

Weber State University
Annual Assessment of Evidence of Learning

Cover Page

Department/Program: **Computer Science**
Academic Year of Report: **2015/16**
Date Submitted: **11/15/16**
Report author: **Dr. Brian Rague, Dept. Chair, School of Computing**

Contact Information:
Phone: **801.626.7377**
Email: **brague@weber.edu**

A. Brief Introductory Statement:

Please review the Introductory Statement and contact information for your department displayed on the assessment site:

<http://www.weber.edu/portfolio/departments.html> - if this information is current, please place an 'X' below. No further information is needed. We will indicate "Last Reviewed: [current date]" on the page.

Information is current; no changes required.

Information is not current; updates below.

Update:

B. Mission Statement

Please review the Mission Statement for your department displayed on the assessment site: <http://www.weber.edu/portfolio/departments.html> - if it is current, please indicate as much; we will mark the web page as “Last Reviewed [current date]”. No further information is needed.

If the information is not current, please provide an update:

Information is current; no changes required.

Information is not current; updates below.

C. Student Learning Outcomes

Please review the Student Learning Outcomes for your department displayed on the assessment site:

<http://www.weber.edu/portfolio/departments.html> - if they are current, please indicate as much; we will mark the web page as “Last Reviewed [current date]”. No further information is needed.

If they are not current, please provide an update:

Information is current; no changes required.

Information is not current; updates below.

Measurable Learning Outcomes

At the end of their study at WSU, students in this program will:

- 1) ...
- 2) ...
- 3) ...
- 4) ...
- 5) ...
- 6) etc.

D. Curriculum

Please review the Curriculum Grid for your department displayed on the assessment site: <http://www.weber.edu/portfolio/departments.html> - if it is current, please indicate as much; we will mark the web page as “Last Reviewed: [current data]”. No further information is needed. If the curriculum grid is not current, please provide an update:

- Information is current; no changes required.**
- Information is not current; updates below**

Curriculum Map

	Department/Program Learning Outcomes							
	Learning Outcome 1	Learning Outcome 2	Learning Outcome 3	Learning Outcome 4	Etc...			
Core Courses in Department/Program								

Note^a: Define words, letters or symbols used and their interpretation; i.e. 1= introduced, 2 = emphasized, 3 = mastered or I = Introduced, E = Emphasized, U = Utilized, A = Assessed Comprehensively; these are examples, departmental choice of letters/numbers may differ
Note^b: Rows and columns should be transposed as required to meet the needs of each individual department

Additional Information (if needed)

E. Assessment Plan

Please review the Assessment Plan for your department displayed on the assessment site: <http://www.weber.edu/portfolio/departments.html> - if the plan current, please indicate as much; we will mark the web page as “Last Reviewed [current date]”. No further information is needed.

The site should contain an up-to-date assessment plan with planning going out a minimum of three years beyond the current year. Please review the plan displayed for your department at the above site. The plan should include a list of courses from which data will be gathered and the schedule, as well as an overview of the assessment strategy the department is using (for example, portfolios, or a combination of Chi assessment data and student survey information, or industry certification exams, etc.).

Please be sure to include your planned assessment of any general education courses taught within your department. This information will be used to update the General Education Improvement and Assessment Committee’s planning documentation.

Assessment plan:

The current chart needs to be updated to reflect future years and some course changes. Please replace the current chart with the revision below. All the wording after the chart should be retained.

Program-Level Assessment Data Collection, Analysis, and Improvement Schedule

Course	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
CS1030 Foundations of Computer Science			CA/RI	Imp		
CS2130 Computational Structures			CA/RI	Imp		
CS3230 Object Oriented User Interface Development with Java			CA/RI	Imp		
CS4110 Concepts of Formal Languages and Algorithms for Comp.			CA/RI	Imp		
CS1400 Fundamentals of Programming				CA/RI	Imp	
CS2550 Database Design & Application Development				CA/RI	Imp	
CS2705 Network Fundamentals and Design				CA/RI	Imp	
CS3030 Scripting Languages				CA/RI	Imp	
CS1410 Object-Oriented Programming	Imp				CA/RI	Imp
CS2450 Software Engineering I	Imp				CA/RI	Imp
CS3100 Operating Systems	Imp				CA/RI	Imp
CS4450 Advanced Software Engineering Methods	Imp				CA/RI	Imp
CS2350 Web Development	CA/RI	Imp				
CS2420 Introduction to Data Structures and Algorithms	CA/RI	Imp				
CS3550 Advanced Database Programming	CA/RI	Imp				
CS4230 Java Application Development	CA/RI	Imp				
CS2810 Computer Architecture/Organization		CA/RI	Imp			
CS3750 Software Engineering II		CA/RI	Imp			
CS3280 Object-Oriented Windows Application Development		CA/RI	Imp			
CS4790 N-Tier Web Programming		CA/RI	Imp			

