The University of Southern Mississippi

The Aquila Digital Community

Southern Miss Gulf Scholars

Fall 8-21-2023

APT 410 Southern Miss Gulf Scholars Program Module

Southern Miss Gulf Scholars Program
University of Southern Mississippi

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APT 410

Module Curriculum Template
Module Title:

Technological Innovations in Support of Coastal Economic or Environmental Strategies

Module Length (in hours): 5 weeks (this is an online class, so the number of hours will vary)

Course: APT 410

Subject Area(s): Applied Technology

Description of Module:

The module will require students to research new technologies in their specialty areas that can (a) positively impact coastal areas economically or ecologically (b) can in turn help their companies or organizations grow and be profitable. They will then identify three technologies, discuss their advantages and disadvantages, choose ne of the three technologies, justify their choices, and present their conclusion in the form of a formal proposal to their company management.

Module Learning Outcomes(s):
1. Summarize the economic and ecological needs of coastal communities
2. Correlate the needs with developments in your technical field
3. Identify recent technological developments in your technical field
4. Evaluate technological developments in terms of their usefulness
5. Select a development that can best support coastal development
6. Prepare a case for the use of that technology
7. Compose a formal proposal with all required components
8. Record a presentation with the information of the final report.
9. Use proper APA citation and reference style

Assessment Blueprint [align lessons with module learning goal(s)]:

Lesson	Objectives	Cognitive Level	Activities	Assessment
Introductory Lesson (personalize, localize, connect to global challenges)				
Find out about coastal development strategies	Read information about coastal development	Remember	Read the economic development strategies plans from Southern Mississippi, West Florida, Louisiana's Delta Regional	none

			Authority, and the Texas Gulf Coast Economic Development District	
	Summarize findings from the readings	Understand	Threaded discussion	Discussion rubric
	Discover which needs are related to your technical field**	Apply	Threaded discussion	Discussion rubric
Inquiry Project Lesson (personalize via values, localize relevance, globalize need)				
Research technology in your field	Determine recent or upcoming technological developments in your field**	Apply	Online and database research	Annotated bibliography
	Evaluate technologies in terms of their usefulness for coastal development**	Evaluate	Prepare short written report	Report rubric
	Recommend one technology that could be used for coastal development**	Evaluate	Short written report	Report rubric
Create report outline	Compose an outline for a formal report**	Create	Report Outline	Outline completeness
Communicate Results Lesson				
Preparing a formal report	Compose a report draft**	Create	Report Draft	Report rubric
	Create graphics for the report**	Create	Using software to create graphs and charts	Report rubric
	Compose Final Draft and record presentation	Create	Use digital media to complete report and presentation	Report rubric Presentation rubric

**Critical reflection should be integrated throughout every lesson in the module.

Introductory Lesson	Course: APT 410	Date: 12/09/2022

GSP Learning Outcomes 1. Develop knowledge of the Gulf of Mexico and its coastal zone in order to identify potential leverage points for creating a more livable, equitable, resilient, and joyful Gulf Region; 2. Employ the intercultural knowledge, mindset, and skills through active involvement with diverse Gulf communities; 3. Integrate perspectives and approaches from the humanities, engineering, social and natural sciences to develop interdisciplinary responses to complex socio-environmental challenges; 4. Practice civic responsibility and ethical reasoning in problem-solving and research; 5. Conceptualize, develop, research, and implement innovative responses to major Gulf region challenges, grounded in respect for community knowledge and expertise

Location:
- o   X In class
- o   Out-of-class location
  _____

GSP Framework Guidelines
- ◊   Clear learning goals
- ◊   Framing of inquiry question or problem as interdisciplinary
- ◊   Relevance of inquiry personally & Professionally
- ◊   Relevance of inquiry locally & globally
- ◊   Collaborate
- ◊   Communicate results, including broader impact
- ◊   Critical reflection of experience

Strategies/Activities
- ◊   Readings
- ◊   Digital Media
- ◊   Lecture
- ◊   Visual Mapping
- ◊   Think/Pair/Share
- ◊   Modeling or Simulations
- ◊   Writing/Speaking Exercises
- ◊   Problem-based learning
- ◊   Project-based learning
- ◊   Service Learning
- ◊   Group Work
- ◊   Discussion Questions
- ◊   Photovoice
- ◊   DEAL Approach to Critical Reflection
- ◊   Other

Assessment for Learning
- ◊   Observations
- ◊   Conversations
- ◊   Anecdotal Notes
- ◊   Work Sample
- ◊   Class Check-Ins/Quizzes
- ◊   Checklist
- ◊   Diagnostics
- ◊   Other

Introduction
In the first step, students will familiarize themselves with the economic development strategies from various gulf coast areas (I have downloaded the reports for them). They will be told to read the plans and to find areas in which their technical background (I.e., the technical background from their A.A.S. degrees) can be useful in helping reach the goals set in the development plan.

Assessment as Learning
- ◊   Self-assessment
- ◊   Peer-assessment
- ◊   Presentation
- ◊   Visual Mapping
- ◊   Collaboration
- ◊   Class Check-Ins/Quizzes
- ◊   Homework
- ◊   Other

Action
Students will be asked to read the plans and then participate in a reflective threaded discussion where they summarize their findings and reflect about how their technical background is related to the needs of coastal areas.

Assessment of Learning
- ◊   Test

Consolidation Students will be asked to draw a clear relationship between the plans and their field and to support their claims with evidence. The discussion will be evaluated based on a discussion rubric.	◊ Quiz ◊ Presentation ◊ Project Portfolio ◊ Critical Reflection ◊ Journal ◊ Essay ◊ Rubrics ◊ Other
Reflection and Next Steps The next step will be to apply the findings to our project.	

