

Standing Requirements

## Outcomes Library

### MA/MS in Computer Science Outcome Set - Effective 2012-2013

#### Objective 1 - Reinforce Core CS Skills

One objective of the master's program is to reinforce the core CS skills that students become proficient at as undergraduates. If there are any deficiencies in students' core CS skills, these should be removed by the time a student graduates from the master's program. See the Program Educational Objectives and Learning Outcomes for the undergraduate program for more details.

Outcome	Mapping
1A - Reinforce Core CS Skills	No Mapping

#### Objective 2 - Algorithms and Analysis

The second main objective is that students have more specialized knowledge of algorithms and analysis than that expected of undergraduate students.

Outcome	Mapping
2A - Algorithms	No Mapping
2B - Large Software Projects	No Mapping
2C - Independent Research	No Mapping

Students are exposed to a wider variety of algorithm techniques than in the undergraduate program, including a more detailed look at linear programming, randomized algorithms, and the computational complexity of intractable problems. Students gain experience programming a wider variety of algorithms, and should be proficient at analyzing new problems in light of the techniques they have learned.

Students gain experience working on large software projects, using libraries and techniques that are more on the cutting edge of present research. Students should be proficient at working on large software projects.

Students should be proficient at independently researching the best algorithms for a given problem, understanding the state of the art algorithms, and programming or using existing tools to solve the problem.

#### Objective 3 - Professional, Interpersonal, and Writing Skills

Another objective of the program is that the students develop professional, interpersonal, and writing skills.

Outcome	Mapping
3A - Working in a Group	No Mapping
3B - Presentation Skills	No Mapping
3C - Writing Skills	No Mapping

Students should have had some experience working on a programming project in a group setting.

Students should have given presentations in some of their classes, and should be aware of and have mastered basic presentation skills.

Students should have experience writing a technical research paper. Students should be knowledgeable in the standard formatting and style for such papers.

## Replaced - MA/MS in Computer Science Outcome Set

### 1. Knowledge of advanced software development techniques

Demonstrate knowledge of advanced software development techniques.

Outcome	Mapping
1A. Perform object oriented software development Students should be able to perform object oriented software development, component design and architecture design.	No Mapping
1B. Describe and utilize design patterns. Students should be able to describe and utilize design patterns.	No Mapping
1C. Describe and utilize XML. Students should be able to describe and utilize XML.	No Mapping

### 2. knowledge of advanced concurrent processing techniques.

Demonstrate knowledge of advanced concurrent processing techniques.

Outcome	Mapping
2A. Describe and utilize shared variables. Students should be able to describe and utilize shared variables.	No Mapping
2B. Describe and utilize message passing. Students should be able to describe and utilize message passing.	No Mapping
2C. Describe and utilize concurrent programming languages Students should be able to describe and utilize concurrent programming languages.	No Mapping

### 3. Knowledge of advanced topics in the theory of computing.

Demonstrate knowledge of advanced topics in the theory of computing.

Outcome	Mapping
3A. Algorithm analysis and design. Students should be able to describe and utilize advanced methods of algorithm analysis and design.	No Mapping
3B. Formal languages, logic, automata and computability Students should be able to describe and utilize advanced topics in formal languages, logic, automata and computability	No Mapping
3C. Describe & utilize advanced topics in discrete structure Students should be able to describe and utilize advanced topics in discrete structures.	No Mapping

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