

2-18-1971

67th Report of CAC

University of Rhode Island Faculty Senate

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UNIVERSITY OF RHODE ISLAND

FACULTY SENATE

BILL

Adopted by the Faculty Senate

RECEIVED
UNIVERSITY OF R. I.
FEB 23 1971
OFFICE OF THE PRESIDENT

TO: President Werner A. Baum

FROM: Chairman of the Faculty Senate

1. The Attached BILL, titled 67th Report of CAC

is forwarded for your consideration.

2. The original and two copies for your use are included.

3. This BILL was adopted by vote of the Faculty Senate on February 18, 1971
(date)

4. After considering this bill, will you please indicate your approval or disapproval. Return the original or forward it to the Board of Trustees, completing the appropriate endorsement below.

5. In accordance with Section 8, paragraph 2 of the Senate's By-Laws, this bill will become effective on March 11, 1971 (date), three weeks after Senate approval, unless: (1) specific dates for implementation are written into the bill; (2) you return it disapproved; (3) you forward it to the Board of Trustees for their approval; or (4) the University Faculty petitions for a referendum. If the bill is forwarded to the Board of Trustees, it will not become effective until approved by the Board.

February 19, 1971
(date)

Walter E. Swadlow /s/
Chairman of the Faculty Senate

ENDORSEMENT 1.

TO: Chairman of the Faculty Senate

FROM: President of the University

1. Returned.
2. Approved Disapproved

3. (If approved) In my opinion, transmittal to the Board of Trustees is not necessary.

2/23/71
(date)

W. A. Baum /s/
President

ALTERNATE ENDORSEMENT 1.

TO: Chairman of the Board of Trustees.

FROM: The University President

1. Forwarded.
2. Approved.

(date) _____ /s/
President

ENDORSEMENT 2.

TO: Chairman of the Faculty Senate

FROM: Chairman of the Board of Trustees, via the University President.

1. Forwarded.

(date) _____ /s/

(Office)

ENDORSEMENT 3.

TO: Chairman of the Faculty Senate

FROM: The University President

1. Forwarded from the Chairman of the Board of Trustees.

(date) _____ /s/
President

Original received and forwarded to the Secretary of the Senate and Registrar for filing in the Archives of the University.

(date) _____ /s/
Chairman of the Faculty Senate

University of Rhode Island
Kingston, Rhode Island

February 9, 1971

Faculty Senate Curricular Affairs Committee Sixty-seventh Report.

At meetings on January 14 and February 4, 1971, the Faculty Senate Curricular Affairs Committee considered the following matters which are now submitted to the Faculty Senate for information or confirmation as indicated.

I. Matters of Information -- (For further information, consult the Chairman of the department concerned).

A. College of Arts and Sciences

1. Department of Computer Science and Experimental Statistics.

Change in prerequisite in CSC 410, Introduction to Computer Science and Algorithmic Processes, from "MTH 142" to "MTH 142 and CSC 201".

2. Department of Languages.

Change in prerequisite for GER 441, 442, 451, 452, 431, 481, 482, and 483 from "GER 206 or 326" to "GER 206 or equivalent".

B. College of Engineering

1. Department of Mechanical Engineering and Applied Mechanics.

a. Change number of MCE 472 to MCE 372 and change title from Engineering Analysis to Engineering Analysis I.

b. Change in Prerequisites:

- 1) Change prerequisite in MCE 550 from CVE 220, MCE 354, 472 or permission of instructor to CVE 220, MCE 354, 372 or permission of instructor.
- 2) Change prerequisite in MCE 573 from CVE 220, MTH 244, MCE 472 or permission of instructor to CVE 220, MTH 244, MCE 372 or permission of instructor.
- 3) Change prerequisite in MCE 575 from CVE 220, MTH 244, MCE 472 or permission of instructor to CVE 220, MTH 244, MCE 372 or permission of instructor.

C. College of Resource Development

1. Department of Fisheries and Marine Technology.

a. Change description of FIS 014 and 015:

FIS 014 Shipboard Work II
Work aboard training vessels at sea and in port. Experience is

II, 1

gained in rigging and working common gear used in the commercial fishing industry. (Lab. 3) Prerequisite: FIS 013. SAINSBURY.