Activities that worked	Topics to be Revisited

Inquiry	Course: APT 410	Date:

GSP Learning Outcomes 1. Develop knowledge of the Gulf of Mexico and its coastal zone in order to identify potential leverage points for creating a more livable, equitable, resilient, and joyful Gulf Region; 2. Employ the intercultural knowledge, mindset, and skills through active involvement with diverse Gulf communities; 3. Integrate perspectives and approaches from the humanities, engineering, social and natural sciences to develop interdisciplinary responses to complex socio-environmental challenges; 4. Practice civic responsibility and ethical reasoning in problem-solving and research; 5. Conceptualize, develop, research, and implement innovative responses to major Gulf region challenges, grounded in respect for community knowledge and expertise

Location: o In class o Out-of-class location _____	**GSP Framework Guidelines** ◊ Clear learning goals ◊ Framing of inquiry question or problem as interdisciplinary ◊ Relevance of inquiry personally & Professionally ◊ Relevance of inquiry locally & globally ◊ Collaborate ◊ Communicate results, including broader impact ◊ Critical reflection of experience	**Strategies/Activities** ◊ Readings ◊ Digital Media ◊ Lecture ◊ Visual Mapping ◊ Think/Pair/Share ◊ Modeling or Simulations ◊ Writing/Speaking Exercises ◊ Problem-based learning ◊ Project-based learning ◊ Service Learning ◊ Group Work ◊ Discussion Questions ◊ Photovoice ◊ DEAL Approach to Critical Reflection ◊ Other
Introduction Students will be told that this part of the class concerns itself with finding the right technologies and choosing the final technology they will propose to their company management.		**Assessment for Learning** ◊ Observations ◊ Conversations ◊ Anecdotal Notes ◊ Work Sample ◊ Class Check-Ins/Quizzes ◊ Checklist ◊ Diagnostics ◊ Other
Action Students will research technologies through websites and article databases. They will then identify three technologies, describe them, choose one as the most likely to be useful, and justify their choice. **		**Assessment as Learning**

In addition, they will collect sources for their final report and prepare an annotated bibliography, which also helps them practice their APA skills. Finally, students will draw up an outline for the final report. (Outline pattern will be provided.)	◊ Self-assessment ◊ Peer-assessment ◊ Presentation ◊ Visual Mapping ◊ Collaboration ◊ Class Check-Ins/Quizzes ◊ Homework ◊ Other **Assessment of Learning** ◊ Test ◊ Quiz ◊ Presentation ◊ Project Portfolio ◊ Critical Reflection ◊ Journal ◊ Essay ◊ Rubrics ◊ Other

Consolidation
Their learning is consolidated because students must discuss and evaluate their findings, document them, discuss strengths and weaknesses, and make a final choice as to which technology they will propose.**
In addition, the creation of a proposal outline will help students see if they have sufficient information that is coherent and consistent.**

Reflection and Next Steps
The technological development and the final choice will become the centerpieces of the formal proposal.

Activities that worked	Topics to be Revisited

Communication	Course:	Date:

GSP Learning Outcomes 1. Develop knowledge of the Gulf of Mexico and its coastal zone in order to identify potential leverage points for creating a more livable, equitable, resilient, and joyful Gulf Region; 2. Employ the intercultural knowledge, mindset, and skills through active involvement with diverse Gulf communities; 3. Integrate perspectives and approaches from the humanities, engineering, social and natural sciences to develop interdisciplinary responses to complex socio-environmental challenges; 4. Practice civic responsibility and ethical reasoning in problem-solving and research; 5. Conceptualize, develop, research, and implement innovative responses to major Gulf region challenges, grounded in respect for community knowledge and expertise

Location:	**GSP Framework Guidelines**	**Strategies/Activities**
o In class o Out-of-class location _____	◊ Clear learning goals ◊ Framing of inquiry question or problem as interdisciplinary ◊ Relevance of inquiry personally & professionally ◊ Relevance of inquiry locally & globally	◊ Readings ◊ Digital Media ◊ Lecture ◊ Visual Mapping ◊ Think/Pair/Share ◊ Modeling or Simulations ◊ Writing/Speaking Exercises

	◇ Communicate results, including broader impact ◇ Collaborate ◇ Critical reflection of experience	◇ Problem-based learning ◇ Project-based learning ◇ Service Learning ◇ Group Work ◇ Discussion Questions ◇ Photovoice ◇ DEAL Approach to Critical Reflection ◇ Other
Introduction Students will be informed that this section of the module is about creating their final formal report and their presentations		**Assessment for Learning** ◇ Observations ◇ Conversations ◇ Anecdotal Notes ◇ Work Sample ◇ Class Check-Ins/Quizzes ◇ Checklist ◇ Diagnostics ◇ Other
Action Students will first prepare a draft of their report will all required elements (title page, table of contents, list of illustrations, transmittal memo, graphics, etc.). The draft will be reviewed for revision and returned. Students will then prepare the final draft and record their presentations. (Detailed guidelines will be provided.)		**Assessment as Learning** ◇ Self-assessment ◇ Peer-assessment ◇ Presentation ◇ Visual Mapping ◇ Collaboration ◇ Class Check-Ins/Quizzes ◇ Homework ◇ Other
Consolidation The consolidation of all earlier tasks will help consolidate the knowledge and skills acquired and also require critical thinking skills.		**Assessment of Learning** ◇ Test ◇ Quiz ◇ Presentation ◇ Project Portfolio ◇ Critical Reflection ◇ Journal ◇ Essay ◇ Rubrics ◇ Other
Reflection and Next Steps		
Activities that worked	Topics to be Revisited	