

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, 1999 FOR SPRING 2000

PROPOSAL TITLE: CONCEPTS IN ARTIFICIAL INTELLIGENCE

SPONSOR/S: STANLEY TRUJILLO

DEPARTMENT: COMPUTER SCIENCE

C 707.550

CHECK ALL THAT APPLY:
 UNDERGRADUATE GRADUATE

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

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"/> Minor Changes to Existing Courses
<input type="checkbox"/> Literature Designation	<input type="checkbox"/> Course is NOT General Education
<input type="checkbox"/> New Minor/Concentration/Specialization	<input type="checkbox"/> Course IS General Education
<input type="checkbox"/> New Major/Degree Program	
<input type="checkbox"/> Short Term Course Proposal	

DEPARTMENT
(SIGNATURE INDICATES APPROVAL)

Stanley Trujillo 2/5/99 Don C. Stone 2/4/99

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

COLLEGE CURRICULUM COMMITTEE
DATE OF OPEN HEARING (if necessary) 4-27-99

APPROVED
 NOT APPROVED

COMMENTS:

Stanley Trujillo 2/5/99

SIGNATURE **DATE**

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

APPROVED
 NOT APPROVED

COMMENTS:

Don C. Stone 2/4/99

SIGNATURE (Academic Dean) **DATE**

SIGNATURE (Graduate Dean) **DATE**

UNIVERSITY CURRICULUM COMMITTEE

DATE OF OPEN HEARING (if necessary) 4-27-99 (college level only)

APPROVED

NOT APPROVED

COMMENTS:

Janita Rivers 4/21/99
SIGNATURE DATE

change rec'd

SENATE

Date announced at Senate 4-27-99

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] 9/21/99

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED _____

HEGIS TAXONOMY & COURSE NUMBER ASSIGNED 0707.550

DATE/SIGNATURE OF REGISTRAR Robert O. Bledet 7/26/99

NOTIFICATION FORWARD:

SENATE CURRICULUM COMMITTEE CHAIRPERSON

DEPARTMENT CHAIRPERSONS

ACADEMIC DEAN(S)

REGISTRAR

SPONSOR(S)

T M
8/12/99

Rowan University
Department of Computer Science

Course Proposal

Concepts in **Artificial Intelligence** 6767.550

1. Details

- a. Course Title: Concepts in Artificial Intelligence
- b. Sponsor: Nancy Tinkham, Department of Computer Science
- c. Credit Hours: 3
- d. Course Level: Graduate
- e. Curricular Effect: This course will be an elective for students in the Master of Arts in Higher Education program who are specializing in Computer Science. It will also be available as a service course to graduate students in other programs who are taking courses in computer science and related fields.
- f. Prerequisites: Foundations of Computer Science (0707.210), Data Structures (0704.222), and Discrete Mathematics (1703.150); or permission of instructor
- g. Suggested Time, Implementation: Offered once every two years
- h. Resources: The course can be taught with existing faculty, equipment, and library resources.

2. Rationale

Artificial Intelligence is an important research area of computer science which investigates techniques for modeling “intelligent” behavior in computers; fields of Artificial Intelligence research include natural language understanding, learning, puzzle-solving, game-playing, and expert systems. Currently, there is no graduate course at Rowan which surveys Artificial Intelligence and introduces the student to the basic techniques in the field. This course will help to fill that gap.

The computer science department already has an undergraduate (senior-level) Artificial Intelligence course. This is the graduate counterpart. In practice, the graduate course will frequently be offered concurrently with the undergraduate course; graduate students will be expected to do more work in the course than the undergraduates (for example, graduate students may have to solve extra problems or be required to research an area and present the results to the class).

3. Essence of the course

- a. Objectives in relation to student outcome

- Students will understand and be able to apply the most common methods for knowledge representation in Artificial Intelligence.
- Students will understand and be able to apply heuristic search.
- Students will understand, at an introductory level, several of the open problems and major research areas of Artificial Intelligence.

b. Topic outline:

(Note: Since Artificial Intelligence is a broad research area encompassing many specific subfields and including many open problems, specific topics in the course may vary, depending on the current state of the art and the particular interests of the instructor.)

I. Heuristic search algorithms, including:

- A. A*
- B. Minimax (including alpha-beta pruning)

II. Knowledge representation methods, including:

- A. Formal logic and resolution theorem-proving
- B. Semantic networks
- C. Production systems
- D. Inexact reasoning

III. Application areas, including:

- A. Natural language processing
- B. Expert systems
- C. Learning

c. Evaluation and grading procedures for students

Students will be evaluated based on a combination of written homework assignments, programming projects, and exams.

d. Course evaluation

The department curriculum committee will evaluate this course.

4. Consultation: Consultation was internal to the department.

5. Additional information

Possible texts include:

Artificial Intelligence (Luger & Stubblefield, Addison-Wesley, 1998)

Artificial Intelligence: A Modern Approach (Russell & Norvig, Prentice-Hall, 1995)

6. Catalogue description

Concepts in Artificial Intelligence 3 s.h.

(Prerequisites: Foundations of Computer Science (0707.210), Data Structures (0704.222), and Discrete Math (1703.150); or permission of instructor)

This course surveys methods for programming computers to behave intelligently. Topics include knowledge representation methods, heuristic search, theorem-proving, puzzle-solving, game-playing, natural language processing, and expert systems.

Suggested hegis #: 0707.550



June 1st, 1999

Rowan University Senate

TO: Dr. Nancy Tinkham, Computer Science

FROM: Dr. Laretta Reeves, Psychology *LR*

RE: Concepts in Artificial Intelligence proposal

I support your proposal for a new course in Concepts in Artificial Intelligence. Although many of the topics overlap with those covered in Cognitive Psychology (e.g., semantic networks, language processing, etc.), your course obviously approaches these topics from an AI perspective. Our course deals more with information processing by humans within these arenas.

It may be worthwhile for you to recommend that potential students in 'Concepts in Artificial Intelligence' acquire some background in cognitive psychology (either through our Intro. Psych: Brain, Mind, & Behavior course OR Cognitive Psychology), but this is not necessary. Best wishes on your new course.