1965

COMMITTEE ON CURRICULAR AFFAIRS--19th Report. Committee policy on General Education; approval of advanced degrees; course changes, new courses, curriculum revisions and new curriculums.

University of Rhode Island Faculty Senate

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Transmittal Form for Bills Approved by the Faculty Senate

From: The Chairman, Faculty Senate
To: The President, Dr. Francis H. Horn

Enclosure

1. The attached bill, entitled COMMITTEE ON CURRICULAR AFFAIRS -- 19th Report. Committee policy on General Education; approval of advanced degrees; course changes, new courses, curriculum revisions and new curriculums. is hereby forwarded to you for your consideration.

2. The official original and 2 copies for your use are attached.

3. This bill was approved by vote of the Faculty Senate on March 18, 1965.

4. After your consideration, will you kindly indicate your approval or disapproval, as appropriate, and return it, completing the appropriate endorsement below.

March 24, 1965

Endorsement 1.

From: The President, University of Rhode Island
To: The Chairman, Faculty Senate

1. Returned.
2. Approved. Disapproved ___
3. (If approved) In my opinion, transmittal to the Board of Trustees would not be desired by the Board and is unnecessary.

4/18/65

(Signature) President, Univ. of R.I.

Received April 5, 1965

(Signature) Chairman, Faculty Senate

Original forwarded to Secretary of the Senate and Registrar, E. Farrell, for filing in the archives of the University.

April 14, 1965

(Signature) Chairman, Faculty Senate
Faculty Senate Committee on Curricular Affairs, 19th Report (Full)

The committee recommends the following items which have been approved by the Graduate Faculty, where pertinent, for confirmation by the Senate:

I. Policies of Curricular Affairs Committee relevant to accommodation of curriculums to the General Education requirements of the University.

A. In those cases in which the curriculum can be changed to include the requirements of the General Education program by adjusting the time sequence in which the courses will be given and/or by using present electives, only informational reports from the respective deans to the registrar, the editor, and the chairman of the Curricular Affairs Committee shall be required.

B. In those cases where courses have to be added to or deleted from the total curriculum in question, the regular procedures will be followed.

II. Authorization of the offering of the following advanced degrees.

A. Ph.D. degree

1. Dept. of Mechanical Engineering

   a. General Requirements for the Degree of Doctor of Philosophy in Mechanical Engineering.

   Applicants for admission to graduate study in Mechanical Engineering leading the Ph.D degree will meet general admission requirements of the Graduate School and will ordinarily be expected to have completed the requirements for a B.S. degree (or its equivalent) in Mechanical Engineering at a school of recognized standing. It may be necessary for the student to take undergraduate courses to overcome any deficiencies determined by interviews or by examination of his transcript.

   The student will satisfy the general requirements for the Ph.D degree as established by the Graduate Council.

   b. Sample Program

   A particular student's program will be determined by the student's committee in such a way as to best fit the needs of the student. The sample program shown below is typical of what might be taken by a student.
Program A - Full load, six semesters (summers off campus).
No M.S. thesis.

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Crs.</th>
<th>2nd Semester</th>
<th>Crs.</th>
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<tr>
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<td>ME 255 Viscous Fluids</td>
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<td>ME 264 Vibrations</td>
<td>3</td>
<td>ME 355 High Speed Flow</td>
<td>3</td>
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<td>Physics 172 Theoretical Physics</td>
<td>3</td>
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<td>Math 163 Operational Math</td>
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<td>Math 172 Numerical Analysis</td>
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<tr>
<td>ME 201 Seminar</td>
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<td>ME 202 Seminar</td>
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<td>ME 271 Theory of Elasticity</td>
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<td>Physics 151 Acoustics</td>
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<td>Ocean 201 Physical Oceanography</td>
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<td>Math 151 Statistics</td>
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<td>Math 162 Complex Variables</td>
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</tr>
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b. Fields of Specialization:

c. Faculty

Donald Bradbury, Professor and Chairman, Dept. of Mech. Eng.
B.S., 1939, Tufts University;
M.S., 1940, Harvard University;
Ph.D., 1950, Ibid.

Frank J. DeLuise, Asst. Prof.
B.S., 1948, Univ. of R.I.
M.S., 1950, Univ. of R.I.

William J. Ferrante, Assoc. Prof.
B.S., 1949, Univ. of R.I.
M.S., 1955, Brown University

Robert H. Geff, Asst. Prof.
M.S., 1956, Cornell University

Warren M. Hagist, Assoc. Prof.
B.S., 1948, Univ. of Penna.
M.S., 1949, Harvard University
M.E., 1961, Ibid.

John P. Hatch, Assoc. Prof.
B.S., 1939, Duke University
M.M.E., 1949, New York University

Charles D. Nash, Jr., Professor
B.S., 1949, Yale University
M.S., 1951, Ohio State Univ.
Ph.D., 1959, Ibid.

John Parker, Assoc. Prof.
B.S., 1940, Univ. of R.I.
M.S., 1950, Univ. of Michigan

Frederick L. Test, Professor
B.S., 1945, Mass. Inst. of Tech.
M.S., 1947, Ibid.

Andrew Velletri, Assoc. Prof.
B.S., 1943, New York Univ.
M.S., 1957, Univ. of Conn.
3/4 course work toward Ph.D., Ibid.

Frank M. White, Assoc. Prof.
B.S., 1954, Georgia Institute of Tech.
M.S., 1956, Mass. Institute of Tech.
Ph.D., 1959, Georgia Inst. of Tech.

Physical facilities. In addition to the physical facilities now available, a building devoted to engineering research is in the planning stage.

2. Dept. of Physics

a. General Requirements for the Degree of Doctor of Philosophy in Physics

It is proposed that the University of Rhode Island, through its Physics Department, formally institute a course of study leading to the degree of Ph.D. in Physics and that it begin accepting students who intend to obtain that degree in the fall of 1965. The requirements for such a degree shall consist of:
1. A minimum of 6 units (including thesis) beyond the under­graduate level, a certain number of these being in required courses.

2. Satisfactory passage of a formal Ph.D. qualifying examination, both written and oral, in the fields of Classical Mechanics, Classical Electricity and Magnetism, Thermodynamics, and Introductory Atomic and Nuclear Physics (normally taken at the equivalent level of a Master's degree).

The Candidate must pass a written comprehensive Ph.D. final examination given by the department on the subjects of Nuclear Physics or Solid State Physics, Statistical Mechanics, Electricity and Magnetism, and Quantum Mechanics.

b. Sample Program

Average Student - Average Preparation

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<th>First Year</th>
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<td>310</td>
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<tr>
<td>352</td>
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<tr>
<td>or</td>
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<td>362</td>
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<td>320</td>
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</table>

c. Faculty

Arthur L. Quirk, Professor of Physics and Chairman of the Department: M.Sc. 1932, Catholic University of America; Ph.D. 1934, Ibid.

Frank T. Dietz, Assoc. Professor M.A. 1946, Wesleyan; Ph.D. 1951, Penn State

Stephen V. Letcher, Assistant Professor: B.S. 1957, Trinity College; Ph.D. 1964, Brown University

Surendra S. Malik, Assistant Professor: M.Sc. 1956, Agra University, Agra, India; Ph.D. 1960, Agra University and Bartol Research Foundation
B. Masters degree

1. M.A. in Geography

a. Sample program

A sample program for a candidate in geography might be as follows:

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<th>Fall</th>
<th>Spring</th>
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<tr>
<td>Geography 151</td>
<td>Geography 102</td>
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<tr>
<td>Geography 291</td>
<td>Geography 292</td>
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<tr>
<td>Land Utilization</td>
<td>Climatology</td>
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<tr>
<td>Special Problems in Geography</td>
<td>Cartography</td>
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<tr>
<td>Seminar in Urban Geography</td>
<td>Seminar in Political Geography</td>
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<tr>
<td>Graduate Seminar</td>
<td>Graduate Seminar</td>
</tr>
<tr>
<td>Thesis</td>
<td></td>
</tr>
</tbody>
</table>

b. Course offerings

1) The Geography Department currently lists twelve courses above the 100 level. They are as follows:

- 102 Climatology
- 111 Urban Geography
- 121 Cartography
- 132 Seminar in Political Geography
- 141 Geography of Europe
- 142 Geography of the Soviet Union
- 151 Land Utilization
- 212 Seminar in Urban Geography

   Alexander
   Buerle
   Mitchell
   Alexander
   Alexander
   Alexander
   Higbee
   Buerle
In addition, there are 4 seminars — 191, 192, Special Problems in Geography; and 291, 292, Graduate Seminars.

2) The University of Rhode Island includes a number of other departments whose facilities could be used in fulfilling the objectives of a candidate in Geography: the Graduate Program in Community Planning and Urban Development, and the departments of Food and Resource Economics, Economics, Sociology, and Political Science.

c. Faculty

The departmental faculty at present is equated to 3½ faculty members. Implementation of the graduate program is contingent upon the addition of another full-time faculty member to the staff.

