Colonnade FOUNDATIONS Assessment 2021-2022	
Ogden College of Science of Engineering	*School of Engineering and Applied Sciences*
Computer Science	
Guangming Xing	

Please select the option(s) that best describe all sections of this course (you may select more than one):

☒ Taught 100% face to face

☐ Taught 100% online

☐ Mix of online and face to face

☐ Includes dual credit

Student Learning Outcome 1			
Student Learning Outcome	Interpret information presented in mathematical and/or statistical forms.		
Measurement Instrument 1	A programming assignment(Homework assignment 7) is used as the measuring instrument. The students is given a prompt, and some of the instructions are in mathematical forms. They need to analyze and interpret the problems, model, and then code the solution. Student responses to homework 6 were collected and analyzed.		
Criteria for Student Success	The assessment task requires the students to interpretate the information presented in mathematical forms. The completed work reflects the explanation of the information.		
Program Success Target for this Measurement	70% of the students will get 3 out 4 based on the assessment rubric.	**Percent of Program Achieving Target**	There are three students who completed the assessment task, and all of them (100%) have received 3 out of 4 or better.
Methods	There are three students that continued in the course to the end of the semester, and the work from all of them are chosen for the study.		
Based on your results, highlight whether the program met the goal Student Learning Outcome 1.		☒ Met	☐ Not Met

Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)

Even though we have met the goal in the Student Learning Outcome, our retention is low. Instruction technologies will be introduced to improve the retention ratio and increase the sample size. We will use very similar problems and the same rubric in the next cycle.

Student Learning Outcome 2			
Student Learning Outcome	Illustrate and communicate mathematical and/or statistical information symbolically, visually and/or numerically.		
Measurement Instrument 1	A programming assignment(Homework assignment 7) is used as the measuring instrument. The students is given a prompt, and some of the instructions are in mathematical forms. They need to analyze and interpret the problems, model, and then code the solution. Student responses to homework 6 were collected and analyzed.		
Criteria for Student Success	The programming assignment requires the students to communicate their understanding in Pyhton code(symbolically).		
Program Success Target for this Measurement	70% of the students will get 3 out 4 based on the assessment rubric.	**Percent of Program Achieving Target**	There are three students who completed the assessment task, and all of them (100%) have received 3 out of 4 or better.
Methods	There are three students that continued in the course to the end of the semester, and the work from all of them are chosen for the study.		

Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.	☒ Met	☐ Not Met

Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)

Even though we have met the goal in the Student Learning Outcome, our retention is low. Instruction technologies will be introduced to improve the retention ratio and increase the sample size. We will use very similar problems and the same rubric in the next cycle.

Student Learning Outcome 3			
Student Learning Outcome	Students will demonstrate the ability to determine when computations are needed and to execute the appropriate computations.		
Measurement Instrument 1	A programming assignment(Homework assignment 7) is used as the measuring instrument. The students is given a prompt, and some of the instructions are in mathematical forms. They need to analyze and interpret the problems, model, and then code the solution. Student responses to homework 6 were collected and analyzed.		
Criteria for Student Success	The programming assignment requires the students to determine the appropriate computations to solve a problem.		
Program Success Target for this Measurement	70% of the students will get 3 out 4 based on the assessment rubric.	**Percent of Program Achieving Target**	There are three students who completed the assessment task, and all of them (100%) have received 3 out of 4 or better.

Methods	
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.	☒ **Met** ☐ **Not Met**

Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)

Even though we have met the goal in the Student Learning Outcome, our retention is low. Instruction technologies will be introduced to improve the retention ratio and increase the sample size. We will use very similar problems and the same rubric in the next cycle.

Student Learning Outcome 4			
Student Learning Outcome	Students will demonstrate the ability to apply an appropriate model to the problem to be solved.		
Measurement Instrument 1	A programming assignment(Homework assignment 7) is used as the measuring instrument. The students is given a prompt, and some of the instructions are in mathematical forms. They need to analyze and interpret the problems, model, and then code the solution. Student responses to homework 6 were collected and analyzed.		
Criteria for Student Success	The programming assignment requires the students to properly model the problem.		
Program Success Target for this Measurement	70% of the students will get 3 out 4 based on the assessment rubric.	**Percent of Program Achieving Target**	There are three students who completed the assessment task, and all of them (100%) have received 3 out of 4 or better.
Methods	There are three students that continued in the course to the end of the semester, and the work from all of them are chosen for the study.		
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 4.	☒ **Met** ☐ **Not Met**		

Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)

Even though we have met the goal in the Student Learning Outcome, our retention is low. Instruction technologies will be introduced to improve the retention ratio and increase the sample size. We will use very similar problems and the same rubric in the next cycle.

