

**Assurance of Student Learning
2019-2020**

Ogden College of Science and Engineering

School of Engineering and Applied Sciences

Computer Science 629

Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages.

Student Learning Outcome 1: Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

Instrument 1	Design a solution for a given problem
Instrument 2	Implement a solution for a given design
Instrument 3	Evaluate an implementation of a design

Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 1.	Met	Not Met
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Student Learning Outcome 2: Communicate effectively in a variety of professional contexts.

Instrument 1	Ability to give effective in-class oral presentation
Instrument 2	Ability to write research paper or research report
Instrument 3	Ability to write cover letter for application

Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.	Met	Not Met
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Student Learning Outcome 3: Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

Instrument 1	Ability to work well together as a team and team's ability to set goals.
Instrument 2	Team's ability to set goals
Instrument 3	Team's ability to manage the project and to manage risk
Instrument 4	Team's ability to create final deliverables

Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.	Met	Not Met
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Program Summary (Briefly summarize the action and follow up items from your detailed responses on subsequent pages.)



Student Learning Outcome 1

Student Learning Outcome	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.			
Measurement Instrument 1	Design a solution for a given problem: In an upper-level course (CS 425), students have to develop a design for a given problem. The design is evaluated based on a rubric established by the program.			
Criteria for Student Success	Evaluation item	Novice	Intermediate	Proficient
	Conceptualize/design a component to given requirements	Don't meet major desired needs	Meet major desired needs but lack of clarity or structural optimization	Meet major desired needs with clear and optimized structure
	Number of Students	3	1	16
Program Success Target for this Measurement	70% of students should score at the proficient level.	Percent of Program Achieving Target		80%
Methods	The sampled student population is the set of students who are enrolled in the CS 425 course during the fall semester of a given year.			
Measurement Instrument 2	Implement a solution for a given design In an upper-level course (CS 425), students have to implement a design. The implementation is evaluated based on a rubric established by the program.			
Criteria for Student Success	Evaluation item	Novice	Intermediate	Proficient
	Implementing a given design	Important component design criteria are not implemented or implemented incorrectly (incorrect on basic test cases)	Some important design criteria are implemented and work reasonably well	All important component criteria implemented and work reasonably well; but 1 or 2 minor issues are missing

	Number of students	1	3	16	
Program Success Target for this Measurement	70% of students should score at the proficient level.	Percent of Program Achieving Target		80%	
Methods	The sampled student population is the set of students who are enrolled in the CS 425 course during the fall semester of a given year.				
Measurement Instrument 3	Evaluate an implementation of a design In an upper-level course (CS 351, CS 425), students have to evaluate the implementation of a design. The implementation is evaluated based on a rubric established by the program.				
Criteria for Student Success	Evaluation item	Novice	Intermediate	Proficient	
	Evaluate and test the resulting system (Ability to collect and analyze data for evaluation of the performance)	No collection or no analysis	Collect data but few analysis	Collect data and sufficient analysis with reasonable conclusions or observations	
	Number of students	5	1	14	
Program Success Target for this Measurement	70% of students should score at the proficient level.	Percent of Program Achieving Target		70%	
Methods	The sampled student population is the set of students who are enrolled in the CS 425 course during the fall semester of a given year.				
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 1.				Met	Not Met
Actions (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)					
The goal was met, but the program still discussed how to improve the performance, particularly how to move the students out of the novice category. A decision was made to encourage the instructor to meet with some (or all) students about a week prior to the due date for the design (as well as the implementation). The idea is to identify struggling students who might not reach out and provide/direct them towards resources which will help them. For the 'Evaluation' category, a decision was made to find a different place in the curriculum for this assessment: An assignment where students will evaluate the implementation of other students in a setting where the evaluations can be used by students to improve their work prior to turning it in. That should address two aspects: The purpose/benefit of a good evaluation is clear in that context and we (= humans) are biased when evaluating their own work.					
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)					
The student outcome will be assessed again during fall 2020.					

