B.S. Computer Science

Annual Program Report Template

Year:	2021-2022
Program:	BS Computer Science
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Summary of Continuous Improvement Efforts since Last Report

Provide a brief description of how assessment results have been used for program improvement. Point to a specific example of how an assessment provided the program with data it could use for improvement and what that improvement was, if possible, also show evidence of the improvement. You may look at data from the two previous academic years to support this case.

Respond here:

The department Assessment committee met November 14, 2022, after members had reviewed all assessment data collected for the previous year including the feedback from the annual spring department Advisory Board meeting. Meeting minutes are listed in Appendix J of the annual ABET report for the program dated Nov. 14, 2022.

The following improvement efforts have been made:

- 1. Revised and improved Computer Science undergraduate program catalog to show accurate program information.
- 2. Revised and improved Computer Science undergraduate course catalog to show accurate course descriptions.
- 3. Updated syllabi of undergraduate-level courses to increase rigor and show differences learning outcomes, objectives between 1000-level to 4000-level courses along the curricular ladder in association of SACSCOC requirements.
- 4. Develop and revised 6 undergraduate-level AP courses.

These changes will take effect in the 2022-2023 academic year.

- 5. Since our assessment did not meet the direct target for criteria 1.4 (develop correct and efficient programs) we will reevaluate next year to see if any changes are needed since the data indicated less than 1% away from meeting the target goal. (See the Annual ABET report for the program dated Nov. 14, 2022)
- 6. Since our assessment did not meeting the direct target for criteria 2.3.4 (Demonstrate basic knowledge of equivalences and normal forms of logical formulas in propositional logic) we will notify the instructors of COSC 3308, 3302 and 2375 of the deficiency and request diligence in teaching equivalences and normal forms of logical formulas in propositional logic. (See the Annual ABET report for the program dated Nov. 14, 2022)

Program Highlights Since Last Report

Identify and briefly discuss any programmatic curriculum changes made since the last report (e.g. new courses, course changes, SLO changes, course deletions).

Respond here:

- 1. Develop new course content to improve COSC 1336 CS 1 online course for QM certification.
- 2. Develop new course content to improve COSC 1173 Programming Lab online course for QM certification
- 3. Developed new course contents for COSC 1336 CS 1 in-person course so that students can take this course in both synchronized online and in-person format due to COVID-19.
- 4. New AP courses were developed to enhance the AP curriculum.

Table 1. Assessment Results and Analyses for Current Cycle.

STAGE 1: PLAN			STAGE 2: DO		STAGE 3: STUDY	
Departmental	Program Student	Assessment	Assessment	Benchmark	Data Results	Actions/Goals Based on
Student Learning	Learning Outcome		Method/Locati	Expectations		Data Results* What do the
Goal			on			data tell you? How will you
						use this data? How were
						data from the last cycle used
						to make changes during this
						cycle, and What were the
						results of those changes?
Graduates of the	 Graduates of the 	Instructor	Curriculum	>80%	[1.1] score 86%	14 out of 15 criteria met
Computer Science	program will have	defined rubric	Outcomes 1, 2		[1.2] score 85%	their direct assessment
Program will	an ability to analyze	for Semester	and 3	Using the	[1.3] score 87.17%	targets (>80%). Criterion 1.4
develop the	a complex	Project in CPSC	/Department of	instructor	[1.4] score 79.11%	was only one that did not
professional skills	computing problem	4317 and COSC	Computer	defined	[1.5] score 82.67%	meet the target for direct
and the necessary	and to apply	4310	Science	assessment	[1.6] score 85%	assessment. However, it was
technical knowledge	principles of	Selected		rubrics in	[1.7] score 90.67%	less than 1 percentage point
both in breadth and	computing and	Questions on		each	[2.2.1] score 82.6%	of meeting the goal of 80%.
in-depth to prepare	other relevant	Final Exam CPSC	This is	course/s	[2.2.2] score 84.78%	
them for	disciplines to	4360	explained in	which are the	[2.2.3] score 80.4%	Overall, the data
employment and	identify solutions.		Section 3 of the	context for	[2.2.4] score 82.6%	demonstrates that CS
advanced study in	 Graduates of the 	(Annual ABET	assessment	[3.1] score 90.54%	undergraduate students can
Computer Science.	program will have	All rubrics are	report for the	of each of	[3.2] score 87.35%	develop professional skills
	an ability to design,	defined by each	program dated	the above	[3.3] score 85.61%	and techniques for their
	implement, and	instructor in	Nov. 14, 2022.	criteria, the	[3.4] score 86.75%	future employment and
	evaluate a	their course.		average		advanced studies. The data
	computing-based			score of all	This data is taken from	will be used to analyze
	solution to meet a			students in	Table G.2 in the Annual	program development and
	given set of			all the	ABET report for the	

