>
</tr>
<tr>
<td>ASE 461 Fluid Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>Wr 323 English Composition</td>
<td>3</td>
</tr>
<tr>
<td>Approved upper division math</td>
<td>3</td>
</tr>
<tr>
<td><strong>Approved engineering courses or science electives</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td><strong>Approved science electives</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>Arts &amp; letters or social science</td>
<td><strong>total 50</strong></td>
</tr>
</tbody>
</table>
Senior Year

Ec 328 Engineering Economics ............................................. 3
**Approved engineering courses or science electives .................. 32-37
Arts & letters or social science ........................................... 12
total .................................................................................. 47-52

ELECTRICAL-ELECTRONICS ENGINEERING OPTION

Required Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 251, 252, 253 Electrical Circuit Analysis</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 351 Engineering Electromagnetics</td>
<td>4</td>
</tr>
<tr>
<td>ASE 352, 353 Contemporary Electrical Machinery</td>
<td>4,4</td>
</tr>
<tr>
<td>ASE 357 Electronic Devices</td>
<td>4</td>
</tr>
<tr>
<td>ASE 358 Electronic Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ASE 359 Electronic Amplifiers</td>
<td>4</td>
</tr>
<tr>
<td>ASE 421, 422, 423 Electronics II or</td>
<td>3,3,3</td>
</tr>
<tr>
<td>ASE 454, 455, 456 Electrical Energy Systems</td>
<td>4,4,4</td>
</tr>
</tbody>
</table>

Approved Electives

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 410 Basic Digital Systems</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 421, 422, 423 Electronics II</td>
<td>3,3,3</td>
</tr>
<tr>
<td>ASE 424 Laser Principles and Applications</td>
<td>3</td>
</tr>
<tr>
<td>ASE 441, 442, 443 Systems Analysis and Synthesis</td>
<td>3,3,3</td>
</tr>
<tr>
<td>ASE 447, 448, 449 Systems Analysis Computer and Computation Lab</td>
<td>1,1,1</td>
</tr>
<tr>
<td>ASE 451, 452, 453 Automatic Control Processes</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 454, 455, 456 Electrical Energy Systems</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 464, 465 Fluid Control Systems</td>
<td>4,4</td>
</tr>
</tbody>
</table>

MECHANICAL ENGINEERING OPTION

Required Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 241 Materials &amp; Processes in Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>ASE 313 Engineering Vibrations</td>
<td>3</td>
</tr>
<tr>
<td>ASE 314 Kinematics of Machine Elements</td>
<td>3</td>
</tr>
<tr>
<td>ASE 323 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ASE 381 Elementary Structural Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ASE 382 Indeterminate Structures I</td>
<td>3</td>
</tr>
<tr>
<td>ASE 405 R &amp; C - Design Project</td>
<td>3</td>
</tr>
<tr>
<td>ASE 491, 492, 493 Mechanical Analysis &amp; Design</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 495 Engineering Measurement &amp; Instrumentation Systems</td>
<td>3</td>
</tr>
<tr>
<td>ASE 496 Topics in Fluid Systems Design</td>
<td>4</td>
</tr>
<tr>
<td>ASE 497 Topics in Mechanical Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>ASE 498 Topics in Thermal Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>ASE 499 Topics in Machine Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Approved Electives

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 116, 117 Engineering Graphics</td>
<td>3,3</td>
</tr>
<tr>
<td>ASE 242, 243 Materials &amp; Processes in Manufacturing</td>
<td>3,3</td>
</tr>
<tr>
<td>ASE 312 Advanced Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ASE 383 Indeterminate Structures II</td>
<td>3</td>
</tr>
<tr>
<td>ASE 407 Engineering Seminar</td>
<td>1,1,1</td>
</tr>
</tbody>
</table>
**Proposed catalog statement: (81-83 catalog)**

**ENGINEERING AND APPLIED SCIENCE CORE CURRICULUM**

### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 111, 112 Engineering Concepts and Problems</td>
<td>6</td>
</tr>
<tr>
<td>ASE 115 Engineering Graphics</td>
<td>2</td>
</tr>
<tr>
<td>ASE 116 Engineering Graphics II</td>
<td>3</td>
</tr>
<tr>
<td>Ch 201, 202, 203 Chemistry for Engineering Majors or equivalent</td>
<td>12</td>
</tr>
<tr>
<td>Mth 200, 201, 202 Calculus</td>
<td>12</td>
</tr>
<tr>
<td>Ph 204 Physics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>Ph 207 Physics for Students of Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Wr 121 English Composition</td>
<td>6</td>
</tr>
<tr>
<td>Arts &amp; letters or social science</td>
<td>6</td>
</tr>
<tr>
<td>Health or physical education</td>
<td>3</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 211 Statics</td>
<td>4</td>
</tr>
<tr>
<td>ASE 212 Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>ASE 213 Properties of Materials</td>
<td>4</td>
</tr>
<tr>
<td>ASE 215 Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>Mth 203 Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Mth 321 Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>Ph 205, 206 Physics Lab</td>
<td>2</td>
</tr>
<tr>
<td>Ph 208, 209 Physics for Students of Engineering</td>
<td>6</td>
</tr>
<tr>
<td>Approved-upper-division-math</td>
<td>3</td>
</tr>
<tr>
<td><strong>Approved engineering courses</strong></td>
<td><strong>10-16</strong></td>
</tr>
<tr>
<td>Arts &amp; letters or social science</td>
<td>6</td>
</tr>
<tr>
<td>Health &amp; physical education</td>
<td>3</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>46-52</strong></td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 311-Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>ASE 321, 322 Engineering Thermodynamics</td>
<td>6</td>
</tr>
<tr>
<td>#ASE 354-Fundamentals-of-D-C-Electrical-Circuits</td>
<td>3</td>
</tr>
<tr>
<td>#ASE 355-Fundamentals-of-A-C-Electrical-Circuits</td>
<td>3</td>
</tr>
</tbody>
</table>
# ASE-356 - Principles of Electromagnetic-Energy Conversion

# ASE 354 - Fundamentals of Electrical Circuits

# FASE 355 - Electrical Energy Conversion Fundamentals

# ASE-481 - Fluid-Mechanics

# WR 323 - English Composition

***Approved upper division math

**Approved engineering courses or science electives

†Approved science electives

Arts & letters or social science

**CS 251 and CS 252 to be substituted for electrical-electronics engineering option.

## ELECTRICAL-ELECTRONICS ENGINEERING OPTION

### Required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 251, 252, 253 Electrical Circuit Analysis</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 265 Introduction to the Frequency Domain</td>
<td>4</td>
</tr>
<tr>
<td>ASE 350 Engineering Electromagnetics I</td>
<td>4</td>
</tr>
<tr>
<td>ASE 351 Engineering Electromagnetics II</td>
<td>4</td>
</tr>
<tr>
<td>ASE 352, 353 Contemporary Electrical Machinery</td>
<td>4, 4</td>
</tr>
<tr>
<td>ASE 357 Electronic Devices</td>
<td>4</td>
</tr>
<tr>
<td>ASE 358 Electronic Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ASE 359 Electronic Amplifiers</td>
<td>4</td>
</tr>
<tr>
<td>ASE 365 Principles of Feedback Control System Design</td>
<td>4</td>
</tr>
<tr>
<td>ASE 371 Introduction to Computer Architecture</td>
<td>4</td>
</tr>
<tr>
<td>ASE 421, 422, 423-Electronics II or</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 421, 422, 423 Advanced Electronics or</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 454, 455, 456 Electrical Energy Systems</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 460 Solid State Electronic Devices</td>
<td>4</td>
</tr>
</tbody>
</table>

