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## Curricular Report No, 1997-98-4 from the Graduate Council to the Faculty Senate

University of Rhode Island Faculty Senate

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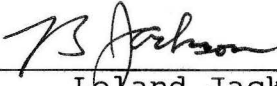
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UNIVERSITY OF RHODE ISLAND  
Kingston, Rhode Island  
FACULTY SENATE  
BILL  
Adopted by the Faculty Senate

TO: President Robert L. Carothers  
FROM: Chairperson of the Faculty Senate

1. The attached BILL, titled Curricular Report No. 1997-98-4 from the Graduate Council to the Faculty Senate, 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 January 22, 1998.
4. After considering this bill, will you please indicate your approval or disapproval. Return the original or forward it to the Board of Governors, completing the appropriate endorsement below.
5. In accordance with Section 10, paragraph 4 of the Senate's By-Laws, this bill will become effective February 12, 1998, 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 Governors for their approval; or (4) the University Faculty petitions for a referendum. If the bill is forwarded to the Board of Governors, it will not become effective until approved by the Board.

January 22, 1998  
(date)

  
Leland Jackson  
Chairperson of the Faculty Senate

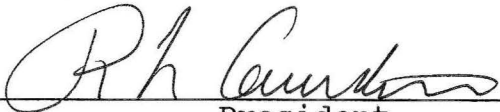
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ENDORSEMENT

TO: Chairperson of the Faculty Senate  
FROM: President of the University

Returned.

- a. Approved .
- b. Approved subject to final approval by Board of Governors \_\_\_\_\_.
- c. Disapproved \_\_\_\_\_.

1. 28. 98  
(date)

  
President

UNIVERSITY OF RHODE ISLAND

The Graduate School

CURRICULAR REPORT FROM THE GRADUATE COUNCIL TO THE FACULTY SENATE:

Report No. 1997-98-4

At meeting No. 343 held December 12, 1997 the Graduate Council considered and approved the following curricular matters which are now submitted to the Faculty Senate for information or confirmation as indicated.

**I. Matters of Information.**

- A. Colleges of Arts & Sciences and Human Science and Services  
1. Departments of English and Education  
a. Temporary Course

WRT/ENG/EDC 524X Histories and Theories of Writing Instruction (II, 3) Examines the history of writing instruction in American colleges and secondary schools; introduces students to competing theories of writing and new technologies. Pre: graduate standing. (Seminar) Reynolds

**II. Matters Requiring Confirmation by the Faculty Senate**

- A. College of Arts & Sciences  
1. Department of Mathematics  
a. Changes

MTH 561 Advanced Applied Mathematics - delete prerequisite  
MTH 572 Numerical Analysis - delete prerequisite

2. Department of Clinical Laboratory Science  
a. Addition of Biotechnology Track in the graduate Clinical Laboratory Science program.

Admission Requirements: Same as in current catalog with the deletion of "certification, or certification eligibility, by a nationally recognized certifying agency or."

Program Requirements: 33 credits including 15 credits of Core Courses (BCH 551; MIC 534; MTC 510, 512, 513.); BIO 437; CHE 574; MTC/APS 571; MTC 594; Six credits of Electives selected from education, management, or other relevant specializations (clinical microbiology, clinical chemistry, hematology, immunohematology, pharmacology, biomedical sciences, etc.); Comprehensive written examination; Major research paper. Courses would be offered on a three-year, part-time, evening, rotating basis. If needed, certain courses will be offered on every-other-year basis. Students would be expected to complete the program within four years.

- b. Add (New)

MTC/APS 571 Biotechnology Product Evaluation and Development (I, II, SS, 3) The process through which candidate products produced using recombinant DNA technology are evaluated for safety and efficacy, including conductance of clinical trials, economic issues, and regulatory affairs. (Lec. 3) Pre: graduate standing and permission of chairperson. Campbell, Paquette and Tente.

MTC 594 Special Problems in Biotechnology (I, II, SS, 3) Intensive tutorial work, research and reading in biotechnology. (Independent Study) Pre: graduate standing and permission of chairperson.  
Paquette and Tente

3. Department of Computer Science
  - a. Addition of a New "applied" or "professional" track.

The new track provides an option to obtain a professional Master's degree (for example, with focus on software management and industrial applications) or to obtain a dual degree (for example, Ph.D. in a related field and an M.S. in Computer Science).

- b. Changes in program requirements for the M.S. degree in Computer Science to read:

**General Information:** The M.S. curriculum in computer science has three tracks: thesis, non-thesis, and applied non-thesis. For the purpose of describing degree requirements, computer science courses are organized into the following groups: Algorithms: CSC 440, 541, 542; Programming Languages: CSC 402, 501, 502; Computer Architecture: CSC 411, 415, 511; Computer Systems: CSC 412, 512, 519; Theory of Computation: CSC 445, 544; Software Design: CSC 505, 509; Applications: CSC 406, 436, 481, 536, 550, 581. A program of study can include at most 3 courses at the 400-level. Students who have undergraduate credits for a particular 400-level course (or equivalent) cannot repeat the course for graduate credit.

**Program Requirements:** Thesis Option: Minimum number of credits is 40. At least one course in each of the following course groups: Algorithms, programming languages, computer architecture, computer systems, and theory of computation; At least three additional courses chosen with the approval of the major professor; Eight credits of thesis.

**Non-Thesis Option:** Minimum number of credits is 40. At least one course from each of the following course groups: Algorithms, programming languages, computer architecture, computer systems, theory of computation, and software design; At least two courses from the applications group; At least two more courses chosen with the approval of the advisor. At least one of the ten courses listed above should include writing a substantial paper based on significant independent research. Passing a written comprehensive examination.

