DEPARTMENT OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING

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Software Engineering Program Coordinator: Dr. Lily Chang
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MAJORS
Computer Science

• Computer Technology Emphasis
• Computer Information Systems Emphasis

Software Engineering

• Digital Application Domain Sequence
• Engineering Management Application Domain Sequence

MINORS
Computer Science

ABOUT THE DEPARTMENT AND MAJORS
The UW-Platteville Department of Computer Science and Software Engineering offers two majors: one in computer science and one in software engineering. Students may also earn a minor in computer science from this department. Computer science is concerned with the theory and practice involved in the feasibility, design, implementation and evaluation of every aspect of computing. In addition to the valuable practical skills acquired in the study of computer science, the concepts and theories in the field provide exposure to some of the most imaginative and challenging ideas in the history of human intellectual development. The program is committed to blending the theory of computer science with the arts of programming and analysis, while providing attention to the business, ethical and moral aspects of computing in our society. Graduates are prepared for such positions as systems and applications programmers, analysts and various computer specialist positions.

COMPUTER SCIENCE
https://www.uwplatt.edu/ems/computer-science

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COMPUTER SCIENCE MISSION STATEMENT
The mission of the computer science program is to provide a quality computer science education with significant hands-on and laboratory experience that will enable our graduates to practice their profession with proficiency and integrity.

COMPUTER SCIENCE GOALS
Graduates are expected to have:
1. the ability to apply the principles of analysis and design to software development
2. knowledge of data structures, databases, algorithms, computer architecture and operating systems
3. the ability to develop effective software tests at the unit and system level
4. knowledge about the tools and environments used for software development
5. written and oral communication skills, ethics and professionalism to function effectively on software development teams, and in society in general
6. the ability to engage in lifelong learning and recognize its importance
COMPUTER SCIENCE OUTCOMES

1. Foundation: Graduates will have a solid foundation in computer science. These graduates will be able to apply this fundamental knowledge to both their immediate professional software development tasks, as well as to acquiring new professional skills throughout their lifetime.

2. Development: Graduates will be able to engage in effective software development practices over the entire system lifecycle. This includes design, implementation and testing.

3. Professionalism: Graduates will conduct themselves ethically, honestly and professionally in all work environment activities. These activities include all interactions with employers, team members and peers, as well as customers.

4. Presentation: Graduates will be capable of effective written and oral communication. Graduates will be capable of preparing and publishing the necessary project documents involved in the specification, design, testing and deployment of software. Graduates will also be capable of actively participating in customary project discussions, walk-throughs, reviews and inspections.

5. Growth: Graduates will be able to provide themselves with lifelong learning capabilities, such as the ability to learn new tools, study new language processes and generally adapt to new surroundings throughout their careers.

COMPUTER SCIENCE MAJOR

The computer science major leads to a Bachelor of Arts or Bachelor of Science degree in two emphases: computer information systems and computer technology. The department offers a general minor. In addition, selected course sequences form emphases in computer science for a variety of other majors in the university.

BACHELOR OF SCIENCE DEGREE

Total for graduation: 120

General education: 53

Major: 67

BACHELOR OF ARTS DEGREE

Total for graduation: 120

General education: 53

Major: 67

Includes an additional nine credits in upper division coursework in humanities, fine arts or social sciences

Students completing a Bachelor of Science degree in computer science need only to complete the coursework specified for their chosen emphasis and university requirements. All computer science majors must complete at least 37 credits in computer science (not including COMPUTER 1130, COMPUTER 1810 or COMPUTER 1830) and the requirements in one of the emphasis areas of computer information systems or computer technology.

ACADEMIC STANDARDS

All computer science majors must earn at least a "C-" in each computer science or software engineering course listed as a requirement in the emphasis selected and each computer science course listed in the core requirements. Computer science majors must earn a "D" or better in all corequisites unless otherwise stipulated by the offering department. Students must have a G.P.A. of 2.00 or higher in all Computer Science and Software Engineering courses.

SOFTWARE ENGINEERING

https://www.uwplatt.edu/ems/software-engineering

Coordinator: Dr. Lily Chang
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Phone: 608.342.1557
E-mail: changl@uwplatt.edu

University of Wisconsin Platteville’s Software Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

SOFTWARE ENGINEERING MISSION STATEMENT

The mission of the software engineering program is to provide a quality software engineering education with significant hands-on and laboratory experience that will enable graduates to practice their profession with proficiency and integrity.