### Approved Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 410 Basic Digital Systems</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 421, 422, 423 Advanced Electronics</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 425 Communication Systems I</td>
<td>4</td>
</tr>
<tr>
<td>ASE 426 Communication Systems II</td>
<td>4</td>
</tr>
<tr>
<td>ASE 424 Laser Principles and Applications</td>
<td>3</td>
</tr>
<tr>
<td>ASE 441, 442, 443 Systems Analysis and Synthesis</td>
<td>3, 3, 3</td>
</tr>
<tr>
<td>ASE 447, 448, 449 Systems Analysis Computer and Computation Lab</td>
<td>1, 1, 1</td>
</tr>
<tr>
<td>ASE 451, 452, 453 Automatic Control Processes</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 457, 458, 459 Microprocessor System Design</td>
<td>4, 4, 4</td>
</tr>
<tr>
<td>ASE 464, 465 Fluid Control Systems</td>
<td>4, 4</td>
</tr>
<tr>
<td>ASE 454, 455, 456 Electrical Energy Systems</td>
<td>4, 4, 4</td>
</tr>
</tbody>
</table>

## MECHANICAL ENGINEERING OPTION

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 213 Properties of Materials</td>
<td>4</td>
</tr>
<tr>
<td>ASE 241 Materials &amp; Processes in Manufacturing</td>
<td>3</td>
</tr>
</tbody>
</table>
ELECTRICAL-ELECTRONICS ENGINEERING OPTION

Required courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 251, 252, 253</td>
<td>Electrical Circuit Analysis</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 265</td>
<td>Introduction to the Frequency Domain</td>
<td>4</td>
</tr>
<tr>
<td>ASE 350</td>
<td>Engineering Electromagnetics I</td>
<td>4</td>
</tr>
<tr>
<td>ASE 351</td>
<td>Engineering Electromagnetics II</td>
<td>4</td>
</tr>
<tr>
<td>ASE 352, 353</td>
<td>Contemporary Electrical Machinery</td>
<td>4,4</td>
</tr>
<tr>
<td>ASE 357</td>
<td>Electronic Devices</td>
<td>4</td>
</tr>
<tr>
<td>ASE 358</td>
<td>Electronic Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ASE 359</td>
<td>Electronic Amplifiers</td>
<td>4</td>
</tr>
<tr>
<td>ASE 365</td>
<td>Principles of Feedback Control System Design</td>
<td>4</td>
</tr>
<tr>
<td>ASE 371</td>
<td>Introduction to Computer Architecture</td>
<td>4</td>
</tr>
<tr>
<td>ASE 421, 422, 423-Electronics II or</td>
<td>3,3,3</td>
<td></td>
</tr>
<tr>
<td>ASE 424</td>
<td>Laser Principles and Applications</td>
<td>4</td>
</tr>
<tr>
<td>ASE 441, 442, 443</td>
<td>Systems Analysis and Synthesis</td>
<td>3,3,3</td>
</tr>
<tr>
<td>ASE 447, 448, 449</td>
<td>Systems Analysis Computer and Computation Lab</td>
<td>1,1,1</td>
</tr>
<tr>
<td>ASE 451, 452, 453</td>
<td>Automatic Control Processes</td>
<td>4,4</td>
</tr>
<tr>
<td>ASE 457, 458, 459</td>
<td>Microprocessor System Design</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 464, 465</td>
<td>Fluid Control Systems</td>
<td>4,4</td>
</tr>
<tr>
<td>ASE 454, 455, 456</td>
<td>Electrical Energy Systems</td>
<td>4,4,4</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Approved Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 410</td>
<td>Basic Digital Systems</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 421, 422, 423</td>
<td>Advanced Electronics</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 425</td>
<td>Communication Systems I</td>
<td>4</td>
</tr>
<tr>
<td>ASE 426</td>
<td>Communication Systems II</td>
<td>4</td>
</tr>
<tr>
<td>ASE 424</td>
<td>Laser Principles and Applications</td>
<td>3</td>
</tr>
<tr>
<td>ASE 441, 442, 443</td>
<td>Systems Analysis and Synthesis</td>
<td>3,3,3</td>
</tr>
<tr>
<td>ASE 447, 448, 449</td>
<td>Systems Analysis Computer and Computation Lab</td>
<td>1,1,1</td>
</tr>
<tr>
<td>ASE 451, 452, 453</td>
<td>Automatic Control Processes</td>
<td>4,4</td>
</tr>
<tr>
<td>ASE 457, 458, 459</td>
<td>Microprocessor System Design</td>
<td>4,4,4</td>
</tr>
<tr>
<td>ASE 464, 465</td>
<td>Fluid Control Systems</td>
<td>4,4</td>
</tr>
<tr>
<td>ASE 454, 455, 456</td>
<td>Electrical Energy Systems</td>
<td>4,4,4</td>
</tr>
</tbody>
</table>

MECHANICAL ENGINEERING OPTION

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE 213</td>
<td>Properties of Materials</td>
<td>4</td>
</tr>
<tr>
<td>ASE 241</td>
<td>Materials &amp; Processes in Manufacturing</td>
<td>3</td>
</tr>
</tbody>
</table>
ASE 313 Engineering Vibrations ....................................................... 3
ASE 314 Kinematics of Machine Elements ........................................ 3
ASE 323 Heat Transfer ...................................................................... 3
ASE 361 Fluid Mechanics .................................................................. 4
ASE 381 Elementary Structural Analysis .......................................... 3
ASE-382-Indeterminate-Structures-I ................................................. 3
ASE-496-R & C Design Project .......................................................... 3
ASE 474 Mechanical Engineering Testing and Evaluation Laboratory . 3
ASE 487 Advanced Strength of Materials ........................................... 3
ASE 491, 492, 493 Mechanical Analysis & Design ............................ 4,4,4
ASE 495 Engineering Measurement & Instrumentation Systems ....... 3
ASE-496-Topics-in-Fluid-Systems-Design .......................................... 3
ASE-497-Topics-in-Mechanical-Systems-Design ................................ 3
ASE-498-Topics-in-Thermal-Systems-Design ..................................... 3
ASE-499-Topics-in-Machine-Design .................................................. 3
Design Topics (to be selected from ASE 496,497,498,499) ............... 12
Approved Electives ........................................................................ 12

Approved Electives

ASE 116, 117 Engineering Graphics .................................................. 3,3
ASE 242, 243 Materials & Processes in Manufacturing ....................... 3,3
ASE 312 Advanced Dynamics ............................................................ 3
ASE 382 Indeterminate Structures I .................................................... 3
ASE 383 Indeterminate Structures II ................................................... 3
ASE 405 R & C DEsign Project ........................................................... 3
ASE 407 Engineering Seminar ........................................................... 1,1,1
ASE 411, 412 Engineering Materials Science ..................................... 3,3
ASE 424 Laser Principles and Applications ....................................... 3
ASE 431 Transfer & Rate Processes .................................................... 3
ASE 441, 442, 443 Systems Analysis & Synthesis ............................... 3,3,3
ASE 444 Engineering Project Mangement ......................................... 3
ASE 447, 448, 449 Systems Analysis Computer Laboratory ............... 1,1,1
ASE 451, 452, 453 Automatic Control Processes ............................... 1,4,4
ASE 362 Hydraulics ......................................................................... 4
ASE 464, 465 Fluid Control Systems ................................................ 4,4
ASE 467 Engineering Acoustics ......................................................... 3
ASE 468 Solar Heating Design ........................................................... 3
ASE 474 Mechanical Engineering Testing and Evaluation Laboratory ... 2
ASE-487-Advanced-Strength-of-Materials .......................................... 2
ASE 499 Transportation-Systems-Planning-and-Design ..................... 2
ASE 340 Transportation Systems: Planning and Design ..................... 3
ASE 494 Heating, Ventilating and Air Conditioning Design ............... 3
ASE 496 Topics in Fluid Systems Design .......................................... 4
ASE 497 Topics in Mechanical Systems Design ................................ 3
ASE 498 Topics in Thermal Systems Design ..................................... 3
ASE 499 Topics in Machine Design .................................................. 3
Justifications for the proposed changes:

1. Graphics courses (ASE 115, 116, 117) have been revised and upgraded so that the Engineering Graphics requirement (ASE 116) would match more closely the level of preparation of the majority of the incoming engineering freshmen.