2. M.B.S. (Master of Biological Sciences-interdepartmental)

a. Limitations. The Curricular Affairs Committee recommends that this degree be authorized until 1968 and that at that time the entire program shall be reassessed.

b. General statement

This program originated with the biology department of the University in 1959 because of the demand by biology teachers in the grade, secondary and high schools in Rhode Island for a program that could be taken outside of school time, and that would give the teacher an advanced degree in subject material.

It is an interdisciplinary program set up among three departments (Bacteriology, Botany, and Zoology, all authorized to pursue graduate work to the doctoral level), and it is adjusted to the changes being imposed on high school biology teaching by the BSCS (AIBS) courses and training as well as in the light of new teacher certification proposals in Rhode Island.

c. Requirements and Administration

1) 30 credits of biology courses above the elementary level; Bacteriology 1 must be included.

2) The final 3 credits must be in a special problems course for which a written report of the work conducted is required; this report to be written in an approved style.

3) Each candidate be required to have had as least one semester of inorganic and 1 semester of organic chemistry.
4) Distribution of courses to be the decision of the Committee to determine for each student.

5) The candidate's special problem paper must be presented orally and defended at a committee meeting after the written paper has been accepted. Open to everyone as in (9) below.

6) Program to be supervised by a committee of 3; one from each department, to be appointed for three-year terms by the Department Chairman. Chairmanship of the committee will be rotated annually.

7) A total of 6 transfer credits may be permitted towards the degree.

8) No language examination will be required.

9) A final comprehensive oral examination will be given after the 27 course credits have been completed. It will be given on the same basis and plan as the oral comprehensive examination for regular Master's Degrees, only it is to be more general except in the field of specialization. It is to be attended by the Committee together with invited guests at a time convenient to committee and candidate.

10) Time limit from matriculation to completion of degree work will be 6 years. Appeal for annual extension must be made in writing to the Dean.

III. Course changes, new courses, curriculum revisions and new undergraduate curriculums from the respective colleges.

A. From the College of Arts and Sciences.

1. Dept. of Art

a. course changes

1) change in description for Art 115-116 with the following catalog entry:

Art 115, 116 Art in its Cultural Context Semester I and II, 3 credits each

Intensive investigation of selected periods in the history of art, revealing inter-relationships between the visual arts and literature, drama, music, etc., through consideration of prevailing philosophical, social political, religious and economic conditions. (Lec.3) Prerequisite: Art 23 and 24 or permission of the department. Offered in alternate years, next offered 1965-66. Kane
2) change in Art 117 to provide two courses, Art 118, 119 with the following new titles, credits, and descriptions:

Study of selected examples of scholarship in variety of areas relating to art history, including connoisseurship, morphology, archaeology, primary and secondary documentation, iconology, psychoanalytical and sociological interpretations, aesthetic theories, etc. (Lec. 3) Prerequisite: Art 23 and 24. Kane

b. major revision of B.A. degree, Major in Art

Bachelor of Arts degree, Major in Art:

Major in Art. Students selecting this field of concentration must complete 33 credits in Art. Courses required of all majors include:

Art 1 and 2 Visual Design 6
Art 3 and 4 Intermediate Studio 6
Art 23 and 24 Survey of World Arts 6
Art 120 and 121 Advanced Projects 6

9 credits will also be selected from the following:

Art 11 Introduction to Advertising Art 3
Art 20 Understanding Art 3
Art 105 and 106 Advanced Studio 6
Art 115 and 116 Art in its Cultural Context 6
Art 118 and 119 Documentary History of Art 6

Majors will be required to register in 6 credits of Art during the freshman year and 6 credits during the sophomore year. If necessary, the requirements of Math 7 and Phil. 1 may be postponed to the sophomore year, and 9 credits of social science, laboratory science, or English literature may be postponed to the junior year. Art 20 may not be counted for credit if Art 23-24 has been previously completed. A minimum of 9 credits of non-studio study in Art is required. It is recommended that Art majors elect at least 3 credits in the allied field of Music or Theatre.

2. Dept. of Education

a. Twelve new courses
1) **Education 101. Development and Utilization of Instructional Materials.** Semester I or II, 3 credits

Methods of developing and making classroom application of selected materials: non-projected, projected, and audio. Specific attention to utilization in the social sciences, English, reading, the natural sciences, the humanities, arithmetic and mathematics. (Lec. 1, Lab. 4) Prerequisite: permission of department. Staff.

2) **Education 205. Principles and Practices of Leadership Development For Youth and Community Programs**  
   Semester I, 3 credits

Philosophy and interrelationships of vocational-technical and general education with extension education, and other community educational agencies; methods and techniques for increasing the effectiveness of organization. (Lec. 3) Prerequisite: permission of department. Shontz.

3) **Education 208. Comparative Education**  
   Semester I, 3 credits

Comparing systems of education, with particular emphasis upon Great Britain, France, U.S.S.R., Denmark and the United States; also emphasis upon emerging education in developing countries and significant educational experiences in foreign countries. (Lec. 3) Prerequisite: permission of the department. Felton.

4) **Education 262. Organizing and Administering Youth Programs**  
   Semester I, 3 credits

Planning, organization, instruction, and supervision of youth programs. Includes vocational-technical and general education in their relationship to extension education and other community agencies. Youth guidance and psychological development emphasized. (Lec. 3) Prerequisite: Ed. 205. Shontz.

5) **Education 263. Organizing and Administering Programs of Continuing Education for Adults**  
   Semester II, 3 credits

The planning, organization, instruction, and supervision of continuing education for adults in both vocational-technical and general education as conducted by extension education and other community agencies. (Lec. 3) Prerequisite: Ed. 205. Shontz.

6) **Education 267. Analyzing Community Needs and Resources for Adult Programs**  
   Semester I or II, 3 credits

Investigating the needs of a community in the areas of youth and adult education; studying its socio-economic resources; organizing a program for community development. (Lec. 3) Prerequisites: Ed. 262 and 263. Shontz.
7) Education 305. Higher Education in America Semester I, 3 crs.
A seminar in the history, current status, and pressing problems of American higher education. (Lec. 3) Horn.

8) Education 306. The Junior College Semester II, 3 credits
A study of the growth, development, and current status of the junior college in America. (Lec. 3) Horn.

9) Education 343. Social Studies Instruction in the Secondary School Semester I or II, 3 credits
Evaluation of theories, techniques, materials, research and current trends in the secondary social studies program. (Lec. 3) Prerequisite: Certification to teach. Staff.

10) Education 344. English Instruction in the Secondary School Semester I or II, 3 credits
Evaluation of the English program, dealing with its philosophy, techniques, materials, research, and current trends. (Lec. 3) Prerequisite: Certification to teach. Staff.

11) Education 371. Diagnostic and Remedial Techniques in Reading Semester I, 3 credits
Primary and secondary causes of reading disabilities; introduction to techniques for diagnosis; basic principles of remedial instruction and techniques for treatment of specific reading difficulties. Each student will be responsible for observing and working with a minimum of one case. (Lec. 3) Prerequisites: Ed. 224, Psych. 120 or equivalents. Aukerman.

12) Education 376. Seminar on Leadership Development for Youth and Community Programs Semester I or II, 3 credits
Each student will participate in selected youth and continuing education programs; problems encountered will be presented for group discussion, analysis, and resolution. (Lec. 3) Prerequisite: Ed. 267. Staff.

3. Dept. of English
a. course changes

1) change number, title, prerequisites and when offered for English 177 (171), 178 (272) with the following new catalog entries:
177, (171), 178, (272) English Literature: 1832-1914
Semesters I and II, 3 credits each
The poetry, non-fiction prose and selected novels of the early and mid-Victorian period. Emphasis will be on the work of Tennyson, Browning, Arnold, Carlyle, Dickens, Thackeray and others. Eng. 172. The literature of the later 19th Century and the period before the first World War. Emphasis will be on Rossetti, Swinburne, Meredith, Hopkins, Hardy, Housman, Wilde, and Shaw. (Lec. 3) Prerequisite: junior, senior or graduate standing. Engl. 171 not prerequisite for Engl. 172. Goldman.

b. Three new courses

1) 104s. The Recent British Novel Summer Session II, 1965
3 credits
A survey of the British novel since 1945. Emphasis upon the novels of Murdoch, Burgess, Golding, Durrell, Snow, Lessing, and Beckett (Lec. 3) Prerequisite: junior standing or above. Sharpe.

2) 105s. Poetry Since World War II (English and American)
Summer Session II, 1965, 3 credits
Forces and trends in contemporary poetry. Emphasis on the various schools and on the most important post-war poets, including Theodore Reethke, Robert Lowell, Howard Nemerov, Richard Wilbur, Denise Levertov, Robert Creeley, Philip Larkin, Ted Hughes, and others. (Lec. 3) Prerequisite: junior standing or above. Goldman.

