

Assessment Report - Four Column

Eastern Oregon University

Program (CAS) Computer Science/Multi Media

Catalog Description: Students in the Computer Science/ Multimedia Studies program prepare for a future in software development and the use of computer technology to solve complex problems, skills which are in high demand and for which demand is likely to continue. An initial core of classes introduces students to general principles of programming and multimedia development. Upon completion of the core students choose either a concentration in computer science, scientific and statistical computing, or multimedia studies.

How Program serves the Mission: The CS/MM program prepares students in the creative science of software development. Computer software plays an increasingly important role in every sector of modern US society, including business, industry, entertainment, education, and agriculture. The supply of individuals with skills in software design and development remains sufficiently low that US employers are frequently driven to seek workers abroad. Furthermore, the economy of the Eastern Oregon region is beginning to shift from timber to high tech, which means a local increase in demand for graduates of technological programs. In 2006 Google opened a datacenter in The Dalles, and within the last year Facebook opened a datacenter in Prineville. The city planner for Umatilla recently inquired about the annual number of CS graduates in as part of an effort to bring an unnamed major high-tech company to Umatilla, saying that a local source for programming skills is critical for the deal. Although the city planner did not disclose the company involved, Amazon Inc. has acquired land in the area. Successfully attracting tech industry (and the economic growth that it brings) requires a ready supply of suitably-trained talent. This program strives to satisfy the need for capable software developers from the region who can serve the region.

In addition to its vital role in EOU's objective in supporting economic development in the region, course offerings by the CS/MM department serve other programs whose students need fundamental expertise in writing computer programs or technical skill with graphics or authoring tools as well as those programs whose that need technical proficiency with digital media such as still and moving graphics, digital video and digital audio.

Program Outcomes	Means of Assessment & Benchmark / Tasks	Data Analysis	Closing the Loop & Follow-Up
Program (CAS) Computer Science/Multi Media - Integrated Learning and Communication - Demonstrate the ability to incorporate learned skills design, develop, and evaluate software systems of varying complexity to meet desired user requirements. Year(s) to be Assessed: 2013-2014 Start Date: 06/01/2008 Outcome Status: Active	Description of Assessment: CS 401: Project Benchmark: levels of achievement 1-3	07/12/2011 - A greater number of students paid appropriate attention to the process and the business of documenting their progress. In most cases the evolution of the design was clear in the final versions of documents and the prototypes. However, there were shortcomings in the extent of code documentation in several instances. It appears that in regular meetings with supervising faculty students are getting the message about documenting revisions, but there is not sufficient stress on attention to documentation. Benchmark Met: Yes	07/12/2011 - The quality of this project as an integrative learning opportunity is improving. However, it appears that even in their final year of study students still fail to pay sufficient attention to documentation. As a program we must examine all courses in which students write code and make documentation an explicit element of how student work is assessed. Faculty who teach programming intensive courses such as CS 161, CS

Program Outcomes	Means of Assessment & Benchmark / Tasks	Data Analysis	Closing the Loop & Follow-Up
		Reporting Year: 2008-2009 Related Documents: Assessment Summary	162, CS 221, CS 260, CS 360, MM 319, MM 419, and MM 420 will develop a consistent set of documentation requirements and make them explicitly clear to students. 2011 Update: The program will initiate a review of other disciplines? capstone classes and ascertain whether redesign of our approach may benefit students.
Program (CAS) Computer Science/Multi Media - Teamwork and Civic Engagement - Demonstrate teamwork ability to work collaboratively with end users and other developers. Year(s) to be Assessed: 2010-2011 2015-2016 Start Date: 06/01/2010 Outcome Status: Active	Description of Assessment: CS 370: Term Project Benchmark: Rubric 1-3	07/12/2011 - It is clear that the data collected provide inadequate information for evaluating the course or the program?s ability to satisfy this learning outcome. However, the faculty member who conducted this assessment has been aggressively resistant to all assessment efforts, and is fortunately retiring. There is every reason to believe that a younger, more nimble-minded replacement will be more helpful in improving the quality of the program?s educational offerings. Benchmark Met: Yes Reporting Year: 2010-2011 Related Documents: Assessment Summary	07/12/2011 - The CS/MM Program has had difficulties conducting some assessments and carrying out serious evaluation owing to resistance of some faculty. The hiring of new faculty who are open to new approaches to teaching and evaluation will, we hope, improve the programs record.
Program (CAS) Computer Science/Multi Media - Inquiry, Critical Thinking, and Analysis - Demonstrate ability to apply conceptual knowledge for analysis and problem solving.	Description of Assessment: MM 319 Benchmark: Rubric 1-3	10/31/2012 - More than half of the responses were proficient according to the rubric standards. However, since two of the responses failed to be at least adequate the minimum accepted goal was not	10/31/2012 - Analysis critical thinking and problem solving of a very concrete type are at the very core of the objectives a program in software development