Student Learning Outcome 2

Student Learning Outcome	Communicate effectively in a variety of professional contexts.			
Measurement Instrument 1	Ability to give effective in-class oral presentation. In some upper-level courses (CS 360, CS 396) students have to make presentations about their work for the course. Each student's work is evaluated based on a rubric established by the program.			
Criteria for Student Success	Evaluation item	Novice	Intermediate	Proficient
	Structure of the Presentation	Order of topics is unclear and presentation is unstructured.	The topics are not in a good order and/or topics are missing which should have been addressed. Presentation deviates from given time frame.	Outline is presented to audience and includes an introduction and a summary/conclusion. Presentation covers the topic in logical order. Presentation stays within allotted time frame.
	Number of students	2	2	31
	Understanding of Topics	Substantive information is inaccurate. Examples do not clarify the topic.	Some errors are made throughout the presentation. Examples are not appropriate to illustrate important concepts.	No significant errors are made. Appropriate terminology is used and explained where needed. Examples help the audience to understand the presented concepts.
	Number of students	2	2	31
	Visual Aids	No visual aids are used, or they are poorly prepared.	Visual aids contribute little to the understanding of the presented topics. They contain too much and/or badly formatted information, are visually confusing or contain info which the presenter skips.	The visual aids support the presentation effectively and important topics stand out clearly. The aids are well organized.

	Number of students	2	2	31	
	Presentation Skills & Response to Questions	The presenter is lacking most basic presentation skills.	The presenter often depends on written information and does not establish a rapport with the audience. Questions are not handled well.	The presenter maintains eye contact and talks to the audience and ensures that the audience can see and hear the presentation. The presenter can answer questions.	
	Number of students	2	2	31	
Program Success Target for this Measurement		70% of the students score at the proficiency level		Percent of Program Achieving Target	86%
Methods	The sampled student population is the set of students who are enrolled in the CS 360 course during the fall semester of a given year.				
Measurement Instrument 2	Ability to write research paper or research report In some upper-level course (CS 382) students are asked to write a research paper about a topic related to the material covered in the course or a report about a course project. Each student's work is evaluated based on a rubric established by the program.				
Criteria for Student Success	Evaluation item	Novice	Intermediate	Proficient	
	Introduction: Problem Statement	No introduction of problem statement	Problem statement is introduced with certain abruptness	Problem statement is introduced clearly	
	Number of Students	2 (8.7%)	3 (13.0%)	18 (78.3%)	
	Breadth and depth	No enough neither in breadth or depth	Breadth and depth are not well balanced, e.g., only focusing on the study area without a broader context, or only having a	Good balanced between breadth and depth, e.g., more than two related topics are discussed with a focus on a theory or technique within the proposed study area	

			few topics presented without any focus		
	Number of Students	0 (0%)	4 (17.4%)	19 (82.6%)	
	Citations/References:	Reference section is not presented, or no in-text citation	Most references do not follow a standard format (such as IEEE, ACM, and APA), or are not cited in text	Most references follow a standard format (such as IEEE, ACM, and APA), and are cited in text. The reference list should include several good references (such as published papers)	
	Number of Students	2 (8.7%)	4 (17.4%)	17 (73.9%)	
	Writing	Persistently unclear and many grammar errors.	At least half of writing is clear but with many grammar errors	Majority of writing is clear and with a few grammar errors	
	Number of Students	0 (0%)	2 (8.7%)	21 (91.3%)	
	Organization	More than one section (e.g., Introduction, Conclusion, etc.) are missing and sections are disorganized.	One section is missing and sections are unbalanced.	Sections are completed, well organized, and well balanced.	
	Number of Students	0 (0%)	2 (8.7%)	21 (91.3%)	
Program Success Target for this Measurement		70% of the students score at the proficiency level		Percent of Program Achieving Target	73% - 91%
Methods	The sampled student population is the set of students who are enrolled in the CS 382 course during the fall semester of a given year.				
Measurement Instrument 3	Ability to write cover letter for application. In an upper level course (CS 496) students are asked to write a cover letter for a job application. Each student's work is evaluated based on a rubric established by the program.				
Criteria for Student Success	Evaluation item	Novice	Intermediate	Proficient	

	Business format and overall quality of writing ability; is on one page.	Business formatting is not used in this letter.	Letter is formatted okay into section but does not use business format.	This letter uses correct business format, sections, and reads well (spelling, grammar, etc.)
	Number of students			
	Section 1: Introduction (1st paragraph)—why was this letter sent their way? Tell them where you found the position (date), why you are qualified, and that you would like an interview.	Introduction is not professional and does not provide context information for reader (why is student writing the letter/ what does student want to happen?)	Professional style introduction provides limited or weak context information for reader	Professional style introduction provide broad context information for reader (why are you writing the letter/ what do you want to happen)
	Number of students			
	Section 2: Identification of skills and experiences as related to position; give an example of a project that relates to the position, have a beginning, middle, and end so the reader can follow the project's completion.	Student has not written a focused paragraph that describes a project, student's given tasks, and what the results were achieved after project completion.	This letter identifies one qualification of the student but it is not related to the position at hand. This letter restates what is in the résumé with minimal additional information. The student explains why he/she is interested in this position but is too vague.	This letter identifies one or two strongest qualifications of the student and relates how his/her skills apply to the job you want. This letter explains specifically why the student is interested in this position and this type of job, company, and/or location.
	Number of students			
	Section 3: Closing segment thanks the reader, gives them a reason to call you and a cellphone number (give days and times), a	Student has not given any information for follow up if the employer needs to contact student.	The student thanks the reader for taking time to read this letter. Student does not refer the reader to his/her	This letter refers the reader to the résumé or any other enclosed documents and thanks the reader for taking time to read

