1969

54th Curricular Affairs Committee Report

University of Rhode Island Faculty Senate

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TO: President Werner A. Baum  
FROM: Chairman of the Faculty Senate  

1. The Attached BILL, titled 54th Curricular Affairs Committee Report

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 April 17, 1969 (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 May 8, 1969 (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.

   April 25, 1969 (date)  
   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.

   4/20/69 (date)  
   President

Form approved 11/65 (OVER)
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
Faculty Senate Curricular Affairs Committee Fifty-fourth Report (Full).

At its meeting on March 27, 1969, 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 details consult the chairman of the Department concerned).

A. College of Arts and Sciences.

1. Department of Chemistry

   a. Change description of Chemistry 1, 3, and 4 to read:

   Chemistry 1 General Chemistry 1, 4
   Foundation for advanced courses in Chemistry and a chemical background for other sciences. Course is open only to students who pass a standard proficiency exam to be given each September by the Department of Chemistry. A background in high school chemistry is assumed. (Lec. 3, Lab. 3) STAFF.

   Chemistry 3 General Chemistry 1, 4
   Introductory course similar to Chemistry 1 for students without prior chemical training or who show a weakness in chemistry on the basis of a required proficiency exam given each September by the Department of Chemistry. (Lec. 3, Lab. 3) STAFF.

   Chemistry 4 General Chemistry 1, 4
   Continuation of Chemistry 1 or 3 for students who plan no further training in Chemistry and who wish to complete a year's study of general chemistry. (Lec. 3, Lab. 3) STAFF.

   b. Change the number and description of Chemistry 6 to 24 to read:

   Chemistry 24 Organic Chemistry 1, 4
   Elementary principles of organic chemistry with emphasis on aliphatic compounds, including especially those of physiological significance such as amino acids and proteins, carbohydrates, fats and waxes. (Lec. 3, Lab. 3) Prerequisites: Chemistry 1 or 3. Not open to students in chemistry or chemical engineering. STAFF.

Comment: An entering freshman who wishes to take chemistry courses has three paths which he might follow. (1) He may receive credit for beginning chemistry if he places high enough on the proficiency exam and proceed to higher level courses. (2) He may enter Chemistry 1 if he does sufficiently well on the proficiency exam. (3) He may enter Chemistry 3 if he does poorly on the proficiency exam. All students who wish to take some chemistry will be required to take the proficiency exam. This new system will require no additional staff and is much better geared to the needs and abilities of the students than is the present program. The Deans of Agriculture,
Engineering, Home Economics, and Nursing have all agreed that these changes are worthwhile.

2. Department of Dental Hygiene
   a. Correct description of Dental Hygiene 54 to read:

      Dental Hygiene 54 Survey of Dental Specialties
      Survey of major specialties in dentistry: endodontics, pedodontics, orthodontics and oral surgery. (Lec. 2) HOLTON, MEHLMAN and NELSON.

3. Department of History
   a. Change prerequisites of History 143 and 144 by adding "and junior standing or above".

4. Department of Languages
   a. Change description of Linguistics 179-180 by adding "Accepted towards major credit in a language".

5. Department of Mathematics
   b. Change requirements for the B.A. program in Mathematics as follows:
      1) Delete Math 137 Advanced Calculus
      2) Add Math 135 Introduction to Real Analysis I
         (This change corrects a previous oversight. Math 137 is designed for non-majors).

6. Department of Military Science
   a. Change title and description of 27 and 28 to read:

      27, 28 Military Science I, II, 3 each
      Advanced courses: military law, obligations and responsibilities of an officer, Army readiness program, administrative management, world change and military implications, logistics, the military team, internal defense and development. (Lec. 3, Lab. 1) Prerequisite: M.S. 25 and 26. STAFF.

7. Department of Psychology
   a. Change titles of Psychology 10 and 110 to:

      Psych. 10 Quantitative Methods in Psychology I.
      Psych. 110 Quantitative Methods in Psychology II.