Student Learning Outcome 5	
Student Learning Outcome	Students will demonstrate the ability to make inferences, evaluate assumptions, and address limitations in estimation modeling and/or statistical analysis.
Measurement Instrument 1	A programming assignment(Homework assignment 7) is used as the measuring instrument. The students is given a prompt, and some of the instructions are in mathematical forms. They need to analyze and interpret the problems, model, and then code the solution. Student responses to homework 6 were collected and analyzed.

Criteria for Student Success	The solution of the assignment requires the students use quantitative analysis to describe assumptions in the solutions and infer the correctness of the solution.		
Program Success Target for this Measurement	70% of the students will get 3 out 4 based on the assessment rubric.	**Percent of Program Achieving Target**	There are three students who completed the assessment task, and all of them (100%) have received 3 out of 4 or better.
Methods	There are three students that continued in the course to the end of the semester, and the work from all of them are chosen for the study.		
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 5.		☒ **Met**	☐ **Not Met**
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)			
Even though we have met the goal in the Student Learning Outcome, our retention is low. Instruction technologies will be introduced to improve the retention ratio and increase the sample size. We will use very similar problems and the same rubric in the next cycle.			

QUANTITATIVE REASONING (QR)
PROPOSED SLO ASSESSMENT RUBRIC
Adapted from AAC&U LEAP VALUE Rubrics (Quantitative Literacy, Problem Solving)

Students will demonstrate the ability to interpret information in mathematical and/or statistical forms.				
	Capstone (4)	**Milestone (3)**	**Milestone (2)**	**Benchmark (1)**
Interpretation	Provides accurate explanations of information presented in statistical forms. Makes appropriate inferences based on that information.	Provides accurate explanations of information presented in mathematical forms.	Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units.	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means.
Students	1	2	0	0
Students will demonstrate the ability to illustrate and communicate mathematical and/or statistical information symbolically, visually, and/or numerically.				
	Capstone (4)	**Milestone (3)**	**Milestone (2)**	**Benchmark (1)**
Representation	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
Students	1	2	0	0
Students will demonstrate the ability to determine when computations are needed and to execute the appropriate computations.				
	Capstone (4)	**Milestone (3)**	**Milestone (2)**	**Benchmark (1)**
Calculation	Calculations attempted are essentially all successful and sufficiently comprehensive to solve	Calculations attempted are essentially all successful and	Calculations attempted are either unsuccessful or represent only a portion of the calculations required	Calculations are attempted but are both unsuccessful and are not comprehensive.

	the problem. Calculations are also presented elegantly.	sufficiently comprehensive to solve the problem.	to comprehensively solve the problem.	
Students	**1**	**2**	**0**	**0**

Students will demonstrate the ability to apply an appropriate model to the problem to be solved.

	Capstone (4)	Milestone (3)	Milestone (2)	Benchmark (1)
Proposes Solutions/Hypotheses	Proposes one or more solutions/hypotheses that indicate a deep comprehension of the problem. Solution/hypotheses are sensitive to contextual factors.	Proposes one or more solutions/hypotheses that indicate comprehension of the problem. Solutions/hypotheses are sensitive to contextual factors.	Proposes one solution/hypothesis that is "off the shelf" rather than individually designed to address the specific contextual factors of the problem.	Proposes a solution/hypothesis that is difficult to evaluate because it is vague or only indirectly addresses the problem statement.
Students	**0**	**3**	**0**	**0**

Students will demonstrate the ability to make inferences, evaluate assumptions, and address limitations in estimation modeling and/or statistical analysis.

	Capstone (4)	Milestone (3)	Milestone (2)	Benchmark (1)
Application/Analysis/Assumptions	Uses the quantitative analysis of data as the basis for drawing insightful conclusions. Explicitly describes appropriate assumptions and shows awareness that confidence in final conclusions is limited by the accuracy of the assumptions.	Uses the quantitative analysis of data as the basis for drawing reasonable conclusions. Explicitly describes assumptions.	Uses the quantitative analysis of data as the basis for drawing conclusions that are plausible but without inspiration or nuance. Explicitly describes assumptions	Uses the quantitative analysis of data as the basis for tentative or uncertain conclusions. Attempts to describe assumptions.
Students	0	3	0	0

Evaluators are encouraged to assign a zero to any work that does not meet the benchmark-level performance.