

# **Master's Degree in Applied Mathematics and Computer Sciences**

## **Program Assessment Plan**

### **Department of Mathematical Sciences and Department of Computer Sciences**

**Proposed in February 2009, and adopted in March 2009**

#### **I. Student Learning Goals**

Students will acquire the ability to read critically, evaluate, and apply research and other scholarship to problems in their chosen area of study/practice. The program provides students with opportunity to acquire the ability to actively engage in scholarship in the areas of applied mathematics and computer science.

The emphasis throughout the curriculum is on the real-world problems and applications likely to be encountered in business and industry, which provides opportunity for students to acquire the ability to analyze problems and issues within their area of study or practice.

The program provides schedules that are tailored to the interests of students to acquire depth of content that is intellectually demanding and/or intended to build specialized professional skills.

The program provides opportunity for students to acquire the communication skills necessary for effective participation in their chosen area of study or professional practice.

Students will acquire breadth of skills in applied mathematics and in computer science.

The program provides opportunity for students to acquire the technological expertise expected by their chosen area of study or professional practice.

The program provides opportunity for students to learn the ethical principles governing scholarship and professional practice as appropriate to their chosen area of study/practice.

Students will complete a project or a thesis with academic merit under the guidance of an

identified advisor and a committee. Students will receive orientation to the field of study/professional practice, mentoring, and a variety of formal and informal opportunities

to interact with faculty and other experts in the field.

Student will have an opportunity to publish original research articles with their thesis advisors.

#### **II. Methodology**

The program uses several methods to assess students of master's degree in applied mathematics

and computer science. A major instrument of assessment is the use of student theses or projects.

Two surveys are also chief instruments of assessment. Every third year, a survey is taken of current students majoring in the master's degree program. The current student survey takes place in the fall starting 2009, and repeats in 2012, 2015, etc. The alumni survey takes place the year after the current student survey.

### **III. Process**

The committee for the master's degree in applied mathematics and computer science meets annually, usually in its last meeting of the spring semester, to analyze the assessment information collected. Changes to the degree programs, including curriculum and scheduling of courses, are considered in light of the accumulated assessment data. Further, the assessment plan itself is discussed and, if necessary, revised at this meeting.

### **IV. Participation**

All current members of the joint graduate committee participate in the analysis and discussion of assessment data, as well as the revision of the assessment plan. Student surveys are structured in such a way that students are not just objects of assessment but are given the opportunity to suggest changes to the curriculum or degree programs. As noted above, alumni as well as current students are involved in the assessment process.

### **V. Records**

The Departments of Mathematical Sciences and Computer and Information Sciences will keep an archive of student theses, student projects, student surveys, any other assessment data collected, copies of all assessment reports, and copies of its assessment plan on file in the department offices. Copies of the assessment plan and reports will be placed on the departmental web pages in a downloadable electronic format.

### **Attachment 2**

## **Operational Structure of the MS in Applied Math and CS "The Constitution"**

*Approved by the Department of Mathematics and Computer Science Faculty on 5/10/2001,*

*Article II 1) & 2) was amended on 9/07/2007*

**Article I - Structure of the Graduate Committee:**

- 1) The committee will have 6 voting members, 3 from each discipline. The committee will be co-chaired by two faculty members, one chosen from each discipline.
- 2) The chair of each future department will appoint the members of that discipline. The chairs shall make appointments with continuity of membership in mind.

#### **Article II - The Graduate Director:**

- 1) **Normally**, the graduate director will be selected in an alternating fashion from each discipline. Faculty members from the discipline will nominate up to three candidates for the position of graduate director. The graduate committee shall vote to elect one of the nominees for the position of graduate director. When it is their turn, if a discipline can not, or chooses not, to submit a nomination the directorship can continue in the other discipline for another term if that discipline is willing. In such cases, the issue has to be brought before the faculty of both disciplines for approval.
- 2) The term of the director shall be 2 years with an option to extend one additional year. The request for the extension must be initiated by the Director and approved by the faculty of both disciplines. The director may be removed if there is a vote of no confidence from the graduate committee.
- 3) The scope of the responsibilities of the graduate director is determined by the graduate committee. Among other responsibilities the graduate director is in charge of coordinating course scheduling, perform evaluation and assessment functions of the overall program, perform day to day operational functions, provide advising for incoming students prior to selection of their thesis advisor.
- 4) Each year the graduate director shall make two reports to the committee (at the beginning of Fall and Spring Semesters). Additional reports shall be made upon the request of the graduate committee or upon graduate directors own request.
- 5) The graduate director will be a non-voting member of the graduate committee. However, in cases when a tie vote is cast in the graduate committee, the graduate director shall cast the tie breaking vote.
- 6) The graduate director shall work closely with the chairs of each discipline.

#### **Article III - The Graduate Committee:**

- 1) The graduate committee will act as the Graduate Curriculum Committee for the new program. The committee shall review and approve new course proposals or prerequisite modifications. Such proposals or modifications shall be accepted only after they have been recommended for approval by the curriculum committee in the appropriate discipline.
- 2) The graduate committee, shall oversee the changes made to the program. Changes to the core courses of each discipline should be approved by the majority of faculty in the respective discipline prior to submission to the graduate committee.
- 3) The meetings of the graduate committee will be open to the faculty of each discipline. The faculty can present written or verbal comments or initiatives at such meetings. After discussion, if a vote becomes necessary, only the members of the graduate committee shall participate in any votes.
- 4) The graduate committee, shall oversee the development of all advertising

campaigns for this new program (i.e. brochures for admission, flyers, newsprint, radio, etc.).

5) The graduate committee, may form new subcommittees from its membership or from faculty members from each discipline to work on specific issues important to the program. The subcommittee's make their recommendations to the graduate committee for review.

**Article IV - Amendments:**

Amendments to the constitution shall require approval by 2/3 of the graduate committee.