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: December 7, 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 changes to some of the requirements for the Preliminary Exam for the PhD program. This exam currently has two requirements: a course requirement in which the student must take 5 breadth courses and meet certain grade and GPA constraints, and a research part where the student conducts a research project followed by an oral exam. The proposed changes are:

1. We are clarifying the language by consistently referring to the two parts of the preliminary exam as "course component" and "research component" respectively.

2. The course component currently requires that the student obtain a grade of B- or better on each of 5 breadth courses and also obtain a minimum GPA of 3.5 averaged over these five courses. We are proposing to eliminate the requirement of getting a grade of B- or better on these courses. This is because we feel that the minimum GPA of 3.5 on these courses is sufficiently strong that we don't need to insist on a minimum grade for each course.

3. Currently, the Pass/Fail decision for a student is made by a committee of two CIS faculty who evaluate the student's research project and conduct the oral exam for the project. We are proposing that (a) the committee consist of at least two CIS faculty, thus allowing the committee to have more than two members, usually in cases where the student has a co-advisor in addition to the advisor, and (b) the committee now will only make a recommendation of Pass/Fail and the final decision will be made in a faculty meeting where the student's performance on both the research and course components will be considered. This will allow us to be more consistent in our decisions because the faculty meeting will discuss the cases of all students taking the Preliminary Exam in a given semester.

4. Currently, if a student fails the Preliminary Research Exam, the student is allowed to retake the exam one more time. We are now proposing to eliminate this provision. If a student fails the preliminary exam, there is no second attempt. However, there is already a provision that exceptions may be made under special circumstances (such as serious illness or injury or other extenuating circumstance) and this will continue to be the case. In our experience with the preliminary exam, the few students who have failed the exam have decided to leave without a second attempt. The reasons are usually that these students do not have the aptitude or ability to do research and a second attempt is not likely to change that.

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

Item no. 3 of the catalog description of the PhD Program requirements:

Current	Proposed
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.	***Preliminary Examination 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 Preliminary Examination requirements have two components: a course component for demonstrating breadth, and a research component for demonstrating research ability. The course component is satisfied by taking 5 breadth courses and obtaining a minimum 3.5 GPA on these courses. The research component requires the student to work with a committee of at least 2 CIS faculty members on a research project, culminating in a written report and presentation/oral exam. Candidates must fulfill the Preliminary Exam requirements within 2 years, counted from the date the student enters the graduate program. Candidates who anticipate not meeting or failing the research component of the exam due to serious illness, injury, or other extenuating circumstances may request either an extension in time or a second opportunity to take the research component. Such candidates should submit a letter to the department's Graduate Program Committee, before the end of the two-year period, detailing the issue and clearly stating the requested accommodation. A pass or fail decision for the Preliminary Examination is made by the CIS Faculty upon recommendation of the student's research committee, taking into account the student's performance on both the course and research components. If the Preliminary Exam requirements are not satisfied within the allowed time period, a recommendation to dismiss the student will be made to the Office of Graduate Studies. Full details of the Preliminary Exam requirements may be found on the CIS departmental web site.

[Note: The text to be deleted is crossed out, e.g. ~~Departmental~~. The text to be inserted is highlighted in yellow, e.g. <mark>Department</mark>. Only paragraph 3 is affected by these proposed changes. Please note that the remainder of the document below is taken from the 2015-2016 catalog as it currently stands. Revisions to paragraphs 1 and 4 of this document were proposed previously and are also being processed independently in the current revision cycle.]

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 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. 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 Examination Requirements.

3. ***Preliminary Examination 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 Preliminary Examination requirements have two components: a course component for demonstrating breadth, and a research component for demonstrating research ability. The ~~breadth requirement~~ course component is ~~met~~ satisfied 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 on the 5 breadth courses~~ on these courses. The research ~~requirement is met by working~~ component requires the student to work with a committee of at least 2 CIS faculty members on a research project, culminating in a written report and presentation/oral exam.

   Candidates must fulfill the Preliminary ~~Requirements~~ Exam requirements and have a PhD advisor 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.~~ Candidates who anticipate not meeting or failing the research component of the exam due to serious illness, injury, or other extenuating circumstances may request either an extension in time or a second opportunity to take the research component. Such candidates should submit a letter to the department's Graduate Program Committee, before the end of the two-year period, detailing the issue and clearly stating the requested accommodation.

   A pass or fail decision for the ~~research requirement will be made by the committee.~~ Preliminary Examination is made by the CIS Faculty upon recommendation of the student's research committee, taking into account the student's performance on both the course and research components. If the Preliminary Exam requirements are not satisfied within the allowed time period, a recommendation to dismiss the student will be made to the Office of Graduate Studies. ~~If failed, the candidate is allowed to retake the exam one more time. 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~~ Exam 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 in charge of the candidate's research and dissertation. At least two members represent the area of 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.

5. ***Qualifying Examination.*** Each candidate must pass a qualifying examination. 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 examination is normally taken one year after fulfilling the preliminary examination. 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.