M.S. in Computer Engineering Academic Assessment Plan 2012-13

Department of Computer Information Science and Engineering College of Engineering

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Office of the Provost

University of Florida

Institutional Assessment

Continuous Quality Enhancement

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2012-13 Academic Assessment Plan M.S. in Computer Engineering
Information Science and Engineering Department

College of Engineering

A. Mission

A.1. CISE Mission:

The Department of Computer and Information Science and Engineering is concerned with the theory, design, development and application of computer systems and information processing techniques. The mission of the CISE Department is to educate undergraduate and graduate majors as well as the broader campus community in the fundamental concepts of the computing discipline, to create and disseminate computing knowledge and technology, and to use our expertise in computing to help society solve problems.

A.2. College of Engineering Mission

The College of Engineering fosters and provides world-class programs in engineering education, research and service to enhance the economic and social well-being of the citizens of Florida, the nation and the world.

A.3. University of Florida Mission

The University of Florida faculty renews its commitment to serve the citizens of Florida and educate students so they are prepared to make significant contributions within an increasingly global community. In affirming the university's academic mission, we honor the human component of our mission: our students, faculty, staff and administrators; and recognize the importance of these human resources to the university's success. Towards this affirmation, the University of Florida faculty specifically encourages a campus-wide culture of caring.
It is the mission of the University of Florida to offer broad-based, exclusive public education, leading-edge research and service to the citizens of Florida, the nation and the world. The fusion of these three endeavors stimulates a remarkable intellectual vitality and generates a synthesis that promises to be the university's greatest strength.

The university maintains its dedication to excellent teaching and researching by creating a strong and flexible foundation for higher education in the 21st century. While the faculty remains committed to key aspects of the university's original mission, changing times will require that we continually expand and evaluate our academic aspiration. We do this in order to assure that quality education at the University of Florida remains the highest goal and most valued contribution to society.

The University of Florida belongs to a tradition of great universities. The faculty and staff of the university are dedicated to the common pursuit of its mission of education, research and service. To-

gether with our undergraduate and graduate students we participate in an educational process that links the history of Western Europe with the traditions and cultures of all societies, that explores the physical and biological universes, and that nurtures generations of young people from diverse backgrounds to address the needs of our societies. The university welcomes the full exploration of our intellectual boundaries and supports our faculty and students in the creation of new knowledge and the pursuit of new ideas.

Teaching is a fundamental purpose of this university at both the undergraduate and graduate levels. Research and scholarship are integral to the education process and to the expansion of our understanding of the natural world, the intellect and the senses. Service reflects the university's obligation to share the benefits of its research and knowledge for the public good.

These three interlocking elements span all of the university's academic disciplines and represent the university's commitment to lead and serve the State of Florida, the nation, and the world by pursuing and disseminating new knowledge while building upon the experiences of the past. The University of Florida aspires to advance the state, nation and the international community by strengthening the human condition and improving the quality of life.

A.4. Mission Alignment:

The program mission clearly aligns with the college and the university missions. The program addresses the concerns with the theory, design, development, and application of computer and information systems. Its mission emphasizes research, education, services, and contribution to the society.

B. Student Learning Outcomes and Assessment Measures

Student Learning Outcomes	Assessment Method	Results	Use of Results
1. Knowledge: an ability to identify, formulate, and solve computer science and engineering problems	Assess the achievements in the assignments and exams of COT 5405 Analysis of Algorithms	Target: students answering 75% (or more) of the questions in the assessment instruments in COT 5405. Assessment begin Fall 2012	Assessment of Student Learning Outcomes of Knowledge, Skill and Professional Experience
2. Knowledge: an ability to critically read computer science and engineering literature	Student write a paper surveying the literature on a selected topic from COT 5405 Analysis of Algorithms	Target: students correctly identify the contributions of the papers surveyed and identify areas of improvement for future work. Assessment begin Fall 2012	Assessment of Student Learning Outcomes of Knowledge, Skill and Professional Experience
3. Skills: an ability to use the techniques, skills, and tools necessary for computer science and engineering practice at an advanced level	Required homework, projects, and other deliverables from COT 5405 Analysis of Algorithms	Target: students complete required homework, projects, and other course deliverables with an overall score of 75% or greater. Assessment begin Fall 2012	Assessment of Student Learning Outcomes of Knowledge, Skill and Professional Experience
4. Professional experience: an understanding of professional and ethical responsibility	Students must take an exam with questions on ethics.	Target: students must answer 90% of the questions correctly before graduation.	Assessment of Student Learning Outcomes of Knowledge, Skill and Professional Experience
5. Professional experience: an ability to communicate effectively	Exit interview	Target: students must effectively answer all exit interview questions.	Assessment of Student Learning Outcomes of Knowledge, Skill and Professional Experience

C. Research

The department establishes six research areas:

1.Analysis of Algorithms, modeling and art
2.Computer systems
3.Computer vision and intelligent systems
4.Database and information systems
5.High-performance computing and algorithms
6.Networks and security

The CISE department at the University of Florida provides many opportunities for research at all levels. All of our Ph.D. students are expected to perform original, publishable research in the Computer and Information Science and Engineering fields. Our Ph.D. students will usually publish in high quality IEEE or ACM journals and conferences. Many of our Ph.D. students learn to do research by collaborating with their advisors and by working as Graduate Research Assistants. M.S. students may perform research. There is an M. S. thesis option but the thesis is not required. Less than half of the students take the thesis option. It is often the case, although not always, that the research performed to complete the thesis option results in publishable research. Undergraduate students also get involved in research activities in multiple ways as described below.