B. College of Engineering.

1. Engineering I. Change semester offered to I and II.

2. Department of Electrical Engineering
a. Change course numbers as follows:

1) Change 301, 302 to 398, 399
2) Change 303 to 365
3) Change 310 to 361
4) Change 323, 324 to 331, 332

b. Change 201, 236, 305, 309, 341, 342, and 361 to read:

201 Linear Circuit Theory I, 3
Transform analysis of discrete and distributed systems, functions of a complex variable, state variable description of systems and time domain analysis, matrices and linear spaces, feedback concepts. (Lec. 3) STAFF.

236 Semiconductor Electronics I, II, 3
Recent advances in semiconductor devices other than transistors. Analysis of performance and typical application. (Lec. 3) SADASIV.

305 Non-Linear System Analysis I, II, 3
Iteration and perturbation techniques, phase plane and state space concepts, Liapunov's direct method, stability criteria for non-linear systems. (Lec. 3) Prerequisite: E.E. 201 or equivalent. LINDGREN.

309 Random Signals and Noise I, II, 3
Auto and cross-correlation functions and their relation to spectral density functions. Analysis of linear networks with stochastic inputs. (Lec. 3) Prerequisite: E.E. 201 and Math 151 or equivalent. KELLEY, SPENCE.

341 Advanced Engineering Analysis I I, 3
Analytical techniques for the solution of problems involving a finite number of degrees of freedom with applications to linear and non-linear systems. (Lec. 3) Prerequisite: advanced graduate standing and permission of instructor. STAFF.

342 Advanced Engineering Analysis II II, 3
Continuation of E.E. 341. Techniques for the analysis of distributed parameter systems. Application to diffusion problems and wave propagation. (Lec. 3) Prerequisite: E.E. 305. STAFF.

361 Information Transmission I, II, 3
Shannon's basic theorems of information transmission, measurement of information. Study of discrete and continuous communication channels. Coding theory. (Lec. 3) Prerequisite: E.E. 309. KELLEY.

3. Department of Industrial Engineering

Introduction to Industrial Engineering

I, 2  
Introduction to Industrial Engineering with emphasis on interrelation of various functional divisions of an industrial enterprise such as production and inventory control, motion and time study, quality control and plant layout. Introduction to operations research and quantitative techniques. (Lec. 2) Prerequisite: Math 42. For engineering students only. STAFF.

Methods Engineering

II, 3  
Motion analysis, subjective ratings, allowance, standard time data, uses of process charts, operations analysis and time study. Human engineering data and principles of motion economy applied in development of work methods and design of work layout. (Lec. 2, Lab. 3) Prerequisite: Math 42. STAFF.

Plant Design

II, 3  
Design and analysis of plant facilities to provide greatest efficiency for men, materials, and machinery, encompassing product design evaluation, optimum arrangement of man's working environment, use of plant utilities, and engineering economics. (Lec. 3) Prerequisite: I.E. 132. STAFF.

Manufacturing Analysis

I, II, 2  
Theory and applications of materials processing technology; thermal considerations, mechanics of machine systems, power and force relations, and tool analyses. Numerical control and metrology will also be emphasized. (Lec. 1, Lab. 3) Prerequisite: Credit or registration in C.E. 21 or permission of department. STAFF.

Engineering Economy

I, 3  
effects of economics on engineering decisions in design, selection, and replacement of equipment and evaluation of project proposals. Theory of depreciation and obsolescence. (Lec. 3) Prerequisite: Econ. 23, Math 42. STAFF.

Engineering Statistics

I, 3  
Introduction to applied statistical methods in engineering. Density functions, applied probability, economic and natural tolerances, design of specifications, risks and confidence levels, hypotheses tests. (Lec. 3) Prerequisite: Math 42. STAFF.

Engineering Statistics and Quality Control

II, 3  
Continuation of I.E. 111. Control charts, sampling theory, and statistical quality control. Other engineering applications of applied statistics and related topics. (Lec. 3) Prerequisite: I.E. 111. STAFF.

Design and Analysis of Compensation Systems I

I, 2  
Wage and employment theory, job evaluation, motivational systems, supplemental payments; labor force loading, scheduling and leveling. (Lec. 2) Prerequisite: credit or registration in I.E. 111 and 132. STAFF.
129 Design and Analysis of Compensation Systems II

Influence on past, present, and future labor markets (micro and macro) of labor unions and collective bargaining. Evaluation of governmental regulation of labor markets and analysis of economics of security. (Lec. 2) Prerequisite: I.E. 128. STAFF.

