

## General Requirements

The following are the *minimum* requirements for the *Computer Science (CS)* concentration of a Doctor of Philosophy (PhD) in Engineering and Applied Science (EAS) degree program.

- 1) **Admission:** For admission, a BS in CS (or equivalent) is required. A student with a non-CS background (i.e., a student not having a BS in CS or an equivalent degree) must have completed an MS in Computer Science program before admission to the PhD Program. In addition, all other admission requirements (e.g., regarding CGPA, English Proficiency, GRE) mandated by the Graduate school and the PhD EAS Program must also be satisfied.
- 2) **Coursework and Credit Hours:** All coursework must be completed with a grade B- or higher before submission of the PhD dissertation and the oral defense.

Maximum credits allowed from MS in CS program towards PhD program .....	30 credits
Coursework particularly for PhD program .....	18 credits
Seminar <sup>1</sup> .....	01 credit
Dissertation/Thesis .....	35 credits
<b>Total minimum credits required for graduation .....</b>	<b>84 credits</b>

- Of the 18 credits of coursework particularly taken for PhD,
  - At least nine (09) credits must be at the 6000 level.
  - At least twelve (15) credits must be earned from courses offered by the CS department.
- Of all the regular (30+18) coursework (other than dissertation/thesis) completed at ISU, a maximum of one-third (1/3) of the credits can be from Special-topic, Experimental, or Independent-Study courses collectively.

### 3) Comprehensive Qualifying Exam:

A PhD student must complete a Comprehensive Qualifying Exam (CQE) before submission of the PhD dissertation and the oral defense. The CQE is to be administered according to the CQE guidelines (separate document) for CS.

### 4) Proposal Defense

Within six (06) months of passing the CQE, the PhD candidate will submit a research proposal to the PhD dissertation committee and will make an oral presentation and defense of the *proposal*.

### 5) Research and Dissemination of Results:

A PhD student must carry out original and substantial research in CS and disseminate the results in the form of scientific publications.

- Over the duration of PhD, by the time of graduation, a PhD student must produce at least – 2 journal publications

<sup>1</sup> For the semester in which the student takes graduate seminar, the student must:

- a) attend at least 06 presentations given by other graduate students, or professional talks, seminars, and the like,
- b) give at least one (01) seminar presentation based on the dissertation/thesis topic, and
- c) make a brief report of half a page on each of the seminar presentations attended

or, 1 journal publication and 2 conference publications as full papers  
or, 4 conference publications as full papers

- Articles can be fully published or unconditionally accepted for publication before graduation.
- The publication venues must be international, peer-reviewed reputed journals or conference proceedings published by reputed publishers such as ACM, IEEE, Springer, and Elsevier.
- Two short papers may be counted as equivalent to one full paper.

#### **6) Dissertation/Thesis and Oral Defense:**

A complete dissertation/thesis describing substantial original research and a successful oral defense are required for completion of the PhD EAS degree with a CS concentration. The thesis/dissertation must be formatted according to the guidelines of the Graduate School and approved by the PhD Dissertation Committee.

- A candidate can submit the final dissertation/thesis any time after six (06) months from the date of acceptance of the research proposal.

### **COMMITTEE FORMATION**

The PhD Advisory Committee and the PhD Dissertation Committee must be formed conforming to the guidelines of the PhD EAS program and the committees must be approved by the department chair and the CS Graduate Committee.

#### **a. PhD Advisory Committee:**

The PhD Advisory Committee has the responsibility to oversee and monitor the student's academic and research progress until after the comprehensive qualifying examination (CQE) has been completed. The committee will guide the student in establishing his or her program of coursework and research based upon the student's background and research interest. The committee members are also responsible for the administration of grading of the CQE.

- The committee must include at least three members
- The student's major professor must be a graduate faculty primarily appointed in the CS department
- At least two members should be CS graduate faculty with a CS background
- At least one member should be a graduate faculty from another relevant CoSE department participating in the PhD EAS program

#### **b. PhD Dissertation/Thesis Committee**

The PhD dissertation committee is responsible for directing the PhD candidate's research to make sure that the PhD thesis/dissertation includes results of substantial and original research. The committee is also responsible for administering the dissertation/thesis defense of the PhD candidate.

- The committee must include at least five members
- The student's major professor must be a graduate faculty primarily appointed in the CS department, who becomes the Dissertation Committee Chair
- At least two members should be CS graduate faculty with a CS background.
- At least one member should be a graduate faculty from another relevant CoSE department participating in the PhD EAS program
- The committee must also include a graduate faculty representative (GFR). The GFR must be from another CoSE department participating in the PhD EAS program
- It is recommended that the Dissertation/Thesis Committee be formed by augmenting the Advisory Committee with another graduate faculty from the CS department and a GFR from another department.