College of Arts and Sciences (CAS) 2016 - 2017 Yearly Assessment Report

If you would like to preview this form before you begin submitting, please follow this link:
https://myusf.usfca.edu/sites/default/files/2017_Yearly_Assessment_Report_preview.pdf

NOTES:

- *2016-2017 Yearly Assessment Reports* for all CAS Majors, Minors, Graduate Programs, and Non-Degree Seeking Programs are due by 10/28/17; early submissions are welcome.
    - Undergraduate programs (majors and minors) must include two curricular maps – one showing how courses map onto Program Learning Outcomes (PLOs) and one showing how PLOs map onto Institutional Learning Outcomes (ILOs).
    - Graduate programs must include one curricular map showing how courses map onto PLOs.
    - Non-degree seeking programs must include one curricular map showing how PLOs map onto ILOs.

- This form **cannot be saved** once it is in-progress. If you close out of the form before submission, responses will be **discarded**. Please ensure you are ready to fill out the full form once you begin, and/or keep a backup copy of your responses.

- If you encounter any issues while utilizing this form, please contact Corie Schwabenland Garcia, Academic Data and Assessment Analyst, at x4285 or ceschwabenland@usfca.edu

Identifying Information

Name of Program *

Computer Science

Type of Program *

Major ▼

College of Arts and Sciences Division *

Sciences ▼

Name/Title/E-mail Address of Submitter *

EJ Jung/Associate Professor/ejung@cs.usfca.edu

Name(s)/E-mail Address(es) of Additional Individual(s) Who Should Receive Feedback

David Wolber/Professor and Chairperson/wolberd@usfca.edu

Submissions via the following Google form are strongly encouraged. However, if your department/program wishes to upload its assessment report in lieu of completing this form, you can do so here. Would you like to upload a PDF version of your Yearly Assessment Report?

○ Yes

◉ No

Yearly Assessment Report PDF Upload

If you wish to submit a separate PDF report, please be sure to include all the components listed in this google form (screen shots of the google form are available at https://myusf.usfca.edu/sites/default/files/2017_Yearly_Assessment_Report_preview.pdf)

Please upload a PDF version of your Yearly Assessment Report here: *

Please upload your program's PLO x Courses Curriculum map here (all file types allowed) *

Please upload your program's PLO x ILO Curriculum map here (all file types allowed)

If you would like to upload any other files (i.e. rubrics used to evaluate student work products, scripts/surveys/other indirect methods used to evaluate student work), you may upload them here. Please use descriptive file names (i.e. "SociologyAssessmentRubric").

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Mission Statement

Please type and/or copy-and-paste directly into the space below:

*

Students who graduate with a Bachelor of Science (B.S.) degree in Computer Science will be prepared for both graduate school and for software development careers. The curriculum provides a solid base in computer science fundamentals that includes software design and development, problem solving and debugging, theoretical and mathematical foundations, computer systems, and system software.

Program Learning Outcomes (PLOs)

Please type and/or copy-and-paste directly into the space below:

*

THEORY: Explain and analyze standard computer science algorithms and describe and analyze theoretical aspects of various programming languages.
APPLICATION: Apply problem-solving skills to implement medium- and large- scale programs in a variety of programming languages.
SYSTEMS: Describe the interactions between low-level hardware, operating systems, and applications.
PROJECT: Demonstrate effective communication and organization as part of a team of software developers or researchers collaborating on a large computer program.

Curriculum Maps

Please upload your Curriculum Maps below. All file types (Excel, PDF, etc.) are allowed.

Please upload your PLOs to Courses Curriculum map here *

> CS Major PLO X Co...

Please upload your PLOs to ILOs Curriculum map here *

> CS Major - PLO X IL...

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Assessment Methods

Which of your Program Learning Outcomes did you assess during 2016-2017? *

PROJECT: Demonstrate effective communication and organization as part of a team of software developers or researchers collaborating on a large computer program.

What student work products did you use to assess your PLO(s)? Pick one or more direct methods from the list below and briefly describe below what specific work product(s) you used. *

☐ Published (Standardized) Test (e.g., Major Field Test)

☐ Class Tests & Quizzes with Embedded Questions

☑ Class Presentations

☐ Off-Campus Presentations (NGOs, clients, agencies, etc.)