FIS 015 Shipboard Work III 1, 1
Work aboard training vessels at sea and in port. Rigging, working and evaluation of fishing gear. (Lab. 3) Prerequisite: FIS 014. HILLIER.

b. Add prerequisites:

FIS 121 Fishing Gear I -- Add: Prerequisite: FIS 013.
FIS 122 Fishing Gear II -- Add: Prerequisite: FIS 121.
FIS 182 Navigation II -- Add: Prerequisite: FIS 181.
FIS 192 Fishing Operations -- Add: Prerequisite: FIS 015, FIS 122.

II. Items Requiring Confirmation by the Faculty Senate.

A. College of Arts and Sciences

1. Department of Botany.

a. Change description of BOT 432 to read:

BOT 432 (132) Mycology: Introduction to the Fungi 1, 4
Basic course in identification, structure, cytology, development and distribution of fungi. Recognition of types important in organic decomposition, disease, medicine, industry and as food. Prerequisite: BIO 101 or BOT 111. GOOS (Lec. 2, Lab. 4).

b. Change number and description of BOT 133 as follows:

BOT 433 Field Mycology SS only, 3
A basic course involving methods of collecting, preserving, and identifying fungi and the use of literature. Emphasis on higher fungi. (Lec. 1, Lab. 4). Prerequisites: BOT 111 or BIO 101 or the equivalent. GOOS.

2. Department of Chemistry.

a. Change CHM 101 (4 credits) to CHM 101 (3 credits) and CHM 102 (1 credit).

CHM 101 General Chemistry Lecture I 1 & II, 3
A course providing a good foundation through fundamental treatments of concepts and principles in atomic structure, energy relationships, and reaction mechanisms balanced with applied and descriptive material. (Lec. 3). CRUICKSHANK.

CHM 102 General Chemistry Laboratory I 1 & II, 1
The laboratory consists of experimental work illustrating certain concepts and principles that have now become part of general chemistry. Experiments in solutions, reaction rates, enthalpy,

molar heat capacity, and electro-chemistry. (Lab. 3) Prerequisites:
prior or concurrent registration in CHM 101. STAFF.

- b. Change CHM 103 (4 credits) to CHM 103 (3 credits) and CHM 105 (1 credit).

CHM 103 General Chemistry Lecture I 1, 3
Introductory course similar to CHM 101 for students without
prior chemical training. (Lec. 3). STAFF.

CHM 105 General Chemistry Laboratory I 1, 1
Laboratory course designed to fit the course content of CHM 103.
(Lab. 3) Prerequisite: Prior or concurrent registration in
CHM 103. STAFF.

- c. Change CHM 104 (4 credits) to CHM 104 (3 credits) and CHM 106 (1 credit).

CHM 104 General Chemistry Lecture II 11, 3
Continuation of CHM 101 or CHM 103 for students who plan no
further training in Chemistry and wish to complete a year's study
of general chemistry. (Lec. 3) Prerequisite: CHM 101 or 103.
CRUICKSHANK.

CHM 106 General Chemistry Laboratory II 11, 1
Laboratory course designed to fit the course content of CHM 104.
(Lab. 3) Prerequisite: Prior or concurrent registration in CHM
104. STAFF.

- d. Change CHM 109 (4 credits) to CHM 107 (3 credits) and CHM 108 (1 credit).

CHM 107 Chemistry of Our Environment 1, 11, 3
An elementary chemistry course for non-science majors, em-
phasizing the chemical aspects of the human environment. Topics
include the chemistry of the biosphere, chemistry of pollution
and aspects of industrial chemistry. (Lec. 3) Not open to
students who have passed CHM 109. STAFF.

CHM 108 General Chemistry Laboratory 1, 11, 1
A laboratory in the general principles of chemistry to accompany
CHM 107, for those who want a laboratory as part of their
chemistry course. (Lab. 3) Prerequisites: Prior or concurrent
registration in CHM 107. Not open to students who have passed
CHM 109. STAFF.

- e. Change CHM 110 (4 credits) to CHM 112 (3 credits) and CHM 114 (1 credit).

CHM 112 (110) General Chemistry Lecture II 1, 11, 3
Elementary thermodynamics, chemical equilibria in aqueous solu-
tions, properties and reactions of inorganic species, and practical
applications of chemical principles. (Lec. 3) Prerequisite:

CHM 101 or 103. Not open to students who have passed CHM 110.
STAFF.

CHM 114 General Chemistry Laboratory II I & II, 1
Laboratory course in semi-micro qualitative analysis and its
applications. (Lab. 3) Prerequisite: Prior or concurrent en-
rollment in CHM 112. Not open to students who have passed CHM
110. STAFF.

