


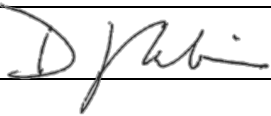


GAAC Degree Program Proposal

Requesting College(s)/School(s)/Center(s): Arts & Sciences

Requesting Department(s): Computer Science

Academic Level:	<input type="checkbox"/> <input type="checkbox"/> Post-Baccalaureate (includes all graduate and professional programs)
Associated Degree:	<input type="checkbox"/> <input type="checkbox"/> Master of Arts (M.A.) <input type="checkbox"/> <input type="checkbox"/> Master of Science (M.S.) <input type="checkbox"/> <input checked="" type="checkbox"/> Doctor of Philosophy (Ph.D.) <input type="checkbox"/> <input type="checkbox"/> Other – <i>please specify:</i> <input type="text"/> Click or tap here to enter text.
Program Title/Area of Study:	<i>Examples: English, Biology, Public Health</i> Computer Science
Program Start Term	<input type="checkbox"/> <input type="checkbox"/> Fall <input type="text"/> Click or tap here to enter year. <input type="checkbox"/> <input checked="" type="checkbox"/> Spring 2021 <input type="checkbox"/> <input type="checkbox"/> Summer <input type="text"/> Click or tap here to enter year. <input type="checkbox"/> <input type="checkbox"/> Other <input type="text"/> Click or tap here to enter term.

SLU Approval Authority	Signature	Date
Department Chair		April 20, 2020
College/School/Center Curriculum Committee Chair		
College/School/Center Dean		08/19/2020
Chair, GAAC		
Council of Academic Deans and Directors		
Provost		
Chair, Academic Affairs Committee of the University Board of Trustees		
Chair, University Board of Trustees		

HLC Approval Date (if applicable) Click or tap to enter a date.

4.0 STUDENT LEARNING OUTCOMES AND ASSESSMENT PLAN

Note: You are strongly encouraged to work with the University Assessment Coordinator as you develop this portion of the proposal. The University Assessment Coordinator can help you establish appropriate student learning outcomes, methods for measuring student progress and using the data to inform program improvement, and assist with all facets of academic assessment.

4.1 Student Learning Outcomes Assessment Plan

Complete the table below to provide an overview of your plan to assess student progress toward achievement of desired program-level learning outcomes. Note that results of evaluations of student performance against each learning outcome identified below will be reviewed as part of all college/school/center-level and University-level program reviews.

<p>Program-Level Student Learning Outcomes</p> <p><i>What are the most important (no more than five) specific learning outcomes you intend for all program completers to be able to <u>achieve and demonstrate</u> upon completion of the program?</i></p>	<p>Evaluation Method</p> <p><i>How will students document/demonstrate their performance toward achievement of the learning outcomes? How will you measure student performance toward achievement of the learning outcomes?</i></p> <p><i>Describe any use of <u>direct</u> measures: capstone experiences/courses, standardized exams, comprehensive exams, dissertations, licensure exams, locally developed exams, portfolio reviews, course-embedded assessments, etc.</i></p> <p><i>Describe any use of <u>indirect</u> measures: student, alumni or employer surveys (including satisfaction surveys); exit interviews/focus groups with grads; retention/transfer studies; graduation rates; job placement/grad school admission rates; etc.</i></p>	<p>Use of Assessment Data</p> <p><i>How and when will student performance data be analyzed and then used to “close the assessment loop” and inform <u>program improvement</u>? How will you document that?</i></p>
<p>EXAMPLE:</p> <p>1. Demonstrate a thorough understanding of ethical problems being addressed in an individual case or class of cases.</p>	<p>EXAMPLE:</p> <p>Direct Measures:</p> <ol style="list-style-type: none"> The following courses in the program specifically require formal case analyses designed to elicit direct evidence of student development toward this outcome: BUS 500, BUS 522, BUS 600 Embedded in the mid-term and final exams in certain required courses (BUS 550, MGMT 503, BUS 650) will be questions designed specifically to provide data enabling faculty and program administrators to evaluate student progress toward this outcome. <p>Indirect Measures</p> <ol style="list-style-type: none"> End-of-course student surveys will solicit self-evaluations of their development in the context of this outcome. Alumni surveys (administered one and five post-graduation) will solicit from graduates self-evaluations of their continued development in the context of this outcome, and will particularly focus on how the program has impacted professional competency. 	<p>EXAMPLE:</p> <p>Assessment results will be analyzed annually against a standard rubric by the program director and a small team of faculty; recommendations for curriculum, pedagogy and/or assessment revisions will be made to the department faculty on an annual cycle that allows for appropriate implementation.</p> <p>Reviews of the impact of any such program changes will also be conducted annually, and the records of those reviews will be maintained by our department assessment coordinator.</p>