☐ Research Projects Reports

☐ Case Studies

☐ Term Papers

☐ Portfolio

☐ Artistic Performances, Recitals & Products

☑ Capstone Projects

☐ Poster Presentations

☐ Comprehensive Exams

☐ Thesis, Dissertation

☐ Pass Rates on Certification or Licensure Exams

☑ Group Projects

☐ In-/Out-of Class Presentations

☐ Competency Interviews (e.g., oral exams)

☐ Simulations

☐ Juried Presentations

☐ Other: ....

Brief description of student work products used to assess PLOs: *

Capstone/Group Projects: CS 490 Senior Project is a capstone project course where students are required to work in a team and develop a large-scale computer program (project). Typically the project takes a full semester to develop and has multiple components that students have to collaborate on.

Class Presentations: students do a class presentation to explain the problem they solve with this software and to show the design and the functionality of their software.

What tools did you use to evaluate the student work product(s) (e.g. rubric, test score)? *

Rubric

Please upload any tools used to evaluate student work product(s) here in PDF format only. Please use descriptive file names (e.g. "SociologyAssessmentRubric.PDF").

| CS490 Final Projec... |

Who evaluated the student work product? Check all that apply. *

☐ FT faculty members who were not instructor(s) of the course(s)

☑ FT faculty members who were instructor(s) of the course(s)

☐ PT faculty members who were not instructor(s) of the course(s)

☐ PT faculty members who were instructor(s) of the course(s)

☐ Other: ....

Describe the calibration procedure you employed, if any (i.e., how did you assure that faculty raters were consistent with each other in how they rated the student work products):

....

What indirect methods did you employ, if any?

☐ Student Survey

☐ Student Interview

☐ Focus Groups

☐ Reflection Sessions

☐ Reflection Essays

☐ Faculty Survey

☐ Exit (end of program) Survey

☐ Exit (end of program) Interview

☐ Alumni Survey

☐ Employer Survey

☐ Diaries or Journals

☐ Data from Institutional Surveys

☐ Curriculum/Syllabus Analysis

☐ Other: ....

Please indicate and briefly describe what indirect methods you used (and/or attach the survey/script/interview below).

....

Attach survey/script/interview here as needed

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Results

What were the direct data results? *

In the final presentation,19 students received Exemplary rating and 4 students received Acceptable rating. In the capstone project, 17 students received Exemplary rating and 6 students received Acceptable rating. No student received Unsatisfactory rating in the final presentation or capstone project.

What were the indirect data results? (If applicable)

How do you interpret these results? What do they mean? *

All students who passed CS 490 Senior Project demonstrated effective communication and organization as part of a team of software developers collaborating on a large computer program. We believe CS 490 is serving our Project PLO well.

Closing the Loop

"Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change: Assessment alone changes little. Its greatest contribution comes on campuses where the quality of teaching and learning is visibly valued and worked at. On such campuses, the push to improve educational performance is a visible and primary goal of leadership; improving the quality of undergraduate education is central to the institution's planning, budgeting, and personnel decisions. On such campuses, information about learning outcomes is seen as an integral part of decision making, and avidly sought."

    --9 Principles of Good Practice for Assessing Student Learning: American Association for Higher Education

Purpose: In the current field of higher education today, Assessment of student learning is seen as a critical tool to assist in the mission of student centered education. It is a way for faculty and the other university constituents involved in learning to use data driven results to bring about needed curricular or programmatic changes to improve student outcomes.

In the previous section, you have analyzed the data to get some critical insights into student learning. This section is for our way forward, and touches upon a few core areas:

What might you do as a result of these assessment results? What curricular or programmatic changes might you implement? *

☐ Revision of PLOs

☑ Changes in pedagogical practices

☐ Revision of program course sequence

☐ Revision of course(s) content

☐ Curriculum Changes (e.g. addition and/or deletion of courses)

☐ Modified program policies or procedures

☐ Designed measurement tools more aptly suited for the task

☐ Improved within and across school/college collaboration

☐ Improved within and across school/college communication

☐ Revised student learning outcomes in one or more courses

☐ Modified rubric

☐ Developed new rubric

☐ Developed more stringent measures (key assessments)

☐ Modified course offering schedules

☐ Changes to faculty and/or staff

☐ Changes in program modality of delivery

☐ Other: ....