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<p>Year(s) to be Assessed: 2011-2012 2016-2017</p> <p>Start Date: 06/01/2011</p> <p>Outcome Status: Active</p>		<p>achieved. Perhaps denying any poor performance is not realistic.</p> <p>An additional concern is the difficulty of assessing analysis and problem solving in a really satisfactory fashion. More useful information might be obtained by carefully designing an activity or activities specifically with assessment in mind.</p> <p>Benchmark Met: No</p> <p>Reporting Year: 2011-2012</p> <p>Related Documents: Assessment Summary</p>	<p>(which is what computer science and multimedia are about). The success of our graduates speaks to the program's general ability to accomplish these goals, and yet the facts that some students don't graduate and that we sometimes have trouble articulating what we are trying to measure suggest that we have plenty of work to do.</p> <p>In the immediate instance of MM 319 it seems that some practice solving problems in the format presented on the exam might be fairer to the students. Even better would be using activities more like the actual programming assignments they complete as the basis for assessment, provided the scale of these problems did not make them too unwieldy for measurement.</p>
<p>Program (CAS) Computer Science/Multi Media - Problem Solving - Demonstrate proficiency in using one or more industry-standard programming languages and mark-up and scripting languages to solve problems.</p> <p>Year(s) to be Assessed: 2012-2013 2017-2018</p> <p>Start Date: 06/01/2012</p> <p>Outcome Status:</p>	<p>Description of Assessment: Due to assess Problem Solving 12-13</p>	<p>04/13/2013 - Considering the final grades in the course as compared to the two prompts, students proficiency is typical. Some students demonstrated excellence in solving the presented problems. Some were above average in the derived solutions. Others were average. And some were below average and demonstrated no proficiency with the material. With regard to Prompt #1, the scores leaned towards proficiency, most likely due to the type answer required, i.e., a simple written explanation, rather than demonstration of expertise with CSS markup.</p>	

Program Outcomes	Means of Assessment & Benchmark / Tasks	Data Analysis	Closing the Loop & Follow-Up
Active		Benchmark Met: Yes Reporting Year: 2012-2013 High Impact Practice (HIP) - only choose one: Performance Related Documents: Assignment Data Analysis	
	Description of Assessment: Due to Assess Problem Solving 12-13 (CS 221)	<p>07/02/2013 - Two students failed to answer the question at all. Another student addressed the portion of the question covered by criterion one but didn't answer the rest of the question. The absence of information in these instances offers little to analyze.</p> <p>Students who answered the portion of the question that addresses criterion two but missed it failed to use Boolean operators correctly. This is a topic covered in CS 162 and the weakness demonstrated here suggests that greater attention be given this subject in the future.</p> <p>Four students did not answer the portion of this question that addressed criterion three. The other unsatisfactory response came from a student who misapplied a common C output statement.</p> <p>For criterion four, more students performed at the ?proficient? level than expected. However, all of the rest were completely unsatisfactory?three who did not answer the question at all and three who used static rather than dynamic allocation.</p> <p>Benchmark Met: No Reporting Year: 2012-2013</p>	<p>07/02/2013 - Two students failed to answer the question at all. Another student addressed the portion of the question covered by criterion one but didn't answer the rest of the question. The absence of information in these instances offers little to analyze.</p> <p>Students who answered the portion of the question that addresses criterion two but missed it failed to use Boolean operators correctly. This is a topic covered in CS 162 and the weakness demonstrated here suggests that greater attention be given this subject in the future.</p> <p>Four students did not answer the portion of this question that addressed criterion three. The other unsatisfactory response came from a student who misapplied a common C output statement.</p> <p>For criterion four, more students performed at the ?proficient? level than expected. However, all of the rest were completely unsatisfactory?</p>

