SPECIAL REPORT

OF THE

ACADEMIC MATTERS COUNCIL

AND

GRADUATE COUNCIL

concerning

CREATION OF AN ACCELERATED MASTER’S PROGRAM:

COMPUTER SCIENCE

(#4359)

Presented at the

772nd Regular Meeting of the Faculty Senate

November 16, 2017

COUNCIL MEMBERSHIP

ACADEMIC MATTERS COUNCIL

Neal Abraham, Wesley Autio, Martha Baker, Carol Barr, Bryan Beck, Allison Butler, Marcy Clark, Catherine Dimmitt, Sharon Domier, Diane Flaherty, Laura Francis, Mark Guerber, Jennifer Heuer, Maeve Howett, Patrick Kelly, Kathryn Lachman, Nancy Lamb, Meredith Lind, Linda Lowry, Ernest May, Ruthanne Paradise, MJ Peterson, Linda Shea (Chair), Kelly Smiaroski, Kregg Strehorn, Patrick Sullivan, Jack Wileden, Rebecca Woodland, Ben Stone, Nancy Symmes, Jennifer Randall, Roberta Marvin

GRADUATE COUNCIL


ACADEMIC MATTERS COUNCIL

On Wednesday, November 8, 2017, the Academic Matters Council unanimously approved the Accelerated Master’s Program: Computer Science in the College of Information and Computer Sciences, Proposal #4359 in the Curriculum Management System.
On Wednesday, September 13, 2017, the Graduate Council unanimously approved the Accelerated Master’s Program: Computer Science in the College of Information and Computer Sciences, Proposal #4359 in the Curriculum Management System.

MOTION: That the Faculty Senate approve the Creation of an Accelerated Master’s Program: Computer Science, as presented in Sen. Doc. No. 18-014.

Briefly describe the Proposal

We propose a new five-year accelerated degree program offering a BS and MS in Computer Science. It is open to BS and BA students in Computer Science and includes all MS tracks currently offered.

Provide a brief overview of the process for developing the Proposal.

A task force consisting of faculty and staff from the College of Information and Computer Sciences was formed to develop a plan for integrating graduate requirements into the undergraduate schedule. Members of the task force included the graduate program director, the undergraduate program director, the undergraduate program manager, and the graduate program manager. The final proposal was discussed by the faculty, approved by the curriculum committee of the College, and reviewed by the chair.

Purpose and Goals

Describe the proposal's purpose and the particular knowledge and skills to be acquired and provide a rationale for creating this accelerated degree program.

The master’s degree in Computer Science allows students with an undergraduate foundation in computing to develop advanced skills that qualify them for a more senior position in industry or for a research career by pursuing a Ph.D. The College of Information and Computer Sciences has been actively growing its master’s program, serving UMass undergraduates, local professionals, and international students. Our current Bay State programs allows qualified UMass and Five College students to easily transition from undergraduate study to the master’s degree, with streamlined admissions processes. We have found that some of our best-qualified and most successful masters students are those who were undergraduates at UMass. Most Bay State students follow a regular timeline for the master’s degree, completing it in two years after their undergraduate work. The accelerated master’s program will extend our ability to appeal to UMass undergraduates, providing a clear path for students to finish their master’s in five years.

Accelerated Masters Information

Does the accelerated master's option apply to all master's degrees in this field, or only to certain tracks or concentrations?

CICS has two unofficial tracks within its Master's of Science degree program, differing by interest in pursuing a Ph.D. The Professional MS is the track for students who do not expect to apply to a Ph.D. program. The Research MS is the track for students who are planning to apply for Ph.D. programs. The requirements for the two tracks are identical, but we suggest different ways of meeting the requirements depending on the track. The college also offers a Concentration in Data Science and a
Concentration in Security which meet all of the regular Master’s degree requirements but offer specialization.

The accelerated master’s option applies to all master’s degrees offered by CICS: the Professional track, the Research track, and the optional concentrations.

What type of degree program does this accelerated master's option pertain to?
Note: second and third require separate approval.

An existing degree

Comments:

Describe the projected course sequence for this degree and the timeline to completion for students.

The application deadline for admission to this accelerated MS program will be established as November 30 of a student’s junior year. A GPA of 3.4 or higher and a grade of B+ or higher in CMPSCI 311 is required for admission.

Eligible students will complete the master’s requirements by taking 9 500+ credits in their 4th year (3 courses), and 15 credits during their 5th academic year (5 courses). They will also complete 6 credits during the summer between the 4th and 5th year. Expected timeline to completion is therefore one year after receiving their bachelor's degree. (A projected course sequence is shown in a figure in the attached PDF.)

What undergraduate degree program is this accelerated masters associated with, if any.

This accelerated master’s is associated with BS in Computer Science and the BA in Computer Science (however BA students must take CMPSCI 311, which is not a requirement of a terminal BA degree).

If this proposal requires no additional resources, say so and briefly explain why. If this proposal requires additional resources, explain how they will be paid for. For proposals involving instruction, indicate how many new enrollments are expected and whether the courses have room to accommodate them.

This program requires no additional resources. No additional courses need to be taught to accommodate the requirements above. Existing capacity for MS students will cover expected enrollment.

Provide the curriculum to the applicable masters degree as it currently appears in the Graduate Bulletin and explain how this curriculum will be scheduled over the student's undergraduate and graduate careers. Note that total number of credits must be 30 plus the minimum number required for undergraduate degree (generally 120, making total number of credits required 150).

Note: For Master's programs under 36 credits, a maximum of 9 graduate-level credits taken as an undergraduate may be applied to both degrees. For Master's programs over 36 credits, a maximum of 12 graduate-level credits taken as an undergraduate may be applied to both degrees.

Master of Science Degree (current)

The college has the following requirements for the master's degree, in addition to those requirements of the Graduate School: A student must pass four core courses with a grade of B or better during the first four semesters. The core courses must include one course from systems, one from theory, and one from Artificial Intelligence (AI). The fourth core course is chosen from a rich set of regular core course offerings. A Concentration in Data Science is also offered. Students who took equivalent courses at other institutions can arrange to substitute other COMPSCI offerings as core courses. Thirty credits must be completed within three calendar years. A Master’s Project (6 credits) is optional.
A list of core courses is available here: https://www.cics.umass.edu/grads/core-requirements-ms

Typical accelerated Masters:

Students will complete two core courses and an additional non-core course in their senior year, a total of 9 credits. Those courses satisfy the master’s degree requirements, therefore the configuration (shown in attached figure) assumes that the student completes their BS requirements with sufficient space in their schedule to complete 9 credits toward their MS degree during their senior year. During the summer after their senior year, they will complete 6 credits (non-core) courses. They may complete the Master’s requirements by taking 9 credits in Fall of their 5th year, and 6 credits in Spring of their 5th year. Six of the credits in their 5th year will be core courses.

At least twelve of the thirty credits counted toward the Master’s degree must be at the 600-level or higher.

Who can apply to pursue this accelerated Master’s degree?
(UMass students, Five College Students, Students in specific degree programs, etc.)

Any Five College students majoring in Computer Science, including UMass students in the BS or BA program in Computer Science.

Are there any admissions exceptions to this degree program, such as a waiver of the GRE requirements?

Yes

Comments: The GRE is waived for applicants meeting the requirements for applying to this degree program.