Description of the Proposed Changes (as checked above): *

While CS 490 is serving our Project PLO well, we wish to monitor students' progress more carefully so that we can catch early signs of struggling students, if there are any. We also noticed that we did not provide a rubric for the class presentations beyond providing guidelines on how to prepare a good presentation, and we plan to make the grading criteria more explicit to students.

Amendments to your assessment plan: If, in course of conducting current assessment, you felt a need to amend the assessment plan itself for future assessments, please discuss it here in a few sentences: *

We did not feel such need this time.

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Google Forms

Program Learning Outcomes X Courses	PLO1 THEORY: Explain and analyze standard computer science algorithms and describe and analyze theoretical aspects of various programming languages.	PLO2 APPLICATION: Apply problem-solving skills to implement medium- and large- scale programs in a variety of programming languages.	PLO3 SYSTEMS: Describe the interactions between low-level hardware, operating systems, and applications.	PLO4 PROJECT: Demonstrate effective communication and organization as part of a team of software developers or researchers collaborating on a large computer program.
Courses or Program Requirement				
110: Introduction to Computer Science I	I	I	I	I
112: Introduction to Computer Science I	I	D	I	I
212: Software Development	D	D		D
SYSTEMS (220 or 221)			D	
220: Introduction to Parallel Programming				
221: C and Systems Programming				
245: Data Structures and Algorithms	D	D		D
315: Computer Architecture			M	
326: Operating Systems			M	
THEORY (345, 411, or 414)	M			
345: Programming Language Paradigms				
411: Automata Theory				
414: Compilers				
APPLICATIONS (one of the courses below)		M		
333: Introduction to Database Systems				
336: Computer Networks				
360: Data Visualization				
419: Computer Graphics				
420: Game Engineering				
451: Data Mining				
480: Computers and Society				
398/498: Directed Reading and Research		D		D
490: Senior Team Project		M		M
	Key:			
	I = Introductory			
	D = Developing			
	M = Mastery			

Institutional Learning Outcomes X Program Learning Outcomes	PLO1 THEORY: Explain and analyze standard computer science algorithms and describe and analyze theoretical aspects of various programming languages.	PLO2 APPLICATION: Apply problem-solving skills to implement medium- and large- scale programs in a variety of programming languages.	PLO3 SYSTEMS: Describe the interactions between low-level hardware, operating systems, and applications.	PLO4 PROJECT: Demonstrate effective communication and organization as part of a team of software developers or researchers collaborating on a large computer program.
Institutional Learning Outcomes				
1. Students reflect on and analyze their attitudes, beliefs, values, and assumptions about diverse communities and cultures and contribute to the common good.				
2. Students explain and apply disciplinary concepts, practices, and ethics of their chosen academic discipline in diverse communities.		x		x
3. Students construct, interpret, analyze, and evaluate information and ideas derived from a multitude of sources.	x	x	x	x
4. Students communicate effectively in written and oral forms to interact within their personal and professional communities.				x
5. Students use technology to access and communicate information in their personal and professional lives.	x	x	x	x
6. Students use multiple methods of inquiry and research processes to answer questions and solve problems.	x	x	x	x
7. Students describe, analyze, and evaluate global interconnectedness in social, economic, environmental and political systems that shape diverse groups within the San Francisco Bay Area and the world.				

Total possible points: 100
• Introduction: purpose of the project and the problem it is intended to solve. (15 pts)
• Requirements: technical requirements and constraints and user requirements. Describe how you determined both sets of requirements. (15 pts)
• Design: initial design, including conceptual design and user-interface sketches. (20 pts)
• Testing: how you tested your project — for software correctness and usability by intended users. (20 pts)
• Results: what you achieved, what you learned from the project, and possible next steps. (20 pts)
• Timeline: your research/design/development schedule, including how the actual compared with what you initially planned. (10 pts)