COURSE OUTLINE: CCM202 - ADAPT. & MITIGATION

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Course Code: Title	CCM202: ADAPTATION AND MITIGATION STRATEGIES
Program Number: Name	5250: CLIMATE CHANGE MIT.
Department:	NATURAL RESOURCES PRG
Academic Year:	2024-2025
Course Description:	Students will examine an integrated ecosystem management approach to climate change that thoroughly discusses mitigation and intervention verses adaptation strategies as a response to climate change.
Total Credits:	3
Hours/Week:	3
Total Hours:	45
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**5250 - CLIMATE CHANGE MIT.** VLO 1 Design and implement resource surveys and sampling programs, including statistical analysis of environmental data to support climate change analysis. VLO 2 Interpret and apply international, national and regional level environmental and climate policy to support mitigation and adaptation strategies. VLO 5 Assess potential environmental threats to human health and natural systems due to climate change and propose adaptive strategies to address them. VLO 6 Apply an integrated ecosystem management approach to climate change to balance mitigation, intervention and adaptation strategies. VLO 7 Assess and address the impacts of natural disturbances on various watershed processes in forests, hillside slopes, and crown land. VLO 8 Facilitate stakeholder engagement and collaboration, across various levels and branches of government and the community to secure support for various initiatives.
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.

	EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	Academic success is directly related to attendance. Missing more than 1/3 of the course hours in a semester shall result in a F grade for this course.

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
1. Understand how to assess the vulnerability of ecosystems to the impacts of climate change.	1.1 Identify factors that contribute to the vulnerability of ecosystems to climate change. 1.2 Analyze case studies to determine the vulnerability of different ecosystems to specific climate change threats. 1.3 Evaluate the role of biodiversity in increasing or decreasing ecosystem vulnerability. 1.4 Develop a vulnerability assessment report for a selected ecosystem outlining potential risks and impacts.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Evaluate the adaptive capacity of ecosystems in the face of climate change.	2.1 Define adaptive capacity and its significance in ecosystem resilience. 2.2 Research and identify examples of ecosystems that have demonstrated high adaptive capacity. 2.3 Compare and contrast the adaptive capacity of natural versus human-managed ecosystems. 2.4 Propose adaptive strategies for enhancing the resilience of a vulnerable ecosystem based on its adaptive capacity assessment.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Distinguish between mitigation and adaptation strategies in the context of climate change.	3.1 Identify and define key characteristics of adaptation and mitigation strategies in an ecosystem management context. 3.2 Understand the importance assessing vulnerability and evaluating adaptive capacity prior to developing adaptation or mitigation strategies to climate change under a range of scenarios. 3.3 Differentiate between mitigation and adaptation strategies using specific examples. 3.4Explain the importance of both mitigation and adaptation strategies as a response to climate change.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Analyze real-world	4.1 Research and analyze an ecosystem management case

integrated ecosystem management examples of mitigation and adaptation strategies and evaluate their effectiveness.	study on a real-world mitigation strategy for climate change. 4.2 Research and analyze an ecosystem management case study on a real-world adaptation strategy for climate change. 4.3 Compare and contrast the effectiveness of different adaptation and mitigation strategies in various ecosystems. 4.4 Evaluate the long-term impact of adaptation and mitigation strategies on ecosystem resilience.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Compare and contrast the advantages and disadvantages of mitigation versus adaptation strategies in addressing climate change.	5.1 Build a portfolio of ecosystem management adaptation and mitigation strategies. 5.2 Analyze the advantages and disadvantages of the adaptation and mitigation strategies. 5.3 Analyze case studies to determine which type of strategy would be more suitable in different scenarios. 5.4 Justify the need for a balanced approach that includes both mitigation and adaptation strategies.
Course Outcome 6	**Learning Objectives for Course Outcome 6**
6. Demonstrate an understanding of how ecosystems can adapt to and help mitigate climate change through various strategies.	6.1 Research and present examples of natural adaptation and mitigation mechanisms in different ecosystems. 6.2 Explain how human interventions can support or hinder ecosystem adaptation and mitigation to climate change. 6.3 Discuss the concept of ecological resilience and its role in ecosystem adaptation and mitigation. 6.4 Predict potential challenges ecosystems may face in adapting to or mitigating climate change.
Course Outcome 7	**Learning Objectives for Course Outcome 7**
7. Evaluate the importance of integrating both mitigation and adaptation strategies in ecosystem management for climate change resilience.	7.1 Participate in a group discussion on the interconnectedness of mitigation and adaptation strategies. 7.2 Create a visual representation showing the overlap and unique aspects of mitigation and adaptation strategies. 7.3 Debate the necessity of a comprehensive approach to ecosystem management that includes both types of strategies. 7.4 Propose a hypothetical ecosystem management plan that integrates mitigation and adaptation strategies effectively.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	70%
Engagement	10%
Tests/quizzes	20%

Date: September 13, 2024

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.