- f. Change CHM 221 (4 credits) to CHM 227 (3 credits) and CHM 229
(1 credit).

CHM 227 (221) Organic Chemistry Lecture I I & II, 3
General principles and theories with emphasis on classification,
nomenclature, methods of preparation and characteristic reactions
of organic compounds in aliphatic series. (Lec. 3) Prerequisite:
CHM 104, 110 or 192. Not open to students who have passed CHM
221. STAFF.

CHM 229 Organic Chemistry Laboratory I I, 1
Laboratory course emphasizing common techniques and typical pre-
parative methods in aliphatic series. (Lab. 3) Prerequisite:
Prior or concurrent registration in CHM 227. Not open to students
who have passed CHM 221. STAFF.

- g. Change CHM 222 (4 credits) to CHM 228 (3 credits) and CHM 230
(1 credit).

CHM 228 (222) Organic Chemistry, Lecture II II, 3
Continued discussion of general principles and theories of organic
chemistry with emphasis on the aromatic series. (Lec. 3)
Prerequisite: CHM 227. Not open to students who have passed
CHM 222. STAFF.

CHM 230 Organic Chemistry Laboratory II II, 1
Common techniques and typical preparative methods are continued
with emphasis on the aromatic series. (Lab. 3) Prerequisite:
CHM 229 and prior or concurrent registration in CHM 228. Not
open to students who have passed CHM 222. STAFF.

- h. Add:

CHM 421 (422) Advanced Organic Chemistry I, 3
Emphasis on fundamental organic structure theory and reaction
mechanisms. (Lec. 3) Prerequisite: CHM 228 and CHM 230.
VITTIMBERGA.

- i. Change catalog statement (page 36) of required courses in Chemistry
for the senior year to read:

Students must take three of the following courses: 353, 354,
422, 435 or any 500 level chemistry course with departmental

approval. A student may substitute one 400 or 500 level course in a biological science, engineering, mathematics or physics for one of these courses with approval of the Chemistry Department.

j. Delete the following courses:

CHM 109, 110, 221, 222 and 422, contingent upon approval of the above replacements.

3. Department of Computer Science and Experimental Statistics.

a. Add:

CSC 413 Data Structures 1, 3
Formal data structures. Algorithms for handling such common structures as arrays, linear lists, trees and multi-linked lists. Searching and ordering techniques. Data management systems. Data structures in programming languages. (Lec. 3) Prerequisites: CSC 410, MTH 215. STAFF.

b. Change descriptions of CSC 411 and CSC 412 to read:

CSC 411 Computer Organization and Programming 1, 3
Logical structure of computer systems, information representation, instruction codes, arithmetic and logical operations, flow of control. Assembly language programming, input-output, sub-routines, linkages, macros, conditional assemblers. (Lec. 3) Prerequisite: CSC 410 or equivalent. TETREULT & CARRANO.

CSC 412 Programming Systems 11, 3
Structure of monitor and executive systems, time-sharing systems, real-time systems, input-output systems, file organization and manipulations, command languages. (Lec. 3) Prerequisite: CSC 411. TETREULT.

c. Delete CSC 101 Digital Computation.

4. Department of English.

Add for Semester II, 1971 only:

ENG 300 History of Film 11, 3
Development of European and American cinema from origins to present. Concentration on evolution of style, form, and technique to its present status as a major art form. Lectures, films, discussions. (Lec. 3) Prerequisite: Junior or Senior standing. BARKER, LYNN.

5. Department of Languages.

a. Change in the requirements of the Spanish concentration.

Add catalog description as follows:

SPANISH CONCENTRATION

Students selecting Spanish as a concentration will normally complete 30 credits as follows:

- I. Language learning
Spanish 103, 104, 205, 206
(depending on level begun) 0-12 credits
- II. Introduction to the use of Spanish in teaching or in literary studies:
Spanish 325, 326, 407, 408
(All four suggested for students in G.T.E. Program. One course minimum required) 3-12 credits
- III. Literature

Spanish 472	Hispanic-American Literature	3
Spanish 481	Don Quixote	3
		9 to 30 credits

The remaining hours to a minimum of 30 may be chosen from courses numbered between 430 and 574. Linguistics 409 and 410, and, with special permission of the adviser, section, departmental chairman, and Dean of the College, courses in allied fields such as history, art and anthropology.

