

**Institutional Effectiveness
2023-2024**

Program: Professional Science PSM

College and Department: College of Interdisciplinary Studies

Contact: Samantha Allen

Mission:

Attach Curriculum Map (Educational Programs Only):

Learning Outcome 1.1

Define Outcome:

Students will have the ability to apply GIS and statistical tools to manage spatially distributed environmental data to aid in decision making.

Assessment Methods:

Internship report by student; internship supervision evaluation.

Internship Written Report by Student: During the internship, students will be working in an industry, utilizing knowledge and concepts learned from the curriculum to produce deliverables, which will be presented in writing and during an oral examination. The oral examination and 3 written reports will be evaluated by the graduate student's advisory committee to assess whether the student has mastered program and concentration learning outcomes.

Internship Supervisor Evaluation: Internship employers will provide a written evaluation of respective intern's performance in achieving designated deliverables.

Criteria for Success (Thresholds for Assessment Methods):

The PSM-EI program has set a goal for all students to collectively be a 4.0 out of 5 or above on their supervisor evaluations.

Any student that gets marked average or below will have individual review discussion with the faculty or graduate committee

Link to 'Tech Tomorrow' Strategic Plan:

1.A Experiential Learning, 2.A Technology Infused Programs, 2.B Research, Scholar, Intellect, and Creativity

Results and Analysis:

The industry supervisor evaluations generally indicated good student mastery of GIS and statistical tools. For example, one evaluation stated that the student's "expertise in GIS is now adding an entirely new component to our understanding.. and potential solutions".

Attached Files: See Appendix 1

Use of Results to Improve Outcomes:

The program is improving the PSM-EI student experience by implementing an annual student meeting and orientation to discuss internship expectations and requirements.

In regards to the internship course, a recently proposed a change to the internship course will allow the course to be flexible of 1, 2, or 3 credit hours, with the ability to spread over multiple semesters, as appropriate. In the first credit hour of the Internship, the students will complete newly developed Online Learning Modules and Orientation in preparation of the internship with their chosen agency to improve the likelihood of a successful internship experience. Implementing the use of ILearn to set deadlines and paperwork submissions for students in the Internship course will allow faculty and students to easily see learning modules, professional development resources, frequently asked questions and stay organized with outstanding course and paperwork requirements.

A summative assessment assignment will be developed and added to the Fundamentals of Environmental Spatial Analysis course to better assess student progress toward the learning outcome.

Learning Outcome 1.2**Define Outcome:**

Students will demonstrate the skills to understand, analyze, and interpret data independently.

Assessment Methods:

Internship report by student; internship supervision evaluation.

Internship Written Report by Student: During the internship, students will be working in an industry, utilizing knowledge and concepts learned from the curriculum to produce deliverables, which will be presented in writing and during an oral examination. The oral examination and 3 written reports will be evaluated by the graduate student's advisory committee to assess whether the student has mastered program and concentration learning outcomes.

Internship Supervisor Evaluation: Internship employers will provide a written evaluation of respective intern's performance in achieving designated deliverables.

Criteria for Success (Thresholds for Assessment Methods):

One question on the evaluation asked supervisors to rate their level of agreement on a series of statements regarding student performance for the following statement: "Demonstrate an ability to work independently."

Any student that gets marked average or below will have individual review discussion with the faculty or graduate committee.

Link to 'Tech Tomorrow' Strategic Plan:

1.A Experiential Learning, 2.B Research, Scholar, Intellect, and Creativity

Results and Analysis:

Supervisor evaluations indicated that the students were able to work independently. One question on the evaluation asked supervisors to rate their level of agreement on a series of statements regarding student performance. For the following statement, "Demonstrate an ability to work independently," three out of the three supervisors evaluations received marked strongly agreed. In a similar fashion, all three supervisors in the comments described their interns as having "excellent initiative" or the ability to "take on tasks with little direction to complete the desired outcome".

Use of Results to Improve Outcomes:

In regards to the internship course, a recently proposed a change to the internship course will allow the course to be flexible of 1, 2, or 3 credit hours, with the ability to spread over multiple semesters, as appropriate. In the first credit hour of the Internship, the students will complete newly developed Online Learning Modules and Orientation in preparation of the internship with their chosen agency to improve the likelihood of a successful internship experience.

Implementing the use of ILearn to set deadlines and paperwork submissions for students in the Internship course will allow faculty and students to easily see learning modules, professional development resources, frequently asked questions and stay organized with outstanding course and paperwork requirements.

Learning Outcome 2.1

Define Outcome:

Students will demonstrate the ability to integrate business management concepts with environmental information to manage environmental systems.

Assessment Methods:

Internship report by student; internship supervision evaluation.

Internship Written Report by Student: During the internship, students will be working in an industry, utilizing knowledge and concepts learned from the curriculum to produce deliverables, which will be presented in writing and during an oral examination. The oral examination and 3 written reports will be evaluated by the graduate student's advisory committee to assess whether the student has mastered program and concentration learning outcomes.

Internship Supervisor Evaluation: Internship employers will provide a written evaluation of respective intern's performance in achieving designated deliverables.

Criteria for Success (Thresholds for Assessment Methods):

The PSM-EI program has set a goal for all students to collectively be a 4.0 out of 5 or above on their supervisor evaluations.

Supervisor comments regarding the student's ability to integrate business and leadership related skills to their internship experience are reviewed by the student's advisor.

