Program-Level Assessment Plan

Program: Undergraduate Certificate in Geographic Information Systems	Degree Level (e.g., UG or GR certificate, UG major, master's program, doctoral program): UG
Department: EAS	College/School: Arts and Sciences
Date (Month/Year): 08/2021	Primary Assessment Contact: Zachary Phillips, Vasit Sagan

Note: Each cell in the table below will expand as needed to accommodate your responses.

#	Student Learning Outcomes What do the program faculty expect all students to know or be able to do as a result of completing this program? Note: These should be measurable and manageable in number (typically 4-6 are sufficient).	Curriculum Mapping In which courses will faculty intentionally work to foster some level of student development toward achievement of the outcome? Please clarify the level at which student development is expected in each course (e.g., introduced, developed, reinforced, achieved, etc.).	Assessment Methods	
			Artifacts of Student Learning (What) 1. What artifacts of student learning will be used to determine if students have achieved this outcome? 2. In which courses will these artifacts be collected?	Evaluation Process (How) 1. What process will be used to evaluate the artifacts, and by whom? 2. What tools(s) (e.g., a rubric) will be used in the process? Note: Please include any rubrics as part of the submitted plan documents.
1	*Have a systematic view of GIScience, and be familiar with geospatial technology and the methods used to derive information from spatial data.*	GIS 4010 – Introduction to GIS (Introduced) GIS 4040 – Introduction to Remote Sensing (introduced) GIS 4050 – Digital Image Processing (Developed)	*Embedded in the Quizzes, mid-term and final exams in certain required courses (*GIS 4010 – Introduction to GIS, GIS 4040 – Introduction to Remote Sensing, GIS 4050 – Digital Image Processing*) there will be questions designed specifically to provide data enabling faculty and program administrators to evaluate student progress toward this SLO.* **Indirect Measures** 1. End-of-course student surveys will solicit from students self-evaluations of their development in the context of this SLO 2. Alumni Surveys will solicit from	*Assessment results will be analyzed annually by the program director and a small number 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.* *Review of the impact of any such program changes will be conducted annually.*

			graduates self-evaluations of their continued development in the context of this SLO, and will be particularly focus on how the program has impacted their professional competency.	
2	*Be able to solve a variety of spatial and temporal environmental problems with integrated methods of GIS, remote sensing and GPS; Understand how to* *integrate remote sensing and GPS into GIS for data mining, and become effective at maintaining and updating organizational databases.*	GIS 4010 – Introduction to GIS (Introduced) GIS 4030 – Geospatial Data Management (Introduced, Developed) GIS 4040 – Introduction to Remote Sensing (introduced) GIS 4050 – Digital Image Processing (Developed)	*Embedded in the Quizzes, mid-term and final exams in certain required courses (*GIS 4010 – Introduction to GIS, GIS 4030 – Geospatial Data Management, GIS 4040 – Introduction to Remote Sensing, GIS 4050 – Digital Image Processing*) there will be questions designed specifically to provide data enabling faculty and program administrators to evaluate student progress toward this SLO.* **Indirect Measures** 1. End-of-course student surveys will solicit from students self-evaluations of their development in the context of this SLO 2. Alumni Surveys will solicit from graduates self-evaluations of their continued development in the context of this SLO, and will be particularly focus on how the program has impacted their professional competency.	*Assessment results will be analyzed annually by the program director and a small number 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.* *Review of the impact of any such program changes will be conducted annually.*
3	*Be able to apply concepts and skills learned to a new project; Be able to develop new methods and applications of remote sensing and GIS for various disciplines. In these project scenarios, students work with their peers or community leaders on issues that matters the most in our neighborhoods. For example, water pollution, air*	GIS 4010 – Introduction to GIS (Introduced) GIS 4040 – Introduction to Remote Sensing (introduced) GIS 4050 – Digital Image Processing (Developed)	*Embedded in the Quizzes, mid-term and final exams in certain required courses (*GIS 4010 – Introduction to GIS, GIS 4040 – Introduction to Remote Sensing, GIS 4050 – Digital Image Processing*) there will be questions designed specifically to provide data enabling faculty and program administrators to evaluate student progress toward this SLO.* **Indirect Measures** 1. End-of-course student surveys will	*Assessment results will be analyzed annually by the program director and a small number 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.* *Review of the impact of any such program changes will be conducted annually.*

	pollution, measures and action plans to build a sustainable environment, etc.		solicit from students self-evaluations of their development in the context of this SLO 2. Alumni Surveys will solicit from graduates self-evaluations of their continued development in the context of this SLO, and will be particularly focus on how the program has impacted their professional competency.	

Use of Assessment Data

1. How and when will analyzed data be used by program faculty to make changes in pedagogy, curriculum design, and/or assessment practices?
    - Every other academic year, program faculty assess student learning. Courses that need curriculum adjustments are noted by assessments. For those classes needing adjustment, regional experts in GIS and Remote Sensing are consulted as to what curriculum aspects can be improved upon, what other learning resources may be helpful, or what classes need rethought.

2. How and when will the program faculty evaluate the impact of assessment-informed changes made in previous years?
    - Assessments are performed every other year by monitoring the total percent of failing grades as noted in the Evaluation Process section above. Comparison across years points to progress (decrease in % failing) or decline (increase in % failing).

Additional Questions

3. On what schedule/cycle will program faculty assess each of the program's student learning outcomes? (Please note: It is <u>not recommended</u> to try to assess every outcome every year.)
    - Assessments are conducted every other academic year, during the summer break.

4. Describe how, and the extent to which, program faculty contributed to the development of this plan.
    - This assessment plan was developed by Vasit Sagan and documented for this report by Zachary Phillips

IMPORTANT: Please remember to submit any rubrics or other assessment tools along with this plan.