b. Add catalog descriptions of German Concentration as follows:

GERMAN CONCENTRATION

Students selecting this field of concentration complete at least 30 credits in German not including German 101, 102, (1, 2) or German 391, 392 (97, 98). German 205, 206 (11, 12) or equivalent is prerequisite to the courses on the 400 level. Linguistics 409, 410 (179, 180) may be used for concentration credit.

c. Change description of GER 103, 104 to read:

GER 103, 104 (3, 4) Intermediate German I & II, 3
Development of facility in reading narrative and expository prose; exercises in grammar, listening comprehension, and speaking.
(Lec. 3) Prerequisite: GER 102 (2).

d. Change description of GER 205, 206 to read:

GER 205, 206 (11, 12) Conversation and Composition I & II, 3
Development of facility in spoken and written German using contemporary writings and topics; special emphasis on general classroom discussion. (Lec. 3) Prerequisite: GER 104 (4) or equivalent.

e. Change description of GER 325, 326 to read:

GER 325, 326 (25, 26) Introduction to Modern German Literature
I & II, 3 cr. each
Literary appreciation of German narrative, drama and lyric poetry
by leading writers from 1885 to the present. (Lec. 3) Pre-
requisite: GER 104 (4) or equivalent. B. A. WOODS.

f. Change description of GER 409 to read:

GER 409 (171) History of the German Language I, 3
Development of the German language from early Germanic to modern
German. Emphasis on cultural influences on linguistic change.
(Lec. 3) Prerequisite: GER 206 (12) or permission of the
instructor. In alternate years, next offered 1971-72. F. WOODS.

6. Department of Economics.

Change ECN 451, 452 Assigned Work, and ECN 515, 516 Economic Re-
search to S/U grading.

7. Department of Geology.

a. Change title and description of GEL 301 to read:

GEL 301 Geology of Mineral Resources I, 3
Origin and distribution of various mineral resources such as metals,
coal, petroleum, natural gas, building and industrial materials.
Strategic minerals, their world distribution, and part played in
world affairs. (Lec. 3) Prerequisite: GEL 103, 302, or ESC 102.
Offered in Fall of even calendar years. J. A. CAIN.

b. Change title and description of GEL 490 to read:

GEL 490 Senior Thesis I & II, 3
Introduction to independent research. Student will have ample
freedom in selection of an area of study and will work in close
conjunction with a faculty member of his own choice. (Lab. 6)
Prerequisite: senior standing and permission of the instructor.
Not for graduate credit. STAFF.

c. Change ESC 102 (4 credits) to ESC 105 (3 credits) and ESC 106
(1 credit) and cross-list with Geology (GEL).

ESC 105 (GEL 105) Geological Earth Science I & II, 3
An introductory study of the earth intended for non-geology
majors. Coverage includes volcanism, earthquakes, mountain-
building, Ice Ages, history of the earth, evolution of life.
Current topics such as continental drift, sea-floor spreading,
environmental geology and lunar geology are introduced. (Lec. 3)
Not open to students who have passed GEL 103 or 104. STAFF.

ESC 106 (GEL 106) Geological Earth Science Laboratory I & II, 1
Investigative problems in geological earth science emphasizing
both collection of field data and the experimental approach.
There will be several afternoon field trips. (Lab. 2) Pre-
requisite: Prior or concurrent registration in ESC 105. STAFF.

- d. Change the description of the B.A. curriculum in Geology in the University Catalog to read:

GEOLOGY

"Students selecting this field of concentration must complete a minimum of 27 credits in Geology, including 103 (8) Physical Geology, 3 credits, and 104 (21) Historical Geology, 3 credits, but not including Earth Science 105 and 106 (Geology 105 and 106). Students intending to pursue graduate work in the geosciences should consider the B.S. curriculum in geology."

8. Department of Theatre.

- a. Add (new):

THE 111 Fundamentals of Acting 1, 3
An introduction to the basics of and creation of character and emotions; fundamental rehearsal procedures, stage terminology, and the actor-director relationship. (Studio 6) Theatre majors only. SMOKER.

THE 112 Fundamentals of Acting 11, 3
The development of the technique approach to characterization, the Stanislavski creation of honest emotion, discipline of body movement, and the integration of these through improvisation. Prerequisite: THE 111. (Studio 6). SMOKER.

