Master of Science in Computer Science

Note: this documents the program requirements as of September, 2009. All new students must follow these requirements, but existing students can graduate under any previous catalog. Please contact the program coordinator if you have any questions.

Curriculum

The requirements for the curriculum fit into five categories: foundations, electives, project work, culture and language, and writing. The writing requirement consists of either a thesis or a seminar paper; this choice affects the number of credits to be taken in the other categories. The total number of required credits for both options is 30. In addition, students must satisfy requirements for coursework involving significant global content and graduate school requirements for the number of credits at the 7000 level and above.

Other than the courses covering language, all courses are taught in English. There is no requirement that students know another language to enter the program.

Foundation Courses

The foundation courses are divided into two groups with group A including an element of theory and group B being more applied. Students are required to take at least 3 credits from each group. In addition, certain courses are marked with an asterisk indicating that these have significant global content.

The lists of foundation courses include some which are offered only at partner institutions. Course numbers indicate which are offered at UW-Platteville. COMPUTER 7830, Special Topics, and COMPUTER 7980, Independent Study, can also count towards the foundations requirement (with a designation in Group A or Group B) upon approval by the department chair or program coordinator.

Group A, courses with a significant mathematical component or which cover a traditional theoretical concept:

- Advanced Database Systems and Data Mining
- Algorithms and Complexity
- Artificial Intelligence (offered at UWP as COMPUTER 5030)
- Compiler Construction (offered at UWP as COMPUTER 7630)
- Computer Graphics (offered at UWP as COMPUTER 5920)
- Computer Security (*, offered at UWP as COMPUTER 7460)
- Formal Methods in Computer Science
- Grid and Distributed Computing (*)
- Fuzzy Logic and Applications
- Neural Networks
- Mobile Computing (*)
- Natural Language Systems
- Object-Oriented Analysis and Design (offered at UWP as COMPUTER 5430)
- Parallel Computing
- Robotics
- Simulation (offered at UWP as COMPUTER 7430)

Group B, applied courses:

- Advanced Networking Principles
- Agile Software Development
- Business Process Engineering (*)
- Design Patterns
- Enterprise Computing (*)
- Real-Time Embedded Systems Programming (offered at UWP as COMPUTER 6130)
- Service-oriented Architecture
- Software Maintenance and Reengineering (*, offered at UWP as COMPUTER 5860)
- Software Product Line Engineering (*)
- Software Quality (*, offered at UWP as COMPUTER 5730)
- Web Protocols, Technologies, and Applications (*, offered at UWP as COMPUTER 5870)

Electives

The following courses are allowed as electives. Courses marked with an asterisk count towards the global studies requirement. Some courses are available in an online format only.

- BUSADMIN 5130: Legal Environment of Business
- BUSADMIN 5230: Small Business Management
- BUSADMIN 5540: Quality Management
- BUSADMIN 5620: Financial Management
- BUSADMIN 5720: International Marketing (*)
- Economics 6330: International Economics (*)
- Engineering 5030: Linear Algebra
- Engineering 6050: Applied Statistics
- Project Management 7010: Project Management Techniques I

Project Work

All students must take two courses, one at UW-Platteville and one at a partner institution. The UW-Platteville courses that count towards this requirement are COMPUTER 7120 and COMPUTER 7220.

Culture and Language

All students must take courses relating to the culture and/or language of the abroad institution. This coursework can take many forms. GERMAN 5000 (Foreign Languages Travel Abroad
Seminar) counts towards this requirement; other courses can be taken upon approval by the department chair or program coordinator. All credits in this category apply towards the significant global content requirement.

Writing

All students must take either COMPUTER 7920, Seminar Paper Research, or COMPUTER 7990, Thesis. For the thesis, each student must organize a thesis committee containing at least three qualified individuals. At least one member of the thesis committee must be a member of the department at the student's home institution and at least one must be a member of a partner institution.

In addition to other graduate school and program requirements, the research paper or thesis must include significant global content. The seminar and thesis credits count towards the total requirement for global content.

Credit Requirements

The following table gives the requirements for each category depending on whether the student takes the thesis option or the seminar paper option.

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<tr>
<th>Option</th>
<th>Thesis</th>
<th>Seminar Paper</th>
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<tbody>
<tr>
<td>Total Credits</td>
<td>30</td>
<td>30</td>
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<tr>
<td>Foundations</td>
<td>12 or more credits</td>
<td>15 or more credits</td>
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<td>At least 3 credits of foundations coursework must be from Group A and at least 3 credits must be from Group B.</td>
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<tr>
<td>Electives</td>
<td>0 to 3 credits</td>
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<td>Project</td>
<td>4 to 5 credits with at least 1 credit at an abroad institution</td>
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<tr>
<td>Culture/Lang./Intl. Studies</td>
<td>2 to 4 credits with at least 1 credit at an abroad institution</td>
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<td>Additional Requirements</td>
<td>6 credits of COMPUTER 7990 – Thesis Research</td>
<td>3 credits of COMPUTER 7920 – Seminar Paper Research</td>
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<td></td>
<td>At least 9 credits must be earned abroad and 15 credits from courses with significant global content</td>
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