

NEW COURSE PROPOSAL

DATE 11.29.06
PROGRAM AREA COMPUTER SCIENCE

1. Catalog Description of the Course. *[Follow accepted catalog format.]*

Prefix COMP **Course#** 590 **Title** ADVANCED TOPICS IN COMPUTER SCIENCE **Units** (3)

3 hours Lecture **per week**

☐ **Prerequisites**

☐ **Corequisites** none

Description Selected advanced topics in Computer Science.

☐ **Gen Ed**

Categories

☐ **Lab Fee Required**

Graded

☐ **CR/NC**

☒ **Repeatable for up to 9 units**

☒ **A - F**

☐ **Optional** (Student's choice)

Total Completions Allowed

☐ **Multiple Enrollment in same semester**

2. Mode of Instruction.

	Units	Hours per Unit	Benchmark Enrollment	Graded Component	CS # (filled in by Dean)
Lecture	3	1	24	☒	
Seminar				☐	
Laboratory				☐	
Activity				☐	

3. Justification and Learning Objectives for the Course. (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

Justification: This course is an elective course for teaching graduate students in computer science.

Learning Objectives:

Upon completion of this course students will be able to:

(Press enter for the next bulleted item)

- conduct further research in the selected topic
- apply knowledge from the studies in researching related areas
- apply the learned methodologies in software design, development and engineering
- apply the learned skills in the professional career

4. Is this a General Education Course YES ☐

NO ☒

If Yes, indicate GE category and attach GE Criteria Form:

A (English Language, Communication, Critical Thinking)

A-1 Oral Communication ☐

A-2 English Writing ☐

A-3 Critical Thinking ☐

B (Mathematics, Sciences & Technology)

B-1 Physical Sciences ☐

B-2 Life Sciences – Biology ☐

B-3 Mathematics – Mathematics and Applications ☐

B-4 Computers and Information Technology ☐

C (Fine Arts, Literature, Languages & Cultures)

C-1 Art ☐

C-2 Literature Courses ☐

C-3a Language
C-3b Multicultural
D (Social Perspectives)
E (Human Psychological and Physiological Perspectives)
UD Interdisciplinary

☐
☐
☐
☐
☐

5. Course Content in Outline Form. *[Be as brief as possible, but use as much space as necessary]*
(Press enter for the next bulleted item)

- The content depends on the selected topic.
- For example, for a course on Evolutionary Computing it could be:
- Darwin's evolution theory
- Principles of genetics
- Problem solving as a search task
- Hill climbing techniques and their relation to the evolution theory
- Standard evolutionary algorithm
- Crossover+Mutation+Selection=Evolution
- Evolution strategies
- Evolutionary programming
- Genetic programming
- Selected applications

Does this course overlap a course offered in your academic program? YES ☐ NO ☒

If YES, what course(s) and provide a justification of the overlap?

Does this course overlap a course offered in another academic area? YES ☐ NO ☒

If YES, what course(s) and provide a justification of the overlap?

Signature of Academic Chair of the other academic area is required on the consultation sheet below.

6. Cross-listed Courses (Please fill out separate form for each PREFIX)

List Cross-listed Courses

Signature of Academic Chair(s) of the other academic area(s) is required on the consultation sheet below

Department responsible for staffing:

7. References. *[Provide 3 - 5 references on which this course is based and/or support it.]*

(Press enter for the next number)

The bibliography depends on the selected topic.

For example, for the course on Evolutionary Computing the following books could be used:

"Introduction to Evolutionary Computing" by A.E. Eiben, J.E. Smith, Springer 2003

"An Introduction to Genetic Algorithms" by Melanie Mitchell, The MIT Press, 1998

"Genetic Algorithms in Search, Optimization, and Machine Learning" by David E. Goldberg, Addison-Wesley, 1989

"Genetic Algorithms + Data Structures = Evolution Programs" by Zbigniew Michalewicz, Springer, 1998

"Practical Genetic Algorithms" by Randy L. Haupt, Sue Ellen Haupt, Wiley, 2004

8. List Faculty Qualified to Teach This Course.

9. Frequency.

a. Projected semesters to be offered: Fall ☒ Spring ☒ Summer ☒

10. New Resources Required. YES ☐ NO ☒

If YES, list the resources needed and obtain signatures from the appropriate programs/units on the consultation sheet below.

a. Computer (data processing), audio visual, broadcasting needs, other equipment)

b. Library needs

c. Facility/space needs

11. Will this new course alter any degree, credential, certificate, or minor in your program? YES ☐ NO ☒

If, YES attach a program modification form for all programs affected.

AJ Bieszczad

Proposer of Course

Date

Approvals

Program Chair

Date

General Education Committee Chair

Date

Curriculum Committee Chair

Date

Dean

Date