MASTER OF SCIENCE IN COMPUTER SCIENCE

Mission Statement

The mission of the Department of Computer Science is to provide a high-quality, student-oriented educational experience to undergraduate and graduate students in the Northwest Florida region. The department prepares students for successful careers in computing by empowering them with the knowledge and skills to contribute responsibly and creatively to a complex and ever-changing world, and to continue professional development and life-long learning.

Student Learning Outcomes

The Computer Science Department offers a Master of Science program in Computer Science with two specializations: Computer Science (CS) and Software Engineering (SE). Upon successful completion of the graduate program, students will be able to do the following:

Content

- Describe, compare, and evaluate at an expert level one or more contemporary topics of specialization in modern computing
- Apply computing principles to a specific problem domain (e.g., medical software, high-performance computing)
- (For students who choose the CS specialization) Develop and analyze relevant algorithms and their efficient implementation in a variety of environments
- (For students who choose the SE specialization) Explain and adapt to the software life cycle, including communicating with users, developing requirements, testing and deploying systems, and managing the whole of the Software Engineering process

Critical Thinking

- Identify and analyze alternate approaches to solving computing problems
- Implement and analyze relevant algorithms in a variety of environments

Communication

- Employ effective and professional technical writing skills
- Present summary of thesis or project results using appropriate technologies

Integrity/Values

- Identify ethical issues and responsibilities within the computing profession

Project Management
- Conceive, plan, organize and execute a significant months-long project in computing
- Collaborate with team members where appropriate and defend results and outcomes at the end of the project timeline

Evaluation of Student Learning Outcomes
Computer Science graduate students will acquire advanced skills and knowledge that enable them to join the computing profession or continue a path of higher education towards a doctoral degree. They will gain expertise through courses in their chosen area of specialization: Computer Science or Software Engineering. They will be assessed in a capstone experience, thesis or project, which is required at the end of their program of study. The capstone requirement allows students to demonstrate an integrative grasp of the outcomes by developing a research thesis or software system of appropriate complexity that must abide by ethical standards and make a creative contribution to the field.

Career Paths and Job Prospects

Computer Scientist	Software Engineer
Project Manager	Software Consultant
Senior Programmer / Analyst	Systems Engineer
Network Administrator	Requirements Engineer
Database Administrator	Software Quality Assurance Engineer
Computing Researcher	Advanced Graduate Studies

For more information on the Computer Science Master's Program at UWF, please visit:
http://www.cs.uwf.edu/

Computer Science Rubric for Assessment of ALP Based on Graduate Thesis or Project

Student Name: _____ **Course:** _____ **Semester:** _____ **Supervisor:** _____
Assessment of: _____ first semester _____ second semester

Criteria & Points Assigned	Missing	Unacceptable	Below Expectations	Meets Expectations	Exceeds Expectations	Points Earned
	0	**1**	**2**	**3**	**4**	
Content						
Summarize, compare and evaluate, at an advanced level, concepts, research findings and current theories and models in core content areas of computer science.	Literature review in thesis or project is incomplete and/or omits important research findings or theoretical positions.	Literature review is incomplete and includes excessive discussion of unrelated issues and/or significant errors in content. Assertions are made without adequate support from evidence.	Literature review is brief, with insufficient detail. Unrelated issues are introduced and/or minor errors in content. Assertions made without adequate support from evidence.	Literature review is brief but complete; review focuses only on issues related to question; review is factually correct; assertions are clearly supported with evidence and appropriate use of logic.	Literature review is complete; sufficient detail is provided to support assertions; assertions supported with evidence; includes original and relevant insight or analysis of topic.	
Identify computing principles and algorithms that are relevant to thesis or project topic and apply them within specific problem domain.	Unable to identify relevant computer science theories or algorithms.	Basic understanding of computing principles. Fails to apply them within specific problem domain.	Basic principles and techniques relevant to project or thesis are included, but some are missing. Fails to develop complete theoretical or design framework for thesis or project.	Provides good computing framework for thesis or project; applies principles and algorithms correctly to problem domain.	Project or thesis is completely grounded in computing theories and techniques. Applies them to problem correctly and clearly establishes their relevance.	
Critical Thinking						
Evaluate and integrate computer science literature to address specific theory or practical problem. Describe and select appropriate scientific methods to answer question.	No clear research question or project posed. Relevance to existing literature and theory not established. Major errors in choice of research methods or analysis. Conclusions inconsistent with evidence presented.	Project/Question posed is of questionable relevance or has clearly been answered. Question unrelated to existing literature. Errors in choice, execution or interpretation of methods and/or data. Conclusions weakly justified by evidence.	Project is not very innovative. Question has been adequately answered in prior research; no clear rationale for reexamination of question given. Research and methods selected are flawed or inadequately carried out. Conclusions overreach evidence presented.	Meaningful question/project is posed, but may not be fully explicated. Research and methods selected appropriate for project. Conclusions follow logically from evidence presented.	Project addresses question or problem that is meaningfully connected to existing literature and theory. Student provides clear explanation of relationship. Research methods selected are appropriate for project. Conclusions follow logically from evidence presented.	