	computing requirements in the context of the program's discipline. • Graduates of the program will have an ability to apply computer science theory and software development fundamentals to produce computing- based solutions.			courses for both fall and spring semesters, our department target is 80% of students will demonstrate a working understandin g of the specified criteria. All criteria are specified as learning objectives in Table E.1 of the Annual ABET report for the program dated Nov. 14, 2022.	program dated Nov. 14, 2022.	support further improvement. The department Assessment Committee meets each summer to review the previous year's assessment results and formulate plans for continuous improvement as needed for learning objectives (criteria) that did not meet the desired targets. Committee meeting minutes are listed in Appendix J of the Annual ABET report for the program dated Nov. 14, 2022.
Graduates of the Computer Science Program will have sufficient awareness of the local and global societal impact of technology and of the related legal and ethical issues in computer science to make decisions	Graduates of the program will have an ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	Exam Questions COSC 3325, CPSC 4317 COSC 4360 Each instructor used their own scoring methodology for exam questions in their courses.	Curriculum Outcomes 4 and 5 /Department of Computer Science This is explained in Section 3 of the Annual ABET report for the	>80% Using the instructor defined assessment rubrics in each course/s which are the context for assessment	[4.1] score 97% [4.2] score 97% [4.3] score 97.28% [4.4] score 96% [5.1] score 96% [5.2] score 85% [5.3] score 96% [5.4] score 96% [5.5] score 96%	All criteria met their direct assessment targets. The data demonstrates that CS undergraduate students are able to recognize professional responsibilities and legal and ethical principles. The data will be used to analyze program development and support further improvement.

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regarding their			program dated	of each of	This data is taken from	The department Assessment
personal and			Nov. 14, 2022.	the above	Table G.2 in the Annual	Committee meets each
professional				criteria, the	ABET report for the	summer to review the
responsibilities.				average	program dated Nov.	previous year's assessment
				score of all	14, 2022.	results and formulate plans
				students in		for continuous
				all the		improvement as needed for
				courses for		learning objectives (criteria)
				both fall and		that did not meet the
				spring		desired targets.
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				our		Committee meeting minutes
				department		are listed in Appendix J of
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				of students		the program dated Nov. 14,
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				criteria are		
				specified as		
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				objectives in		
				Table E.1 of		
				the Annual		
				ABET report		
				for the		
				program		
				dated Nov.		
				14, 2022.		
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Graduates of the	Graduates of the	Rubrics CPSC	Curriculum	>80%	[6.1] score 95%	All criteria met their direct
Computer Science	program will have	4340, CPSC	Outcomes 6, 7		[6.2] score 91.97%	assessment targets.
Program will have	an ability to	4360,	and 8.	Using the	[6.3] score 92.27%	80000
the critical thinking,	communicate	Rubrics COSC	/Department of	instructor	[6.4] score 92.27%	The data demonstrates that
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Graduates of the Computer Science Program will be able to demonstrate intellectual curiosity and the independent study skills necessary for life-long learning.	Graduates of the program will have an ability to independently acquire new computing related skills and knowledge to pursue either further formal or informal learning after graduation.	Rubrics COSC 3325 and COSC 4272 All rubrics are defined by each instructor in their course.	Curriculum Outcome 9 /Department of Computer Science This is explained in Section 3 of the Annual ABET report for the program dated Nov. 14, 2022.	>80% Using the instructor defined assessment rubrics in each course/s which are the context for assessment of each of the above criteria, the average score of all students in all the courses for both fall and spring semesters, our department target is 80% of students will demonstrate a working understanding of the specified criteria. All criteria are specified as learning objectives in	[9.1] score 97% [9.2] score 95.31% [9.3] score 97% This data is taken from Table G.2 in the Annual ABET report for the program dated Nov. 14, 2022.	All criteria met their direct assessment targets. The data demonstrates that CS undergraduate students can learn new skills and knowledge independently after graduation. The data will be used to analyze program development and support further improvement. The department Assessment Committee meets each summer to review the previous year's assessment results and formulate plans for continuous improvement as needed for learning objectives (criteria) that did not meet the desired targets. Committee meeting minutes are listed in Appendix J of the Annual ABET report for the program dated Nov. 14, 2022.

	Table E.1 of the Annual ABET report for the program dated Nov. 14, 2022.	

Table 2. Continuous Improvement Results Since Last Report

Stage 4: ACT		
*Copy last cycle's actions/goals and report on progress toward continuous improvement on those here.	Status C=Complete P=Progressing N=No Action Taken	Discussion of Status If C, describe efforts that led to accomplishment of actions/goals. If P, provide update on progress made toward accomplishing actions/goals and what tasks remain If N, discuss why action toward accomplishing actions/goals has been delayed and what work will be initiated toward accomplishment.
Enhance the BSCS program by adding new content and teaching materials to CS undergraduate-level courses.	P	The new course content has been developed to improve COSC 1336 CS I online course and COSC 1173 Programming Lab online course for QM certification. More course content showing cutting-edge knowledge will be added continuously.
Develop new AP courses to strengthen the AP curriculum and increase the enrollment of AP students.	P	New AP courses have been developed in response to the growing popularity and demand for computer science areas such as Game Development and Cybersecurity. These specialized fields have witnessed a significant rise in their importance and relevance due to emerging technologies and evolving societal needs. More new AP courses will be developed.

Encourage faculty members to actively engage in	P	Undergraduate students played an active role in
mentoring undergraduate students in their		numerous research projects, including those
research endeavors. Faculty involvement provides		supported by the NSF MRI grant, which provided
crucial guidance, expertise, and mentorship. Foster		Research Experiences for Undergraduates (REU)
a supportive culture that encourages faculty to		students with valuable opportunities to engage in
invest in undergraduate research.		hands-on research using state-of-the-art
		equipment. More research opportunities will be
		provided to students to enhance their
		competitiveness for future careers