THE 200 Technical Theatre Practices 1 & 11, 1
Experience in actual production preparation and performance through specific project assignments in connection with current productions; areas include: costumes, scenery, properties, lighting, and sound. (Studio 3) Repeatable to maximum of 4 credits. Prerequisite: Written permission of the appropriate instructor in the area involved. STAFF.

THE 215 Movement and Mime 1 & 11, 2
Exercises to free the body and develop it for meaningful stage movement; discipline of the body to communicate feeling and character without words. (Studio 4) Prerequisite: Permission of instructor. STAFF.

THE 251 Advanced Stage Makeup 11, 1
Advanced techniques in theatrical makeup with emphasis on character delineations and special effects. (Lab. 2) Prerequisite: THE 151. SPANABEL.

- THE 265 Theatre Graphics 11, 2
The methods and procedures of reading and execution of the specialized descriptive and informational drawings required for theatrical production. (Lab. 4) Prerequisite: THE 161 (41). EMERY.
- THE 311 Advanced Acting 1, 3
Scene Study. Problems of style, ensemble choral work, Shakespeare, and Restoration. Style considered as symbolic action. (Studio 6) Prerequisites: THE 111, 112, 211, 212 and permission of the instructor. WHEELLOCK.
- THE 312 Advanced Acting 11, 3
Continued scene study in style. Avant-garde ensemble techniques, style of the non-English theatre. Style of the non-verbal theatre. (Studio 6). Prerequisites: THE 111, 112, 211, 212, 311 and permission of the instructor. WHEELLOCK.
- THE 341 Theatre Management 1 & 11, 2
An analysis of the economics of theatre, promotion techniques, union regulations, laws of literary property, philanthropy, and producing aspects of theatre. (Lec. 1, Lab. 2) Prerequisite: permission of instructor. SMOKER.
- THE 361 Theatre Technology 11, 3
Theatre architectural forms and their influence on production. Details of mechanical staging systems, the shop as a production unit, modern technological materials and processes. (Lec. 2, Lab. 2) Prerequisites: THE 161. STAFF.
- THE 366 Scene Design II 11, 3
Application of scenic design theories and techniques to modern staging, emphasizing differing production types and styles, new stage forms, and non-traditional materials. (Lec. 2, Lab. 2) Prerequisite: THE 365. EMERY.
- THE 372 Stage Lighting II 11, 3
Theatrical lighting design practices, creation of special effects, and in-depth study of stage lighting equipment and materials. (Lec. 2, Lab. 2) Prerequisite: THE 371. STAFF.
- THE 400 Individual Problems in Theatre Studies 1 & 11, 1-3
Advanced individual theatre work of an approved project under supervision of a staff member. Prerequisite: permission of staff. (Max. 3). STAFF.
- THE 401 Special Group Studies 1 & 11, 1-3
Advanced group theatre work in production projects under approval and supervision of a staff member. Prerequisite: permission of staff. (Max. 3). STAFF.

THE 451 Stage Costume Technology 1, 2
Construction methods and techniques appropriate to stage costuming with emphasis on major theatrical periods and productions. (Lec. 1, Lab. 2) Prerequisite: 351 or 352 and permission of instructor. SPANABEL.

THE 481 American Theatre History 1, 3
Origins and development of American theatre from the wilderness to Broadway of 1940's, including the evolution of the musical play. Analysis of special contributions made by the grass-roots movement, the university theatres, the Federal Theatre Project. (Lec. 3). WILL.

b. Change descriptions to read:

THE 110 Introduction to Acting 1 & 11, 2
An introductory course for non-theatre majors with an interest in acting. (Studio 4). STAFF.

THE 211 Intermediate Acting I 1, 3
Improvisation/Scene Study. Roles chosen to parallel actor's age, type, values. Emphasis on bridging the gap between exercise/improvisation and a preconceived script. (Studio 6). Prerequisite: THE 111, 112 and permission of the instructor. STAFF.

THE 212 Intermediate Acting II 11, 3
Continued scene study chosen from the modern realistic period. Problems of characterization emphasized. (Studio 6). Prerequisite: THE 111, 112, 211 and permission of instructor. STAFF.

THE 221 Stage Management/Directing Workshop 1 & 11, 2
An introduction to stage management and directing. Students will work closely with staff directors and stage managers. (Studio 4) Repeatable. Max. 4 credits. Prerequisite: permission of staff. STAFF.

