COMPUTER SCIENCE

Mission and Structure

The mission of the computer science program at Monmouth College is to develop students' understanding of the underlying principles which constitute the discipline and to prepare them for careers and life-long learning in computer science. The program emphasizes a combination of theory and abstraction together with techniques for the development of computer solutions to real-world problems. By building a strong foundation of knowledge we seek to prepare our graduates both to meet current challenges in computing and to adapt to the future directions of the discipline.

Our Computer Science curriculum is taught in a liberal arts setting where students are expected to examine the importance of computer technology in our world and our society. While students are instructed in techniques for developing computer solutions to problems, they are at the same time asked to consider the effect of computer technology within society. By learning Computer Science in a liberal arts environment, students are exposed to moral and ethical dilemmas in a variety of contexts and provided with an opportunity to consider the relationship of computer technology to those issues.

The curriculum structure contains the four components:

1. foundation courses in programming languages
2. the logical foundations of computer science
3. theoretical foundation of computer science
4. a capstone experience in a Senior Project

The computer science program complements the general education curriculum of the college by providing a forum for a discussion of the link between technology and our human society.

The computer science program prepares students for rich professional lives (Monmouth College Statement of Purposes 1). The program endeavors to foster the discovery of connections between the discipline and larger patterns of meaning (4B). We foster and promote intellectual inquiry and critical analysis by each student (7). We seek to develop creativity and skills in problem solving which are both written and orally communicated (8).
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<tr>
<th>Program Objectives / Outcomes</th>
<th>Most Relevant Course</th>
<th>Assessment Measures</th>
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<tbody>
<tr>
<td>1. to learn the principles, abstractions, theories, and concepts that constitute the discipline of computer science.</td>
<td>161, 163, 230, 400, Math 241, Math 260</td>
<td>exams &amp; programming projects</td>
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<td>2. to be able to communicate the ideas of computer science orally and in writing.</td>
<td>335, 400</td>
<td>course projects</td>
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<td>3. to understand how computer hardware and software work and how they interact.</td>
<td>230, 337 345</td>
<td>final exams</td>
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<td>4. to acquire a working knowledge of a variety of problem solving paradigms.</td>
<td>161, 163, 325</td>
<td>exams &amp; programming projects</td>
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<td>5. to apply the techniques to solve problems individually and as a member of a group.</td>
<td>161, 163, 400</td>
<td>programming assignments &amp; oral/written presentations</td>
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<td>6. to thoughtfully consider ethical and moral issues involving the use of computers, and be able to make rational, responsible decisions regarding those issues.</td>
<td>400</td>
<td>written/oral presentations</td>
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Overall Assessment of the CS Major

Transcript narrative and an exit interview.
General Yearly Timeline for the Department’s Assessment

Before or near the start of the Fall semester, the department will review last year’s assessment. At that time, we will review and make any changes to our Specific Assessment document. In our Specific Assessment document, we list exactly what we will assess for each outcome, the course, and a brief description of how we will do the assessment. The Specific Assessment document is an internal document.

The department maintains an “Assessment Course Booklet” in the Public Folders area. For each course in the major, the faculty member who regularly teaches the course has created a brief description of the course, current textbook used, brief comments about the course, and a syllabus. Some include past grade distributions. If a course is listed in the Specific Assessment document, then a detailed description of what is being assessed and assessment measure that will be used is included in the document.

At the end of each semester, faculty members who are teaching a course used in assessment will summarize their assessment for the semester.

Faculty who teach COMP 400 will give the transcript narrative and exit interview and summarize the findings.

Summaries of the past year’s assessment will be discussed at the Fall meeting.