



Florida Institute of Technology

Department of Computer Sciences
Memorandum

To: University Curriculum Committee
Through: College of Engineering Academic Council
Date: December 6, 2005; Revised January 13, 2006
From: William Shoaff, Head, Department of Computer Sciences
Subject: Repeatable Undergraduate Classes

William Shoaff
Jan 31, 06

The department makes the following requests for approval by College of Engineering Academic Council and the University Curriculum Committee.

1. Approval of a new repeatable variable credit course, in which at most 6 credits may be earned:

CSE 4400 INDEPENDENT STUDY IN COMPUTING (1–3 credits).

Individual projects under the direction of faculty members of the computer science or software engineering programs. Requirement: Instructor approval. (R6)

2. Removal of 3 fixed credit repeatable courses from the university catalog.

(a) **CSE 4401 INDEPENDENT STUDY IN COMPUTER SCIENCE (1 credit).**

(b) **CSE 4402 INDEPENDENT STUDY IN COMPUTER SCIENCE (2 credits).**

(c) **CSE 4403 INDEPENDENT STUDY IN COMPUTER SCIENCE (3 credits).**

3. The catalog description of CSE 4510 SPECIAL TOPICS IN COMPUTER SCIENCE be altered to denote that a maximum of 9 credits may be earned in it.

CSE 4510 SPECIAL TOPICS IN COMPUTER SCIENCE (3 credits).

Explores new and emerging topics within the various disciplines included in the field of computer science. Subject matter varies, depending on the instructor and other available resources. May be repeated for credit, provided the topics change. (Requirement: Instructor approval.) (R9)

4. The catalog description of CSE 4520 SPECIAL TOPICS IN SOFTWARE ENGINEERING be altered to denote that it is repeatable and a maximum of 9 credits may be earned in it.

CSE 4520 SPECIAL TOPICS IN SOFTWARE ENGINEERING (3 credits).

Provides instruction and experience in timely topics related to the production of quality-engineered software. May be repeated for credit, provided the topics change. (Requirement: Instructor approval.) (R9)

This course is available for student registration only after the approval process has been completed.

Subject CSE Course No. 4400 Credit Hours 1-3 Term to be added to the file Fall 2006
Alpha Prefix (e.g., CSE) Number Choice (e.g., 1301) (e.g., Fall 2005)

Class Hours 1-3 Lecture Hours _____ Lab Hours _____ Contact Hours (CEU only) _____

Department Computer Sciences Schedule Type Independent Study
(e.g., Computer Sciences) (e.g., lecture, lab or special project)

College/School (Please check appropriate box)
 College of Aeronautics-23 College of Psychology and Liberal Arts-25
 College of Business-24 College of Science-26
 College of Engineering-01 University College/SEGS-90

Computer Title (restricted to 25 spaces, including blanks) Independent Study in Comp

Catalog Title Independent Study in Computer Sciences

Catalog Description of Course (limited to 350 characters, including spaces)

Individual projects under the direction of faculty members of the computer science or software engineering programs. May be repeated for credit. (Requirement: Instructor approval.) (R6)

In addition, you may attach a course syllabus and/or more detailed description.

Restrictions Prerequisite _____ Corequisite _____ Grades to be issued
(course number) (course number) A, B, C, D, F
 Prerequisite _____ Corequisite _____ S, U
(course number) (course number) P, F
 Prerequisite _____ Corequisite _____ Other _____
(course number) (course number)

Additional Restriction Instructor approval
(e.g., major, class level, department head approval)

If this course replaces a course currently offered in BANNER, please indicate old course information

Subject Alpha Prefix (e.g., CSE) CSE Course No. (e.g., 1301) 4401, 4402, 4403

APPROVALS
 Upon completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee for approval below and forward to Catalog Coordinator.