132 Operations Research I

Introduction to major areas of operations research and their application to systems analyses. Linear programming, game theory, applied networks, queuing, and related topics. (Lec. 3) Prerequisite: Math 43. STAFF.

133 Operations Research II

Continuation of I.E. 132, Operations Research I, (Lec. 3) Prerequisite: I.E. 132. STAFF.

160 Process Engineering

Design and selection of processes, equipment, tooling and production sequence for efficient and economic manufacture of products through mathematical analyses of physical and economic principles. (Lec. 3) Prerequisite: I.E. 104, I.E. 30. STAFF.

210 Human Factors

Analytic relationship between man and his working environment. The design of equipment, facilities and environmental controls to meet the capabilities and limitations of the human being. (Lec. 3) Prerequisites: permission of instructor. STAFF.

217 Applied Control Theory in Industrial Engineering

Complex control mechanisms will be studied and applied to production and manufacturing operations. Automatic control systems for production and manufacturing will be designed and analyzed. (Lec. 3) Prerequisites: I.E. 104, Math 44 and permission of Instructor. STAFF.

333 Advanced Statistical Methods for Research and Industry

Topics in analysis of variance and covariance; development of concepts for interval estimation and testing hypotheses. Single variable regression and correlation. Applications related to industrial operations and engineering research problems. (Lec. 3) Prerequisite: I.E. 112 or equivalent. STAFF.

334 Design and Analysis of Industrial Experiments

Further development of topics in analysis of variance. Randomized blocks, Latin squares and related designs, factorial experiments, confounding and fractional replications, and split-plot designs. Design and analyses of engineering experiments. (Lec. 3) Prerequisite: I.E. 333. STAFF.

345 Manufacturing Engineering: Design, Analysis, Synthesis

Consideration of production and logistic systems, quantitative models introduced in and applied to congestion problems, industrial planning, control, scheduling, and other problem areas of the industrial enterprise. (Lec. 4) Prerequisite: permission of Instructor. STAFF.
C. College of Nursing.

1. Change description of Nursing 33 to read:

Nursing 33 Maternal and Child Nursing
Physio-pathological, psychosocial and cultural influences on child growth and development and family health. Utilization of family-centered concepts in the application of nursing principles and techniques to Maternal, child care. Field observation and experience in selected community agencies. (Lec. 9, Lab. 20) Prerequisite: Nursing 30 and Pharm. 26. CUMBERLAND, DELPAPA, and STAFF.

D. Graduate Library School

a. Change title of LT 1 and 2 to read:

LT 1 Libraries and Management
LT 2 Basic Library Procedures

II. Matters Requiring Confirmation by the Faculty Senate (approval recommended).

A. College of Agriculture.

1. Department of Agronomy and Mechanized Agriculture

a. Add (new):

Mech. Agric. 150 Soil Conservation Technology
Principles and practices involved in the protection, improvement, and development of soil and water resources for agricultural, forest, and wetlands. Design of conservation structures. (Lec. 2, Lab. 3)
Prerequisite: Math 9 or equivalent. MCKIEL.

B. College of Arts and Sciences.

1. Department of Chemistry

a. Delete:

1) Chemistry 2 General Chemistry
2) Chemistry 5 General Chemistry
3) Chemistry 8 Inorganic Chemistry

2. Department of Education

a. Add (new):

Education 300 Inservice Biology Workshop for Elementary School Teachers
Developing and making classroom applications of locally available biological materials. For elementary teachers (k-6) with little or no biology training. Held on Saturdays at the Kingston Campus, labs and field trips utilize staff and facilities of the Agricultural Experiment
Station; Jones Campus, and Narragansett Bay Campus. Taught in Extension Division only. Not open to teachers with more than 8 credits in biology. Not applicable to graduate degree programs. DURFEE and RAYMOND COORDINATORS and STAFF.

Education 355 Principles and Practices of Student Personnel Service in Higher Education 1, II, III
Survey of the historical, psychological, organizational and educational factors which have evolved and combined to form student personnel work. (Lec. 3) Prerequisites: Educ. 350 and 352.

