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 PhD 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: PhD_____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: PhD _____
(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: PhD 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.)

We are proposing two changes to the PhD program requirements:

1. Our PhD program currently requires students to take at least two courses (6 credits) beyond the coursework required for the MS degree. We are proposing that at least one of these courses be at the 800-level. In a companion proposal for revising the MS degree requirements, we are proposing to reduce the 800-level courses required for the MS degree from three (9 credits) to two (6 credits). By requiring PhD students to take at least one 800-level course as part of their PhD coursework, the total number of 800-level courses required for both the MS and PhD degrees together will stay unchanged. We feel that this change is necessary so that PhD students will continue to take the same number of advanced courses as before.

2. We are proposing some changes to our departmental requirements for the composition of the PhD Advisory Committee which supervises the Qualifying Examination of a PhD student and also conducts the final Dissertation Examination of the student. Currently, we require the Advisory Committee to consist of 4-6 members of which at least two members represent the area of proposed research (including the advisor) and at least one member is from outside the CIS Department. There is no change to these requirements.

    i. However, University rules also require that at least one member be from the secondary area of study. In cases where there is no secondary area of study, University rules further require that this member be from within the department but from an area outside the primary area of study. We are proposing to change our departmental requirements to bring them in alignment with this University rule. The change will require at least one member of the Advisory Committee to be from within the CIS Department and be from an area outside the primary area of study.

    ii. Currently, we require the candidate's advisor who is also the Chair of the Advisory Committee to be a CIS Department tenure-track faculty member. However, the current language is not clear on this issue. We are proposing a change that will state this clearly.

    iii. Currently, a candidate may have a co-advisor who may be a CIS faculty member or from another department within the University. However, our current document does not state this explicitly. We are proposing a change that will explicitly state this.

    iv. We are clarifying the meaning of what constitutes a CIS faculty member by stating that this means a tenure-track faculty member whose primary appointment is in the CIS Department or who has a joint appointment in CIS, but does not include continuing track faculty, research faculty, affiliated faculty, visiting faculty, secondary faculty, or adjunct faculty. This requirement only applies to the candidate's primary advisor and to the committee member who represents the secondary area of study. All other committee members may be from outside CIS or be drawn from the above-mentioned categories of faculty.

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 _Kathleen J. M~_ Date _2/22/16_

Dean of College_ _tunde ogunmaiku_ Date _2/26/2016_

(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_ _Jim_ _____ Date _2/26/16_

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

Required Coursework for PhD:

Current	Proposed
Required coursework for PhD: Minimum 6 credits (two courses) beyond MS coursework.	Required coursework for PhD: Minimum 6 credits (two courses) beyond MS coursework.
The 6 additional credits do not include CISC 666, CISC 866, CISC 868, and CISC 969.	The 6 additional credits do not include CISC 666, CISC 866, CISC 868, and CISC 969.
The 6 additional credits may be either 600-level or 800-level (no restriction).	At least 3 credits (one course) of the 6 additional credits must be at the 800-level.

PhD Advisory Committee:

Current	Proposed
4-6 members	4-6 members
At least two members represent the area of proposed research.	At least two members represent the area of proposed research.
At least one member from outside the CIS Department.	At least one member from outside the CIS Department.
No requirement for a member outside the primary area of study.	At least one member from within the CIS Department but from an area outside the primary area of study.

[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.]

Doctor of Philosophy Degree in Computer and Information Sciences
Program Requirements

In addition to satisfying the general requirements of the University, candidates for the Doctor of Philosophy degree must satisfy several departmental requirements. One objective of these requirements is to provide flexibility in designing an appropriate plan of study. The PhD is an individualistic degree. As soon as possible in the program, each candidate should find a faculty member to act as adviser and be in charge of the candidate's research.

The candidate and advisor design a plan of study that satisfies the University and Department requirements. The Department requirements as listed below specify a minimum amount of necessary work. It is expected that additional course work will normally be required by the adviser. A minimum set of requirements provides a large degree of flexibility for each individual candidate.

Departmental General Requirements

The ~~Departmental~~ Department requires the following:

1. ***Course Work.*** Each candidate must complete all requirements of a University of Delaware MS degree in Computer and Information Sciences. Candidates with a similar degree from another institution of higher education may be exempted from part or all of this requirement with the written approval of the Graduate Committee.

