Academic Level:	
Associated Degree(s): *(check all that apply)*	
Major or Minor:	
Program Start Term	

Approval Authority	Signature	Date

4.0 STUDENT LEARNING OUTCOMES AND ASSESSMENT PLAN

Note: You are strongly encouraged to work with the University Assessment Coordinator (977-4189 or thatcherk@slu.edu) 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.

Student Learning Outcomes Assessment Plan

What are the most important (no more than five) specific learning outcomes you intend for all program completers to be able to achieve and demonstrate upon completion of the program?	*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?* *Describe any use of direct measures: capstone experiences/courses, standardized exams, comprehensive exams, dissertations, licensure exams, locally developed exams, portfolio reviews, course-embedded assessments, etc.* *Describe any use of indirect 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.*	*How and when will student performance data be analyzed and then used to "close the assessment loop" and inform program improvement? How will you document that?*
1. *Demonstrate the ability to A) analyze patterns in large, complex datasets and B) communicate information regarding data, analyses, and graphics.*	1. *Students' ability to analyze patterns in large datasets (A) will be assessed in Introduction to Programming for GIS and Remote Sensing (GIS 4090). Final student projects will be evaluated against a common grading rubric to judge the percentage of students able to successfully analyze and present geospatial projects including big data. An acceptable grade results from a student grade of B or higher on fim0 G[ ]t3 201.7Tm06 00001*	

		Development of the program's improvement will be documented using temporal data to note important program changes in relation to student performance metrics (i.e. a timeline).
2. Show proficiency in Remote Sensing, including the ability to acquire, process, and analyze remotely sensed data	*1. Final Projects in GIS 4040 and 4050, which require students to acquire, process, and analyze remotely sensed data, will be graded against a common rubric to measure project quality in each focus area and judge trends in student performance over time.* *1. Successful placement of an internship/job in Remote Sensing* *2. Employer Feedback* *3. Placement in a Graduate program in Remote Sensing*	*Student performance data will be assembled and assessed by the program director after each semester. The rubric scores of student final projects in GIS 4040 and 4050 will be averaged each year and the average will be monitored over time. Scores will be categorized by various learning goals so that faculty may monitor student performance in each category (acquisition of data, processing, analysis, etc…).* *Student placement data will be collected annually and used to support grade-based student performance measures. We aim for a 95% placement and will require curriculum adjustments if SLU graduates are unable to compete in hiring processes.*
3. Attain skills in programming languages relevant to GIS, Remote Sensing, and Computer Science.	*Final Projects in GIS 4090 and 4091 will be used to assess student performance in learning programming languages through grading against a common rubric. Rubric scores will be categorized based on important scripting, GIS, and Remote Sensing topics. Scores will be averaged after each semester and monitored over time.* *1. Participation in any hackathon/Ideathon/ Mapathon event and monitoring of GeoSLU student team placing over time in the 1904 Geospatial Hackathon.* *2. Successful job/internship placements with GIS, remote sensing, or programming employers*	*Student performance data in programming languages will be collected and assessed by the program director after each semester. The categorized rubric scores for final projects in GIS 4090 and 4091 will assess performance in different, important subdisciplines of programming that will be used to inform changes to curriculum. Data will be organized sequentially to monitor the effect of curriculum changes on student learning performance.* *GeoSLU's annual placement in the 1904Labs Geospatial Hackathon is a good indicator of competition against other academic and professional programmers. With the targeted increase in SLU's*

Level I	Level II	Level III

- *Knowledge & Comprehension:*