THE 365 Scenic Design I 1, 3
Theories and techniques of scenic design, emphasizing conceptualization and development of stage settings through project designs for various stage forms, production styles, and periods. (Lec. 2, Lab. 2) Prerequisites: THE 161 and 265 or equivalents. EMERY.

THE 371 (145) Stage Lighting I 1, 3
Theories and techniques of lighting for the stage with concentration on instrumentation and equipment characteristics and their uses in designed lighting for theatrical productions. (Lec. 2, Lab. 2) Prerequisites: THE 161 and 265 or equivalents. STAFF.

THE 381 History of Theatre Through the Eighteenth Century I, 3
Development of the theater from its origins through the neo-
classical movement including, its people, technical elements,
theories and styles of productions. (Lec. 3) Prerequisite:
junior or senior standing. WILL.

THE 382 History of Theatre Since The Eighteenth Century II, 3
Development of the modern theatre from the revolt against neo-
classicism to post WW II. Particular emphasis on the new
European stagecraft and the contributions of Duke Georg,
Antoine, Appia, Craig and Stanislavski. (Lec. 3) Prerequisite:
junior or senior standing. WILL.

- c. Change course number as follows:

THE 201 to THE 281 (201).

- d. Change in credits.

THE 151 Makeup

Change 1-2 credits to 2.
Change (Studio 1-2) to 4.
Delete (Max. 4 credits).

THE 250 Costuming

Change 1-2 credits to 2.
Change (Studio 1-2) to 4.
Delete (Max. 4 credits).

- e. Delete, contingent upon approval of the preceding courses.

THE 140 Stage Management I & II, 1-2.
THE 160 Scene Construction I & II, 1-2.
THE 170 Stage Lighting I & II, 1-2.
THE 240 Theatre Management I & II, 1-2.
THE 260 Special Effects I & II, 1-2.

B. College of Engineering

1. Department of Mechanical Engineering and Applied Mechanics.

- a. Add:

MCE 373 Engineering Analysis II II, 3
A continuation of 372 (172). Prerequisite MCE 372 (172). STAFF.

- b. Add:

MCE 417 (or ELE 417) Direct Energy Conversion II, 3
A study stressing the physical understanding of processes by

which energy is converted directly to electricity. Topics include fuel cells and thermoelectric, thermionic, photovoltaic, and magnetohydrodynamic generators. (Lec. 3) Prerequisite: Background in electricity and magnetism, thermodynamics of fluid systems, and modern physics plus permission of instructor. LESSMANN, POULARIKAS or ZIRKIND.

c. Change in undergraduate curriculum, junior year, second semester.

Replace MTH 151 with MCE 373.

2. Department of Chemical Engineering.

Change undergraduate curriculum to the following:

CHEMICAL ENGINEERING

Freshman Year

<u>First Semester</u>	5	<u>Second Semester</u>	
CHM 191 General Chemistry	5	CHM 192 General Chemistry	5
EGR 101 Introd. to Engr.		EGR 101 Introd. to Engr.	
or	1	or	1
EGR 102 Basic Graphics		EGR 102 Basic Graphics	
MTH 141 Introd. Calculus	3	MTH 142 Intermed. Calculus	
+General Education Electives*	6	with Anal. Geom.	3
(Div. A or C)	<u>15</u>	PHY 213 Elem. Physics	3
		PHY 285 Physics Lab.	1
		General Education Electives*	6
		(Div. A or C)	<u>19</u>

+Students who intend to major in Chemical Engineering are advised to elect, Elements of Economics, ECN 123 (23) in their freshman year.

Sophomore Year

CHM 441 Phys. Chemistry	3	CHM 442 Phys. Chemistry	3
PHY 214 Elementary Physics	3	CHM 336 Phys. Chem. Lab.	2
PHY 286 Physics Laboratory	1	ELE 220 Circuits Electron.	3
MTH 243 Calculus & Analyt.	3	MTH 244 Diff. Equations	
CHE 211 Introd. to CHE	2	or	3
CHE 212 Chem. Process Calc.	2	Approved Math Elective	
General Education Elective*	3	BIO 102 Gen. Biology	
	<u>17</u>	or	3
		BAC 201 Gen. Microbiology	
		CHE 313 Ch. E. Thermo.	3
			<u>17</u>