   A candidate with a master's degree in a related field (e.g., EE, Math) must put together a program that meets the CIS Graduate Committee's approval. Using courses taken for the related graduate degree plus courses taken at Delaware, the candidate must satisfy the Computer Science course requirements for the MS degree, and show the equivalent of the 30 credit MS degree offered by the CIS Department.

   Each candidate is required to complete a minimum of 6 additional credits beyond the master's degree. At least 3 of these 6 additional credits must be 800-level CISC courses. The 6 additional credits do not include the following courses: CISC 666, CISC 866, CISC 868, CISC 969. Normally, in meeting the University's requirement for a major area, a candidate will be required by the adviser to complete more than 6 credits. (Note that the University requires a candidate to complete 9 credits of CISC969 after admission to candidacy.)

2. ***Research Ability.*** PhD candidates are strongly encouraged to get involved in research as early as possible in their program. As part of the process of finding an adviser, and as early as possible, candidates must demonstrate the potential to perform research, as formalized in the Preliminary Requirements.

3. *Preliminary Requirements.* These requirements ensure that each Ph.D. candidate (1) has significant breadth of knowledge in core areas of computer science, and (2) has demonstrated the ability to perform research in a specific computer science area. The breadth requirement is met by taking 5 breadth courses, which may include the 4 breadth courses from the breadth requirement of the MS degree, and obtaining a minimum 3.5 GPA with at least a B- grade for each of the 5 breadth courses. The research requirement is met by working with a committee of 2 CIS faculty members on a research project, culminating in a written report and presentation/oral exam. A pass or fail decision for the research requirement will be made by the committee. If failed, the candidate is allowed to retake the exam one more time. Candidates must fulfill the Preliminary Requirements within 2 years, counted from the date the student enters the graduate program. Candidates may request an extension in exceptional circumstances (such as serious illness or injury) subject to approval by the Faculty. The student will be dismissed from the Ph.D. program if the Preliminary Requirements are not satisfied within the allowed time period. Full details on the process for fulfilling the Preliminary Requirements may be found on the CIS departmental web site.

4. *Advisory Committee.* Each candidate, with the advice of the PhD advisor, needs to establish an advisory committee (usually following the successful completion of the preliminary requirements). In accordance with the University requirements, the committee consists of 4-6 members ~~of the faculty~~ nominated and approved by the CIS Department faculty. The committee chair is the ~~faculty member~~ candidate's PhD advisor in charge of the candidate's research and dissertation and must be a member of the CIS faculty. The candidate may have a co-advisor who must be a UD faculty, possibly from another department. A co-advisor is a member of the advisory committee. At least two members represent the area of proposed research. The committee must also include at least one member of the CIS faculty working outside the main area of the proposed research. At least one member must be from outside the CIS Department. The proposed advisory committee must be submitted to the Graduate Committee for approval. It must then be approved by the CIS faculty. In the above, CIS faculty means tenure-track faculty whose primary appointment is in the CIS Department or who have a joint appointment in CIS, but not including continuing track faculty, research faculty, affiliated faculty, visiting faculty, secondary faculty, or adjunct faculty.

5. *Qualifying Examination.* Each candidate must pass a qualifying exam. The advisory committee prepares an examination (oral and/or written) testing a candidate's knowledge in the area of proposed research. Part of the examination includes an oral presentation of a candidate's proposed dissertation research. A student passes the qualifying exam as long as there is no more than one negative vote.

Prior to taking the qualifying exam, candidates must submit a dissertation proposal and a written plan describing their background and research interests. The proposal and plan are submitted to the advisory committee and are considered as input to the qualifying examination. Copies of "Discussion on PhD Thesis Proposals in Computing Science" are available in the CIS Department Office.

The qualifying exam is normally taken one year after fulfilling the preliminary requirements. During this year a student should actively investigate research possibilities and select a dissertation topic.

6. ***Dissertation.*** Each candidate must complete a dissertation demonstrating results of original and significant research written in a scholarly and competent manner worthy of publication. Upon completion of the dissertation, a final oral public examination must be passed, consisting of a defense of the dissertation and a test of the mastery of a candidate's research area. The final oral examination is directed and evaluated by the student's advisory committee.

7. ***Facility of Expression in English.*** As part of satisfying the University's requirement that PhD graduates demonstrate an ability to orally express themselves clearly and forcefully, each candidate must present his or her research results in a departmental colloquium, or one of the Department's special research interest groups within six months of the defense.

8. ***Foreign Language.*** There is no foreign language requirement.