3) 113. Literary Heritage of New England to 1860
Semester I, 3 credits
Literature of New England through the colonial, national, and romantic periods to the Civil War. Field trips will be taken to important literary sites when practicable. (Lec. 3) Prerequisite: English 41 or permission of department. Robinson

4. Dept. of Geology

a. course changes

1) change number and (in two cases) prerequisites:
   a) 10 Mineralogy to 110 (10) Mineralogy
   b) 15 Petrology to 115 (15) Petrology
   c) 51 Crystallography to 151 (51) Crystallography
   d) 125 Animal Micropaleontology to 225 (125) Animal Micropaleontology
   e) 126 Plant Micropaleontology to 226 (126) Plant Micropaleontology.
f) 131 Sedimentation to 231 (131) Sedimentation
   Prerequisite: Geol. 124, 130.

g) 132 Stratigraphy to 232 (132) Stratigraphy.
   Prerequisite: Geol. 231

2) change title only:

   a) 124 Invertebrate Paleontology to 124 Introduction to
      Paleontology.

b. Three new courses

   1) 100, 101. Seminar
      Semesters I and II, 1 credit each
      The students will be introduced to the literature of the
      various fields of geology, library research, and oral
      presentation of material. The subject of the seminar will
      change each semester it is offered to accommodate new
      concepts in geology, the history of geology, and the areas
      of current or special interest. The course will meet once
      a week and will be required of geology majors. Staff.

   2) 130. Introduction to Stratigraphy and Sedimentation
      Semester I, 3 credits
      The principles of sedimentation and stratigraphy, their
      interrelationships, and the standard terminology are
      introduced. Classic stratigraphic sections, their position
      in the continental framework and the sedimentary processes
      by which they were formed are stressed. (Lec. 2, Lab. 3)
      Prerequisite: Geology 8 and 21 or Geology 9, Geology 15, and
      51, or permission of the Department. In alternate years,

   3) 150. Geomorphology
      Semester II, 3 credits
      Introduction to classification of landforms, their development,
      distribution and associated geologic processes. Study of the
      cycles of development of coastal, glacial and fluvial land- 
      forms is emphasized. Laboratory includes landform analysis
      by topographic maps and aerial photographs. Field trips
      illustrate both local and regional geomorphic features.
      (Lec. 2, Lab. 3) Prerequisite: Geol. 8 or 9 or permission
      of Department. In alternate years, next offered 1965-66.
      Fisher.

   c. changes in curriculum in geology at baccalaureate level.

      1) deletion of Geology 231 and 232 (previously 131 and 132)
         from the list of courses required of geology majors.
2) addition of four courses required of geology majors.

Geology 100 - 101 Seminar
Geology 130 Introduction to Stratigraphy and Sedimentation
Geology 150 Introduction to Geomorphology

3) total number of credits required in the curriculum is increased by two.

4) The elective courses in geology and related fields have been spelled out to reduce confusion. The graduate courses 225, 226, 231, and 232 have been added as electives for advanced undergraduates. Geography has been added as a related minor field.

**B. S. Degree in Geology**

**First Semester**

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<td>Math 9</td>
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<td>Geology 8</td>
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**Second Semester**

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**Sophomore Year**

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<tr>
<td>Chemistry 1</td>
<td>4</td>
</tr>
<tr>
<td>Math 42</td>
<td>3</td>
</tr>
<tr>
<td>Physics 1</td>
<td>4</td>
</tr>
<tr>
<td>P. E. 3 M or 3 W</td>
<td>1</td>
</tr>
<tr>
<td>General Requirement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**Junior and Senior Years**

The following courses are to be scheduled in the junior and senior years.
General Requirements

History 3 and 4.................................... 6
Statistics 201..................................... 3
Modern Language through the intermediate level. (see language requirements of the College of Arts and Sciences)........... 6
General Requirement elective.................. 3

Required Geology Courses

Geology 100 Seminar............................ 1
Geology 101 Seminar............................ 1
Geology 110 Mineralogy......................... 3
Geology 115 Petrology........................... 3
Geology 124 Introduction to Paleontology... 3
Geology 130 Introduction to Stratigraphy and Sedimentation............. 3
Geology 140 Field Geology or Summer Camp........ 3
Geology 142 Structural Geology.............. 3
Geology 150 Intro. to Geomorphology........ 3
Geology 151 Crystallography.................. 3
Geology 162 Special Problems.................. 3

Elective courses in Geology and Related fields........... 15
Fifteen credits are to be selected from the following elective courses according to the interest of the student and the advice of faculty.

Geology 12 Economic Geology
225 Animal Micropaleontology
226 Plant Micropaleontology
231 Sedimentation
232 Stratigraphy
Botany 52 Genetics
124 Plant Ecology
23 Field Botany
Zoology 53 Invertebrate Zoology
121 Principles of Taxonomy
162 Animal Ecology
Or fifteen credits in any one of the following areas in courses numbered above curriculum requirements:

Chemistry
Physics
Mathematics
Engineering
Geography

Free elective - Student choice........................................ 3

5. Dept. of History

a. course changes

1) change descriptions for History 116 and 120 with the following new catalog entries:

a) 116. Civil War and Reconstruction Semester II, 3 credits

American History during the period 1850-1877, giving equal emphasis to the background of the Civil War, the war itself, and the social, political, and economic aspects of reconstruction. (Lec. 3) Prerequisite: Hist.13 and 14. In alternate years, next offered 1966-67. Klein.

b) 120. Twentieth Century America Semester II, 3 credits

United States History, 1917 to the present. Equal emphasis given to social, political and economic developments in the domestic sphere and to America's role as a world power since World War I. (Lec. 3) Prerequisite: Hist. 13 and 14. In alternate years, next offered 1965-66. Klein.

b. new courses

1) History 113s. History of New England to the Civil War. 3 credits

History of New England—political, social, economic and intellectual—through the Colonial, Revolutionary, and National periods, down to the Civil War. Stress will be placed on the contributions of New England to national growth as well as on those developments peculiar to New England itself. Field trips will be taken to important historical sites and museums. (Lec. 3) Prerequisite: History 13 or permission of Department. Metz.
2) 117. Emergence of Industrial America 1877-1917  
Semester I, 3 credits  

3) 137. Twentieth-Century Britain  
Semester II, 3 credits  
History of Britain since 1906. Emphasis upon her changing role as a World power, the impact of economic change on politics and society, and the development of the social welfare state. (Lec. 3) Prerequisite: Hist. 4 and Junior standing. In alternate years, next offered 1965-66. Gutchen.

4) 144. History of the Near East  
Semester II, 3 credits  
A survey of Near Eastern history covering the classical Islamic period, the origins of the Ottoman Empire, Europeanization of the area, collapse of the Ottoman Empire, and the establishment of new nations. (Lec. 3) Prerequisite: Hist. 3 and 4. In alternate years, next offered 1966-67. Gard.

6. Dept. of Journalism  
a. course changes  
1) change number, title and description of Journ. 135 (35), with the following catalog description:  

135 (35) Theory of Communication  
Semester II, 3 credits  
Study of the general principles of communication. Emphasis on the effects of mass communication. Course has value for anyone interested in the theory of communications and its significance for the individual and society. (Lec. 3)

7. Dept. of Languages (French)  
a. course changes  
1) substitute new descriptions for French 81 and 220s and 221s  
a) French 81 (61) Romanticism  
Semester I, 3 credits  
General survey of Romantic poets and prose writers. Authors studied are Chateaubriand, Constant, Lamartine, Musset, Vigny, Hugo, Sand. (Lec.3) Prerequisite: French 12. Waters.
b) French 220s  Romantic Prose  Summer Session, 3 credits

Detailed study of prose of the authors listed will illustrate the beginnings of the Romantic movement in France and its impact upon the intellectual activity of the 19th Century. Writers studied will include Mme. de Stuel, Chateaubriand, Senacour, Constant, Hugo, Vigny, Sainte-Beuve, Gautier, Musset, Sand. (Lec.3)

c) French 221s  Romantic Poetry and Drama  Summer Session, 3 credits

Detailed study of the poetry and drama of the authors listed will illustrate the beginnings of the Romantic movement in France and its impact upon the intellectual activity of the 19th Century. Writers studied will include Lamartine, Vigny, Musset, Hugo. (Lec.3)

8. Dept. of Mathematics

a. course changes

1) change number, title, credits, prereq., when offered, and/or descriptions as follows:

   a) 24. Solid Geometry to 25 Foundations of Euclidean Geometry
       with the following catalog listing:

       25 (24) Foundations of a Euclidean Geometry
               Semester II, 3 credits
       Rigorous development of elementary Euclidean plane
       geometry. Introduction to non-Euclidean geometries for
       comparison. Recommended for those planning to teach
       geometry in secondary schools. (Lec. 3) Staff.


   d) 114. Modern Algebra to 114. Introduction to Abstract Algebra
       with the following new catalog listing:

       114. Introduction to Abstract Algebra
               Semester II, 3 credits
       Definition and basic properties of groups, rings and
       fields. (Lec. 3) Prerequisite: Math 42 or equivalent.
e) 215. Linear Algebra to 115. Introduction to Linear Algebra with the following new catalog listing:

115 (215) Introduction to Linear Algebra
Semester II, 3 credits
Finite dimensional vector spaces. Matrices and determinants. (Lec. 3) Prerequisite: Math 42 or equivalent.

f) 122 Concepts of Geometry with the following new catalog listing:

122 Concepts of Geometry Semester II, 3 credits

A survey of geometrical systems including non-Euclidean, affine, and projective spaces and finite geometries. A modern view of Euclidean geometry will be presented using both synthetic and analytic methods. (Lec. 3) Prerequisite: Math 41 or equivalent. Alternate years, next offered in 1966-67.