<p>1. Demonstrate the use of computing systems, theory and software engineering to solve theoretical and applied problems</p>	<p>Direct Measures: Artifacts from the systems, theory and software engineering courses will be collected to assess students' ability to solve problems in each of the three areas.</p> <p>Indirect Measures: Exit interviews for all students will contain a self-assessment of their development for this outcome. Post-graduate surveys (one and three years out) will ask for a self-assessment of their continued development.</p>	<p>Assessment of Course-Level Outcomes will be performed annually by instructors. Evaluation of Program-Level Outcomes will be performed on a staggered three-year cycle under the supervision of the Assessment Committee. Recommendations for curriculum, pedagogy, and/or assessment revisions will be made to the department faculty on an annual cycle that allows for the appropriate implementation. Reviews of the impact of any such program changes will also be conducted annually, and the records of these reviews will be maintained by the program coordinator.</p>
<p>2. Utilize state-of-the-art techniques in their research area to solve open problems</p>	<p>Direct Measures: Students knowledge and application of techniques in their area of research will be evaluated during their oral qualifying exam using an assessment committee design rubric.</p> <p>Indirect Measures: Exit interviews for all students will contain a self-assessment of their development for this outcome. Post-graduate surveys (one and three years out) will ask for a self-assessment of their continued development.</p>	<p>Assessment of Course-Level Outcomes will be performed annually by instructors. Evaluation of Program-Level Outcomes will be performed on a staggered three-year cycle under the supervision of the Assessment Committee. Recommendations for curriculum, pedagogy, and/or assessment revisions will be made to the department faculty on an annual cycle that allows for the appropriate implementation. Reviews of the impact of any such program changes will also be conducted annually, and the records of these reviews will be maintained by the program coordinator.</p>
<p>3. Conduct independent, high quality, innovative research in computer science</p>	<p>Direct Measures: A survey of each student's defense committee will be administered to evaluate this outcome. Furthermore, the assessment committee will review the referee reports from papers submitted by the student to peer-reviewed conferences and journals.</p> <p>Indirect Measures: Exit interviews for all students will contain a self-assessment of their development for this outcome. Post-graduate surveys (one and three years out) will ask for a self-assessment of their continued development.</p>	<p>Assessment of Course-Level Outcomes will be performed annually by instructors. Evaluation of Program-Level Outcomes will be performed on a staggered three-year cycle under the supervision of the Assessment Committee. Recommendations for curriculum, pedagogy, and/or assessment revisions will be made to the department faculty on an annual cycle that allows for the appropriate implementation. Reviews of the impact of any such program changes will also be conducted annually, and the records of these reviews will be maintained by the program coordinator.</p>
<p>4. Communicate computer science research results effectively in both publication formats and professional presentations</p>	<p>Direct Measures: Each student's thesis, which typically will include several published peer reviewed results within it, will be evaluated for quality of exposition using a rubric designed by the assessment committee. Students oral presentation skills be similarly evaluated during colloquium presentations and thesis defense.</p> <p>Indirect Measures: Exit interviews for all students will contain a self-assessment of their development for this outcome. Post-graduate surveys (one and three years out) will ask for a self-assessment of their continued development.</p>	<p>Assessment of Course-Level Outcomes will be performed annually by instructors. Evaluation of Program-Level Outcomes will be performed on a staggered three-year cycle under the supervision of the Assessment Committee. Recommendations for curriculum, pedagogy, and/or assessment revisions will be made to the department faculty on an annual cycle that allows for the appropriate implementation. Reviews of the impact of any such program changes will also be conducted annually, and the records of these reviews will be maintained by the program coordinator.</p>
<p>5. Recognize professional responsibilities and make informed judgements in computing practice based on legal and ethical principles.</p>	<p>Direct Measures: In CSCI 5050, which is required all students, final papers will be evaluated using a rubric design by the assessment committee.</p> <p>Indirect Measures: Exit interviews for all students will contain a self-assessment of their development for this outcome. Post-graduate surveys (one and three years out) will ask for a self-assessment of their continued development.</p>	<p>Assessment of Course-Level Outcomes will be performed annually by instructors. Evaluation of Program-Level Outcomes will be performed on a staggered three-year cycle under the supervision of the Assessment Committee. Recommendations for curriculum, pedagogy, and/or assessment revisions will be made to the department faculty on an annual cycle that allows for the appropriate implementation. Reviews of the impact of any such program changes will also be conducted annually, and the records of these reviews will be maintained by the program coordinator.</p>

4.2 Curriculum Mapping

Courses should contribute to student achievement of the program learning outcomes detailed above. Sequencing should be intentional and complementary, allowing for the development of curricular content at multiple levels and the application and demonstration of student understanding and skills at multiple levels. Accordingly, complete the two curriculum maps below, indicating the course(s) in which each learning outcome is intentionally addressed and at particular levels of intellectual complexity and rigor, using the level indicators* provided below. **Depending on the nature of the proposed program, the levels may seem more or less appropriate. Without veering from the spirit of the exercise, you may adapt the levels as deemed appropriate.**

Level I	Level II	Level III
<ul style="list-style-type: none"> ▪ Knowledge & Comprehension: Recall data or information; understand the meaning, translation, interpolations, and interpretation of instructions and problems; state a problem in one's own words. 	<ul style="list-style-type: none"> ▪ Application: Use a concept in new situations; unprompted use of an abstraction. Application of knowledge in novel situations. ▪ Analysis: Separates material or concepts into component parts so organizational structure may be understood. Distinguishes facts from inferences. 	<ul style="list-style-type: none"> ▪ Synthesis: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure. ▪ Evaluation: Make judgments about the value of ideas or materials.

Note: When you first complete the curriculum maps, you may see that certain outcomes are not addressed in any developmentally-appropriate sequence, or that a particular outcome might not be addressed substantially enough; you might even see that you have included a course(s) in your curriculum that doesn't substantially contribute to the development of any outcome. You should use the map to alter your program design, course syllabi and course sequencing to best facilitate and support student achievement of the outcomes. The result of that exercise should be a final curriculum map presented below when you submit your proposal to UAAC.

Courses Offered by Home Department of Proposed Major or Minor:

Major or Minor Student Learning Outcomes	CSCI 5030	CSCI 5050	CSCI 5090	Software Eng Course	Systems Course	Theory Course	Electives in Research Field	CSCI 6990
Example: Outcome #1	1	1	1, 2	2	2	2		3
Outcome #1				1,2	1,2	1,2		
Outcome #2			1				1,2	2,3
Outcome #3	1							2,3
Outcome #4			1,2					2,3
Outcome #5		1,2,3						