PROPOSAL NUMBER: 99-

CURRICULUM PROPOSAL FORM

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: Robotics

SPONSOR/S: J. Kay

DEPARTMENT: Comp Sci

0707.310

CHECK ALL THAT APPLY:

X UNDERGRADUATE ____ GRADUATE

COLLEGE: ____________________

If LAS: ____ History/Humanities

X Math/Sciences

____ Social/Behavioral Sciences

* * * * * * * * * * *

TYPE OF PROPOSAL *(Check ALL that Apply)*

____ General Education

__ *New Course in ________ Bank*

__ *Existing course, Add To ________ Bank*

__ *Multicultural/Global Designation*

__ *Writing Intensive Designation*

____ New Minor/Concentration/Specialization

____ New Major/Degree Program

Short Term Course Proposal

X New Course (NOT Gen. Ed.)

____ Name Change (Dept., School, Major)

____ Changes in Degree Requirements

__ *Changes Involve Gen. Ed. requirements*

____ Minor Changes to Existing Courses

__ *Course is NOT General Education*

__ *Course IS General Education*

DEPARTMENT

(SIGNATURE INDICATES APPROVAL) See Attached

DEPT. CURRICULUM CHAIR / DATE

DEPT. CHAIRPERSON / DATE

COLLEGE CURRICULUM COMMITTEE

DATE OF OPEN HEARING (if necessary) 2-25-99

✓ 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

UNIVERSITY CURRICULUM COMMITTEE

2/25/99 (college level only)

✓ APPROVED

— NOT APPROVED

COMMENTS:

[signature] 1/31/99

SIGNATURE DATE

Changes rec'd

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 3 FACULTY LOAD HOURS 3 EQUALIZED CREDIT HOURS______

OFFICIAL COPY & APPROVAL SHEET FILED (DATE): ____

DATE/SIGNATURE EXECUTIVE VICE PRESIDENT/PROVOST [signature] 7/21/99

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED __________

HEGIS TAXONOMY & COURSE NUMBER ASSIGNED 0707.310

DATE/SIGNATURE OF REGISTRAR Robert A. Talbot 7/26/99

NOTIFICATION FORWARD:

✓ SENATE CURRICULUM COMMITTEE CHAIRPERSON

✓ DEPARTMENT CHAIRPERSONS

✓ ACADEMIC DEAN(S)

✓ REGISTRAR

SPONSOR(S)

TM 8/16/99

DEPARTMENT

(SIGNATURE INDICATES APPROVAL)

Nancy Lynn Witham 10-23-98 Don C. Stm 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

Robotics 0707. 310

1. Details

A. Course Title	Robotics
B. Sponsor	Jennifer S. Kay, Department of Computer Science
C. Credit Hours	3
D. Course Level	Junior
E. Curricular Effect	Elective course for Computer Science Majors, Mechanical Engineers, and Electrical Engineers.
F. Prerequisites	Computer Science & Programming (0704.103), Data Structures & Algorithms (0704.222) or Sophomore Engineering Clinic II (0901.202), Linear Algebra (1701.210) or Math for Engineering Analysis II (1701.242).
G. Suggested Time	One section every two years, or more often as demand dictates.
H. Resources	Robot Kits. Faculty, computer laboratory resources, and library resources are adequate.

2. Rationale

This course will provide students with an introduction to one of the largest applications in the field of computer science today. It is designed primarily for computer science majors, as well as students in the school of engineering. In addition to learning about the growing field of robotics, students will gain experience in programming small mobile robots in a real-time real-world domain where noisy and imprecise data is commonplace.

3. Essence of the course

a. Objectives in relation to student outcomes

Students will learn about the basic concepts in the field of robotics, including robot manipulators commonly used today in industry, and mobile robots which are a current subject of significant research. Students will gain practical experience in programming "real world" systems. These projects will also give students experience in working together in small groups.

b. Topic Outline

Robot Manipulation
Kinematics
Sensors & Perception
Robot Vision
Cognition for Robotics
Mobile Robots

c. Evaluation and grading procedure of students

Students will be evaluated based on one or more in term examinations, one or more individual or group practical projects, performance in collaborative work groups, and a final examination.

d. Course Evaluation

This course will be evaluated by the Department's curriculum committee.

4. Results of consultation

I consulted with members of the Mechanical and Electrical Engineering Departments as well as the members of the Computer Science Department.

5. Catalogue Description

0707.3xx

Robotics

(Prerequisites: 0704.103, 0704.222 or 0901.202, 1701.210 or 1701.242)

This course provides an introduction to the fundamentals of robotics. Students will study robot manipulators and mobile robots, robot sensors, and robot cognition. Students will also gain experience programming in small groups, and programming in a domain where noisy and imprecise data is commonplace.