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**\*DEADLINES:**

REGULAR COURSE PROPOSALS: OCTOBER 23, 1998 FOR FALL, 1999 AND FEBRUARY 19, 1999 FOR SPRING, 2000  
 SHORT-TERM COURSE PROPOSALS: DECEMBER 11, 1998 FOR FALL, 1999 AND MARCH 26, 1998 FOR SPRING 2000

**PROPOSAL TITLE:** *Systemic Programming*

**SPONSOR/S:**

**DEPARTMENT:** *Computer Science* 0704.510

**CHECK ALL THAT APPLY:**  
 UNDERGRADUATE      GRADUATE

**COLLEGE:**  
 If LAS:      History/Humanities  
                Math/Sciences  
                Social/Behavioral Sciences

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**TYPE OF PROPOSAL (Check ALL that Apply)**

<input type="checkbox"/> General Education	<input checked="" type="checkbox"/> New Course (NOT Gen. Ed.)
<input type="checkbox"/> New Course in _____ Bank	<input type="checkbox"/> Name Change (Dept., School, Major)
<input type="checkbox"/> Existing course, Add To _____ Bank	<input type="checkbox"/> Changes in Degree Requirements
<input type="checkbox"/> Multicultural/Global Designation	<input type="checkbox"/> Changes Involve Gen. Ed. requirements
<input type="checkbox"/> Writing Intensive Designation	
<input type="checkbox"/> New Minor/Concentration/Specialization	<input type="checkbox"/> Minor Changes to Existing Courses
<input type="checkbox"/> New Major/Degree Program	<input type="checkbox"/> Course is NOT General Education
<input type="checkbox"/> Short Term Course Proposal	<input type="checkbox"/> Course IS General Education

**DEPARTMENT**  
 (SIGNATURE INDICATES APPROVAL) *See Attached*

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**DEPT. CURRICULUM CHAIR / DATE**                      **DEPT. CHAIRPERSON / DATE**

<p><b>COLLEGE CURRICULUM COMMITTEE</b>                  DATE OF OPEN HEARING (if necessary) _____</p> <p><input checked="" type="checkbox"/> APPROVED  <input type="checkbox"/> NOT APPROVED</p> <p>COMMENTS:</p> <p><i>Nancy Lynton Wilham</i>     <i>3-2-99</i></p> <p>SIGNATURE                      DATE</p>	<p><b>ACADEMIC DEAN (&amp; GRADUATE DEAN, for New Graduate Programs Only)</b></p> <p><input type="checkbox"/> APPROVED  <input type="checkbox"/> NOT APPROVED</p> <p>COMMENTS:</p> <p>_____                  SIGNATURE (Academic Dean)     DATE</p> <p>_____                  SIGNATURE (Graduate Dean)     DATE</p>
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UNIVERSITY CURRICULUM COMMITTEE

2/18/99 (college level only)

APPROVED

NOT APPROVED

COMMENTS:

Maureen Reetz 3/19/99  
SIGNATURE DATE

SENATE

Date announced at Senate 3/2/99

Voted upon at Senate:            Approved            Not Approved            Date:

EXECUTIVE VICE PRESIDENT/PROVOST

APPROVED

NOT APPROVED If no, reasons are as follows:

STUDENT CREDIT HOURS \_\_\_\_\_ FACULTY LOAD HOURS \_\_\_\_\_ EQUALIZED CREDIT HOURS \_\_\_\_\_

OFFICIAL COPY & APPROVAL SHEET FILED (DATE): \_\_\_\_\_

DATE/SIGNATURE EXECUTIVE VICE PRESIDENT/PROVOST [Signature]

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED \_\_\_\_\_

HEGIS TAXONOMY & COURSE NUMBER ASSIGNED 0704.510

DATE/SIGNATURE OF REGISTRAR Robert A. Lubat 4/9/99

NOTIFICATION FORWARD:

SENATE CURRICULUM COMMITTEE CHAIRPERSON

DEPARTMENT CHAIRPERSONS

ACADEMIC DEAN(S)

REGISTRAR

SPONSOR(S)

TJM 4/22/99

DEPARTMENT

(SIGNATURE INDICATES APPROVAL)

*[Handwritten Signature]* 10/23/98 *[Handwritten Signature]* 10/23/98

DEPT. CURRICULUM CHAIR / DATE DEPT. CHAIRPERSON / DATE

COLLEGE CURRICULUM COMMITTEE

DATE OF OPEN HEARING (if necessary) \_\_\_\_\_

----- APPROVED

----- NOT APPROVED

Comments:

\_\_\_\_\_  
SIGNATURE DATE

ACADEMIC DEAN (& GRADUATE DEAN, for New Graduate Programs Only)

----- APPROVED

----- NOT APPROVED

Comments:

\_\_\_\_\_  
SIGNATURE (Academic Dean) DATE

\_\_\_\_\_  
SIGNATURE (Graduate Dean) DATE

**Rowan University**  
**Department of Computer Science**

**Course Proposal**

**Software Engineering**

1. Details

- |    |                                   |  |
|----|-----------------------------------|--|
| a. | Course Title:                     | Software Engineering   |
| b. | Sponsor:                          | Don Stone, Computer Science Department   |
| c. | Credit Hours:                     | 3  |
| d. | Course Level:                     | Graduate   |
| e. | Curricular Effect:                | Elective for Master's in Higher Education,<br>Computer Science specialization. Professional<br>development for people working in the region.<br>Elective for Master's in Engineering |
| f. | Prerequisites:                    | None, because of the diversity of backgrounds<br>expected. Proficiency in programming is expected<br>of the people entering this course.   |
| g. | Suggested Time,<br>Implementation | Two sections per year  |
| h. | Resources                         | Faculty, equipment, and library resources are<br>adequate  |

2. Rationale

Software engineering is the application of computer science, engineering, mathematics, and business principles to develop high-quality software that meets user's specifications. By applying rigorous standards and formal tools to the software development process, software engineering causes software development to become something closer to an engineering discipline. Since software engineering has become a recognized sub-discipline only within the last several years, a number of people who earned bachelor's degrees five or more years ago have not had a chance to study it formally and in depth; this course will offer them such a chance. Because modern software is created using teams, students in this course will work in teams on mini-projects that will expose them to several phases of software development.

3. Essence of the course

- a. Objectives in relation to student outcome

Students will be able to

- describe the overall process of software development -- the "Software Lifecycle";

- describe in detail each phase of software development;
- create the relevant documentation ("deliverables") for each phase;
- create test plans and perform software testing procedures;
- use one or more Software Engineering tools;
- understand the ethical and legal context of Software Engineering;
- apply engineering design principles (such as modularity, separation of concerns, etc.) to the development of software;
- conduct code and design walkthroughs.

b. Topic outline

Introduction to software engineering  
 The software process and its problems  
 Software life-cycle models  
 Tools for software engineering  
 Principles of software testing  
 Capturing user requirements  
 Developing specifications  
 Planning and estimating software projects  
 Software design and architectures  
 Implementation and integration  
 Software maintenance  
 Software process improvement

c. Evaluation and grading procedure of students

Students will be evaluated based on team mini-projects, one or more in-term examinations, and a final examination

d. Course evaluation

This course will be evaluated by the Computer Science and Electrical and Computer Engineering Departments.

4. Results of consultation

Consultations have been internal to the Computer Science and Electrical and Computer Engineering Departments

5. Catalog Description

0707.5xx Software Engineering

This course provides an introduction to the discipline of software engineering. In it students will explore the major phases of the software lifecycle, including analysis, specification, design, implementation and testing. Techniques for creating documentation and using software development tools will be presented. Students will gain experience in these areas by working in teams on mini-projects. Proficiency in programming is expected of the students entering this course.