

UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. Detailed instructions for the proposal should be followed. A [checklist](#) is available to assist in the preparation of a proposal. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: Adarsh Sethi _____ phone number: (302) 831-1945

Department: Computer & Information Sciences _____ email address: sethi@udel.edu

Date: October 28, 2015 _____

Action: Revise MS Degree Requirements in Computer and Information Sciences

(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term: 16F _____
(use format 04F, 05W)

Current degree: MS _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: MS _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: _____
Proposed new name for revised or new major / minor / concentration / academic unit
(if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: _____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: _____
(Must attach your Graduate Program Policy Statement)

Graduate Program of Study: MS in Computer & Information Sciences _____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: _____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, either describing the new program or highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the [Course Challenge](#) list. If there are no new courses enter "None")

None

Supply support letter from the Library, Dean, and/or Department Chair if needed
(all new majors/minors will need a support letter from the appropriate administrator.)

Not applicable.

Supply a resolution for all new majors/programs; name changes of colleges, departments, degrees; transfer of departments from one college to another; creation of new departments; requests for permanent status. [See example of resolutions.](#)

Not applicable.

Explain, when appropriate, how this new/revised curriculum supports the 5 goals of undergraduate education: <http://www2.udel.edu/gened/>

Not applicable.

Identify other units affected by the proposed changes:

(This would include other departments/units whose courses are a required part of the proposed curriculum. Attach permission from the affected units. If no other unit is affected, enter "None")

None.

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

Our MS program currently requires students to take three 800-level courses (9 credits). We are proposing to reduce this requirement to two 800-level courses (6 credits). The total credits required for an MS degree are unchanged at 30 credits. The reasons for the proposed change are:

1. When the requirement of three 800-level courses was originally approved for MS students, our motivation was to make these students familiar with faculty research areas and encourage them to continue in the PhD program. Since then, our PhD enrollment has increased significantly, so this is not as strong of a reason any more to require MS students to take three 800-level courses.

2. We are now offering many more 600-level courses on topics that are of interest to MS students. Reducing the number of courses required at the 800-level offers these students the opportunity to take more 600-level courses. Of course, any student wishing to take more 800-level courses will still be able to do so.

Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.) [See example of side by side.](#)

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____ Date _____

Dean of College _____ Date _____

(By signing above, the Dean confirms that their college policies and bylaws have been followed correctly during consideration of the request described in this form.

The approval actions that were taken at the college level were (check all that apply) :

_____ college faculty vote; _____ college curriculum approval _____ college senate approval

Chairperson, College Curriculum Committee _____ Date _____

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____

Vice Provost for Academic Affairs & International Programs _____ Date _____

Board of Trustee Notification _____ Date _____

Revised 9/22/2015/khs

Side-by-Side Comparison

Course Requirements for the Master of Science Degree in Computer and Information Sciences

Current	Proposed
Breadth courses: 4 courses (12 credits)	Breadth courses: 4 courses (12 credits)
800-level courses: 3 courses (9 credits)	800-level courses: 2 courses (6 credits)
Electives (may be 600-level or 800-level): 3 courses (9 credits)	Electives (may be 600-level or 800-level): 4 courses (12 credits)
Total required for MS degree: 10 courses (30 credits)	Total required for MS degree: 10 courses (30 credits)

[Note: The text to be deleted is highlighted in yellow and crossed out, e.g. ~~Departmental~~. The text to be inserted is highlighted in yellow, e.g. Department.]

Master of Science Degree in Computer and Information Sciences Program Requirements

In addition to satisfying the general requirements of the University, candidates for the Master of Science degree must satisfy both the departmental general requirements and the computer science course requirements.

An Application for Advanced Degree for the Master of Science degree should be filed with the Departmental Graduate Committee no later than the beginning of the semester in which the degree is expected. Application forms are available from the Office of Graduate and Professional Education.