Students are sometimes involved in National Science Foundation Research through the Research Experience for Undergraduates program that provides additional funding to NSF grantees to fund undergraduate research. Some of our students perform research in collaboration with companies via our Integrated Product Process and Design (IPPD) program. In addition, all of our undergraduate must conduct a senior project, some of which are research projects undertaken with individual faculty members.

D. Assessment Timeline

Program: MS in Computer Engineering
College: College of Engineering

Assessment SLOs	Assessment 1	Assessment 2	Assessment 3
Knowledge			
#1	Final exam		
#2		Literature review	
Skills			
#3	Final exam		
Professional Behavior			
#4			On-line ethics tutorial & quiz
#5	Final exam	Literature review	

E. Assessment Cycle

Assessment Cycle for:
Program: M.S. in Computer Engineering College: College of Engineering

Analysis and Interpretation: Fall Term every other year
Program Modifications: Completed by the following Spring term
Dissemination: Completed by the End of following Spring Term

Year SLOs	10-11	11-12	12-13	13-14	14-15	15-16
Content Knowledge						
#1			Fall 12	Fall 13	Fall 14	Fall 15
#2			Fall 12	Fall 13	Fall 14	Fall 15
Skills						
#3			Fall 12		Fall 14	
Professional Behavior						
#4			Fall 12		Fall 14	
#5			Fall 12		Fall 14	

F. Measurement Tools

Knowledge and Skill: We distribute an evaluation form to the instructor teaching COT5405. The instructor makes a thorough evaluation based on student's performance in the literature review and the final exam.

Professional Behavior: The department has established an online ethics tutorial and quiz for all graduate students. All students must take the tutorial and quiz before graduation. Students who do not reach to the minimum requirement (answer 90% of the questions correctly), are allowed to re-take the test again until they reach the goal.

G. Assessment Oversight

Name	Department Affiliation	Email Address	Phone Number
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Figure 1: M.S. in Engineering SLO Assessment Rubrics
For Knowledge, Skill and Communication at COT5405 and Rubric for Assessment of Professional Behavior

The M.S. student performance is assessed at the COT5405 Analysis of Algorithms class. Student's instructor circle the appropriate numbers to indicate levels of performance based on comparisons with other students of comparable academic level. A minimum score of 3 is required for all four outcomes in order for the student to be considered successful. In addition, we establish on-line tutorial and quizzes for assessing professional behavior.

	1 = poor	2 = fair	3 = good	4 = very good	5 = excellent
1. Ability to identify, formulate, and solve computer science and engineering problems.	unable to understand and formulate the stated exam problem and relate it to the topics discussed in class	Weak understanding and incomplete formulation of the problem, sketchy solution attempt	Provide general description and formulation on the problem with reasonably clear solution method.	Clearly identify, formulate and solve the stated exam problem.	Clearly identify and formulate the stated problem and provide creative solution.
2. Ability to critically read and integrate engineering literature.	Literature survey paper is written without proper research on the topic.	Partial but incomplete literature survey.	Provide complete literature survey, but missing good comprehensive integration.	Complete literature survey to cover all important subjects and integrates with the material covered in class.	Complete literature survey to cover all important subjects as well as potential future research topics.
3. Ability to use the techniques, skills, and tools necessary for computer science and engineering practice at an advanced level.	No theoretical formula, tool, and other means for solving the identified problem	Limited tools and techniques used for solving the problem.	Provide reasonable techniques, skill and tools for solving the problem	Provide good techniques, skill and tools for solving the problem at an advanced level	Provide excellent and innovative techniques, skill and tools for solving the problem at an advanced level
4. Ability to communicate effectively.	Unclear, unorganized written presentation of the material in exam and survey papers	Reasonable presentation, but does not highlight the key issues of the solution or the review material	Well organized and clear presentation addressing the basics	Well-organized and clear presentation addressing the basics and beyond	Well-organized, clear and intriguing presentation with creative ideas
5. Ability to understand Code of Ethics and professional practice for software engineers	Answer online quiz with <60% correctness	Answer online quiz with 60% - 70% correctness	Answer online quiz with 70% - 80% correctness	Answer online quiz with 80% - 90% correctness	Answer online quiz with 90%- 100% correctness