

Western Michigan University

Computer Science Graduate Program Objectives and Assessment

The primary mission of the Department of Computer Science is the advancement of the field of computer science through teaching, research, and service. Graduate programs objectives to remain actively engaged in this mission are:

- a. Graduates will be able to apply research and development skills upon employment and be able to design and develop computer software systems and products independently based upon sound theoretical principles and software development skills.
- b. Graduates will be able to assess and apply technological advances through active participation in life-long learning.
- c. Graduates will be able to apply technical communication, collaboration and mentoring skills on the job as team members and leaders in research and development in the computing field.
- d. Graduates will be able to explain the roles of professional ethics, regulations and guidelines in the profession, including global cultural awareness and environmental impacts.
- e. Doctoral graduates will be able to generate knowledge in at least one computer science sub-discipline at a level that allows them to pursue academic and research careers at colleges and universities, as well as with national and international industries and laboratories.

MS Program Student Outcomes

M1.Students will be able to explain and apply basic theoretical knowledge and core concepts of computer science.

M2.Students will be able to construct solutions to real-world computing problems utilizing advanced algorithms and system design.

M3.Students will be able to explain technical concepts orally and in written form effectively to a wide audience.

Outcomes	Metrics	Target	Frequency
M1	Letter grade distributions in foundation courses (CS 5310, 5541, 5800)	For each course, 80% of students pass with B or better.	In the year following ABET accreditation visitation
M2	Letter grade distributions in CS 6000-level courses	80% of students pass with B or better.	Same as above
M2, M3	Percentage of enrollment in research/topic-oriented courses (CS 5950, 5990, 6030, 7100), M.S. project (CS 6970), or M.S. thesis (CS7000).	50% of students enroll in at least one such course.	Same as above

PhD Program Student Outcomes

- D1. Students will be able to analyze and explain solutions to problems using a breadth of computer science knowledge.
- D2. Students will be able to explain concepts and solve problem in an in-depth manner in at least one computer science sub-discipline.
- D3. Students will be able to analyze and construct novel solutions for problems in computer science research.
- D4. Students will be able to explain technical concepts orally and in written form effectively to a wide audience.

Outcomes	Metrics	Target	Frequency
D1	Letter grade distribution in CS 6000-level courses	80% of students pass with BA or better.	In the year following ABET accreditation visitation
D1	Percentage of qualification exams passed on the first attempt	For each exam, 80% of students pass on the first attempt.	Each student once
D2, D3	Number of students passing the annual review with or without reservations	90% of students pass annual review without reservation.	Each student every year
D2, D3, D4	Number of semesters registered in CS 7300 (Ph.D. Dissertation)	80% of students complete within 6 full semesters.	Each student upon graduation
D3, D4	Number of accepted peer-reviewed academic publications	90% of students graduate with at least two published research papers.	Each student upon graduation