

# Master of Science in Computer Science



Computer scientists impact society through their work in many areas. The advancement of technology has transformed the way and speed with which individuals work, communicate, and exchange information. As we now depend daily on the stability and reliability of our technology systems, there is a very strong demand for individuals with a background in computer science. Graduate-level computer scientists are generally hired to work with the next generation of technology in areas such as computer systems, networking, database administration, operating systems, search engines, software engineering, and custom applications.

## Admission Requirements

All candidates must meet the general admission requirements of the School of Graduate Studies. Each candidate must show evidence of having completed coursework in programming principles and data structures either prior to admission as a degree candidate or before completion of his or her program of study.

## Degree Requirements

The program offers four plans for maximum flexibility in meeting your goals: (1) the traditional research-based thesis, (2) a more commercial project-oriented option, (3) an internship option, or (4) an all-coursework option. In each, you will take courses that stress projects, teamwork, and a fundamental knowledge of computing. You will graduate with competence and confidence: the competence to do the job and the confidence to know you can do it.

**Plan 1: The Thesis Option** requires 27 semester hours (SH) of coursework and 6 SH of research. The final written thesis will be a formal document describing the research and will be prepared in accordance with the requirements of the School of Graduate Studies.

**Plan 2: The Project Option** requires 30 SH of coursework and 3 SH of directed study research. A final written report on the research project is required. The successful completion of a final oral examination covering the research project or thesis, when those plans are chosen, is required to graduate.

**Plan 3: The Internship Option** requires 30 SH of coursework and 3 SH of internship credit. A final written report on the internship is required.

**Plan 4: The All-Coursework Option** requires 33 SH of coursework.

In the All-Coursework Option, the chairperson of the student's graduate committee will normally be the chairperson of the Departmental Graduate Committee. Students may petition the Departmental Graduate Committee for a change of chairperson.

If a student requires no remedial computer science coursework, a total of 33 SH is required for the Master of Science degree in Computer Science. The course requirements are as follows:

### Proficiency

Students must complete CS 500: Intensive Programming Review (3 SH).

### Core Requirements

Students must complete one course from each of the subject areas listed below (18 SH).

### Depth Requirements

Students must complete a second course in two of the subject areas listed below (6 SH).

### Subject Areas

Operating Systems (CS 410[G], CS 512, CS 513)  
Database Systems (CS 470[G], CS 522, CS 523)  
Artificial Intelligence (CS 460[G], CS 548, CS 549)  
Computer Networks (CS 420[G], CS 556, CS 557)  
Computer Architecture (CS 560, CS 561, CS 562)  
Computer Graphics (CS 465[G], CS 566, CS 567)

A variety of programming languages and software packages are used at the graduate level. Graduate students are expected to have the ability to

**Program Location:**  
Macomb

## Contact Information

### Questions about the program:

School of Computer Sciences  
(309) 298-1452  
C-Science@wiu.edu  
wiu.edu/computerscience

### General admission questions:

School of Graduate Studies  
(309) 298-1806 or (877) WIU GRAD  
Grad-Office@wiu.edu  
wiu.edu/grad



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immediately learn these languages and packages as needed for their programs. There are also many opportunities for independent study, projects, and research.

## Career Opportunities

Our goals for the MS degree program in Computer Science are to offer the knowledge you need to pursue careers in research and commercial environments, and to give you the ability to stay current in our dynamic and rapidly changing discipline. Our graduates have been successful in PhD programs, in industrial research laboratories, in software and hardware design, and in middle- and upper-level management for a variety of companies.

According to the U.S. Department of Labor, Bureau of Labor Statistics, computer scientists are expected to be among the fastest growing occupations through 2018. Employment of these computer specialists is expected to grow much faster than the average for all occupations as organizations continue to adopt and integrate increasingly sophisticated technologies. Job increases will be driven by very rapid growth in computer systems design and related services.

## Faculty Expertise

Department faculty have a variety of experiences, degrees, and research interests. The faculty have doctorates from such universities as Florida State University, Illinois Institute of Technology, Indian Institute of Science, Northwestern University, Southern Methodist University, SUNY Buffalo, University of Illinois, University of Iowa, and University of Western Ontario. Their current research interests are in the areas of artificial intelligence, computer architecture, databases, distributed processing, graphics, languages, networking, simulation, and software engineering.

## Distinctive Features

- Excellent, dedicated faculty
- Coursework in a variety of subjects
- Accessible and available computing equipment
- Preparation for research and commercial careers
- Assistantships offered
- A friendly, caring atmosphere
- Exciting opportunities to work with faculty on research
- Access to the best of current software

## Assistantship Opportunities

A limited number of teaching assistantships, which provide a monthly stipend and a tuition waiver, are available. Undergraduate and graduate grade point averages, scholarship records, recommendations, and a personal statement provide the criteria for awarding assistantships. Teaching Assistants must maintain a 3.0 GPA, exhibit satisfactory progress toward their degree, and satisfactorily perform their assigned duties in order to retain their assistantships.



*Western Illinois University is an Affirmative Action and Equal Opportunity employer with a strong commitment to diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including, but not limited to, minorities, women, and individuals with disabilities. WIU has a non-discrimination policy that includes sex, race, color, sexual orientation, gender identity and gender expression, religion, age, marital status, national origin, disability, and veteran status.*

## Computer Facilities

At Western, you will have access to a large IBM mainframe and SUN computers. There are also large laboratories with the latest microcomputers available. Our access to microcomputers is as good as any university in the United States. It is our goal to give you experience on a variety of computing equipment and the associated software so that you can judge which type of equipment is best suited for the problems you encounter during your working career.

*“As a Database Administrator for a Fortune 500 company, I have found that the Computer Science graduate program at WIU has provided me the tools necessary to be highly successful in the business world.”*

*— Tim Hennings, MS, 1998*