The School of Environmental Studies (SOES)

Academic Year: 2021 2022
Program: with a Concentration in Environmental Informatics
College; School: Interdisciplinary Studies; Environmental Studies
Submission Date: August 2022
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School of Environmental Studies Mission: The School of Environmental Studies (SOES) will foster in students the desire to lead purposeful professional lives through the application of scientific principles to environmental issues within the social, political, and economic framework of our society.

Professional Science Master's with a Concentration in Environmental Informatics
Program: The PSM-EI program, started in Fall 2013, focuses on analytical and computer-based

| 2021 | 16 | 2021 2022 | 3 |
| 2022 | 19 | | |

The PSM-EI program received its first external review during academic year 2019-2020. A self-study report was prepared during Fall 2019 and the external review was conducted during Spring 2020. The self-study report and external review report are appended to this institutional effectiveness report. The self-study report contains additional relevant materials including a curriculum map (Table 5 on page 20) and an alumni survey (Appendix A6 on pages 46-50). The external review report was concise (three pages) and contains valuable recommendations for retaining program quality and suggestions for improvement.

I.   Program Goals and Student Learning Outcomes

Program Goal 1: Prepare students who possess the mathematical and scientific knowledge to analyze and manage spatially distributed data needed to obtain sustainable solutions for complex, real-world environmental problems.

> *Learning Outcome 1.1:* Students will have the ability to apply GIS and statistical tools to manage spatially distributed environmental data to aid in decision making.
> Assessment Tools: Internship report by student; internship supervision evaluation.

> *Learning Outcome 1.2:* Students will demonstrate the skills to understand, analyze, and interpret data independently.
> Assessment Tools: Internship report by student; internship supervisor evaluation.

Program Goal 2: Prepare students who have the business fundamentals, project management and communication skills necessary to become leaders in their chosen fields.

> *Learning Outcome 2.1:* Students will demonstrate the ability to integrate business management concepts with environmental information to manage environmental systems.
> Assessment Tools: Internship report by student; internship supervisor evaluation.

> *Learning Outcome 2.2:*

written report will be evaluate
the student has mastered program and concentration learning outcomes.

Internship Supervisor Evaluation: Internship employers will provide a written evaluation of rmance in achieving designated deliverables.

    III.   **Rationale for Outcomes and Assessments (Process for Data Analysis)**

Internship Written Report by Student:

Table 3. Summary of industry supervisor evaluations for four PSM-Environmental Informatics students who completed their capstone internships during the 2020-2021 academic year.

Intern attribute	Number of ratings per category (out of four students)				
	Excellent	Very good	Average	Below average	Very poor
Attitude	2	1			
Initiative	1	2			
Maturity and poise	1	1	1		
Ability to learn	1	2			
Quality of work	1	2			
Quantity of work	1	1	1		

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in such a way to make it easy for non-governmental agencies/people to understand and
The students advisory committees were glad to see that the students involved
business components to the internship projects, which is a required component of the final report
and capstone presentation to which all students must adhere.

Outcome 2.2 (effective oral and written communication skills): The three 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
defenses   and their committees approved their project reports, generally indicating
successful communication skills. Supervisors were also asked to rate their level of agreement

e created a proposal for the TTU Graduate Studies Executive Committee that met in July 2022 to obtain approval to make the course change and curricular changes to better prepare the students for the technical aspects of their careers. The proposal was passed and the changes will go into effect during the upcoming a12 0 th t5108

Course	Title	1.1 GIS and statistical tools to manage environ. data	1.2 Skills to independently analyze and interpret data	2.1 Integrate business mgmt. with environ-mental info.	2.2 Communicate effectively in written and oral formats
ACCT 6010	Accounting Information for Management Decisions			x	
BMGT 6200	Organizational Leadership			x	x
ESS 6510	Programming GIS	x			
ESS 6910	Internship	x	x	x	x
EVSS 6010	Environmental Social Policy				x
GEOG 5410	Remote Sensing	x			
GEOG 5650	Environmental Applications of GIS	x			
MATH 6070	Applied Linear Statistical Methods I	x	x		
MATH 6470	Environmental Statistics	x	x		
MKT 6100	Strategic Marketing			x	x