g) 155. Topology to 125. Topology with the following new catalog listing:

125 (155) Topology Semester II, 3 credits

A study of abstract topological spaces and continuous functions. Generalizations of some classical theorems of analysis. (Lec. 3) Prerequisite: Math 43 or equivalent. Alternate years, next offered 1965-66.

h) 137. Advanced Calculus, add I to title, with the following new catalog listing:

137 Advanced Calculus I Semester I, 3 credits

Sets of points on the real line. Rigorous treatment of functions, limits, continuity, uniform convergence. The Riemann integral. Improper integrals. Functions of several variables. Jacobians. (Lec. 3) Prerequisite: Math 43 or equivalent.

i) 237. Advanced Calculus II to 138. Advanced Calculus II with the following new catalog description:

138 (237) Advanced Calculus II Semester II, 3 credits

Transformations, inverses, differential of a function, implicit function theorem, line and surface integrals, Stokes' theorem. (Lec. 3) Prerequisite: Math 137.
j) 142. Vector Analysis to 142. Vector and Tensor Analysis with the following new catalog description:

142 Vector and Tensor Analysis  Semester I, 3 credits

Linear transformations, covariant and contravariant vectors. Vector Calculus. Divergence and Stokes theorems. (Lec.3) Prerequisite: Math 44 or equivalent.

k) 54. Tensors to 143. Tensor Analysis and Applications, with the following new catalog listing:

143 (54) Tensor Analysis and Applications  Semester II, 3 credits

Tensor algebra, covariant differentiation, differential geometry, applications to mathematical physics. (Lec.3) Prerequisite: Math 142. Alternate years, next offered in 1965-66.

l) 152. Mathematical Statistics II to 152. Mathematical Statistics with the following new catalog description:

152 Mathematical Statistics  Semester II, 3 credits

A continuation of Math 151 in the direction of statistics. Theory of statistical inference, the standard tests, regression, analysis of variance. (Lec.3) Prerequisite: Math.151.

m) 149. Probability and Random Variables to 156. Probability with the following new catalog listing:

156 (149) Probability  Semester II, 3 credits


n) 161. Advanced Engineering Mathematics to 161. Methods of Applied Mathematics with the following new catalog description:

161 Methods of Applied Mathematics  Semester I, 3 credits

Series solutions to ordinary differential equations: Bessel, Legendre functions. Fourier series. Applications to boundary value problems of mathematical physics. (Lec.3) Prerequisite: Math 44 or equivalent.
o) 162. Theory of Complex Variables to 162. Functions of a Complex Variable with the following new catalog listing:

162. Functions of a Complex Variable  
Semester I, 3 credits  
A first course in the theory of functions of a single complex variable, including analytic functions, power series, residues and poles, complex integration, conformal mapping and applications. (Lec.3) Prerequisite: Math 43 or equivalent.

p) 171. Matrix Analysis with the following new catalog listing:

171. Matrix Analysis  
Semester II, 3 credits  
Maximization of functions of several variables, vectors, canonical forms, constrained maxima, functions of matrices, characteristic roots, stability theory. (Lec.3) Prerequisite: Math 43 or equivalent.

q) 172. Introduction to Numerical Analysis, time offered changed to Semester I.

r) 173. Principles of Digital Computers to 173. Machine Aided Analysis, with the following new catalog listing:

173. Machine Aided Analysis  
Semester II, 3 credits  

s) 182. Number Theory time given changed to Semester II and Alternate years, given in 1965-66.

t) 314. Abstract Analysis to 214. Abstract Analysis with the following new catalog listing:

214 (314) Abstract Algebra  
Semester I, 3 credits  
A detailed investigation of the important algebraic structures of contemporary mathematics. (Lec.3) Prerequisite: Math 114. Alternate years, next offered in 1966-67.
u) 338. Theory of Real Variables to 235. Functions of a Real Variable with the following new catalog listing:

235 (338) Functions of a Real Variable
Semester I, 3 credits
The elements of set theory. The real number system. Continuity. Sequences and series of functions. Differentiation. Riemann-Stieltjes integration. (Lec.3)
Prerequisite: Math. 137. Alternate years, next offered in 1965-66.

v) 350. Advanced Probability to 250 Advanced Probability with the following new catalog listing:

250 (350) Advanced Probability Semester I, 3 credits
Investigation in depth of a topic in foundations or applications of modern probability theory. (Lec.3)
Prerequisite: Math 156. Alternate years next offered in 1965-66.

w) 261. Advanced Engineering Mathematics to 261 Advanced Applied Mathematics with the following new catalog listing:

261 Advanced Applied Mathematics Semester II, 3 credits
Linear Spaces, Theory of Operators, Green's Functions, Eigen value problems of ordinary differential equations. Application to Partial Differential Equations. (Lec.3)
Prerequisite: Math. 161. Alternate years, next offered in 1965-66.

x) 262. Complex Function Theory with the following new catalog listing:

262. Complex Function Theory Semester I, 3 credits

b. Six new courses

1) 217. Topics in Abstract Algebra Semester II, 3 credits
The study in depth of a topic of current interest in abstract algebra. (Lec.3) Prerequisite: Math. 214. Alternate years, next offered 1966-67.
2) 236. Measure Theory and Integration  Semester II, 3 credits

Point set theory. Measure and measurable functions. Lebesgue integration. Introduction to functional analysis. (Lec.3)
Prerequisite: Math. 235. Alternate years, next offered in 1965-66.

3) 272. Numerical Analysis  Semester II, 3 credits


4) 291, 292. Special Problems  Semesters I or II, 1-3 credits each

Advanced work, under the supervision of a member of the Department and arranged to suit the individual requirements of the student.

5) 301. Seminar  Semester I or II, 3 credits

A graduate seminar in the field of specialization of a member of the Department. Prerequisite: Permission of the Department.

c. deleted courses

1) 112. Graphical and Numerical Computation
2) 116. Theory of Equations
3) 200. Special Functions
4) 216. Linear Transformations

d. change in requirements for B.A. in Mathematics

Bachelor of Arts

Major in Mathematics. Students selecting this field of concentration must complete 36 credits, excluding Math. 9, within the Department of Mathematics, including:

I. Math 41, 42, 43, and 137. Students with substantial knowledge of calculus may request permission of the Department to begin study at a higher level than Math. 41.

II. Math. 53 -- Foundations of Mathematics

III. Math. 114 -- Introduction to Abstract Algebra
or
Math. 115 -- Introduction to Linear Algebra

IV. Math. 122 -- Concepts of Geometry or Math 125 -- Topology
9. Dept. of Music  
    a. course changes

1) change heading of series Music 71-80 to Music Ed. 71-80;  
    include "(secondary)" in title with following new catalog  
    listing:

    71-80. Voice and Instruments (Secondary)  
    Semester I, II, 1 credit each  
    Instruction open only to students in Music Education curriculum. Selection may be in any order designated as follows:  
    Music 71-72 Piano, Music 73-74 Voice, Music 75-76 Strings,  
    Music 77-78 Woodwinds, Music 79-80 Brass.

2) change number of 91-98 series to 91-94 and 191-194 with the  
    following new catalog listings:

a) 91-94. Ensemble  
    Semesters I and II, 1 credit each  
    Performance of literature for orchestra, band, chorus and  
    small (chamber music) ensemble. Registration open to any  
    qualified student upon consent of the instructor. Registration numbered consecutively and lettered to designate the  
    organization. (Example: 93A indicates third semester of  
    Orchestra, 91E, first semester Ensemble, 92B, second semester  
    Band).

b) 191-194. Ensemble  
    Semesters I and II, 1 credit each  
    A continuation of Music 91-94 at the upper level. (Example:  
    191C indicates fifth semester course, junior year, etc.)  
    Prerequisite: Music 91-94 or equivalent. Staff.

3) change number and heading of Ed. 19, 20 to Music Education  
    119, 120.

b. new courses

1) 61-68; 161-168 Strings, Woodwinds, Brass, Piano or Voice

a) 61-68. Strings, Woodwinds, Brass, Piano or Voice  
    Semesters I and II, 3 credits each  
    Instruction in vocal or instrumental music. Course  
    registration numbered consecutively and lettered to  
    designate instrument. (Example: 61V indicates first  
    semester Voice - 64B indicates fourth semester Brass,  
    etc.) (Lec.1) Staff.
b) 161-168. Strings, Woodwinds, Brass, Piano or Voice
Semesters I and II, 4 credits each
A continuation of 61-68 at advanced level. Prerequisite:
Music 61-64 or equivalent.

2) 108. Opera. Semester II, 3 credits
History of the opera from its beginnings in Florence at the
turn of the 17th Century to the present. (Lec. 3) Alternate
years, next offered 1965-66. Prerequisite: Music 21, 22.
Staff.

3) 111. Choral Conducting. Semester I, 2 credits
Special techniques for direction and rehearsal of choral
groups. Problems of tone, diction and balance and the
organization of school, church, community and professional
groups. Analysis of major choral works from the conductor's
standpoint. (Lec. 2) Prerequisite: Music 13, 14, 15, 16.
Abusamra

4) 119. Composition. Semester I, 2 credits
Continuation of Music 118, stressing original composition in
larger forms and study of twentieth century techniques.
(Lec. 2) Prerequisite: Music 118. Offered in alternate years.
Custer.