Education 356 Organization and Administration of Student Personnel Services in Higher Education II, III
Systematic analysis of current practices in the alignment and operation of student personnel services, with continuing review of their interrelationships to the total educational program. (Lec. 3) Prerequisites: Educ. 355.

3. Department of Languages
a. Add (new). For 1969 Summer Session I only.

French 237 Rabelais and Humanism SS I, III
Study of selected humanistic topics and ideas in Rabelais' works, with emphasis on the philosophical voyage of Pantagruel in the Quat Libre. Attention will also be given to the sources that Rabelais draws upon from Scripture, from Greek and Roman authors, from Italian humanists and from Northern Renaissance authors such as Erasmus and Lefevre d'Etaples. (Lec. 3) Prerequisite: Graduate standing and permission of the Department.

4. Department of Political Science
a. Authorize a revised M.A. program in Political Science which would provide a non-thesis option.

RATIONALE:

By offering an opportunity to the Master's candidate to choose between one program requiring a thesis and another without, it will be possible to accommodate individual differences and varying aims among our students. The non-thesis option will enable qualified candidates to complete their M.A. in a more reasonable period than is now usual without sacrificing the quality of the program. Moreover, the added course work called for in this option will enable the candidate to inform himself better in particular subject areas of his choice. For a considerable number of those who have in the past or who are presently enrolled as Master's candidates, the M.A. is not a terminal degree. In transferring credits to some other institution for a doctoral program, there is virtually always some sacrifice of credit or added requirements. Therefore, a course that can be completed in an academic year and a summer, we believe, ought to be available to such students. Very often as past experience demonstrates,
the writing of a thesis takes a greater amount of time than this. In fact, we have had several candidates burdened with the task of finishing their thesis while they were engaged in their doctoral studies.

It is our intention that the non-thesis program will be both rigorous and searching. Included in that program and required of all students is Political Science 253, The Scope and Methods of Political Science. This course exposes the student to the newer approaches and techniques now being used in the study of political phenomena. It gives them wider and deeper familiarity with those works and authors who have contributed so much to the advancement of the discipline, serving particularly to provide focus and coherence to the entire field.

Members of the Graduate Program Committee are unanimous in their belief that differences among master's degree candidates are sufficiently great and their needs sufficiently varied to make the proposed non-thesis option a desirable program. We think it is relevant that nearly all other American Universities offer a non-thesis Master's degree in Political Science requiring 30 hours of credit or less. The present proposal simply brings the Political Science Department at the University of Rhode Island into line with prevailing practice elsewhere.

OUTLINE OF PLANS FOR THE MASTER'S DEGREE IN POLITICAL SCIENCE

A. "Plan A" -- With Thesis

The student may elect to write a well-conceived research paper (thesis) on a subject approved by his advisor and thesis committee.

Course Requirements:
30 credits (24 in course work; 6 in thesis)

Examinations:
One written comprehensive examination (which may be repeated only once in case of failure) plus an oral defense of the thesis.

B. "Plan B" -- Without Thesis

The student, with the approval of the department, may elect to take extra course work, instead of writing a thesis.

Course Requirements:
30 credits, all in course work.

Examinations:
One comprehensive examination and an oral examination which will require the student to defend his comprehensive examination. Each student under the non-thesis option must write an extensive term paper demonstrating proficiency in the field. This paper will be kept on file in the Department of Political Science.
C. College of Engineering.

1. Department of Civil Engineering

a. Add (cross listing) C.E. 77 (Plant Path. 77) previously approved as Plant Path. 77, Biological Aspects of Water Quality.

2. Department of Electrical Engineering

a. Add (new):

E.E. 137 Introduction to Photo-Electronic Devices 1, 11, 3
Elemental solid state sensors; scanners; remote and direct viewing image tubes and solid state devices; electron optics. (Lec. 3)
Prerequisite: E.E. 131 which may be taken concurrently or equivalent. NUDELMAN.

E.E. 231 Solid State Engineering I 1, 11, 3
Periodicity of solids, dielectric, thermal, optical and electromagnetic properties of electronically interesting solids. (Lec. 3)
Prerequisite: E.E. 131 or equivalent. STAFF.

E.E. 232 Solid State Engineering II 1, 11, 3
Semiconductor physics, transport properties. Applications including solid state lasers, piezoelectronic, ferroelectric and magnetic devices. (Lec. 3) Prerequisite: E.E. 231 or equivalent. STAFF.