**Applied Non-Thesis Option:** Minimum number of credits is 40. At least one course from each of the following course groups: Algorithms, programming languages, computer architecture, computer systems, and software design; At least two courses from the applications group; An approved concentration in another discipline. It consists of a minimum of four graduate courses in the area of concentration; Passing a written comprehensive examination; major paper required.

Approved Concentrations for the applied non-thesis option: **Computers and Business Management**--Students in this track will take: ACC 610; FIN 601; MGT 630; MGT 681 and two of the following courses: MSI 600, MSI 620, MSI 640, and MSI 684. **Computer and Operations Research**--Students in this track will take: IME 432, IME 540, IME 555, and IME 565. **Computers and Statistics**--Students in this track will take: MTH 451, MTH 452 and three of the following courses: STA

502, STA 513, STA 535, STA 541, STA 584, or MTH 551. The department encourages other application areas in the physical, biological, mathematical and social sciences. Students in the applied track will have an advisor in computer science and an advisor in their application area. Together, these advisors will approve the student's program of study.

c. Add (New)

CSC 505 Advanced Topics in Software Engineering (I or II, 4) Life cycle models; software development environments; project management. Metrics, performance, and testing. Paradigms for software design and architecture. Legal and ethical issues. (Lec. 3, Project 3) Pre: 305 Staff

CSC 509 Object Oriented System Design (I or II, 4) Object-oriented design and programming, the software engineering process. Traditional and current object-oriented design methods. Software reuse. Design tools. Impact of the technology on traditional software engineering. (Lec. 3, Project 3) Pre: 305 and working knowledge of an object-oriented language. Staff

d. Changes

CSC 512- title, description, number of credits and method of instruction to read:

CSC 512 Topics in Distributed Systems (II, 4) Advanced topics in distributed systems. Networking; standard distributed computing environments. Distributed computing algorithms. Concurrency and threading. Real-time computing, scheduling, concurrency control, load allocation. (Lec. 3, Project 3)

CSC 550 - title, description, number of credits, method of instruction, and prerequisite to read:

CSC 550 Computer Algebra (II, 4) Symbolic mathematical computation; history, use, representation of information, algorithms and heuristics. Big number arithmetic, manipulation of polynomials and rational expressions; algebraic simplification; factoring; symbolic integration. Organization and implementation of computer algebra systems. (Lec. 3, Project 3) Pre: 350, 440.

CSC 541 - title, description, number of credits, method of instruction and prerequisite to read:

CSC 541 Advanced Topics in Algorithms (I, 4) Algorithm design techniques such as dynamic programming, greedy method, branch and bound. Linear programming. NP-completeness. Graph algorithms. Number theoretic algorithms. Approximation algorithms for NP-complete problems. Probabilistic and parallel algorithms. (Lec. 3, Project 3) Pre: 440 or 445

CSC 544 - description, number of credits, method of instruction, and prerequisite to read:

CSC 544 Theory of Computation (I, 4) Finite automata, pushdown automata, formal grammars and Chomsky hierarchy, Turing machines, computability, basics of complexity theory, advanced topics including some of the following: cryptography, inter-active proofs, circuit complexity, completeness for various complexity classes, relations among complexity classes, new models of computation. (Lec. 3, Project 3) Pre: 440 or 445

e. Changes in the number of credits and method of instruction

CSC 501 Programming Language Semantics (I, 4) (Lec. 3, Project 3)  
CSC 502 Theory of Compilers (II, 4) (Lec. 3, Project 3)  
CSC 511 Advanced Computer Organization (I, 4) (Lec. 3, Project 3)  
CSC 517 Design and Analysis of VLSI Systems (I, 4) (Lec. 3, Project 3)  
CSC 536 Topics in Data Management Systems (I or II, 4) (Lec. 3, Project 3)  
CSC 542 Mathematical Analysis Algorithms (I, 4) (Lec. 3, Project 3)  
CSC 591 Directed Study in Computer Science (I or II, 1-4)  
CSC 592 Special Topics in Computer Science (I or II, 1-4) (Lec. 3, Project 3)

4. Department of Chemistry

a. Addition of an On-Site Option for the Non-thesis Master's degree in Chemistry at Pfizer, Inc.

Program requirements: Minimum number of credits is 30. Completion of 18 credits of core courses from: Analytical: CHM 511, 512; Inorganic: CHM 501, 502; Organic: CHM 521, 522; and Physical: CHM 531, 532 distributed as follows: at least one core course from three of the four areas and both core courses in the student's Divisional Major; completion of a minimum of 6 additional credits of classroom course work; comprehensive examination; one seminar credit the subject of which must be of current chemical interest unrelated to the student's area of research with source material coming mainly from primary chemical journals; completion of five credit hours of directed research (CHM 551, 552) which will include a major paper.

A Program Coordinator will be appointed by the Department to handle on-site (at Pfizer) advising, assist students in selecting a major professor and other coordination duties of the program. The minimum requirements listed above must be satisfied in order to obtain the degree sought; no more than 6 credits of course work may, with approval of the dean of the Graduate School, be transferred from another institution. The comprehensive examination shall be taken after the completion of 18 credits of formal coursework with one re-examination may be allowed and shall be in a take-home format of at least four hours in length and shall be written and administered by the Department Curriculum and Examinations Committee and will cover all course work taken by the student. To disseminate the results of the directed research (CHM 551, 552) the student must write a major paper describing the results and implications of the research. The student will be sponsored by a faculty member (the major professor) from URI and can be in conjunction with a supervisor from Pfizer. If the nature of the research is proprietary to Pfizer, the URI faculty member can be asked to sign a mutually agreeable nondisclosure agreement.