[Signature] 2/1/06 _____
Originator Date Chair, Graduate Council Date

[Signature] 1/31/2006 _____
Department Head/Program Chair OR

[Signature] 1-31-06 _____
Dean or Associate Dean Chair, Undergraduate Curriculum Committee Date

CATALOG COORDINATOR	REGISTRAR'S USE ONLY
_____ <small>Catalog Coordinator Date</small>	SCACRSE _____ SCADETL _____ SCAPREQ _____ SCABASE _____ SCARRS _____ Operator Init _____ Date _____

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CSE 4400 Independent Study in Computer Sciences (1-3 semester hours)
Course Coordinator — William Shoaff
URL — <http://graybox.cs.fit.edu/moodle/course/view.php?id=15>

Current Catalog Description

CSE 4400 INDEPENDENT STUDY IN COMPUTER SCIENCES (1-3 credits).
Individual projects under the direction of faculty members of the computer science or software engineering programs. May be repeated for credit. (Requirement: Instructor approval.) (R6)

Textbook

There is no assigned textbook.

References

References vary depending on the subject of the study.

Course Outcomes

Although the content and expectations for students enrolled in independent study will vary, by the end of the course, students are expected to be able to:

1. Demonstrate an ability to work independently in the field of computing under the supervision of a member of the faculty.
2. Write a report on a significant problem they have solved or computing issue they have studied.
3. Analyzed a problem, and design and implemented a solution.

Prerequisites by Topic

Approval of the instructor is required. Topic prerequisites vary, but as general rule, students will have successfully completed the course CSE 2010 Algorithms and Data Structures.

Major Topics Covered in the Course

Topics depend on the subject of the study.

Laboratory Projects

Almost always, students will be expected to complete a significant programming project that will be a significant basis for assigned grades.

Oral and Written Communication

Almost always, students will be expected to write a report on their project. Other software artifacts, such as requirements and design documents, test and maintenance plans, and user manuals will be written. The quality of these documents will form another significant basis for the assigned grade.

Course Outcomes Map to Program Outcomes for CSE 4400																		
Course Outcomes	A	B	C	D CS	D SE	E CS	E SE	F	G	H	I	J	K	L	M	N	O	P
1												(3)						
2														(4)				
3															(4)	(3)	(3)	
Index	Program Outcomes																	
A	Demonstrate knowledge of discrete mathematics, calculus, logic, probability and statistics																	
B	Use the scientific method to design and conduct experiments, as well as to analyze and interpret data																	
C	Apply skills in programming fundamentals and knowledge of data structures, algorithms, software engineering, and computer organization																	
D.CS	Apply advanced knowledge of computer architecture, programming language concepts, operating systems, analysis of algorithms and formal languages																	
D.SE	Apply advanced knowledge of requirements engineering, software design, software testing, software evolution, and software processes																	
E.CS	Use specialized knowledge of computer science from areas such as artificial intelligence, databases, compilers, graphics, networks, software engineering, and web technology																	
E.SE	Develop software solutions to problems using specialized knowledge from one or more application domains																	
F	Understand and follow appropriate professional, legal, and ethical practices																	
G	Understand the impact of computer technology in a global and societal context																	
H	Recognize the need for continual professional development																	
I	Use knowledge of historical and contemporary issues to make informed decisions																	
J	Demonstrate the ability to work as an individual with minimum guidance																	
K	Function effectively on multidisciplinary teams using their understanding of team dynamics																	
L	Communicate effectively in writing, oration, and diagrams to a range of audiences about computing problems and their solutions																	
M	Conceptualize, design, and implement computer-based systems																	
N	Design a package, class, or method to meet performance requirements																	
O	Use effective tools to solve practical computing problems																	
P	Operate computing equipment and software systems effectively																	

Bloom levels: (1) Knowledge, (2) Comprehension, (3) Application, (4) Analysis, (5) Synthesis, (6) Evaluation

Figure 1: Program Outcomes Met By Course Outcomes

Social and Ethical Issues

These issues may or may not be present in the study.

Theoretical Content

There may or may not be theoretical content in the study.

Problem Analysis

Students are expected to be given a problem whose solution requires thorough analysis.

Solution Design

Design and implementation of the solution to the problem is expected.

Prepared by:

William Shoaff (February 10, 2006)