2. ASE 213 and ASE 361 are taken out of the core curriculum to allow the inclusion of courses more directly related to electrical engineering in the electrical-electronics engineering curriculum. These courses are replaced by new courses ASE 351 Engineering Electromagnetics II and ASE 460 Solid State Electronic Devices. These changes are prompted by the results of a 1978 national study on electrical engineering curricula. Renumbering the existing ASE 351 to ASE 350 makes it possible for the new related course to have the ASE 351 number. Mechanical Engineering and Structural-Civil Engineering retain the requirement of ASE 213 and ASE 361 in their curricula. The addition of ASE 213 and 361 as required courses in Mechanical Engineering is simply a transfer of these requirements from the core curriculum - an editorial change.

3. Offering ASE 215 (formerly ASE 311) at the sophomore level will bring our program into alignment with other engineering curricula and will facilitate incoming transfer.

4. In preparing for an accreditation visit by ABET (Accreditation Board for Engineering and Technology), Electrical-Electronics Engineering is updating its curriculum to bring it into conformity with the IEEE (Institute for Electrical Electronics Engineering) standard curriculum. The following changes are proposed:
   a. The course sequences ASE 251, 252, 253 and ASE 451, 452, 453 have been reorganized to make room for offering a two-course combination (ASE 265, 365) to cover the newly defined area of the fundamentals of control system design as part of the EIT (Engineer-In-Training Exam) curriculum.
   b. Inclusion of CS 251 and 252 as required courses.
   c. Upgrading of the Electronics course sequence ASE 421, 422, 423.
   d. Adding a required course in Computer Architecture ASE 371.
   e. Adding electives courses in the important areas of communications and control systems to further strengthen the curriculum.

5. The following changes are proposed in the mechanical engineering curriculum
   a. Transferring ASE 382 and ASE 405 from the list of required courses to the approved electives list will allow the inclusion of ASE 474 and ASE 487 as required courses.
   b. The course ASE 474 Mechanical Engineering Testing and Evaluation Laboratory has been developed to the point that all mechanical engineering majors have taken it for the past three years. This laboratory course furnishes the senior student with his first opportunity to
relate specific design concepts in mechanical engineering to laboratory experience. Listing it as a required course will strengthen the curriculum and make it consistent with present practice.

c. The course ASE 487 is to provide the ME major with an analytic study more nearly suited to design applications in mechanical engineering.

d. Transferring the Topics in Design courses ASE 496, 497, 498, and 499 in mechanical engineering from the required course list to the approved electives list and, in their place, requiring 12 hours of Design Topics to be selected from ASE 496, 497, 498, 499 will clarify these requirements providing flexibility in the choice of design topics and design areas for the students.

Franz Rad (CE)    Pieter Frick (EE)
Request prepared by C. William Savery (ME)   Date 9/29/80

Approved by Division Curriculum Committee   Date 9-29-80
Approved by Division Head   Date 9-29-80
PORTLAND STATE UNIVERSITY

PROPOSAL FOR CHANGE IN EXISTING PROGRAM

Request for the following changes in certificate program in Public Health Studies.

EXISTING CATALOG STATEMENT

Certificate Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Bi 220, 221 Elementary Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>**Bi 420 Introductory Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>**Ch 236, 237, 239 Elements of Organic Chemistry</td>
<td>8</td>
</tr>
<tr>
<td>Elementary Organic Chemistry Lab or</td>
<td></td>
</tr>
<tr>
<td>Ch 224, 225 Quantitative Analysis</td>
<td>5</td>
</tr>
<tr>
<td>Mth 364 Elements of Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>PHS 446, 447, 448 Public Health Principles and Practices</td>
<td>9</td>
</tr>
<tr>
<td>PHS 443, 444, 445 Principles of Environmental Health</td>
<td>9</td>
</tr>
<tr>
<td>PHS 450, 451 Epidemiology</td>
<td>6</td>
</tr>
<tr>
<td>Soc 459 Medical Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

*Required for Health Education majors and non-science majors
**Required of science majors

PROPOSED CATALOG STATEMENT

Certificate Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHS 443, 444, 445 Principles of Environmental Health and Safety</td>
<td>9</td>
</tr>
<tr>
<td>PHS 446, 447, 448 Principles and Applied Practices of Public Health</td>
<td>9</td>
</tr>
<tr>
<td>PHS 450, 451 Epidemiology</td>
<td>6</td>
</tr>
<tr>
<td>PHS 452 Epidemiologic Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>PHS 409 Practicum*</td>
<td>6</td>
</tr>
<tr>
<td>Bio 220, 221 Elementary Microbiology or</td>
<td></td>
</tr>
<tr>
<td>Bio 420 Introductory Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>Soc 459 Medical Sociology or other approved Sociology course</td>
<td>3</td>
</tr>
<tr>
<td>Mth 364 Elements of Statistical Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

*3 credits may be satisfied by Health Education practicum, HE 409.
Academic soundness of the proposal

The changes in the present certificate program are required, first, to reflect the multidisciplinary scope of public health studies and, second, to conform with national standards in public health education. The changes consist of adding a course in Epidemiologic Biostatistics and a Practicum in Public Health.

An undergraduate program in Public Health Studies must reflect the present philosophy and goals of the Center. The scope of the core curriculum must be extended to subscribe to national standards, which identify Public Health Principles, Environmental Health, Epidemiology and Biostatistics as basic requirements for quality education in this area. The core courses identified are in accord with the standards of the Council on Higher Education in Public Health (Washington, D.C.).

The present program also needs to expose the students to community agencies in action so that the principles taught in the classroom can be illustrated in the public arena. This requires active participation in field placements in the metropolitan area.

Request prepared by Dr. Kathleen Ching

Approved by Unit Curriculum Committee N/A

Approved by Department Head Dr. Kathleen Ching

Approved by College/School Curriculum Committee

Approved by College/School Dean
Request for the following change(s) in B.A., B.S. in Geography.

Existing catalog statement:

In addition to meeting the general University degree requirements, the major in geography must meet the following departmental requirements:

Introductory (9 credits). Geography majors are required to complete the following introductory sequence or its equivalent:

Geog 204 Environment and Man
Geog 205 The Urban and Economic Landscape
Geog 206 Social and Political Regions

Proposed catalog statement:

In addition to meeting the general University degree requirements, the major in geography must meet the following departmental requirements:

Introductory (9 credits). Geography majors are required to complete the following introductory sequence or its equivalent:

Geog 204 Environment and Man or Geog. 201 Oregon
Geog 205 The Developed World
Geog 206 The Developing World

Rationale for proposed program change:

We wish to revise the portion of our degree requirements that pertains to introductory courses to allow the Geog. 201, Oregon to be used as an alternate to Geog. 204, Environment and Man. Both courses stress the theme of man-environment relations and provide a suitable vehicle for introducing students to basic concepts in physical geography. The courses are sufficiently different that we would allow students to take both, although not for credit for the introductory part of our major requirements.

* Request prepared by John O. Dart
  12/18/79

Approved by Unit Curriculum Committee Alexander R. Gassaway
  12/13/79

Approved by Department Head D. Richard Lycan
  12/19/79

Approved by College/School Curriculum Committee

Approved by College/School Dean

* Originals on file with signatures
PORTLAND STATE UNIVERSITY

PROPOSAL FOR CHANGE IN EXISTING PROGRAM

Request for the following change(s) in the undergraduate program in health education:

EXISTING PROGRAM:

Students majoring in health education follow one curriculum. In addition, a student may choose to take the education courses necessary to qualify for a basic teaching certificate in Oregon (requirements on page 168), may add an athletic training minor (requirements on page 178), or qualify for a certificate in public health studies (requirements on page 117). The latter option is appropriate for health educators who wish to work with official agencies, nonprofit associations, or industry in community health service programs. With careful planning, it is possible to complete the health education major and two of the three additional options within the undergraduate program.