5) 123. Orchestration. Semester II, 2 credits
Continuation of Music 122, emphasizing score reading and
orchestral styles. Transcription for orchestra of a
major keyboard work required as a semester project. Offered
in alternate years, next offered 1965-66. (Lec. 2) Prerequisite:
Music 122. Custer.

6) 127, 128. Sixteenth-Century Counterpoint
Semesters I and II, 2 credits each
Music 127: A practical study of modal polyphony based on the
style of Palestrina and his contemporaries, covering cantus
firmus techniques, imitation and various other contrapuntal
devices in two-voice textures.
Music 128: Continuation of Music 127. Writing in modal
polyphonic textures of three to six voices. Motet and
madrigal composition. (Lec. 2 each) Prerequisite: Music 15
7) 131. The Baroque Era. Semester I or II, 3 credits

A study of the music of the so-called thorough-bass period (ca. 1600-1750) to include the emergence of opera and oratorio, autonomous instrumental music and the concertato style, culminating in the works of Bach and Handel. (Lec.3) Prerequisites: Music 21, 22. Giebler.

8) 132. The Classical Era. Semester II, 3 credits

The music of the period ca. 1725-1815, beginning with the decorative gallant style of the rococo composers and culminating in the expressive architectonic textures in words of Haydn, Mozart and early Beethoven. (Lec.3) Prerequisite: Music 21, 22. Giebler.

9) 133. The Romantic Era. Semester I, 3 credits

A study of the music of the 19th Century within the context of the Romantic movement (1815 to 1875). Major composers and their works in various media are considered with respect to their historical significance. Prerequisite: Music 21, 22. (Lec.3) Custer.

10) 141. Special Projects. Semester I or II, 3 credits

Advanced work in research or of a creative nature in the fields of history, theory and composition. Advisory basis, permission of department and instructor required for registration. Prerequisite: completion of most advanced undergraduate course in field. Staff.


Semester I and II, 2 credits each

Music 181: An intensive survey of keyboard literature from 1700 to 1825. Analysis of styles and forms and their implication for performance. Study of teaching methods and materials. (Lec. 2) Prerequisite: Music 16 and 22 and Music 52 or 62 or permission of instructor. (alternate years.)

Music 182: A continuation of Music 181 involving literature from the 18th Century to the present. (Lec.2) Prerequisite: Music 16, 22 and Music 52 or 62. Rankin.

c. new curriculum for Bachelor of Music degree with concentrations in instrumental, music history and literature, and music education. Note: present curriculum leading to the B.A. degree with a major in music will be retained; B.S. in music education will be discontinued.
Bachelor of Music Curriculum

A. General Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1, 2</td>
<td>6</td>
</tr>
<tr>
<td>History 3, 4</td>
<td>6</td>
</tr>
<tr>
<td>Music 13,14,15,16,117</td>
<td>15</td>
</tr>
<tr>
<td>Music 1, 22</td>
<td>6</td>
</tr>
<tr>
<td>Liberal Arts Elective</td>
<td>18</td>
</tr>
<tr>
<td>English Literature</td>
<td></td>
</tr>
<tr>
<td>Fine Arts (not music)</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>Physical or Biological Science</td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td></td>
</tr>
<tr>
<td>Philosophy</td>
<td></td>
</tr>
<tr>
<td>Free Electives (not music)</td>
<td>12</td>
</tr>
</tbody>
</table>

Note:

- History Majors - 15 hrs. language required may be by advanced placement
- Voice Majors - 15 hrs. language required may be by advanced placement
- Mus.Ed. Majors - State certification requirement, 18 hrs. in Education and Music Education

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education</td>
<td>4</td>
</tr>
<tr>
<td>Mil. Sci. or Elective</td>
<td>4</td>
</tr>
</tbody>
</table>

\[125 (71 + 54)\]

B. Special Requirements in Field of Concentration

1. Instrumental Music

<table>
<thead>
<tr>
<th>Course</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus. 61-64 - Applied (Inst.)</td>
<td>3 ea.</td>
</tr>
<tr>
<td>Mus. 161-164 - Applied (Adv.)</td>
<td>4 ea.</td>
</tr>
<tr>
<td>Mus. 21 - Music History</td>
<td>3</td>
</tr>
<tr>
<td>Mus. 112 - Conducting (Inst.)</td>
<td>2</td>
</tr>
<tr>
<td>Mus. 122 - Orchestration</td>
<td>3</td>
</tr>
<tr>
<td>Mus. 118 - Composition</td>
<td>3</td>
</tr>
<tr>
<td>Mus. 120 - 18th Cent.Counterpoint</td>
<td>3</td>
</tr>
<tr>
<td>*Mus. 91-94 A or B and</td>
<td>8</td>
</tr>
<tr>
<td>191-194 A, B, or Ensemble Elec.</td>
<td>4</td>
</tr>
</tbody>
</table>

*Mus. 91-94 and 191-194 Ensemble includes: A - orchestra; B - band; C - chorus; E - Chamber music or accompanying
### 3. Vocal Music

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus. 61-64</td>
<td>Applied (Voice)</td>
<td>3 ea.</td>
</tr>
<tr>
<td>Mus. 51-54</td>
<td>Applied (Piano)</td>
<td>2 ea.</td>
</tr>
<tr>
<td>Mus. 21</td>
<td>Music History</td>
<td></td>
</tr>
<tr>
<td>Mus. 111</td>
<td>Conducting (Choral)</td>
<td></td>
</tr>
<tr>
<td>Mus. 91-94 C</td>
<td>Ensemble Elect.</td>
<td></td>
</tr>
</tbody>
</table>

**Elective**

- **Note**: Language requirements 15 hrs. - choice of any 3 or more languages at any level satisfies this requirement.

### 4. Music Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus. 51-54</td>
<td>Applied (Inst.or Voice)</td>
<td>2 ea.</td>
</tr>
<tr>
<td>Mus. 51-54</td>
<td>Applied (Piano)</td>
<td>2 ea.</td>
</tr>
<tr>
<td>Mus. 21</td>
<td>Music History</td>
<td></td>
</tr>
<tr>
<td>Mus. 111</td>
<td>Conducting (Choral)</td>
<td></td>
</tr>
<tr>
<td>Mus. 91-94 C</td>
<td>Ensemble Elect.</td>
<td></td>
</tr>
</tbody>
</table>

**Elective**


### 5. Music Theory or Composition

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus. 51-54</td>
<td>Applied (Instrument or Voice)</td>
<td>2 ea.</td>
</tr>
<tr>
<td>Mus. 51-54</td>
<td>or Mus. Ed. 71-80 (Applied Minor)</td>
<td></td>
</tr>
<tr>
<td>Mus. 21</td>
<td>Music History</td>
<td></td>
</tr>
<tr>
<td>Mus. 118</td>
<td>Composition</td>
<td></td>
</tr>
<tr>
<td>Mus. 120</td>
<td>18th Cent Counterpoint</td>
<td></td>
</tr>
<tr>
<td>Mus. 122</td>
<td>Orchestration</td>
<td></td>
</tr>
<tr>
<td>Mus. 127-128</td>
<td>16th Cent Counterpoint</td>
<td></td>
</tr>
<tr>
<td>Mus. 141</td>
<td>Special Projects (Analysis, Research, Orch., Comp.)</td>
<td>3</td>
</tr>
<tr>
<td>Mus. 91-94 A, B, C Ensemble</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**Elective**

- **Note**: Concentration in composition requires Mus. 119 & 123 2 cr. ea.

### 6. Music History and Literature

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus. 51-54</td>
<td>and 151-154 - Applied (Inst.or Voice)</td>
<td>2 ea.</td>
</tr>
<tr>
<td>Mus. 21</td>
<td>Music History</td>
<td></td>
</tr>
<tr>
<td>Mus. 118</td>
<td>Composition</td>
<td></td>
</tr>
<tr>
<td>Mus. 120</td>
<td>18th Cent Counterpoint</td>
<td></td>
</tr>
<tr>
<td>Mus. 122</td>
<td>Orchestration</td>
<td></td>
</tr>
<tr>
<td>Mus. 127-128</td>
<td>16th Cent Counterpoint</td>
<td></td>
</tr>
<tr>
<td>Mus. 141</td>
<td>Special Projects (Analysis, Research, Orch., Comp.)</td>
<td>3</td>
</tr>
<tr>
<td>Mus. 104</td>
<td>Intro. to Contemporary Musical History</td>
<td></td>
</tr>
<tr>
<td>Mus. 141</td>
<td>Special Project</td>
<td>0-6</td>
</tr>
<tr>
<td>Mus. 91-94 A, B, C Ensemble</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**Elective**

- **Note**: 15 hrs. language with intermediate level in at least one language.