	professional email address to contact, ask again for an interview.	Student has been nonprofessional.	résumé or application materials.	the letter and review the résumé. The letter specifies how and when they can contact the student to set-up an interview.	
	Number of students				
Program Success Target for this Measurement	At least 70% of students score at the proficient level.		Percent of Program Achieving Target		
Methods	The sampled student population is the set of students who are enrolled in the CS 496 course during the spring semester of a given year. This assessment was not completed due to COVID – since it was planned for the latter part of spring 2020.				
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.				Met	Not Met
Actions (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)					
I was decided that no actions are needed with respect to this learning outcome. There are other areas in the program which need more attention.					
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)					

Student Learning Outcome 3					
Student Learning Outcome	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.				
Measurement Instrument 1	Ability to work well together as a team. In an upper level course (CS 360, CS 496) students' teamwork is assessed through peer-assessment as well by the instructor based on weekly interactions with the teams. Each student's/team's work is evaluated based on a rubric established by the program.				
Criteria for Student Success	Evaluation item	Novice	Intermediate	Proficient	
	2a) Teamwork (assessed with a team project survey: self-, peer-, and instructor assessment)	Team did not collaborate well	Team collaborated well with only a few occurrences of communication breakdowns	Team collaborated well	

	Number of students	1	1	17	
	2b) Contribution (assessed with a team project survey)	Contribution of each member is not balanced at all	All team members have contributed significantly to each phase but overall contribution was not balanced	All team members have contributed significantly to each phase and overall contribution was well-balanced	
	Number of students	1	1	17	
Program Success Target for this Measurement	At least 70% of students/teams score at the proficient level.		Percent of Program Achieving Target		89%
Methods	The sampled student population is the set of students who are enrolled in the CS 496 course during the spring semester 2020.				
Measurement Instrument 2	Team's ability to set goals In an upper level course (CS 360, CS 496) team's ability to set goals is assessed through reports written about the progress students make on the course project. Each student's/team's work is evaluated based on a rubric established by the program.				
Criteria for Student Success	Performance Indicator	1	2	3	
		Novice	Intermediate	Proficient	
	Goal Setting	Goals for the project is inappropriate for the level of the course. Low level of clarity in system requirements document	Goals for the project is appropriate for the level of the course. Low level of clarity in system requirements document	Goals for the project is appropriate for the level of the course. Acceptable documentation for system requirements	
	Number of students	2	0	33	
Program Success Target for this Measurement	At least 70% of students/teams score at the proficient level.		Percent of Program Achieving Target		94%
Methods	The sampled student population is the set of students who are enrolled in the CS 360 course during the fall semester 2019. This assessment is usually repeated in the senior cap stone course where students perform better, but that did not happen due to Covid in spring 2020.				
Measurement Instrument 3	Team's ability to manage the project and to manage risk				

	Final Deliverable	The final deliverable does not satisfy most of the requirements. Poor documentation.	The final deliverable does not satisfy some major requirements. Major components are missing in the final documentation.	The final deliverable satisfied most of the requirements. Presents all required items at the acceptable level of quality.	
	Number of students	0	11	24	
Program Success Target for this Measurement	At least 70% of students/teams score at the proficient level.		Percent of Program Achieving Target	69%	
Methods	The sampled student population is the set of students who are enrolled in the CS 360 course during the fall semester 2019. This assessment is usually repeated in the senior cap stone course where students perform better, but that did not happen due to Covid in spring 2020.				
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.				Met	Not Met
Actions (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)					
Even though the goal was not met, the decision was made not to change anything. The reported assessments are not from the senior cap-stone class in which they outcome is usually assessed again, but that didn't happen due to Covid in spring 2020. The outcome was passed by students in spring 2019 with 84% as the lowest in any of the assessed aspects.					
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)					