PROPOSED PROGRAM:

The health education curriculum is designed to enable students to follow either school or community health education options. The school health option offers education courses necessary to qualify for Basic Teaching Certificate in Oregon (requirements on page 147). The community health option provides students with the educational and organizational skills necessary to fill entry level health education positions in a variety of community settings. In addition, a student may choose to add an Athletic Training Minor (requirements on page 158), or qualify for a Certificate in Public Health Studies (requirements on page 104).

HEALTH EDUCATION MAJOR

All students in the health education degree program take the following core courses plus one of the two options.

Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi 101, 102, 103 General Biology</td>
<td>9</td>
</tr>
<tr>
<td>Bi 201 Elementary Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>Bi 221 Elementary Microbiology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>Bi 301, 302, 303 Human Anatomy and Physiology</td>
<td>12</td>
</tr>
<tr>
<td>Ch 104, 105, 106 Introductory Chemistry</td>
<td>15</td>
</tr>
<tr>
<td>Ed 467 Mental Hygiene</td>
<td>3</td>
</tr>
<tr>
<td>HE 123 Introduction to Health Education</td>
<td>2</td>
</tr>
<tr>
<td>HE 231 Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>HE 252 First Aid</td>
<td>4</td>
</tr>
<tr>
<td>HE 326 Social Health Problems</td>
<td>2</td>
</tr>
<tr>
<td>HE 359 Safety Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 361 Personal Health Problems</td>
<td>3</td>
</tr>
<tr>
<td>HE 362 Community Health Problems</td>
<td>3</td>
</tr>
<tr>
<td>HE 363 Communicable and Noncommunicable Diseases</td>
<td>3</td>
</tr>
<tr>
<td>HE 409 Practicum: Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>HE 465 School Health Programs</td>
<td>3</td>
</tr>
<tr>
<td>HE 467 Administration of School Health Programs</td>
<td>3</td>
</tr>
<tr>
<td>Psy 311 Human Development</td>
<td>3</td>
</tr>
<tr>
<td>PHS 443 Principles of Environmental Health</td>
<td>3</td>
</tr>
<tr>
<td>PHS 446 Public Health Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>PHS 450 Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>Sc 214 Nutrition</td>
<td>3</td>
</tr>
</tbody>
</table>

Community Health Education Option

In addition to previously listed core requirements, students pursuing the community health education option must complete the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 261 Foundations of Community Health Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 372 Community Organization for Health Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 474 Planning and Evaluation of Community Health Programs</td>
<td>3</td>
</tr>
<tr>
<td>HE 409 Community Hlth Practicum</td>
<td>12</td>
</tr>
<tr>
<td>PHS 444 Prin. of Env. Hlth</td>
<td>3</td>
</tr>
<tr>
<td>PHS 451 Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>HE Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits: 62
School Health Education Option

Completion of previously listed core requirements, Oregon Basic Teaching Certificate requirements (page 168) and the following courses satisfy requirements of the school health education option.

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>PSY 311 Human Development</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>HE 231 Human Sexuality</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>HE 252 First Aid</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HE 326 Social Health Problems</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>HE 359 Safety Education</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>HE 362 Community Health Problems</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HE 363 Diseases</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HE 465 School Health Programs</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HE 467 Adm. School Health Progms.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ED 467 Mental Hygiene</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HE 409 Field Experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

RATIONAL FOR THE PROPOSED PROGRAM CHANGE:

The proposed health education program changes would create a community health education option. Only one option is presently available to health education majors, the teacher education option. Students who have an interest in health education but do not want public school certification may graduate from this option without taking education courses and may have supplemented their curriculum with the Certificate in Public Health Studies. However, neither the school health curriculum nor the Certificate in Public Health Studies is specifically designed to provide preparation in community health education. Combining the two programs produces an extremely demanding curriculum without providing the necessary courses for adequate professional preparation in community health education. If current trends continue, and the rising cost of health care, legislated national health priorities and increased incidence of chronic disease indicate they will, student demand for professional preparation in community health education will continue to increase. The current proposal for an option in community health education will ensure adequate professional preparation while meeting student demand. It will also provide enough flexibility for students to complete the Certificate in Public Health Studies if they wish further work in this area.

A faculty member with professional preparation in community health education joined the HPE faculty at the beginning of the 1979-80 academic year. As this addition was made in order to increase community health education offerings, no additional faculty is required to implement the proposed option. Finally, the proposed curriculum, designed according to guidelines recommended by the National Center for Health Education and the Society for Public Health Education, encourages efficient use of course offerings from disciplines related to health education (i.e. ED, Psych, PHS, SW, SOC, SP, USP).

Request prepared by [Signature] Date: 3-12-80
Approved by School Curriculum Committee: [Signature] Date: 3-12-80
Approved by School Dean: [Signature] Date: 3-13-80
PORTLAND STATE UNIVERSITY

PROPOSAL FOR CHANGE IN EXISTING PROGRAM

Request for the following change in the marketing departmental option in the business administration major.

Reproduce existing catalog statement in full:

Departmental Options. Each department in the School of Business Administration offers an option for those students seeking a specialization in a subject area. In addition, the school offers a general business option for those students desiring a broader approach to the study of business. Each student must select one of these options. Option requirements are satisfied by taking 15 credits beyond the required business courses. In each option, at least 9 of the 15 credits must be in 400-level courses and 9 of the 15 credits are specified in each option. The courses specified to satisfy the option requirements, which may be distinct from the 9 credits at the 400 level, are:

Marketing:
Mktg 415 Marketing Forecasting and Information ............... 3
Mktg 463 Consumer Behavior ........................................ 3
Any 400-level Department of Marketing Course ............... 3

Reproduce proposed catalog statement in full noting changes (underline, brackets, etc.)

Same paragraph as above.

Marketing:
Mktg 415 Marketing Forecasting and Information ............... 3
Mktg 463 Consumer Behavior ........................................ 3
Mktg 464 Marketing Strategy and Management ............... 3

Rationale for the proposed program change:

To round out students' coursework for the marketing departmental option, a course integrating and applying material learned in introductory and other preparatory courses is necessary.

This change in the program requires the development of a new course, Mktg 464. A proposal for this new course is being submitted concurrently with this proposal. The new course and program change require no additional budgetary support, library, or other resources.

Request prepared by

Approved by Marketing Department Curriculum Committee
Approved by Marketing Department Department Head
Approved by School of Business Administration Undergraduate Curriculum Committee
Approved by School of Business Administration Dean
PORTLAND STATE UNIVERSITY

PROPOSAL FOR CHANGE IN EXISTING PROGRAM

Request for the following change in the Finance Departmental Option in the Business Administration Major.

Reproduce existing catalog statement in full:

Departmental Options. Each department in the School of Business Administration offers an option for those students seeking a specialization in a subject area. In addition, the school offers a general business option for those students desiring a broader approach to the study of business. Each student must select one of these options. Option requirements are satisfied by taking 15 credits beyond the required business courses. In each option, at least 9 of the 15 credits must be in the 400-level courses and 9 of the 15 credits are specified in each option. The courses specified to satisfy the option requirements, which may be distinct from the 9 credits at the 400 level, are:

Finance-Law
Finl 336 Principles of Risk and Insurance.........................3
Finl 413 Laws of Business Organizations and Professional Responsibility.........................3
Finl 436 Real Estate.................................................3

Reproduce proposed catalog statement in full noting changes (underline)

Same as above.

Finance-Law
Finl 414 Laws of Business Organization, Securities and Antitrust........3
Finl 422 Financial Markets and Institutions........................................3
Finl 459 Capital Budgeting and Investment Decisions..........................3

Rationale for the proposed program change:

The changes reflect the common underpinnings of the various special areas available in the department and also establishes a minimum standard and a necessary foundation before proceeding to other specialty areas. It further provide a sound basis for integrating important components of law into the broad area of finance.