A. Departmental General Requirements

The Departmental General Requirements include:

1. At least ~~9 credits~~ 6 credits of the 30 credits used to satisfy the degree requirements must be 800-level CISC courses. Credits for independent study, research and master's thesis do not count towards this requirement.
2. A minimum grade average of 3.0 is required in the graduate courses used to satisfy the degree requirements. The University also requires a minimum GPA of 3.0 in all graduate courses taken including any not used towards the required 30 credits. Students are encouraged to explore graduate courses (600 level or higher) in other areas such as electrical engineering, mathematics, linguistics, statistics, and business and economics. Graduate courses outside of Computer and Information Sciences to be used towards meeting degree requirements require written approval of the Graduate Committee.
3. Students are encouraged to participate in the research activities of the Department by taking [CISC 666](#), [CISC 866](#)-Special Problems and Independent Study or [CISC 868](#)-Research. This is especially true of potential PhD students. No more than three credits of CISC 666, [CISC 866](#) or [CISC 868](#) (combined) may be applied toward meeting the degree requirements or used in satisfying the required minimum grade average without prior written approval from the Graduate Committee. (Exception for master's thesis students-see later section.)
4. **Each semester** all graduate students must explicitly register for [CISC 890](#) - Colloquium and sign up and satisfactorily participate in one of the Department's special research interest groups. One faculty member for each group will be responsible for overseeing satisfactory participation for each student on an individual basis (e.g., simply attending, giving a presentation) and will assign a pass/fail grade accordingly. Each MS student needs 3 semesters of passed [CISC 890](#) to graduate. Special arrangements for part-time students and those who finish in less than 3 semesters will be made.

B. Computer Science Course Requirements

Breadth requirement courses:

Area 1: Theory

- Elements of the Theory of Computation ([CISC 601](#))
- Logic in Computer Science ([CISC 604](#))
- Algorithm Design and Analysis ([CISC 621](#))

Area 2: Systems and Networks

- Computer Networks II ([CISC 650](#))
- Computer Systems: Architecture ([CISC 662](#))
- Operating Systems ([CISC 663](#))
- Compiler Construction ([CISC672](#))

Area 3: Software

- Computer Graphics ([CISC 640](#))
- Software Engineering: Principles and Practices ([CISC675](#))
- Artificial Intelligence ([CISC 681](#))

Area 4: Information

- Bioinformatics ([CISC636](#))
- Machine Learning ([CISC689](#)) or Introduction to Data Mining ([CISC683](#))
- Database Systems ([CISC637](#))
- Introduction to Computer Vision ([CISC642](#))

1. All students must take four breadth courses, one in each of the four areas.
2. All students must take a graduate course in either algorithm design and analysis (e.g., [CISC 621](#)) or in theory of computation (e.g., [CISC 601](#)).
3. A grade of B- or better is required in each of the four breadth courses taken to meet the breadth requirement.
4. Substitutions or satisfaction through courses taken at another university are permitted, but require written approval by the Graduate Committee.

C. Master's Thesis

A master's thesis is optional; successful completion requires a combination of six credits of [CISC 868](#) and/or [CISC 869](#), which are included in the thirty credits needed for the MS degree. Students with a high GPA and/or motivation and ability to perform research are strongly encouraged to get involved in a research project. One way to do this is to complete an MS thesis.

Each student working on a master thesis, with the advice of the master's thesis advisor, needs to establish an advisory committee. The committee consists of 2-3 members of the faculty approved by the CIS Graduate Program Committee. The committee chair is a faculty member in the CIS department, and the thesis advisor. At least one other member should be a faculty member in the CIS department. The proposed advisory committee must be submitted to the Graduate Program Committee for approval. Upon completion of the master's thesis, a final oral examination must be passed, consisting of a defense of the master's thesis. The final oral examination is directed and evaluated by the student's advisory committee.

Admission to the master's degree program does not guarantee that a student can pursue a thesis since more students may desire to do a thesis than there are faculty available to guide them. A thesis student may obtain three credits of [CISC 666](#), [CISC 866](#), [CISC 868](#) in addition to the six credits of [CISC 868](#) and/or [CISC 869](#) applied toward the MS thesis only if the areas of study do not overlap, as approved by the CIS Graduate Committee. The MS thesis student must still satisfy all other Department requirements.