

CURRICULUM PROPOSAL FORM

\*DEADLINES:

ANNUAL 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: NATURAL LANGUAGE PROCESSING  
SPONSOR/S: NANCY TRUKHAM  
DEPARTMENT: COMPUTER SCIENCE  
6767.555

CHECK ALL THAT APPLY:

UNDERGRADUATE  GRADUATE

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

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TYPE OF PROPOSAL (Check ALL that apply)

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

DEPARTMENT

(SIGNATURE INDICATES APPROVAL)

Nancy Trukham 10/23/98 DEPT. CURRICULUM CHAIR / DATE  
Don C. Stone 11/23/98 DEPT. CHAIRPERSON / DATE

COLLEGE CURRICULUM COMMITTEE

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

APPROVED  
 NOT APPROVED

COMMENTS:  
Nancy Trukham 2-4-99  
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**

DATE OF OPEN HEARING (if necessary) 11/24/98 (College Level only)

APPROVED

NOT APPROVED

COMMENTS:

Robert A. Kubat 2/2/98  
SIGNATURE DATE

**SENATE**

Date announced at Senate 12/8/98

Voted upon at Senate:                      Approved                      Not Approved                      Date:

**EXECUTIVE VICE PRESIDENT/PROVOST**

FEB 8 1999

APPROVED

NOT APPROVED if so, 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 John Mattson

**REGISTRAR**

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

HEGIS TAXONOMY & COURSE NUMBER ASSIGNED 6707. 555

DATE/SIGNATURE OF REGISTRAR Robert A. Kubat 2/23/99

**NOTIFICATION FORWARD:**

SENATE CURRICULUM COMMITTEE CHAIRPERSON

DEPARTMENT CHAIRPERSONS

ACADEMIC DEAN(S)

REGISTRAR

SPONSOR(S)

T.M.  
2/25/99

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

**Course Proposal**

**Natural Language Processing**

1. Details

- |    |                                |  |
|----|--------------------------------|--|
| a. | Course Title:                  | Natural language processing  |
| b. | Sponsor:                       | Nancy Tinkham, Department of Computer Science  |
| c. | Credit Hours:                  | 3  |
| d. | Course Level:                  | Graduate/Senior  |
| e. | Curricular Effect:             | Restricted elective for computer science majors, and available as a service course to graduate students taking courses in computer science and related fields.               |
| f. | Prerequisites:                 | Artificial Intelligence (0707.450) or permission of instructor   |
| g. | Suggested Time, Implementation | One section every two years to start; will be offered more frequently if demand increases.   |
| h. | Resources:                     | The course can be taught with existing faculty, equipment, and library resources; we expect to expand the library's holdings in this area, which will strengthen the course. |

2. Rationale

Natural language processing is a research area in artificial intelligence which studies methods for enabling computers to interact with humans through "natural", or human, languages such as spoken or written English.

This course is designed to prepare seniors and graduate students to do research in natural language processing. It will survey the major problems and solution methods in the field, will prepare students to do their own literature searches as researchers, and will give students experience in implementing a small natural language system.

The course will also be of value to seniors and alumni who plan to work in industry designing natural language interfaces.

3. Essence of the course

a. Objectives in relation to student outcome

- Students will be able to find current research literature in natural language processing, using tools such as the *ACM Guide to Computing Literature*, the ACM digital library, and Internet resources.

- Students will be able to read current research literature in natural language processing on their own and summarize these research results on a written or oral presentation.
- Students will understand several of the methods currently used in natural language processing and will implement at least one of these approaches in a computer program.

b. Topic outline

The exact topical coverage will vary, depending on the specific interests of the instructor and the state of the art at the time the course is taught; however, typically the topics will include data structures and algorithms to implement the following in computer programs:

Syntax of natural language  
 Semantics of natural language  
 Pragmatics of natural language utterances  
 World knowledge and knowledge representation  
 Speech recognition  
 Language generation

c. Evaluation and grading procedures for students

Students will be evaluated based on class presentations, one or more projects, and possibly one or more exams.

d. Course evaluation

The department curriculum committee will evaluate this course.

4. Consultation: We have consulted with the Communication Studies, Electrical Engineering, and Psychology departments on this course.
5. Additional information

Possible texts:

*Language as a Cognitive Process: Syntax* (Winograd, Addison-Wesley, 1983)  
*Natural Language Understanding* (Allen, Benjamin/Cummings, 1987)  
*Introduction to Natural Language Processing* (Harris, Reston, 1985)

Readings in the course will typically include journal papers in addition to any textbooks chosen.

6. Catalogue description

Natural language processing 3 s.h.

*(Prerequisites: Artificial Intelligence (0707.450) or permission of instructor)*

This course presents methods for allowing computers to understand and generate sentences in human languages (such as English) and prepares the student to do research in natural language processing. Topics include syntax, semantics, pragmatics, and knowledge representation.

Suggested hegis #: 0707.555