The changes require the development of a new course, Finl 459 and revisions of two existing courses. Proposals for the new course and revisions of existing courses are being submitted concurrently with this proposed program change. The new course and program change require no additional budgetary support, library, or other resources.

Request prepared by

Approved by Fin/Law Dept. Curriculum Committee
Approved by Fin/Law Dept. Head
Approved by School of Business Admin. Undergrad Committee
Approved by School of Business Admin. Dean
PROPOSAL FOR CHANGE IN EXISTING PROGRAM:

Request for change in the International Business Studies Certificate.

Reproduce existing catalog statement in full:

INTERNATIONAL BUSINESS STUDIES CERTIFICATE/229-3771

D. J. Manning, Director.

To help meet the growing demand for college graduates prepared for careers in the international operations of business firms, Portland State University offers a certificate program in international business studies. Certificates are granted at the successful completion of specified courses in the program, which includes the University's standard requirements for a B.S. or a B.A. degree in business administration.

Certificate Requirements. Students must complete the following courses to be eligible to receive an International Business Studies Certificate:

Nonmajor requirements

Science
Mth 114, 164, 365 (Mathematics in Business Applications: Elements of Statistical Methods) ........................................ 9
Mth 250 Introduction to Computer Programming I ........................................ 3
Mth 251 Introduction to Computer Programming II, Mth 366 Elements of Statistical Methods ........................................ 6

Total 18

Arts and Letters:
Foreign Language (2 years) ........................................ 18-24

Social Science:
Ec 201, 202, 203 Principles of Economics ........................................ 9
Ec 320 International Economics ........................................ 3
Ec 350 Comparative Economic Systems ........................................ 3
Social Science electives (selected from economics, psychology, sociology, anthropology, geography, history—exclusive of U.S. history, and political science—exclusive of U.S. political science courses) ........................................ 24

Total 39

Total nonmajor credits 75-81

Requirements for B.A. or B.S. degree in business administration

Undergraduate core requirements ........................................ 49
B.A. electives ........................................ 26
(Recommended electives include Mktg 440 Problems in International Business, FinL 456 Foreign Financial Operations, and Mktg 476 International Business.)

Total 75

Total certificate requirements 138-144

International business certificate students are encouraged to spend one or more summers in overseas management training work experience by participating in the Portland State University AIESEC exchange program for business and economics students. Courses taken in the international business studies program are applicable toward departmental, collegial, school, and University requirements for a degree.

AIESEC is an international association of business students with chapters in 51 countries. Its purpose is to enable students to gain practical international business experience by providing temporary employment overseas. It also provides an opportunity to work and become acquainted with members of the Portland business community.
INTERNATIONAL BUSINESS STUDIES CERTIFICATE/229-3771
D.J. Manning, Director

To help meet the growing demand for college graduates prepare for careers in the international operations of business firms, Portland State University offers a certificate program in international business studies. Certificates are granted at the successful completion of specified courses in the program, which includes the University’s standard requirements for a B.S. or a B.A. degree in business administration.

CERTIFICATE REQUIREMENTS. Students must complete the following courses to be eligible to receive an International Business Studies Certificate:

Nonmajor requirements

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science:</td>
</tr>
<tr>
<td>Mth 114; 364, 365 (Mathematics in Business Applications: Elements of Statistical Methods)</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Arts and Letters:</td>
</tr>
<tr>
<td>Foreign Language (2 years)*</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Social Science:</td>
</tr>
<tr>
<td>Ec 201, 202, 203 Principles of Economics</td>
</tr>
<tr>
<td>Ec 320 International Economics</td>
</tr>
<tr>
<td>Ec 350 Comparative Economic Systems</td>
</tr>
<tr>
<td>Social Science electives (selected from economics, psychology, sociology, anthropology, geography, history - exclusive of U.S. history, and political science - exclusive of U.S. political science courses)</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Total nonmajor credit 45-51

Requirements for B.A. or B.S. degree in business administration:

Undergraduate core requirements | 49 |
B.A. electives (electives include Mktg 466 International Marketing; FinL 456 Foreign Financial Operations; Mktg 476 International Business; Mgmt 407 International Management) | 26 |
| Total | 75 |

Total certificate requirements 120-126

International business certificate students are encouraged to spend one or more summers in overseas management training work experience by participating in the Portland State University AIESEC exchange program for business and economics students.

Courses taken in the international business studies program are applicable toward departmental, collegial, school, and University requirements for a degree.

* Successful completion of an AIESEC traineeship may be substituted for the foreign language requirement.
INTERNATIONAL BUSINESS STUDIES
CERTIFICATE/229-3771

D. J. Manning, Director.

To help meet the growing demand for college graduates prepared for careers in the international operations of business firms, Portland State University offers a certificate program in international business studies. Certificates are granted upon successful completion of specified courses in the program, which includes the University's standard requirements for a B.S. or a B.A. degree in business administration.

Certificate Requirements. Students must complete the following courses to be eligible to receive an International Business Studies Certificate:

Nonmajor requirements

Science
Mth 114, 354, 365 (Mathematics in Business Applications; Elements of Statistical Methods) ...
Mth 250-Introduction to Computer Programming I ...
Mth 251-Introduction to Computer Programming II, Mth 365
-Elements of Statistical Methods ...

Total 48

Arts and Letters:
Foreign Language (2 years) ...
Social Science:
Fe 201, 202, 203 Principles of Economics
Fe 320 International Economics
Fe 340 Comparative Economic Systems
Social Science electives ...
(Select from economics, psychology, sociology, anthropology, geography, history—exclusive of U.S. history, and political science—exclusive of U.S. political science courses)

Total 39

Total nonmajor credits 145-151

Requirements for B.A. or B.S. degree in business administration
Undergraduate core requirements ...
B.A. electives ...

International business certificate students are encouraged to spend one or more summers in overseas management training work experience by participating in the Portland State University-AIESEC exchange program for business and economics students.

Courses taken in the international business studies program are applicable toward departmental, collegial, school, and University requirements for a degree.

Successful completion of an AIESEC traineeship may be substituted for the foreign language requirement.

AIESEC is an international association of business students with chapters in 39 countries. Its purpose is to enable students to gain practical international business experience by providing temporary employment overseas. It also provides an opportunity to work and become acquainted with members of the Portland business community.
AIESEC is an international association of business students with chapters in 53 countries. Its purpose is to enable students to gain practical international business experience by providing temporary employment overseas. It also provides an opportunity to work and become acquainted with members of the Portland business community.

Rationale for the program change:

The noted changes reflect changes in the business requirements, new offerings in business as well as deleted courses. The adjustments are designed to broaden the base student interest level and provide more student options. These proposed adjustments require no additional budgetary support, library, or other resources.

Request prepared by

Approved by Marketing Department Curriculum Committee

Approved by Marketing Department Head

Approved by School of Business Administration Undergraduate Curriculum Committee

Approved by School of Business Administration Dean
MEMORANDUM

TO: Faculty Senate
FROM: Graduate Council
        Dan Newberry, Chairperson
SUBJECT: PROPOSALS FOR CHANGES IN EXISTING GRADUATE PROGRAMS, 1981-82

October 13, 1980

The Graduate Council recommends Senate approval for the proposed changes in the following programs:

I. College of Arts and Letters
   A. MAT/MST in Music - The proposal structures the program in four specifically defined areas (Theory/Composition, History/Literature, Conducting, and Performance) and reduces the total number of specified credits in Music from 24-5 to 20. Courses required under History/Literature will now be discretely numbered instead of being omnibus listings.
   B. MA in Theater Arts - The department proposes (1) to add an option, "two papers of acceptable length on subjects chosen from the fields of theater history, dramatic literature, or criticism," to the existing project requirement options: a research thesis, production for public performance of a full-length play; and (2) to clarify the definition of topics acceptable for a research thesis.
   C. MAT/MST in Theater Arts - The department proposes to add an option, "a research thesis on an approved topic from the fields of theater history, dramatic literature, or criticism," to the existing project requirement options: two papers, the production for public performance of a full-length play, or the composition of one full-length or two one-act plays.