CA/RI – Course Assessment and Recommended Improvements (to be approved by CS Faculty and CS Industry Advisory Council)

Imp – Implement Improvements

The following three steps outline the Computer Science assessment process:

1. Following the above schedule, course assessment subcommittees will convene during the assigned year to review the effectiveness of course delivery in achieving department objectives and to establish a Course Assessment Plan. The Plan includes summary evidence of how the course currently satisfies the department's student learning outcomes, investigating specific assessment instruments, the associated learning outcomes, and resulting class performance. Evidence of learning for a specific student learning outcome is deemed successful if the associated assessment measure is 80% or above.

In addition, the source assessment subcommittees will list recommendations for course improvement to address any deficiencies in meeting applicable student learning outcomes.

2. Program recommendations will be compiled by Spring semester and submitted for approval by both CS Faculty and CS Industry Advisory Council, effectively closing the loop and thus engaging department action toward addressing deficiencies in achieving student learning outcomes.
3. Recommendations for improvement will be implemented during the subsequent year indicated in the schedule above. An evaluation of the implementation of course improvements will indicate if the course should be reassessed immediately or if the regular course assessment cycle may be resumed.

Assessment for the Creative Arts (CA) General Education class **CS1010 - Introduction to Interactive Entertainment** occurs bi-annually following the rubric and metrics provided by the Creative Arts subcommittee of the General Education Improvement & Assessment Faculty Senate Standing Committee.

F. Report of assessment results for the most previous academic year:

There are a variety of ways in which departments can choose to show evidence of learning. This is one example. The critical pieces to include are 1) what learning outcome is being assessed, 2) what method of measurement was used, 3) what the threshold for 'acceptable performance' is for that measurement, 4) what the actual results of the assessment were, 5) how those findings are interpreted, and 6) what is the course of action to be taken based upon the interpretation.

A. Evidence of Learning: Courses within the Major

(this is a sample page for purpose of illustration only; a blank template can be found on the next page)

The completed Implementation Evaluations and Course Assessment Plans for courses evaluated during 2015-16 are included in the .pdf attachment sent with this report.

b. Evidence of Learning: High Impact or Service Learning

This is an optional section. If you provide students with high impact or service learning opportunities you may briefly describe those opportunities and explain how you assess their impact on student learning. This [excerpt](#) from George D. Kuh provides a brief overview of high-impact practices.

No community-engaged learning (CEL) or independent study courses were assessed for this current report.

c. Evidence of Learning: General Education Courses

CS1010: Fall 2015

Evidence of Learning: General Education Courses					
Creative Arts					
Measurable Learning Outcome	Method of Measurement	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
Students will...	Direct and Indirect Measures*				
Create works of art and/or increase their understanding of creative processes in writing, visual arts, interactive entertainment, or performing arts.	Creative Assignments: <u>Group:</u> Project – Game Design Document – Final Group Submission	85% of students will earn a C or higher on final projects	65 of 77 (84.4%) students earned a C or higher.	Students are performing nominally near the threshold for evidence of student learning.	No action required at this time.
	Quizzes, Exams, Papers: <u>Individual:</u> Design Practice: Games/Video Games Designing & Developing Games Major Genres Game Concepts Creative and Expressive Play Storytelling	85% of students will earn a C or higher on their final projects	66 of 80 (82.5%) students earned a C or higher.	Findings fall just short of the threshold objective. The subgroup of students who did not reach the stated threshold either did not submit several of the design practice assignments or submitted them late. The omitted assignments earned zero points and significantly impacted the overall collective grade for these assignments.	For design practice assignments, all students will be encouraged to complete and submit each of the assignments on time in order to maximize the credit earned.