Junior Year

CHM 227 Organic Chem. Lec. 1	3	CHM 228 Organic Chem. Lec. 2	3
CHM 229 Organic Chem. Lab. 1	1	CHM 229 Organic Chem. Lab. 2	1
Approved Math. Elective	3	CHE 425 Process Dynamics	3
CHE 314 Ch. E. Thermo.	3	CHE 343 Trans. Operations	3
CHE 344 Transfer Rates	3	CHE 322 Chem. Proc. Anal.	1
CHE 328 Industrial Plants	1	CHE 332 Phys. Metallurgy	
General Education Elective*	<u>3</u>	or	3**
	17	Approved Professional Elective	
		General Education Elective*	<u>3</u>
			17

Senior Year

CHE 464 Reaction Kinetics	3	CHM 412 Instr. Methods	
CHE 351 Plant Design	3	or	3**
CHE 345 Ch. E. Laboratory		Approved Professional Elective	
or	2**	CHM 414 Instr. Methods Lab.	
Approved Professional Elective		or	2**
PHY 340 Modern Physics		Approved Professional Elective	
or	3	CHE 352 Plant Design	3
NUE 581 Introd. to Nu. E.		CHE 346 Ch. E. Laboratory	2
General Education Elective*	3	CVE 220 Mechanics of Mat.	
Free Elective	<u>3</u>	or	3**
	17	Approved Professional Elective	
		General Education Elective*	3
		Free Elective	<u>3</u>
			19

TOTAL CREDITS 138

CHEMICAL ENGINEERING

* General Education Electives, in accordance with the university General Education Requirements, must be taken in courses listed as in "Division A and in Division C" (Humanities and Social Sciences).

** For any or all of these courses, the student may substitute a set of professional courses chosen in an Area of Concentration with the approval of the advisor designated by the Department for that Area of Concentration. Areas of Concentration will include:

Bio-engineering
 Chemical Reaction Engineering
 Engineering Management
 Materials Engineering
 Nuclear Engineering
 Pollution Control
 Transport Phenomena and Thermodynamics

(Chemistry courses CHM 227, 228, 229, 230 contingent upon approval by the Faculty Senate).

C. College of Resource Development

1. Department of Fisheries and Marine Technology.

a. Changes in credits and contact hours.

FIS 013 Shipboard Work I -- Increase credits from 1 to 2 and contact hours from Lab 3 to Lab 6.

FIS 135 Fisheries Meteorology -- Increase credits from 1 to 2 and contact hours from Lec. 1 to Lec. 2.

FIS 171 Vessel Technology -- Increase credits from 3 to 4 and contact hours from Lec. 3 to Lec. 4.

b. Delete from program.

FIS 019 Industrial Practicum.
PHY 111, 112 General Physics.
REN 105 Econ. of Food Prod. & Dist.

c. Add to program.

REN 135 Fisheries Economics.

d. Change program in catalog to read:

Revised Curriculum

Two Year Associate Degree Program in Commercial Fisheries

Freshman Year

Credits

FIRST SEMESTER

ENG 113	Composition	3
FIS 013	Shipboard Work I	2
FIS 118	Introduction to Commercial Fisheries	4
MTH 109A	Algebra and Trigonometry	3
PEM 172	First Aid	1
REN 135	Fisheries Economics	5
		<u>18</u>

SECOND SEMESTER

FIS 014	Shipboard Work II	1
FIS 121	Fishing Gear I	3
FIS 131	Seamanship	3
FIS 110	Marine Technology	5
SPE 101	Fundamentals of Oral Communication	3
---	General Education Elective	3
		<u>18</u>

Sophomore Year

FIRST SEMESTER

FIS 015	Shipboard Work III	1
FIS 135	Fisheries Meteorology	2
FIS 141	Marine Engineering Technology	4
FIS 151	Fish Technology	4
FIS 161	Marine Electronics	3
FIS 181	Navigation I	4
		<u>18</u>

SECOND SEMESTER

FIS 122	Fishing Gear II	3
FIS 142	Marine Engineering Technology II	4
FIS 171	Vessel Technology	4
FIS 182	Navigation II	3
FIS 192	Fishing Operations	4
		<u>18</u>

Total Credits Required -- 72

2. Department of Resource Economics.

REN 135 Fisheries Economics 1, 5
Analysis of supply and demand for fish and fishery products. Cost and return in harvesting and processing. Crew remuneration systems. Fisheries policy and management. Designed for two-year fisheries program. (Lec. 5) Prerequisite: permission of instructor. HOLMSEN.