II. College of Sciences
   A. MA/MS in Geology - The proposal adds the requirement that a candidate must complete a summer field geology camp course of no less than 9 credits or demonstrate comparable experience.

III. College of Social Sciences
   A. MA/MS in Economics - The department proposes to require Ec 464 (econometrics) in place of a required seminar in Economic History as part of the core requirement.
   B. MA/MS in Psychology - The Proposal requires candidates to complete both the three quarter sequence in Advanced General Psychology and a graduate course in History and Systems of Psychology with a grade of B or better; to earn 6 graduate credits with a grade of B or better in specified courses which demonstrate competence in methodology, research design,
and applied statistical techniques; to complete 6 credits of practicum in the student's field of interest; and to submit a thesis acceptable to all members of a committee containing at least 3 department faculty members.

C. MPA in Public Administration - The proposal increases credits required in Area I (Substantive Core) from 24 to 37 credits and reduces credits required in Area IV (Field of Specialization and Supporting courses) from 18 to 15 credits. The total number of credits remains as 60. In addition, certain core courses are being changed.

IV. Division of Engineering and Applied Sciences

A. MA/MS in Applied Science - Proposes substituting a project or additional coursework for the thesis requirement where student has demonstrated prior research experience.
FORTLAND STATE UNIVERSITY

Request for the following changes in the M.A.T./M.S.T. in Music

Existing catalog statement:

Degree Requirements
University master's degree requirements are listed on page 38. In addition, all candidates for the M.A.T. or M.S.T. in Music must take two of the following courses: Music 441, 442, 443 Advanced Conducting (6 credits), Music 507 Style Analysis and Criticism (3 or 4 credits), Music 411, 412, 413 Fundamentals of Composition (6 credits), Music 590 Applied Music (6 credits), 3 credits in an appropriate specialized music literature course (Band, Orchestral, or Choral Literature), and a minimum of 9 to a maximum of 15 credits in education. The remainder of the program will be chosen with the assistance of the advisor, from the selection of music history, music literature, and music theory courses. If the student is seeking recommendation for Standard Certification as part of the degree program, the credits in education must include the courses listed on page 149.

All degree candidates take a final written examination which covers three areas: education, music theory, and music history. A final oral examination may also be required.

Proposed catalog statement:

Degree Requirements
University master's degree requirements are listed on page 38. Specific departmental requirements are as follows (total: 20 credits):

I. Theory/Composition
   - Music 520 Analytical Techniques (3)
   - One of the following:
     - Music 511 Band Arranging (3)
     - Music 512 Orchestral Arranging (3)
     - Music 513 Choral Arranging (3)

II. History/Literature
   - Two of the following:
     - Music 537 Music History: The Baroque Period (2)
     - Music 538 Music History: The Classic Period (2)
     - Music 539 Music History: The Nineteenth Century (2)
     - Music 540 Music History: The Twentieth Century (2)
     - One of the following:
       - Music 532 Band Literature (3)
       - Music 533 Orchestral Literature (3)
       - Music 534 Choral Literature (3)

III. Conducting
    - One of the following:
      - Music 441 Advanced Conducting (instrumental) (3)
      - Music 442 Advanced Conducting (vocal) (3)

IV. Performance
    - Music 391 Applied Music in Secondary Area (2)
    - Music 590 Applied Music (major area) (2)
The program also requires a minimum of 9 to a maximum of 15 credits in education. The remainder of the program will be chosen with the assistance of the advisor, from the selection of music history, music literature, and music theory courses. If the student is seeking recommendation for Standard Certification as part of the degree program, the credits in education must include the courses listed on page 149.

All degree candidates take a final written examination which covers three areas: education, music theory, and music history. A final oral examination may also be required.

Rationale for the proposed program change:

This program change is less sweeping than it may at first seem. In the first area, Theory/Composition, the four proposed courses are merely an adaptation of the present 3-course combination (Mus 411, 412, 413 Fundamentals of Composition) with no change in total credit requirements. The courses proposed in the second area, History/Literature, show, in accordance with Graduate School directives, the application of discrete numbers and catalog descriptions to topics currently taught under 507 listings. Area III, Conducting, continues current courses intact, though reducing the required credit by half; and the new course in the fourth area, Performance, systematizes (and legitimizes) a distinction already in effect within the present program.

We feel nevertheless that the proposed changes will bring needed improvements to the MUS/MAST program in music. The changes in the Theory/Composition area respond to frequent student suggestions that more of the program should point toward demands they face as music teachers and directors of ensembles in the public schools. In reducing the number of specified credits in music from 24-5 to 20 the proposal responds to student requests for more electives as well as to the difficulty, increasing year by year, of offering a wide selection of required graduate courses at the time of greatest student need for them— the summer session. The establishment of two level of Applied Music (fourth area: Performance) upholds the integrity of the 500 level as appropriate to truly advanced work—in the student’s major performance area—while allowing graduate credit at the 400 level for more rudimentary study, still vitally important to the public school music teacher, in secondary performance areas. The discrete numbers and catalog descriptions will have a clarifying and stabilizing effect on this curriculum.

The proposed changes do not require the development of supporting curricula. They are shaped to the capacities of the present music faculty and will require no additional budgetary support.
REQUEST FOR THE FOLLOWING CHANGES IN
MASTER OF ARTS IN THEATER ARTS

Existing Catalog Statement:

The present Theater Arts graduate program provides a thesis option for the degree.

"The student must successfully complete a minimum of 45 graduate credits with a minimum of 36 credits of approved courses in Theater Arts. Nine credits may be taken in an approved area outside the Department of Theater Arts. In addition, the student must successfully complete one of the following projects, for which no less than 6 graduate credits in Theater Arts will be given: (1) a research thesis on an approved topic from the fields of history, literature, or criticism, (2) a production for public performance of a full-length play, or (3) the composition of two one-act or one full-length play. An oral examination is also required."

Proposed Catalog Statement:

"The student must successfully complete a minimum of 45 graduate credits with a minimum of 36 credits of approved courses in Theater Arts. Nine credits may be taken in an approved area outside the Department of Theater Arts. In addition, the student must successfully complete one of the following projects, for which no less than 6 graduate credits in Theater Arts will be given: (1) a research thesis on an approved topic from the fields of history, dramatic literature, or criticism, (2) two papers of acceptable length on subjects chosen from the fields of theater history, dramatic literature, or criticism, (3) a production for public performance of a full-length play, or (4) the composition of two one-act or one full-length play. An oral examination is also required."

Rationale:

The adjustment in topics acceptable for research thesis option merely clarifies the statement's intent.

The adjustments in the MA requirements will allow maximum flexibility in creating courses of study that serve the variety of needs and requirements characteristic of the department's graduate students.

Request prepared by William M. Tate Date 02/17/80
Approved by Department Chairman Date 02/18/80
Approved by TA Curriculum Committee Date 02/18/80
Approved by College Curriculum Committee Date 03/21/80
Approved by College Dean Date 03/21/80
REQUEST FOR THE FOLLOWING CHANGES IN MAT/MST IN THEATER ARTS

Existing Catalog Statement:

For the MAT/MST degree a two papers option is provided:

"The candidate must complete any one of the following: (1) two papers of acceptable length on subjects chosen from the fields of theater history and/or dramatic literature, (2) the production, for public performance, of a full-length play, or (3) the composition of one full-length or two one-act plays. An oral examination is also required."

Proposed Catalog Statement:

"The candidate must complete any one of the following: (1) a research thesis on an approved topic from the fields of theater history, dramatic literature, or criticism, (2) two papers of acceptable length on subjects chosen from the fields of theater history and/or dramatic literature, (3) the production, for public performance, of a full-length play, or (4) the composition of one full-length or two one-act plays. An oral examination is also required."

Rationale:

The adjustments in the MAT/MST requirements will allow maximum flexibility in creating courses of study that serve the variety of needs and requirements characteristic of the department's graduate students.