SOFTWARE ENGINEERING OBJECTIVES

The following are the Software Engineering Objectives describing what is expected of graduates 2-5 years after graduation from the program:

1. Graduates are effective team members, aware of cultural diversity, who conduct themselves ethically and professionally
2. Graduates use effective communication skills to assure production of quality software, on time and within budget
3. Graduates build upon and adapt knowledge of science, mathematics and engineering to take on more expansive tasks that require an increased level of self-reliance, technical expertise, and leadership

SOFTWARE ENGINEERING OUTCOMES
The following are the software engineering outcomes describing what students are expected to know or be able to do by the time of graduation from the program:

A. Foundation: Graduates shall have a strong foundation in science, mathematics and engineering, and can apply this fundamental knowledge to software engineering tasks.

B. Development: Graduates can effectively apply software engineering practice over the entire system lifecycle. This includes requirements engineering, analysis, prototyping, design, implementation, testing, maintenance activities and management of risks involved in software and embedded systems.

C. Process: Graduates know classical and evolving software engineering methods, can select and tailor appropriate methods for projects, and can apply them as both team members and managers to achieve project goals.

D. Professionalism: Graduates are knowledgeable of the ethics, professionalism and cultural diversity in the work environment.

E. Quality: Graduates can apply basic software quality assurance practices to ensure that software design, development and maintenance meet or exceeds applicable standards.

F. Presentation: Graduates have effective written and oral communication skills. Graduates can prepare and publish the necessary documents required throughout the project lifecycle. Graduates can effectively contribute to project discussions, presentations and reviews.

G. Growth: Graduates understand the need for lifelong learning and can readily adapt to new software engineering environments.

ACADEMIC STANDARDS
Software engineering majors must earn a "C-" or better in all required software engineering and computer science courses. Software engineering majors must earn a "D" or better in all corequisites unless otherwise stipulated by the offering department. For example, a "C-" or better is required in PHYSICS 2240 in order to proceed to PHYSICS 2340. However, a "D" in PHYSICS 2340 would satisfy the software engineering requirement for that course. Likewise, a "D" would satisfy the software engineering requirement for computer science courses for which there is an option: COMPUTER 3030, COMPUTER 3520, COMPUTER 3630 and COMPUTER 3920. A software engineering major may repeat any given engineering course only one time. Students must have a G.P.A. of 2.00 or higher in all software engineering and computer science courses.

Software engineering students are immediately able to take computer courses in their first semester. Initially, they are members of general engineering. They must complete five core courses listed below with a minimum G.P.A. of 2.30 before accumulating 60 or more credits at UW-Platteville to become a full member of the software engineering program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH 1130</td>
<td>College Writing I</td>
<td>3</td>
</tr>
<tr>
<td>COMPUTER 1430</td>
<td>Programming in C++</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2640</td>
<td>Calculus and Analytic Geometry I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2730</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2740</td>
<td>Calculus and Analytic Geometry II</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 17

General Requirements Bachelor of Science Degree

Total for graduation: 120

Major: 90-91

MAJORS

- Computer Science Major, B.A. (http://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/computer-science-software-engineering/computer-science-ba)
  - Computer Technology Emphasis
  - Computer Information Systems Emphasis

- Computer Science Major, B.S. (http://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/computer-science-software-engineering/computer-science-bs)
  - Computer Technology Emphasis
  - Computer Information Systems Emphasis
• Software Engineering Major, B.S. (http://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/computer-science-software-engineering/software-engineering-bs)

MINORS
• Minor in Computer Science (http://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/computer-science-software-engineering/minor-computer-science)

FACULTY AND LECTURERS
Additional information about the Faculty and Lecturers below may be found in the Faculty and Academic Staff (http://catalog.uwplatt.edu/faculty-academic-staff) section of this catalog.

Alkhushayni, Suboh
Chang, Lily
Gavin, Donna M.
Landgraf, Lisa M.
Lindahl, Gary
Shi, Yan
Tian, Baozhong
Yang, Qi
Yue, Songqing (Joshua)