### 10. Dept. of Political Science

#### a. Course Changes

1) change descriptions for Pol. Sci. 141, 142 with the following new catalog listings:
a) 141. Political Theory, Ancient and Medieval  
   Semester I, 3 credits  
   Western political thought from Plato to Calvin.  
   Emphasis upon the basic concepts and persistent ques-
   tions of political theory and their relevance to 
   contemporary problems through systematic analyses of 
   major works. (Lec.3) Required for majors in Political 
   Science. Schochet.

b) 142. Political Theory, Modern and Contemporary  
   Semester II, 3 credits  
   Continuation of 141. Hobbes to the present. (Lec.3) 
   Required for majors in Political Science. Schochet.

b. curriculum changes

1) delete Pol.Sci. 153 as a requirement for majors; change 
   relevant statement in description to read "strongly 
   recommended for undergraduates who plan to do graduate 
   work and required for graduate students."

2) change statement concerning additional credits in major 
   field for majors in Political Science (see p. 51, 1964 
   Catalog) to read:

   An additional 18 credits will reflect the emphasis desired 
   by the student, though he should select at least one course 
   in three of the following four fields:

   American Politics and Public Administration
   American Law and Theory
   International Relations
   Comparative Government

c. four new courses

1) 134. American Foreign Policy  Semester II, 3 credits 

   An analysis of the institutions, techniques and instrumen-
   tions of policy-making and the execution of foreign policy. Some 
   attention to the historical context and the role of inter-
   national organization to foreign policy. (Lec.3) Prere-

2) 163. American Civil Liberties  Semester II, 3 credits 

   Survey of the interpretations of the rights guaranteed 
   individuals by the American Constitution. Emphasis will 
   be placed on racial equality, church-state relations, 
   freedom of speech and association, and fair trials. 
   Prerequisite: Pol. Sci. 13. Leiter.
3) 181, 182. Political Science Seminar
Semesters I and II, 3 credits each
Intensive studies in various important fields in political science. Class discussion of assigned readings and student reports. Emphasis will be placed on independent research. (Lec.3) Prerequisites: 6 credits in Political Science beyond 13 and 16. Staff.

11. Dept. of Physical Education for Men.

a. new courses

1) 269. Physical Education for the Atypical Child
Semester I, 3 credits
Limitations, needs, learning characteristics of the physically and mentally handicapped child, which apply to verbal response, body control, kinethesis and neuromuscular acceptance are studied. Research reviewed & synthesized for a practical problem. (Lec.3) Prerequisites: Zool 21, 42 (Kinesiology recommended). Slader.

2) 352. Administration of Physical Education
Semester II, 3 credits
Problems and procedures for administering a physical education program studied from the viewpoint of the physical education administrator, the school administrator and the faculty. Emphasis is placed upon the study of administrative cases. (Lec.3) Prerequisite: Phys.Ed. 52M. Drowes.

12. Dept. of Physical Education for Women

a. new courses

1) 95W. Directed Study
Semester I and II, 3 credits
Honors thesis or equivalent project, relating to Physical Education major. With faculty guidance, the student will determine problem and develop plan of study. Project may be completed in either one to two semesters, maximum credit three. Prerequisite: Admission to the Honors Program of the Department of Physical Education for Women. Staff.

b. deleted course

1) P.Ed. 15W Tests and Measurements in Physical Education for Women.

c. curriculum changes for women students

1) substitute P.Ed. 60M (W) First Aid (second semester, freshman year) for P.Ed. 65M (W) Elementary Physical Diagnosis and First Aid.
2) substitute P.Ed. 51M (W) Tests and Measurements, for P.Ed. 15W. (deleted above)

13. Dept. of Psychology

a. curriculum changes for majors

1) increase total credits in Psychology by one; specify 13 credits in Psychology; student elects 15 credits in major courses over 10. Catalog statement will read:

**Major in Psychology.** Students selecting this field of concentration must complete a minimum of 28 hours in psychology, including:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology 7</td>
<td>General Psychology</td>
<td>3 credits</td>
</tr>
<tr>
<td>Psychology 10</td>
<td>Quantitative Methods in Psych.</td>
<td>3 credits</td>
</tr>
<tr>
<td>Psychology 71</td>
<td>History and Systems of Psych.</td>
<td>3 credits</td>
</tr>
<tr>
<td>Psychology 60</td>
<td>Experimental Psychology</td>
<td>4 credits</td>
</tr>
</tbody>
</table>

The remaining 15 hours may be chosen from any other psychology courses numbered over 10. Students majoring in psychology should complete their biology and mathematics requirements in the freshman year.

14. Dept. of Sociology

a. one new course

1) 131. Sociology of Politics Semester I, 3 credits

Social and ideological contexts of contemporary politics from the perspective of sociological theories of mass and pluralist society. Application of these viewpoints to problems of participation of masses, classes and power groups in politics. Conditions and outlook for democracy in large societies. (Lec.3) Prerequisite: Soc. 1; 6 other credits in sociology. Kleinberg.

b. course changes

1) change numbers only to:

<table>
<thead>
<tr>
<th>Old Course</th>
<th>New Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>57 (17) Peoples of the Far East</td>
<td>79 (19) The Family</td>
<td></td>
</tr>
<tr>
<td>86 (26) Minority and Majority Relations</td>
<td>87 (27) Juvenile Delinquency</td>
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<tr>
<td>104 (24) Criminology</td>
<td>112 (12) Rural Sociology</td>
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<tr>
<td>121 (21) Urban Sociology</td>
<td>123 (11) Social Pathology</td>
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<tr>
<td>148 (28) Population Problems</td>
<td>192 (102) History of Sociological Thought</td>
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<tr>
<td>193 (103) Contemporary Sociological Theory</td>
<td>195 (105) Theory and Methods of Sociological Research</td>
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<tr>
<td>196 (106) Advanced Sociological Research</td>
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</tbody>
</table>
B. From the College of Agriculture

1. Dept. of Agric. Chem.
   a. new courses

   1) 131. The Biochemistry of Foods. Semester I, 3 credits

   An introduction to food science with special emphasis on the chemistry and biochemistry of the essential components common to foods of plant and animal origin. (Lec. 3) Prerequisite: Organic Chemistry. Simpson and Rand.

   2) 132. The Biochemistry of Foods Semester II, 3 credits

   Major emphasis on the problems of biochemical deterioration of foods and the principles of unit processes for the preservation of foods. Field trips and laboratory sessions will be scheduled. (Lec. 2, Lab. 3) Prerequisite: Organic Chemistry, Simpson and Rand.

2. Dept. of Agronomy and Mechanized Agriculture
   a. course changes

   1) change title number and description of Agron. 51 Soil Conservation to Agron. 151 Soil and Water Conservation with the following new catalog listing:

   151 (51). Soil and Water Conservation. Semester I, 3 credits

   Principles and practices of erosion control, soil improvement and watershed protection in development of soil and water resources. Study of conservation under field conditions. (Lec. 2, Lab. 2) In alternate years, next offered 1965-66. Bell. Prerequisite: Agron. 12 or permission of instructor.

   2) change number, title, and description of Mech.Agric.42 (11) with the following new catalog listing:

   42 (11) Power Equipment Semester II, 3 credits

   Functional components of machines used in crop production and turf management; principles and techniques of selection, operation, adjustment and care of machinery. (Lec. 2, Lab. 2) In alternate years, next offered 1965-66. McKiel.

   3) combine Mech.Agric. 32 and 52 into Mech.Agric. 84 with the following catalog listing:
84 (32 and 52) Structures Semester II, 3 credits
Principles of design and construction of farm and utility buildings; requirements, methods and materials of construction, types of structures; environmental control; sewage disposal. (Lec.3) McKiel.

b. new courses

1) 122. Crop Ecology Semester II, 3 credits
Study of environmental and soil factors affecting crop growth. Influence of management, crop rotations and weed competition. Geographic distribution of important world crops and factors affecting production. Student project required. (Lec.3) Prerequisite: Biol. 1 or Bot. 1; Agronomy 7 and Agronomy 12 or equivalent. In alternate years, next offered 1965-66. Wakefield.

2) 142. Advanced Turfgrass Management Semester II, 3 credits
Establishment and maintenance practices for specialty turfgrass areas such as golf courses, lawn tennis courts, bowling greens, athletic fields, public parks, industrial and institutional grounds, airports and roadsides. Some consideration is given to design, construction specifications and construction and maintenance budgets. (Lec.3) Prerequisite: Agronomy 41 or equivalent. Skogley.

c. deleted courses

1) Agron. 22 Field Crops
2) Agron. 181 Statistical Methods for Agronomic Research.

3. Dept. of Animal Pathology

a. course changes

1) change An. Path. 132 Animal Virology (Lec.3, Lab.3) to 2 courses: An. Path. 234 and An. Path. 236 with the following catalog listings:

234 (132) Animal Virology Semester II, 3 credits
Basic properties, classification and evolution of animal viruses. Individual agents are studied in detail. (Lec.3) Prerequisite: Bact. 132, Bact. 233 and permission of department. Yates and Chang.
236. Virology Laboratory  Semester II, 2 credits

Methods employed for the investigation of the biological, physical, and chemical properties of animal viruses (Lab. 6)  
Prerequisite: A.P. 234. However, A.P. 234 and A.P. 236 may be taken simultaneously. Yates and Chang.