Request prepared by  William M. Tate  Date  02/17/80
Approved by Department Chairman  William M. Date  02/18/80
Approved by TA Curriculum Committee  Michelle W. Date  03/18/80
Approved by College Curriculum Committee  Date  03/21/80
Approved by College Dean  Date  03/23/80
Requests for the following change(s) in MA/MS Degree in
Geology

Degree Requirements

University master's degree requirements are given on page 38. Specific departmental requirements for the MA/MS are:

1. Completion of at least 24 credits in the field of geology of which 18 credits must be in 500-level courses.
   a. At least 9 of these credits must be in courses numbered G510 or higher.
   b. A maximum of 9 credits will be allowed for courses numbered G 510 and G 505.
   c. Students must complete at least 6 but not more than 9 credits of G 503 Thesis.

2. Completion of three terms of G 507 Graduate Seminar or one term of G 407 Senior Seminar and two terms of G 507 Graduate Seminar, as directed by the faculty.

3. Completion of the Advanced Graduate Record Examination in Geology taken before the second term of regular admission; scores will be evaluated for deficiencies.

4. Presentation of a thesis.

5. Completion of a final oral examination (thesis defense) taken before the end of the sixth week of the final term in residence.

Proposed catalog statement:

1. Completion of at least 24 credits in the field of Geology of which 18 credits must be in 500-level courses.
   a. At least 9 of these credits must be in courses numbered G 510 or higher.
   b. A maximum of 9 credits will be allowed for courses numbered G 510 and G 505.
   c. Students must complete at least 6 but not more than 9 credits of G 503 Thesis.
   d. Students must complete a summer field geology course of at least 9 credits or furnish evidence of equivalent experience.

2. Completion of three terms of G 507 Graduate Seminar or one term of G 407 Senior Seminar and two terms of G 507 Graduate Seminar, as directed by the faculty.

3. Completion of the Advanced Graduate Record Examination in Geology taken before the second term of regular admission; scores will be evaluated for deficiencies.

4. Presentation of a thesis.

5. Completion of a final oral examination (thesis defense) taken before the end of the sixth week of the final term in residence.
Completion of a summer field geology camp course of no less than 9 credit hours or demonstration of comparable experience is being added to the MA/MS degree requirements for the following reasons:

1. All of our MA/MS degree candidates must complete a field-based Thesis (see Earth Science Departmental Policies, Graduate Program). We have always recommended that they take a summer field geology camp course. It is wiser to publish this as a requirement.

2. Most geology departments at other schools require summer field camp for admission to the graduate program. Oregon State University, Geology Department, with which we conduct our summer field camp each year, requires this course.

3. The course has been offered for the past five years under the Summer School Program. There will be no additional FTE or cost because of addition of this course to our graduate program requirements.

Request prepared by __________________________ Date Feb 12, 1980
Approved by Unit (i.e., Department) Curriculum Committee __________________________ Feb 12, 1980
Approved by Department Head __________________________ Feb 13, 1980
Approved by College/School Curriculum Committee __________________________ Feb 18, 1980
Approved by College/School Dean __________________________ Feb 20, 1980

ROV: iab
Request for the following change in Master of Arts/Master of Science degree in Economics.

Existing Catalog Statement:

Each student must take a 3 Credit seminar in each of the following: Macroeconomic Theory, Microeconomic Theory, and Economic History.

Proposed Catalog Statement:

Each student must take EC-464 and a 3 credit seminar in each of the following: Macroeconomic Theory and Microeconomic Theory.

Rationale for the proposed program change:

Econometric Methods are now employed and appear in such a large portion of the current economic literature that students at the graduate level need some introduction to these techniques. EC-464 will replace the required seminar in Economic History in the core requirements. Students are required to complete a six hour sequence in Economic History at the undergraduate level and receive further training in the development and structure of economic institutions in their fields of specialization. The department will continue to offer Economic History as field in the graduate program.

Request prepared by

Approved by Department Curriculum Committee

Approved by Department Head

Approved by College/School Curric. Comm.

Approved by College/School Dean
Request for the following change(s) in the MA/MS degree in Psychology.

Existing catalog statement:

Degree Requirements

University master's degree requirements are listed on page 36. Students desiring an M.A. degree must be examined in a modern European language, although other languages may be substituted if approved by the department. The student's program is determined in consultation with an advisor. A thesis and oral defense of the thesis are required.

In addition to the University requirements, students will complete the following departmental requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psy 503 Thesis</td>
<td>6</td>
</tr>
<tr>
<td>Psy 507 Proseminar</td>
<td>9</td>
</tr>
<tr>
<td>Psy 507 Quantitative Methods</td>
<td>9</td>
</tr>
<tr>
<td>Electives: Including a concentration devised by the student and advisor, and approved by the Graduate Committee of the department</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

The degree requirements may be explained as follows:

Proseminar. The purposes of the proseminar are two-fold. First, it is designed to provide the student with exposure to a representative set of issues which characterize the current state of psychology. Second, it is intended to be a setting in which students and faculty can get to know one another. These purposes are served in the proseminar by having as many faculty as possible involved in several discussion sessions on the current developments in the psychology of their particular interest.

Quantitative Methods. In order to understand the rationale behind the
design of research studies in almost any area of psychology, and in order to understand the language in which the results of such studies are presented, it is necessary that the scholar be familiar with a wide variety of quantitative techniques. The required sequence in Quantitative Methods is designed to fill this need.

Thesis. The department considers the master’s thesis to be a learning experience and students are not necessarily expected to demonstrate the ability to design and conduct independent research— an expectation of the doctoral candidate. Consequently, there are several options available to the student in satisfying the thesis requirement.

Proposed catalog statement: (changed portions are underlined)

Degree requirements

University master’s degree requirements are listed on page 38. Students desiring an M.A. degree must be examined in a modern European language, although other languages may be substituted if approved by the department. The student’s program is determined in consultation with an adviser, and must include a minimum of thirty hours of Psychology. Although a minimum of 45 credit hours is required of all M.A. candidates, additional courses may be desirable for some specific programs of study. All students are required to complete both the three quarter sequence in Advanced General Psychology and a graduate course in History and Systems of Psychology with a grade of B or better.

All students are required to demonstrate competence in methodology, research design and applied statistical techniques. For this requirement, the student must pass 6 hours of graduate credit with a grade of B or better in the following courses: Field Observation Methods (3 hours) plus 3
additional hours in either Advanced Experimental Design, Field Experimental Methods or Mathematical Models in Psychology. Note that as a prerequisite for taking these graduate level courses in experimental design, a student must have successfully completed Psychology 454 and 455 (Experimental Psychology) at Portland State University or its equivalent at another institution.

All students are expected to complete six hours of practicum in their field of interest. For students interested in traditional academic areas of psychology this requirement may be fulfilled by completing a research apprenticeship (Psy 501) with a department faculty member. Students with applied interest may arrange practica (Psy 509) in the Psychology Clinic or other appropriate agencies in the Portland area. In all instances an evaluation of the student's performance will be made by the student's committee.

Thesis. The student must submit a thesis acceptable to all members of a committee containing at least three department faculty members and defend the thesis at an oral examination. The department considers the master's degree thesis to be a learning experience and students are not necessarily expected to demonstrate the ability to design and conduct independent research—\[\text{an expectation of the doctoral candidate. Consequently, there are several options available to the student in satisfying the thesis requirement.}\]

Rationale for proposed program changes:

The preceding changes in the requirements for an M.A. degree in Psychology have been proposed by the faculty because we feel they will leave students better prepared for the thesis requirement and also better equipped for post-graduate job requirements. Specifically, we feel it is important for the person with an M.A. in Psychology to have a broad background in both the general field of Psychology and in experimental design as well as having some knowledge
of the history of his field. In addition, the requirement of the practicum would give the student some supervised practical experience in the field of his choice.