Link to 'Tech Tomorrow' Strategic Plan:

1.A Experiential Learning, 2.B Research, Scholar, Intellect, and Creativity

Results and Analysis:

Supervisors commented on how the students used business-related skills to enhance their effectiveness. One supervisor wrote that the intern was able to use their skills to "communicate with stakeholders on the issues and solutions". The students' advisory committees oversaw the students inclusion of business components to the internship projects, which is a required component of the final report and capstone presentation to which all students must adhere.

Use of Results to Improve Outcomes:

In regards to the internship course, a recently proposed a change to the internship course will allow the course to be flexible of 1, 2, or 3 credit hours, with the ability to spread over multiple semesters, as appropriate. In the first credit hour of the Internship, the students will complete newly developed Online Learning Modules and Orientation in preparation of the internship with their chosen agency to improve the likelihood of a successful internship experience. Modules on applying their business and leadership skills to their internship experience will be included.

Learning Outcome 2.2

Define Outcome:

Students will communicate effectively in oral and written formats.

Assessment Methods:

Internship report by student; internship supervision evaluation.

Internship Written Report by Student: During the internship, students will be working in an industry, utilizing knowledge and concepts learned from the curriculum to produce deliverables, which will be presented in writing and during an oral examination. The oral examination and 3 written reports will be evaluated by the graduate student's advisory committee to assess whether the student has mastered program and concentration learning outcomes.

Internship Supervisor Evaluation: Internship employers will provide a written evaluation of respective intern's performance in achieving designated deliverables.

Criteria for Success (Thresholds for Assessment Methods):

Two questions on the evaluation asked supervisors to rate their level of agreement on a series of statements regarding student performance for the following statements: "Deliver effective oral presentations" and "Produce effective written communications".

Any student that gets marked neutral or below will have individual review discussion with the faculty or graduate committee.

Link to 'Tech Tomorrow' Strategic Plan:

2.B Research, Scholar, Intellect, and Creativity

Results and Analysis:

The four graduating students defended and presented their internship projects to their graduate advisory committees and other stakeholders, including internship supervisors and other personnel from the internship agencies. The students also completed written internship project reports. All students passed their internship "defenses" and their committees approved their project reports, generally indicating successful communication skills.

Three of the four supervisors submitted student evaluations. For written communications, two supervisors strongly agreed and one agreed; for oral presentations, one strongly agreed, and one agreed. One marked unknown, stating they were not able to attend the oral presentation. Similar patterns have been seen in years past.

Use of Results to Improve Outcomes:

Implementing the use of ILearn to set deadlines and paperwork submissions for students in the Internship course will allow faculty and students to easily see learning modules, professional development resources, frequently asked questions and stay organized with outstanding course and paperwork requirements. It is hoped that by improving organization and expectations, all supervisor evaluations will be submitted.

Oral and written communication professional development modules will be included in the Online Learning Modules for the Internship course.

Summative Evaluation:

The program is improving the PSM-EI student experience by implementing an annual student meeting and orientation to discuss internship expectations and requirements.

In regards to the internship course, a recently proposed a change to the internship course will allow the course to be flexible of 1, 2, or 3 credit hours, with the ability to spread over multiple semesters, as appropriate. In the first credit hour of the Internship, the students will complete newly developed Online Learning Modules and Orientation in preparation of the internship with their chosen agency to improve the likelihood of a successful internship experience. Implementing the use of ILearn to set deadlines and paperwork submissions for students in the Internship course will allow faculty and students to easily see learning modules, professional development resources, frequently asked questions and stay organized with outstanding course and paperwork requirements. It is hoped that by improving organization and expectations, all supervisor evaluations will be submitted. Modules on business and leadership skills, time management, oral and written communications and research practices will be included in the Online Learning Modules.

A summative assessment assignment will be developed and added to the Fundamentals of Environmental Spatial Analysis course to better assess student progress toward the learning outcome 1.1 at an earlier benchmark, prior to the internship experience. The assignment will allow an early assessment of students ability to apply fundamental GIS skills to manage spatially distributed environmental data to aid in decision making.

Assessment Plan Changes:

A summative assessment assignment will be developed and added to the Fundamentals of Environmental Spatial Analysis course to better assess student progress toward the learning outcome 1.1 at an earlier benchmark, prior to the internship experience. The assignment will allow an early assessment of students ability to apply fundamental GIS skills to manage spatially distributed environmental data to aid in decision making.

List of Appendices:

Appendix 1: SLO1.1 Results and Analysis

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Table 1.1 Summary of industry supervisor evaluations for four PSM-Environmental Informatics students who graduated during the 2023-2024 academic year. One student who did not turn in the employer evaluation.

Intern attribute	Number of ratings per category (out of four students)					
	Excellent	Very good	Average	Below average	Very poor	N/A
Attitude	2	1	0	0	0	0
Initiative	2	0	0	0	0	0
Maturity and poise	3	0	0	0	0	0
Ability to learn	3	0	0	0	0	0
Quality of work	3	0	0	0	0	0
Quantity of work	2	1	0	0	0	0
Dependability	3	0	0	0	0	0
Relations with others	3	0	0	0	0	0
Judgment	2	1	0	0	0	0
Attendance	2					1
Punctuality	2					1
Overall performance	2	0	0	0	0	1