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		<p>Related Documents: Rubric for Assessment</p>	<p>three who did not answer the question at all and three who used static rather than dynamic allocation. This topic was given extensive coverage in week six of the course but may need to be revisited later.</p>
<p>Program (CAS) Computer Science/Multi Media - Program Review - No Assessment - Program Review</p> <p>Year(s) to be Assessed: 2014-2015</p> <p>Start Date: 02/11/2013</p> <p>Outcome Status: Active</p>			
<p>Program (CAS) Computer Science/Multi Media - Content Knowledge - Demonstrate factual and conceptual grasp of the field of computing.</p> <p>Year(s) to be Assessed: 2009-2010 2015-2016</p> <p>Start Date: 06/01/2009</p> <p>Outcome Status: Active</p>	<p>Description of Assessment: CS 161: Final Exam</p> <p>Assessment Type: Exam/Quiz - Internal/In Course</p> <p>Benchmark: 75% correct overall</p>	<p>07/12/2011 - Of the 22 questions examined, ten were basic knowledge, eight required simple application of basic knowledge, and four required more advanced application of conceptual knowledge. 79 % of the students correctly answered the ten basic knowledge questions, 80 % answered the eight basic concept questions correctly, and the remaining four questions were correctly answered 76 % of the time.</p> <p>Benchmark Met: Yes</p> <p>Reporting Year: 2009-2010</p>	<p>07/12/2011 - One basic knowledge question was only answered correctly by 8 students, barely more than a third of the class. This question may be badly worded. However, examination of the remaining questions that were regularly missed suggests a need for more practice to make basic knowledge more memorable. I will develop further drill activities for students to use to rehearse the meanings of fundamental terminology and more in-class practice for problems that require application of basic concepts.</p>

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Curriculum Map
Eastern Oregon University
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Integrated Learning and Communication - Demonstrate the ability to incorporate learned skills design, develop, and evaluate software systems of varying complexity to meet desired user requirements.

- * CS 161 - CS 161 - Foundations Of CS I
- * CS 162 - CS 162 - Foundations Of CS II
- * CS 221 - CS 221 - C/C++ Programming
- * CS 248 - CS 248 - Unix Programming
- * CS 260 - CS 260 - Data Structures
- * CS 318 - CS 318 - Algorithm Analysis
- * CS 344 - CS 344 - Systems Analysis & Design
- * CS 401 - CS 401 - Capstone
- * CS 430 - CS 430 - Database Mgmt System
- * MM 319 - MM 319 - Multimedia Programming
- * MM 401 - MM 401 - Capstone
- * MM 419 - MM 419 - Adv Multimedia Programming

Teamwork and Civic Engagement - Demonstrate teamwork ability to work collaboratively with end users and other developers.

- * CS 121 - CS 121 - Intro Software Development
- * CS 161 - CS 161 - Foundations Of CS I
- * CS 162 - CS 162 - Foundations Of CS II
- * CS 260 - CS 260 - Data Structures
- * CS 370 - CS 370 - User Interface Design
- * CS 401 - CS 401 - Capstone
- * CS 407 - CS 407 - Seminar
- * MM 252 - MM 252 - Intro Web Authoring
- * MM 352 - MM 352 - Intermed Web Authoring
- * MM 401 - MM 401 - Capstone
- * MM 407 - MM 407 - Seminar

Inquiry, Critical Thinking, and Analysis - Demonstrate ability to apply conceptual knowledge for analysis and problem solving.

- * CS 161 - CS 161 - Foundations Of CS I
- * CS 162 - CS 162 - Foundations Of CS II
- * CS 221 - CS 221 - C/C++ Programming
- * CS 248 - CS 248 - Unix Programming
- * CS 260 - CS 260 - Data Structures
- * CS 318 - CS 318 - Algorithm Analysis
- * CS 344 - CS 344 - Systems Analysis & Design
- * CS 401 - CS 401 - Capstone
- * CS 430 - CS 430 - Database Mgmt System
- * MM 319 - MM 319 - Multimedia Programming
- * MM 401 - MM 401 - Capstone
- * MM 419 - MM 419 - Adv Multimedia Programming

Problem Solving - Demonstrate proficiency in using one or more industry-standard programming languages and mark-up and scripting languages to solve problems.

- * CS 260 - CS 260 - Data Structures
- * CS 318 - CS 318 - Algorithm Analysis

- * CS 360 - CS 360 - Object-Orient Prog With C++
- * CS 430 - CS 430 - Database Mgmt System

Program Outcomes - Assessment Cycle

Year(s) to be Assessed	Program Outcome Name	Unit Name
2009-2010	Content Knowledge	Program (CAS) Computer Science/Multi Media
2010-2011	Teamwork and Civic Engagement	Program (CAS) Computer Science/Multi Media
2011-2012	Inquiry, Critical Thinking, and Analysis	Program (CAS) Computer Science/Multi Media
2012-2013	Problem Solving	Program (CAS) Computer Science/Multi Media
2013-2014	Integrated Learning and Communication	Program (CAS) Computer Science/Multi Media
2014-2015	Program Review - No Assessment	Program (CAS) Computer Science/Multi Media
2015-2016	Content Knowledge	Program (CAS) Computer Science/Multi Media
2015-2016	Teamwork and Civic Engagement	Program (CAS) Computer Science/Multi Media
2016-2017	Inquiry, Critical Thinking, and Analysis	Program (CAS) Computer Science/Multi Media
2017-2018	Problem Solving	Program (CAS) Computer Science/Multi Media