These proposed changes do not require development of additional courses since all of the relevant courses are presently offered by the department. However, particularly in the area of methodology and statistics, the department will have to ensure that these graduate level courses are offered on a regular basis. It would perhaps be advantageous to consider willingness and ability to teach advanced methodology courses in future hiring decisions.

Request prepared by ____________________________ Date ______

Approved by Unit (i.e., Department) Curriculum Committee __________ Date ______

Approved by Department Head ____________________________ Date ______

Approved by College/School Curriculum Committee ____________________________ Date ______

Approved by College/School Dean ____________________________ Date ______
PORTLAND STATE UNIVERSITY

PROPOSAL FOR CHANGES IN DEGREE REQUIREMENTS

1. College of Social Science

2. Master's Program in Public Administration, MPA degree

3. Existing Catalog statement:

Area I -- Substantive Core (24 credits)

Ec 507  Public Finance

PA 507  Integrative Seminar (3) (Available to students only after they have earned 42-45 credits in the program)

PA 510  Administrative Issues and Concepts (3) (Prerequisite: senior or graduate level course in basic public administration, or consent of instructor)

PA 540  Administrative Theory and Behavior (3)

PA 582  Public Budgeting (3)

PS 507  Intergovernmental Relations (3)

and two of the following:

PA 510  Administrative Law and Regulation (3)

PA 561  Administration of Public Policy (3)

PA 590  Public Personnel Administration (3)

Soc 507  Issues in Complex Organizations (3)

Area II -- Skill Development (12 Credits)

Category A: Analytical

PS 496G  Data Analysis for Politics and Policy (3)

PS 597  Data Analysis for Policy and Administration (3)

Category B: Applied Techniques

PA 532  Organization and Methods (3)
Category C: Communication

One course from the following:

Psy 580  Group Process (3)
PA 510  Public Administration Laboratory (3) (Administrative Role Simulation)
Sp 507  Interpersonal Communications and the Public Sector (3)

Area III -- Organizational Experience (6 Credits)

PA 509  Organizational Experience (6) (Available to students only after they have earned 30 credits in the program.) Pass/No Pass only.

Area IV -- Field of Specialization and Supporting Courses (18 Credits)

Specialty areas and courses will be chosen by the student, with the approval of his or her adviser. Specialty areas may be in administration, policy, or other areas; they may be chosen from individual disciplines or put together as multi-disciplinary endeavors. In consultation and negotiation with other program and disciplines, the M.P.A. staff will indicate in written form the courses that may be available to M.P.A. students in a number of suggested specialty areas. Some examples of specialty areas: environmental studies, various public policy fields, urban studies, administration of justice, business management, communications, collective bargaining, social work, and the traditional disciplines in the social sciences. Total Credits: 60

4. Proposed catalog statement:

Area I -- Substantive Core (27 Credits)

PA 507  Integrative Seminar (3) (Available to students only after they have earned 42-45 credits in the program)
PA 511  Public Administration (3)
PA 513  Administrative Ethics and Values (3)
PA 540  Administrative Theory and Behavior (3) (Prerequisite: PA 511, Public Administration, or consent of instructor)
PA 582  Public Budgeting (3)
PS 507  Intergovernmental Relations (3)
EC 510  Public Finance

and two of the following:

PA 510  Administrative Law and Regulation (3)
PA 561  Administration of Public Policy (3)
Area II -- Skill Development (12 credits)

Category A: Analytical

PS 496G Data Analysis for Politics and Policy (3)
PS 597 Data Analysis for Policy and Administration (3)

Category B: Applied Techniques

PA 532 Organization and Methods (3) (Prerequisite: PA 540, Administrative Theory and Behavior)

Category C: Communication

One course from the following:

Psy 580 Group Process (3)
PA 510 Public Administration Laboratory (3) (Administrative Role Simulation)
Sp 507 Interpersonal Communications and the Public Sector (3)

Area III -- Organizational Experience (6 credits)

PA 509 Organizational Experience (6) (Available to students only after they have earned 30 credits in the program.) Pass/No Pass only.

Area IV -- Field of Specialization and Supporting Courses (15 credits)

Specialty areas and courses will be chosen by the student, with the approval of his or her adviser. Specialty areas may be in administration, policy, or other areas; they may be chosen from individual disciplines or put together as multi-disciplinary endeavors. In consultation and negotiation with other program and disciplines, the M.P.A. staff will indicate in written form the courses that may be available to M.P.A. students in a number of suggested specialty areas. Some examples of specialty areas: environmental studies, various public policy fields, urban studies, administration of justice, business management, communications, collective bargaining, social work, and the traditional disciplines in the social sciences. Total Credits: 60

5. Explanations:

a. Public Administration and Administrative Ethics and Values:
Public Administration has been offered (under an omnibus number)
since the MFA Program was established. During the first two years of the program it was a core requirement; during the last two years it has been a prerequisite for Administrative Issues and Concepts (under an omnibus number), a core requirement. The prerequisite arrangement has not worked: we have not been able to effectively monitor students taking Public Administration during the early part of their degree work; Administrative Issues and Concepts has become largely an offering in administrative ethics and values; and we finally allowed students to take Public Administration as an elective in the degree program and not simply as a program prerequisite. We are now proposing that Public Administration (as PA 511 and not PA 510) be reinstituted as a core course and that Administrative Issues and Concepts be appropriately labeled as PA 513, Administrative Ethics and Values. The focus on values and ethics is becoming an increasingly significant aspect of public service education.

b. Prerequisites for Administrative Theory and Behavior and Organization and Methods: The prerequisites indicated are program prerequisites (program courses). They will improve the flow of students from more introductory courses to more advanced ones.

Sequence of action:
Request prepared by Ronald Cease Date Feb 25, 1980
Approved by Unit Curriculum Committee Ronald Cease Date Feb 25, 1980
Approved by Department Head Ronald Cease Date Feb 25, 1980
Approved by College/School Curriculum Committee Date Apr. 8, 1980
Approved by College/School Dean Date Apr. 10, 1980
PORTLAND STATE UNIVERSITY

Proposal for Change in Degree Requirements in
M.A./M.S. in Applied Science

The Division of Engineering and Applied Science requests the following modifications for the degree requirements pertaining to its M.A./M.S. in Applied Science. These modifications are indicated by underlining or lining-out in the proposed catalog statement.

Existing catalog statement: (80-81 catalog)

Degree Requirements. University master's degree requirements are listed on page 46. In addition, a candidate for the M.A. or M.S. degree must complete at least 27 credits in engineering and applied science, of which not less than 18 credits must be selected from 500-level courses, excluding thesis. A minimum of 9 credits must be selected from an area other than the candidate's major emphasis, subject to the approval of the student's adviser and department. A minimum of 6 credits of thesis is also required.

Proposed catalog statement:

Degree Requirements. University master's degree requirements are listed on page 46. In addition, a candidate for the M.A. or M.S. degree must complete at least 27 credits in engineering and applied science, of which not less than 18 credits must be selected from 500-level courses, excluding thesis. A minimum of 9 credits must be selected from an area other than the candidate's major emphasis, subject to the approval of the student's adviser and department. A minimum of 6 credits of thesis is also required. However, upon the recommendation of the student's committee and with the approval of the engineering head in the student's major area, a project and/or additional coursework may be substituted in lieu of the thesis requirement.

Justification for the proposed change:

The present degree requirements are designed primarily for full-time graduate students. Part-time graduate students who have full-time professional careers would be better served with the proposed change. Most of these potential candidates for the M.S. degree are practicing professional engineers who already have acquired research experience comparable to that accomplished by completing a thesis. Accordingly, the substitution of additional course work and/or project would be justified.

Request prepared by [Signature] Date 9-29-80
Approved by Division Graduate Committee [Signature] Date 9-29-80
Approved by Engineering Heads [Signature] Date 9-29-80
Approved by Division Curriculum Committee [Signature] Date 9-29-80
Approved by Division Head [Signature] Date 9-29-80