Undergraduate Programs

MAJORS:
- Computer Science*
- Computer Science BS & Master of Software Engineering 5-year Dual Degree
- Computer Science/Engineering Dual Degree
- Computer Science with a concentration in Computer Engineering Technology (2+2 Agreement with Western Technical College (WTC))

MINORS:
- Computer Science*
- Computational Science

*Teacher certification available

Sample Courses

- Software Design
- Software Engineering
- Computer Architecture
- Digital Image Processing
- Parallel Computing
- Artificial Intelligence
- Information Security
- Programming Language Concepts
- Object-Oriented Software Development
- User Interface Design
- Advanced Database Management Systems
- Introduction to Robotics
- Research in Computer Science
- Internet of Things
- Mobile App Development
- Digital Circuit Design for Microcontroller I & II

Department Overview

You don't have to be an expert with computers to be a computer science major! However, if you are a logical thinker and like to solve problems this may be the major for you. The curriculum for a computer science major at UWL is both exciting and demanding. What will you do with the knowledge you've learned? You will become a world class problem solver. After learning the fundamental material in computer software, hardware and the theory of computing, you will be finding ways to make life better for people. Software is an integral part of our society in both visible and invisible ways. Take a look at some of the modern conveniences of our life: iPods, cell phones, video games, medical imaging systems, and engines. As you can see, the way we interact with information through software leaves very little that computer science does not touch.

With that said, we think there is no better place to pursue your degree than UWL. Small class sizes and accessible professors give students a level of attention not available on larger campuses. We have outstanding faculty who have many different interests, but who all share a love for teaching. A history of talented students, great facilities and undergraduate research opportunities, make for an ideal learning environment. The department is the second oldest in Wisconsin, only behind Madison, and has a fine reputation within the computing industry during the past 50 years.

The job market for computer scientists has always had plenty of opportunities and the demand continues. The National Bureau of Labor Statistics, in its rolling ten-year horizon Occupational Outlook Handbook, consistently projects the software industry to be among the fastest growing sectors of the economy.

If you would like to find out more about computing, check out the Association for Computing Machinery's (ACM) web site "Computing, Degrees and Careers" at **http://computingcareers.acm.org**.

Computer Science Department
221 Wing Technology Center
608.785.6805
www.cs.uwlax.edu

View degree requirements:
www.uwlax.edu/catalog

Computer Science

Program Features

COMPUTER SCIENCE B.S.
Emphasis is in software development with a variety of electives to give students breadth in computer science.

COMPUTER SCIENCE B.S. & MASTER OF SOFTWARE ENGINEERING 5-YEAR DUAL DEGREE
A great opportunity to those highly motivated students who would like to further their knowledge in software engineering. It enables them to complete both degrees with less time in school, less tuition, and be out in the workforce earlier than those receiving traditional degrees.

COMPUTER SCIENCE B.S. & ENGINEERING B.S. DUAL DEGREE
Receive a degree in computer science from UWL and an engineering degree from UW-Madison.

COMPUTER SCIENCE WITH CONCENTRATION IN COMPUTER ENGINEERING TECHNOLOGY
Attend Western Technical College for two years and transfer to UWL.

GRADUATE PROGRAM: MASTER OF SOFTWARE ENGINEER (MSE)
The only MSE program within the University of Wisconsin System. The focus of the program is to teach the advanced state-of-the-art technologies in software development with hands-on experience and to apply the knowledge to some challenging real world problems.

Department Features

TALENTED STUDENTS
ACT scores for entering computer science students are among the highest at UWL.

Computer science students at UWL actively engage in research. Some research involve working individually or may involve research with a faculty member. Here are just a few of the recent opportunities our students have taken advantage of:

• Summer NSF (National Science Foundation) Research Experience for Undergraduates program
• UWL Student Research grants
• SAH Summer Fellowship grants
• Presentations at the National Conference on Undergraduate Research (NCUR)
• Presentations at the Midwest Instruction and Computing Symposium (MICS)

FACULTY
Twelve professors hold doctorates in computer science or related fields. Three faculty members are nationally recognized authors of college level computer science textbooks. The faculty remains active in research, give presentations, write publications, and successfully apply for grants every year.

In addition, each year a leader in computing is invited as the UWL Distinguished Lecturer in computer science. This guest makes several presentations to students and staff during a two-day campus visit.

HIGH SCHOOL PREPARATION
The department strongly encourages high school juniors to take an appropriate math class their senior year, even though they may have met their math requirements. Calculus or Pre-calculus will better prepare students for the computer science program.

TECHNOLOGY
Computer Science students have convenient access to the latest technology. The Department maintains a laboratory of 28 software development workstations for general use by students in all Computer Science courses. In addition the department maintains a number of server based resources. One of these is a Eucalyptus Cloud consisting of four servers with a total of 128 available cores. The Eucalyptus Cloud is an open source implementation of Amazon's cloud and allows students and faculty to bring up and configure server instances to support software development projects. Another is a Rocks Cluster consisting of 16 nodes to support for high performance parallel computing tasks as well as a 4x4 visualization wall. In addition, the Department maintains labs and equipment for information security, wireless computing devices, robotics and scientific visualization.

STUDENT ORGANIZATIONS
The department sponsors a student chapter of the Association for Computing Machinery (ACM). The organization hosts professional speakers, organizes field trips, hosts LAN parties and promotes social functions for computer science students. The department also sponsors CODERS which is a student group dedicated to community outreach, diversity, and facilitating an inclusive community within the CS department. They welcome students who wish to share their passion for computing with peers and the greater community through social, professional development, and community events with organizations like the public library, Girl Scouts, and the local FIRST robotics teams.

INTERNSHIPS
UWL has one of the largest and most active internship programs in Wisconsin. Many computer science juniors and seniors often choose to gain work experience via internships available through local companies or throughout the country. Paid internships are the norm in computer science compared to other fields of study.

Occupational Outlook

Computer Science has never been more important to society. Software is the common element that enables many technologies from health care to communication. Computer science graduates are employed in a wide variety of industries. Typical starting salaries for UWL graduates exceed $65,000.

A recent CNN report looked at the top ten fastest growing jobs in terms of salary. Five of the top ten were in the area of computer science and software development.

The Bureau of Labor Statistics has consistently ranked computer science and software development jobs at the top of the list both in terms of demand and expected salary. According to the U.S. Bureau of Labor Statistics , computer software engineers positions will continue to increase 17% faster than average through 2024.

Jobs in computer science are varied and interesting with many opportunities for advancement within the profession. Currently there are more jobs than qualified applicants and a student can expect a favorable job market upon graduation.

JOB PLACEMENT
UWL Career Services Office placement statistics show the majority of all computer science majors are placed upon graduation.

Recent employers who have hired computer science graduates include: Epic, Trane Company, Lockheed Martin, Microsoft, Amazon, Google, Yahoo, Oracle, Federated Insurance, Apple, IBM, Authenticom, and SAP.

Many previous graduates are now in management positions and return for on campus interviews of new graduates.

Professional Associations

- **ACM** – Association for Computing Machinery | www.acm.org
- **IEEE** – The Institute of Electrical & Electronics Engineers, Inc. |www.ieee.org