4. Dept. of Animal Science

a. course changes

1) change Poultry Sci. 142 to An. Sci. 142 with new catalog listing:

142. Animal Breeding  Semester II, 3 credits

Consideration of the inheritance of economic and morphological characteristics of domestic animals and poultry. Emphasis on development of criteria for selection and development of genetically sound breeding programs (Lec. 3) Prerequisite: Gen. 1. or Bot. 52. L. T. Smith.


101, 102 Animal Science Seminar  Semesters I & II, 1 credit each. 
Preparation and presentation of papers on recent scientific developments and selected subjects in animal and poultry science and dairy manufacturing. (Lec. 1) Prerequisite: senior standing. Staff.

3) combine An. & DS 191, 192 and P.S. 191, 192 into An.Sci. 191, 192 Special Projects with new catalog listing:

191, 192 Special Projects  Semester I and II, Credits 1-3 each  
Special work to meet individual needs of students in various fields of Animal and Poultry Science, and Dairy Manufacturing. (Lec. and/or Lab. according to nature of project.) Prerequisite: Permission of department. Staff.

b. new courses

1) 52. The Pleasure Horse  Semester II, 2 credits

The principles of light horse management and horsemanship, including appreciation and use (Lec. 1, Lab. 2) Open to all students interested in the pleasure horse. Henderson.
2) 53. Livestock Science  
Semester I, 3 credits  
A study of the problems relating to the scientific production and management of beef cattle, sheep, and swine. (Lec. 2, Lab. 2). Henderson.

3) 300. Experimental Design  
Semester I, 3 credits  
Application of statistical methods to biological research and experimentation. Discussion of experimental situations for which various designs are most suitable. Prerequisite: Stat. 201. In alternate years, next offered 1965-66. L.T. Smith

c. deleted courses

1) An. and D. Sci. 51, Beef Cattle and Horses  
2) An. and D. Sci. 53, Sheep and Swine

5. Dept. of Food and Resource Economics

a. course changes

1) change title of Agr. Econ. 35, Economics of Agric. Production to F. & R. Econ. 35, Food and Resource Production Economics with new description:

Food and Resource Economics 35, Food and Resource Production Economics  
Semester I, 3 credits  
The use of economics in planning resource combinations at the firm level. Factor-product, factor-factor, product-product relationships are covered. Also risk, uncertainty and planning techniques. (Lec. 3) Prerequisites: F. & R. Econ. 5 or Econ. 6. Rohrholm.

2) change Ag. Econ. 101, 102 to Food and Resource Econ. 101, 102, with new description:

101, 102 Senior Seminar  
Semester I and II, 1 credit each  
Important current problems in the area of food and resource economics and in research methods. (Lec. 1) Prerequisite: senior standing. Rohrholm and Staff.

3) change Ag. Econ. 291, 292 to Food and Resource Econ. 291, 292 with new description:

291, 292 Special Projects  
Semesters I and II, 3 credits each  
Advanced theory of agricultural marketing, agricultural and public policy, advanced production economics, advanced resource economics and advanced theory of choice. Prerequisite: permission of department. Staff.
4) change Ag. Econ. 303 to Food and Resource Econ. 303 with 
new description:

303 Advanced Studies  Semesters I or II, 3 credits

Application of economic theory and methods to the solution of 
problems in the area of food and resource economics. (Lec.3)
Staff.

6. Dept. of Forestry

a. new course

1) 106 Forest Influences  Semester I, 3 credits

The effects of forest vegetation on local climate, the 
hydrologic cycle, soil, and man; relationships to water 
yield and runoff. Measurement of precipitation, runoff and 
other variables. (Lec. 3) Prerequisite: Junior standing; 
one course in field botany recommended. In alternate years, 

b. deleted courses

1) Forestry 10 Woodland Practices  
2) Forestry 31 Wood Utilization

7. Dept. of Horticulture

a. course changes

1) combine Hort. 21 and 22 in Hort 24 with new catalog listing:

24 (21 and 22) Vegetable Crops  Semester II, 3 credits

Differences in management, culture, varieties and harvesting 
of vegetables for fresh market, processing, seed production, a 
and roadside sales. The influence of soil characteristics 
and environment control in vegetable production. Prerequisite: 
Bot. 1 or Biol. 1 (Lec. 2, Lab. 2) Griffiths.

b. new courses

Semester I, 3 credits

Plant nutrition in the production of greenhouse and ornamental 
crops; essential mineral element deficiency and toxicity 
symptoms, nutrient accumulation, radioactive tracers, arti-
ficial media, and fertilization practices. (Lec. 2, Lab. 2) 
Prerequisite: Botany 42 or equivalent. In alternate years, 
2) 276. Advanced Mineral Nutrition of Plants
Semester II, 3 credits
Uptake, transport, and metabolic utilization of mineral
nutrients. The essentiality of various anions and cations
in metabolic activity and their utilization in functional
plant compounds. (Lec. 3) Prerequisites: Botany 42 or
equivalent and organic chemistry. In alternate years, next

C. From the College of Business Administration

1. Dept. of Economics
a. course changes

1) change title and description for Econ. 127 with new catalog
listing:

127. Intermediate Economic Theory: Income and Employment
Semesters I and II, 3 credits
Measurement of National Income. Theory of the determination
of the general level of income, employment, and prices.
Business fluctuations. (Lec. 3) Prerequisite: Economics
26 or permission of instructor. Rayack.

b. curriculum changes

1) delete Econ. 142 and substitute Econ. 127 where Econ. 142
appears in curriculum.

D. From the College of Engineering

1. Changes to accommodate to general education requirements.

a. College of Engineering as a whole

1) new curriculum for freshman year involving

a) moving Econ. 23 from the freshman year
b) adding History 3 and 4
c) substituting M.E. 1 and M.E. 2 for M.E. 7 (see below)
to allow room for History 3 and 4.
FRESHMAN YEAR FOR ALL ENGINEERING STUDENTS

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Chem. 1 or 3</td>
<td>General Chemistry</td>
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<tr>
<td>Engr. 1</td>
<td>Introduction to Engineering</td>
</tr>
<tr>
<td>Engl. 1</td>
<td>Composition</td>
</tr>
<tr>
<td>Hist. 3</td>
<td>Western Civilization to 1715</td>
</tr>
<tr>
<td>Math 41</td>
<td>Introductory Calculus with Analytic Geometry</td>
</tr>
<tr>
<td>M.E. 1</td>
<td>Engineering Graphics I</td>
</tr>
<tr>
<td>M.S. 1</td>
<td>Military Science (Optional)</td>
</tr>
<tr>
<td>Phys.Ed.1M or 1 W</td>
<td>Physical Activity</td>
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<td></td>
<td><strong>Total Credits</strong></td>
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Second Semester

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Chem. 10</td>
<td>General Chemistry</td>
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<tr>
<td>Engl. 2</td>
<td>Literature and Composition</td>
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<tr>
<td>Hist. 4</td>
<td>Western Civilization since 1715</td>
</tr>
<tr>
<td>Math 42</td>
<td>Intermediate Calculus with Analytic Geometry</td>
</tr>
<tr>
<td>M.E. 2</td>
<td>Engineering Graphics II</td>
</tr>
<tr>
<td>M.E. 62</td>
<td>Statics</td>
</tr>
<tr>
<td>M.S. 2</td>
<td>Military Science (Optional)</td>
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<tr>
<td>Phys.Ed.2M or 2W</td>
<td>Physical Activity</td>
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<td><strong>Total Credits</strong></td>
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</table>

*Students not electing Military Science will be required to make up the 4 credits by taking a total of 4 credits of general electives prior to graduation. Normally, these may be taken during the junior and/or senior year.

**b. Dept. of Chemical Engineering**

1) special permission to reduce by 6 the total number of credits in the areas of Social Science and the Humanities in the general education core curriculum.