Evidence of Learning: General Education Courses Creative Arts					
Measurable Learning Outcome	Method of Measurement	Threshold for Evidence of Student Learning	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
Students will...	Direct and Indirect Measures*				
Demonstrate knowledge of key themes, concepts, issues, terminology and ethical standards employed in creative arts disciplines. They will use this knowledge to analyze works of art from various traditions, time periods, and cultures.	Demonstrate Knowledge: Quizzes, Exams, Papers: <u>Individual:</u> Game Review: Action Games Arcade Games Adventure Games Simulation Games Puzzle Games Role-Playing Games	85% of students will earn a C or higher on final projects	63 of 80 (78.8%) students earned a C or higher.	Findings fall just short of the threshold objective. The sub-group of students who did not reach the stated threshold either did not submit several of the game review assignments or submitted them late. The omitted assignments earned zero points and significantly impacted the overall collective grade for these assignments.	For game review assignments, all students will be encouraged to complete and submit each of the assignments on time in order to maximize the credit earned.
	Group presentations: Final Group Submission & Game Presentation	85% of students will earn a C or higher on their final projects	65 of 77 (84.4%) students earned a C or higher.	Students are performing nominally near the threshold for evidence of student learning.	No action required at this time.

*At least one measure per objective must be a direct measure.

G. Summary of Artifact Collection Procedure

Summary Information (as needed)

All artifact results are stored electronically on Canvas and/or Chi-tester. The Sources for Assessment Data for **Courses within the Major** are listed in the Course Assessment Devices and Class Performance section of the Course Assessment Plans and Implementation Evaluations listed in Section F. a above. The Sources for Assessment Data for **CS1010** are listed in the Direct and Indirect Measures column in the charts located in Section F.c above.

Appendix B

Please provide the following information about the full-time and adjunct faculty contracted by your department during the last academic year (summer through spring). Gathering this information each year will help with the headcount reporting that must be done for the final Five Year Program Review document that is shared with the State Board of Regents.

Faculty 2015-16	
Headcount	34
With Doctoral Degrees (Including MFA and other terminal degrees, as specified by the institution)	9
Full-time Tenured	3
Full-time Non-Tenured (includes tenure-track)	4
Part-time and adjunct	2
With Master's Degrees	13
Full-time Tenured	2
Full-time Non-Tenured	5
Part-time and adjunct	6
With Bachelor's Degrees	12
Full-time Tenured	0
Full-time Non-tenured	2
Part-time and adjunct	10
Other	
Full-time Tenured	
Full-time Non-tenured	
Part-time	
Total Headcount Faculty	34
Full-time Tenured	5
Full-time Non-tenured	11
Part-time	18

Please respond to the following questions.

- 1) Based on your program's assessment findings, what subsequent action will your program take?

The most recent ABET evaluation of the CS BS program has inclined our future assessment efforts more heavily toward students who have either completed (just prior to graduation) or nearly completed (enrolled in capstone classes) the curriculum. In response, at least one capstone class will be assessed in each year of the five-year course review cycle. We are also requiring a separate Bachelor's Degree Assessment course (CS4899) in which all BS graduates will demonstrate skillsets appropriate to the discipline.

- 2) We are interested in better understanding how departments/programs assess their graduating seniors. Please provide a short narrative describing the practices/curriculum in place for your department/program. Please include both direct and indirect measures employed.

As mentioned above, the Computer Science curriculum includes the course CS4899 – Bachelor's Degree Assessment. The purpose of this zero-credit hour class is to prepare and assess students about to graduate from the program. The course will typically be taken by seniors during their last semester and has four requirements/objectives:

- a. Summative assessment exam of student knowledge and skillsets obtained from upper division courses.**
- b. Exit interview session that both simulates a standard job interview and gathers student feedback about their overall experiences with the program's faculty and curriculum, including recommendations for program improvement.**
- c. Development of student portfolio in preparation for job interviews and career advancement.**
- d. Student attendance to relevant campus presentations from outside speakers invited to the university.**

Results from the assessment exam will provide insights on student readiness and also promote analysis of how course content is delivered in order to improve future student performance.