Mission Statement

The mission of the computer science and engineering graduate degree programs within the Department of Computer Science is to provide students with a comprehensive knowledge in one of the sub-disciplines in computer science and engineering including algorithm and theory of computation, computer system design and engineering, artificial intelligence (e.g., computer vision, robotics, and evolutionary computing), computational science and engineering (e.g., bioinformatics, geoinformatics, and computational physics), and software development and engineering. Doctoral students are most often trained to pursue careers involving teaching and research at university-level academic institutions or research laboratories, to perform applied research and development at existing firms, or to consult on transferring advanced technology to industry.

Doctoral students must demonstrate a comprehensive knowledge in their chosen sub-discipline by completing a unique program of study, which is developed in consultation with their Ph.D. advisor(s) and members of their dissertation committee. The program of study typically includes certain required courses and elective courses, many of which are interdisciplinary, and also includes a substantial fundamental research component, which is related to their specific sub-discipline within computer science and engineering. This research is expected to advance the state of the art in their chosen sub-discipline. The results of the research presented in a Ph.D. dissertation, are typically published in one or more professional research journals, and are usually presented at one or more professional conferences.

Student Learning Outcomes

By completing an approved program of study and a Ph.D. dissertation, each doctoral student will acquire the necessary fundamental knowledge and background in computer science and engineering and demonstrate the ability to teach effectively at the university-level at an academic institution and conduct fundamental and applied research at an academic institution or research agency through the development of an externally funded research program, and/or to work in public or private practice as an information technology consultant in their chosen sub-discipline.

Student Performance Indicators

- Demonstration of the ability to prepare successful research proposals to secure funding to conduct scholarly research
- Development and presentation of detailed proposal for doctoral research
- Demonstration of comprehensive knowledge of fundamental concepts and engineering design principles related to the student's chosen sub-discipline within computer science and engineering
- Demonstration of the potential to conduct scholarly research
- Preparation and submission of abstracts and manuscripts for presentation at

Assessment Method

- Receipt of external funding to conduct fundamental or applied research
- Approval of research proposal by Ph.D. advisor(s) and dissertation committee
- Successful completion of a written qualifying examination administered by the student's doctoral committee after completing the first year of coursework
- Successful defense and approval of Ph.D. dissertation by Ph.D. advisor(s) and dissertation committee
- Presentation of doctoral research at professional conferences
- Evaluation of classroom effectiveness through observation of teaching and/or
Use of Results

Faculty members in the Department of Computer Science will use the assessment methods to enhance the graduate program in Computer Science and Engineering by making appropriate changes in course content and course offerings through curriculum reviews. Each faculty member will encourage students involved in research to present results at professional conferences and submit manuscripts for publication in research journals in order to build the reputation of our graduate programs. Alumni surveys and advisory board input will be used to track the professional development of graduates and identify any appropriate changes to strengthen the graduate programs.

Implementation Plan

The department assessment committee will analyze assessment data and distribute its recommendations to the various sub-disciplines within the department. All faculty members will be asked to annually review assessment methods and suggest appropriate changes and additional performance measures. Successful assessment methods will enhance the reputation of the graduate programs and improve the recruitment of future graduate students.