E.E. 337 Photo-Electronics 1, 3
Optics, including photometry, radiometry, natural illumination, irradiance, luminance, radiance, temperature. Theory, analysis and specifications of photodetectors, scanners and associated systems. Direct viewing image tubes, their components and electron optics. (Lec. 3) Prerequisite: E.E. 137 or equivalent. NUDELMAN and SADASIV.

E.E. 338 Photo-Electronics 11, 3
E.E. 337 continued: theory, analysis, specifications of signal generating (remote) tubes and solid state devices: including transfer characteristics, spectral responses, limiting resolution, modulation transfer function, quantum detective efficiency. Applications to medicine, space, night vision. (Lec. 3) Prerequisite: E.E. 337. NUDELMAN and SADASIV.

b. Authorize a change in the M.S. program in Electrical Engineering which would provide a non-thesis option.

Comment:

The proposed non-thesis program will carry a minimum of 30 credits in course work, with at least one course requiring a paper involving independent study. The program will be consistent with the general requirements of the 1968 Graduate Student Manual.
The reason for this change is to provide more flexibility in organizing Ph.D. graduate programs, particularly in those areas of study where substantial course work preparation is required for the desired research activity. This change will also bring the Department's requirements in line with other Electrical Engineering departments throughout the country. The Department of Electrical Engineering graduate enrollment is presently 30 resident and approximately 80 part-time students. During the past calendar year, 15 M.S. and 2 Ph.D. students completed their degree programs in Electrical Engineering. It is anticipated that students enrolling in the non-thesis option will be part-time students from industry or resident students pursuing the Ph.D. who have substantial previous research experience.

3. Department of Industrial Engineering
   a. Add (new):

   I.E. 225 (CS 225) Simulation
       Introduction to simulation. Discrete simulation models. Comparison of discrete change simulation languages. Simulation methodology including generation of random variates, design of simulation experiments for optimization, analysis of generated data, and validation of models and results. Selected applications of simulation. (Lec. 3) Prerequisite: CS 110, and 6 credits in statistics. In alternate years, next offered 1969-70. STAFF.

4. Department of Mechanical Engineering and Applied Mechanics
   a. Add (new):

   ME 345 Statistical Theories of Turbulence
       Analytical description of random phenomena; three-dimensional space-time correlations. Theories of turbulence including anisotropy and non-homogeneity. Applications to meteorology, boundary layers, and turbulent diffusion. (Lec. 3) Prerequisite: M.E. 255 or permission of the instructor. HAGIST.

D. Course Deletions.

One of the duties of the FSCAC is to periodically review the University course offerings and recommend deletion of courses which have not been given for four consecutive years and which the Committee feels have not been adequately justified by the appropriate administrative officer concerned. (The University Manual, Section 7.4.2 c). According to records in the office of the Registrar the courses listed below were not given in the Summer Sessions, Extension Division, or on campus during the regular academic year in 1965-66, 1966-67, 1967-68 or 1968-69. After considering comments submitted to it by the department chairman concerned, the Faculty Senate Curricular Affairs Committee recommends deletion of:

*Ag. Chem. 192 Special Projects
Chemistry 8 Inorganic Chemistry
Chemistry 172 Textile Chemistry and Dyeing
Chemistry 224  Advanced Techniques for Organic Research
Civil Engr. 373  Sanitary Engineering Laboratory
Education 265  The Core Curriculum
Education 305  Higher Education in America
Education 306  The Junior College
Education 330  Psychology of Creative Teaching
Education 389  Organization and Administration of Guidance
E.E. 304  Network Synthesis
English 38  The Use of the Library
F.N. 243  Family and Child Nutrition
Math 163  Fourier Series and Operational Mathematics
Pharm. Chem. 339 (Pharmacology 339)  Structure and Biological Activity
Pharm. Chem 341  Detoxication Mechanisms
*Physics 150  Advanced Optics
Political Science 204  Modern Far Eastern International Relations
Speech 51  Broadcasting in America
*Zoology 184  Economic Entomology

*Appeals to waive deletion received but not considered by the FSCAC at its meeting on March 27, 1969.