

# Graduate Curriculum

## The Department of Computer Science

### Kent State University

#### 1. Masters Program

##### Admission requirements: (Undergraduate course work)

- Math: Discrete Structures (CS31011), Cal I & II (MATH 12002, 12003), Linear Algebra (MATH 21001)
- Data Structures (CS 33001) and one additional introductory programming course (CS 23021)
- Operating Systems (CS 33201), Computer Architecture (CS 32101)
- Algorithm Design & Analysis (CS 46101)

##### General requirements:

- There are a total of 32 graduate level credit hours required for the Masters program.
- Twenty six (26) credit hours must be at the 60000 level or above.
- Only three (3) credit hours of Research CS69098 or Seminar Courses may count towards the degree
- The student must define a *Masters Plan of Work* that must be approved by the Advisor and Graduate Coordinator. The Plan of Work must ensure the student completes at least one course in three different areas/topics. The Plan of Work must be filled out and submitted to the Graduate Coordinator within one year of entrance to the program. The Plan of Work can be modified with approval from the Advisor and Graduate Coordinator.
- The student must take CS6xxxx Computer Science Seminar (2 credits) and make a public presentation of project and/or research work (excluding Thesis and Project defense) one (1) time before graduation. The presentation must take place in the CS Seminar. This must take place at least one full term before graduation and not more than two years after entering the program. This course can be taken multiple times, but counts only once towards the degree.

##### Additional Requirements for M.S. Degree

Candidates for the M.S. degree in computer science must write and defend a suitable Master's Thesis for which six semester hours of credit are earned. An M.S. Thesis committee must be formed that includes the advisor and at least two other Graduate Faculty members. The Thesis topic and committee must be approved by the Advisor and Graduate Coordinator. The final version of the Thesis must be approved by the Advisor, committee, and Graduate Coordinator.

Summary M.S. requires:

- 2 credit Computer Science Seminar (CS6xxxx) and presentation
- Masters Plan of Work
- 24 credits (8 courses 6 of which are at the 60000 level or above)
- 6 credit Thesis (CS69199) and Defense

##### Additional Requirements for M.A. Degree

M.A. degree candidates in Computer Science are required to take a 3 credit of an individual project course CS69098 under the direction of a faculty member. An M.A. Project committee must be formed that includes the advisor and at least two other Faculty members. The student must prepare a project presentation and pass a project defense by the student's project committee.

Summary M.A. requires:

- 2 credit Computer Science Seminar (CS6xxxx) and presentation
- Masters Plan of Work
- 27 credits (8 courses 7 of which are at the 60000 level or above)
- 3 credit Project (CS69098) and Defense

## 2. Doctoral Program

### Admission requirements:

- Masters in Computer Science or closely related discipline
- Students with a Masters in a closely related discipline must fulfill the admission requirements for Masters in Computer Science
- Students must pass the Preliminary Examination within 20 months of entrance into the program

### General requirements:

- Completion 60 graduate credit hours beyond the Masters degree
- 30 credits of Dissertation I
- 30 credits (excluding Dissertation I and II) at the 60000 level or above
- Only nine (9) credits of Research CS89098 may count for the degree
- Course Requirements
  - Major Concentration
    - Dissertation Advisor will select three (3) courses (9 credits) the student **must** take
    - Represents depth in one research area
  - Minor Concentration
    - Student (with Advisor approval) will select three (3) additional courses (9 credits) in a related field(s) the student **must** take
    - Represents depth/breadth in a related field(s)
  - The concentrations will be defined in a *Doctoral Plan of Work* that is approved by the Advisor and Graduate Coordinator. The Plan of Work must be filled out and submitted to the Graduate Coordinator within 18 months of entrance to the program. The Plan of Work can be modified with approval of Advisor and Graduate Coordinator.
  - Students are highly encouraged to select an advisor and develop a plan of work as early as possible (i.e., before the end of their second term in the program).
- All students must take CS8xxxx Computer Science Seminar (3 credits total) and make a public presentation of project and/or research work (excluding Dissertation Defense and Candidacy Exam) two (2) times before graduation. The presentation must take place in the CS Seminar. This must take place at least one full term before graduation and not more than two years after entering the program. This course can be taken multiple times, but counts only for three credit hours towards the degree. The Computer Science Seminar will only be offered for 1 or 2 credit hours; therefore the student must enroll in this course at least two times.

### Additional requirements:

- Complete the Preliminary Examinations within 20 months of entrance into the program
- Fill out a Plan of Work, signed by their advisor and graduate coordinator, within 18 months of entrance into the program
- Complete the Candidacy Examination one (1) year before the Dissertation Defense
- Successfully write and defend a Doctoral Dissertation (with the University's time limit)
- Extra consideration for part-time student with respect to time frames to complete the preliminary examinations and develop a plan of work may be given in special situations.

### Summary of Doctoral Requirements

- 3 credits CS8xxxx Computer Science Seminar
- 9 credits Major Concentration
- 9 credits Minor Concentration
- 9 credits elective coursework or research
- 30 credits CS89199 Dissertation I
- Preliminary Examination
- Doctoral Plan of Work
- Candidacy Exam
- Dissertation & Defense

**Direct Ph.D. Addendums**

For the direct Ph.D. program, student must fulfill the requirements of both the Masters and Ph.D. degrees. The time limits for the Preliminary Exam, Doctoral Plan of Work, and CS Seminar are extended by 18 months for students in the Direct Ph.D. Program.

**3. Impact on Graduate Course Offerings**

There is no specific required Graduate course in this new curriculum. This is a large departure from the current curriculum which names several specific required courses. Because of this, some of our existing courses will be offered less-often and in some cases may disappear from our curriculum due to lack of Faculty and student interest.

Graduate courses will be offered based on Faculty interest to run a particular course that support their research area. Faculty will need to propose new courses, to be included in the graduate catalog, and offer them on a regular basis. New courses and special topics courses will be reviewed and approved by the Curriculum Committee. The long term object is to have sets of courses, in particular areas, each corresponding to Faculty research interests.

The Curriculum Committee must also weight the (critical) needs to offer and teach Undergraduate courses, in particular the required core courses. The Curriculum Committee will ensure that all faculty members participate, in an equitable manner, in teaching Undergraduate courses. The current model of the graduate class rotation will need modification. There will be plan of graduate course offerings for the future two to three terms. Graduate Faculty will be asked to by the Curriculum Committee to plan the graduate courses they intend to offer during the next two or three terms. Once again, this must be balanced with needs at the undergraduate level.