Revised 1/16/2008

Computer Science Rubric for Assessment of ALP Based on Graduate Thesis or Project

Criteria & Points Assigned	Missing	Unacceptable	Below Expectations	Meets Expectations	Exceeds Expectations	Points Earned
	0	1	2	3	4	
Communication						
Written: Organization and logic	No logical order to information provided.	Weak organization; sentences rambling; ideas repeated.	Minor problems of organization or logic; Needs work on creating transitions between ideas.	Presentation is organized, but does not present clear argument for research position/project rationale.	Clear and logical presentation; good development of argument/project rationale; transitions made clearly and smoothly.	
Mechanics of writing (spelling, punctuation, grammar, clarity of writing)	Problems with mechanics of language serious enough to interfere with effective communication. Frequent errors in punctuation, spelling, sentence structure, etc.	Major problems with mechanics of language; Awkward sentence construction; poor or absent transitions; frequently difficult to understand.	Frequent problems with mechanics of language; Occasional awkward sentences and poor transitions reduce readability.	Infrequent and minor mechanical problems; Errors do not impair readability.	Clear, readable writing. Good use of transitions; no problems with spelling, punctuation, or grammar.	
Use of relevant APA Style (Title page, citations & references, use of language, etc.)	No evidence APA style used.	Minimal use of APA style; frequent errors in all aspects of APA style.	Adequate use of APA style, but frequent errors in citations & references.	Infrequent errors in APA style; errors involve minor aspects of APA style – no errors in style for citations & references.	All relevant aspects of APA style used effectively and correctly.	
Oral: Communication skills during presentation	Unable to respond effectively to questions posed by committee members.	Answers to several questions incomplete; needs frequent assistance from thesis/project advisor.	Answers to few questions incomplete; needs occasional assistance from thesis/project advisor.	Provides complete answers to questions posed. Presents thesis/project work in coherent manner.	Appropriate use of technology during presentation (where relevant). Presentation of thesis/project work is clear and well-organized. Responds to questions in poised, articulate, and professional manner.	

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	0	1	2	3	4	
Integrity/Values						
Clear understanding of and adherence to scientific and professional ethics.	Evidence of transgression of scientific, professional, or academic integrity.	Lack of understanding of scientific and professional ethics. Inadvertent violation of academic-conduct code.	Exhibits incomplete understanding but still complies with principles of scientific, professional and/or academic integrity. Adherence is poorly documented.	Exhibits understanding and complies with principles of scientific, professional and/or academic integrity. Adherence is poorly documented.	Clear documentation of compliance with all relevant ethical guidelines. Clearly establishes authorship of thesis or project work.	
Project Management						
Work individually, or as part of team where appropriate, to formulate, analyze, design, and implement a significant thesis, or computing project.	Unable to formulate project idea. No timeline constructed. Fails to meet most timeline goals. Implementation falls below expected minimum standards. Demonstrates lack of ability to function as part of team if applicable.	Problem formulation and solution contain numerous faults. Significant milestones in timeline not met. Implementation minimally meets expected standards. Unable to work effectively as team member if applicable.	Problem formulation and solution design contain some faults. Some milestones in timeline not met. Implementation exceeds minimal requirements but does not represent significant computing project. Demonstrates marginal effectiveness as team member if applicable.	Problem formulation and solution design contain no faults, but retain areas for significant improvement. Major milestones in timeline are met within acceptable timeframe. Implementation represents significant computing project with minor mistakes. Demonstrates effectiveness as team member if applicable.	Well-formulated, designed, and implemented project. Completes project according to timeline. Implementation represents significant computing project. Demonstrates effectiveness as team member if applicable.	
Student strengths:						
Student weaknesses:						

Revised 1/16/2008