2) drop Speech 1 from curriculum.
CHEMICAL ENGINEERING CURRICULUM

FRESHMAN YEAR
(Common to all Engineering curriculums)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>cr.</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>Chem. 1 - General Chemistry</td>
<td>4</td>
<td>Chem. 10 - General Chemistry</td>
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</tr>
<tr>
<td>Engl. 1 - Composition</td>
<td>3</td>
<td>Engl. 2 - Literature &amp; Comp.</td>
<td>3</td>
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<tr>
<td>Engr. 1 - Intro. to Eng.</td>
<td>1</td>
<td>History 4 - Hist. of Western Civ.</td>
<td>3</td>
</tr>
<tr>
<td>History 3 - Hist. of Western Civ.</td>
<td>3</td>
<td>Math 42 - Intermed. Calc. &amp; Anal. Geom.</td>
<td>3</td>
</tr>
<tr>
<td>M.E. 1 - Engineering Graphics I</td>
<td>2</td>
<td>M.E. 62 - Statics</td>
<td>3</td>
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<tr>
<td>Phys. Ed. 1 - Phys. Activity</td>
<td>1</td>
<td>Military Science (Optional)</td>
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<tr>
<td>Military Science (Optional)</td>
<td>18</td>
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SOPHOMORE YEAR

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<tbody>
<tr>
<td>Ch.E. 11 - Intro. to Chem.Eng.</td>
<td>2</td>
<td>Ch.E. 12 - ChemProcess Calc.</td>
<td>2</td>
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<tr>
<td>Chem. 12 - Quant. Analysis</td>
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<td>Chem. 31 - Physical Chem.</td>
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<td>Several Var.</td>
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<td></td>
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<tr>
<td>M.E. 63 - Dynamics</td>
<td>3</td>
<td>Phys. Ed. 4 - Phys. Activity</td>
<td>1</td>
</tr>
<tr>
<td>Phys. 23 - Intro. to Acoustics &amp; Optics</td>
<td>3</td>
<td>Military Science (Optional)</td>
<td>1</td>
</tr>
<tr>
<td>Military Science (Optional)</td>
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JUNIOR YEAR

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<tbody>
<tr>
<td>Ch.E. 42 - Intro. to Trans.Phen.</td>
<td>4</td>
<td>Ch.E. 22 - Proc.Analysis</td>
<td>1</td>
</tr>
<tr>
<td>Chem. 21 - Organic Chemistry</td>
<td>4</td>
<td>Ch.E. 25 - Proc.Dyn. &amp; Control</td>
<td>3</td>
</tr>
<tr>
<td>Chem. 32 - Physical Chemistry</td>
<td>4</td>
<td>Ch.E. 32 - Phys. Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Chem. 22 - Organic Chemistry</td>
<td>4</td>
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</table>

SENIOR YEAR

<table>
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<th>First Semester</th>
<th>cr.</th>
<th>Second Semester</th>
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</thead>
<tbody>
<tr>
<td>Ch.E. 28 - Industrial Plants</td>
<td>1</td>
<td>Ch.E. 46 - Chem.Eng. Lab.</td>
<td>2</td>
</tr>
<tr>
<td>Ch.E. 45 - Chem.Eng. Lab.</td>
<td>2</td>
<td>Ch.E. 52 - Plant Design &amp; Econ.</td>
<td>3</td>
</tr>
<tr>
<td>Ch.E. 51 - Plant Design &amp; Econ.</td>
<td>3</td>
<td>Econ. 23 - Elements of Econ.</td>
<td>3</td>
</tr>
<tr>
<td>Ch.E. 64 - Indus.React. Kinetics</td>
<td>2</td>
<td>Contemporary Problems</td>
<td>3</td>
</tr>
<tr>
<td>C.E. 21 - Mech. of Materials</td>
<td>3</td>
<td>Social Science or Humanities Elec.</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
<td>General Elec. or Military Science</td>
<td>3</td>
</tr>
<tr>
<td>General Elec. or Military Science</td>
<td>3</td>
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<td>17</td>
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</thead>
<tbody>
<tr>
<td>TOTLA CREDITS</td>
<td>17</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>
2. changes in existing graduate programs

   a. change in thesis requirement for M.S. degree in civil, chemical, and industrial engineering to allow either a thesis or the satisfactory completion of the equivalent six credits on a research problem, engineering design problem or other appropriate graduate courses for which a comprehensive written report must be submitted.

3. course changes

   a. Dept. of Mechanical Engineering

      1) change M.E. 7 into 2 courses, M.E. 1 and 2, with no change in total credit or content.

4. new courses

   a. Dept. of Mechanical Engineering

      1) 128. Mechanical Control Systems Semester I, 3 credits

         Analysis of mechanical, hydraulic, pneumatic and thermal control systems including methods for determination of the transient response of linear systems, introduction to Laplace transformation applied to automatic control systems, transfer functions, system stability. (Lec.3) Prerequisites: Math.44, M.E. 24.

      2) 231. Reliability Analysis and Prediction Semester II, 3 credits

         Statistical analysis of failure of complex engineering systems, design factors contributing to functional system survival, failure distribution functions, redundancy, confidence, reliability testing. (Lec.3) Prerequisites: Math 151 or equiv., ME 74 or permission of the instructor.

      3) 251, 252. Thermodynamics Semester I, II, 3 credits each

         A study of classical thermodynamics and irreversible thermodynamics, with emphasis on the general thermodynamic relations, kinetic theory of gases, Statistical Thermodynamics and the development of the partition functions. (Lec.3) Prerequisites: M.E. 52, M.E. 54. M.E. 252: A continuation of M.E. 251. (Lec.3) Prerequisite: M.E. 251.

      4) 274. Thermal Stress Analysis Semester I, 3 credits

         Theory of stress and deformation in bodies subjected to thermal environments and restraints. Application to problems in thermoelasticity, thermal fatigue, thermoplasticity, and creep analysis. (Lec.3) Prerequisite: M.E. 271 and M.E. 58
5) 279. Plasticity and Creep  
Semester II, 3 credits
Stress induced flow of nominally solid materials, effect of temperature, combined stress problems; stress dependent creep of metals at elevated temperatures, creep buckling, anelastic creep, related dislocation theory. (Lec. 3) Prerequisite: M.E. 271.

6) 355. Viscous Compressible Flow  
Semester II, 3 credits
A study of the flow of real fluids at extremely high speeds, with emphasis on the development of basic physical laws. Application to several important flow problems in space technology. (Lec. 3) Prerequisite: M.E. 251, M.E. 254, M.E. 258.

7) 377. Fatigue Failure and Fracture Mechanics  
Semester II, 3 credits
An advanced study of fracture induced by repeated loading, damage theories, fundamental theories of microscopic crack initiation and growth, statistical aspects of fatigue failure, theory of crack propagation. (Lec. 3) Prerequisites: Math 151, M.E. 74, M.E. 271, or permission of the instructor.

E. From the College of Home Economics

1. Dept. of Textiles and Clothing

a. course changes

1) change number and title of TC 22 with the following new catalog listing:

122 (22) Fashion Merchandising  
Semester I or II, 3 credits
Fashion, as a social force - its influence on the ready-to-wear market, production, distribution, and consumption of clothing. Retailing of apparel goods studied. (Lec. 2, Lab. 2) In alternate years, next offered 1965-66. Matthews.

2) change number and title of TC 26 to TC 125 with following new catalog listing:

125 (26) Advanced Clothing  
Semesters I or II, 3 credits
Application of design to dress expressed through draping techniques. Designs draped in fabrics on half and full size dress forms. (Lec. 1, Lab. 5) Prerequisite: TC 25 or permission of instructor. In alternate years, next offered 1965-66. Weeden.
3) change number of TC 31 to TC 132 with following new catalog listing:

132 (31) Advanced Textiles  Semesters I or II, 3 credits
Analysis of fabrics; methods and techniques of testing fabrics; evaluation of fabric data in relation to end-use performance, and to existing quality standards. (Lec. 2, Lab.2) Prerequisite: T.C. 3 In alternate years, next offered 1966-67. Carpenter

4) change number and title of TC 33 to TC 133 with the following new description:

133 (33) Textile and Clothing Industry  Semesters I or II, 3 credits
Development of production and distribution of textiles and clothing. Economic aspects of the textile and clothing industry. (Lec.3) Prerequisite: Econ. 23 or permission of instructor. In alternate years, next offered 1966-67. Matthews.

5) change number of TC 41 to TC 141 with the following new catalog listing:

141 (41) Historic Textiles  Semester I, 3 credits
Chronological study of the development of textiles, emphasizing sociological, economic, religious, and political influences. Contributions of designers, inventors, trade groups, industrialists, and primitive cultures. (Lec.3) In alternate years, next offered 1965-66. James.

6) change number of TC 43 to TC 143 with the following new description:

143 (43) Historic Costume  Semester I, 3 credits
Sociological, economic, religious, and political facets affecting the history of costume and resulting fashion changes; national and folk costumes. Use of department's historic costume collection. (Lec.3) In alternate years, next offered 1966-67. James.

7) change numbers of TC 81, 82 to TC 161, 162 with the following new catalog listing:

161, 162, (81, 82) Special Problems in Textiles and Clothing  Semester I or II, 2-4 credits each
Open to qualified seniors and graduate students who wish to do advanced work including field work. Total credits not to exceed six. Prerequisite: permission of department. Staff.
8) change numbers of TC 181, 182 to TC 281, 282 with the following new catalog listing:

281, 282 (181, 182) Special Problems in Textiles and Clothing
Semester I or II, 3-6 credits
Supervised independent study in specific areas of textiles and clothing. Total credits not to exceed six. Staff.

9) change number and title of TC 231 to TC 232 with the following new catalog listing:

232 (231) Research Methods in Textiles and Clothing
Semester I or II, 3 credits
Development and execution of research in textiles and clothing following the historical, descriptive, and experimental methods. Analysis of current research in the field. (Lec.2, Lab.2) Carpenter.

10) change description of TC 233 to read:

233 Textile and Clothing Economics
Semester I or II, 3 credits
The economic development of production and distribution of textiles and clothing. (Lec.3) Matthews.

F. From the Graduate Library School.

1. new course

a. L.S. 381 Research in Librarianship

1) 381. Research in Librarianship Semester II, 3 credits

The methods of investigating problems in library science and an introduction to and evaluation of the literature of the field. (Lec.3) Prerequisite: permission of instructor. Humeston.

Note: This report closes the action of the C.A.C. for the 1965 Catalog.