COURSE OUTLINE: CCM105 - METEOROLOGY

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Course Code: Title	CCM105: METEOROLOGY
Program Number: Name	5250: CLIMATE CHANGE MIT.
Department:	NATURAL RESOURCES PRG
Academic Year:	2024-2025
Course Description:	Forecasts rely on past weather patterns to predict the future, but climate change is making the past a less effective predictor of the future. Climate predictions now take a much longer-term view. Students will explore meteorology theory and the impact of climate change in detail.
Total Credits:	2
Hours/Week:	2
Total Hours:	28
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.
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:	Attendance is directly linked to Academic success. Missing more than 1/3 of classes in a term will automatically result in an F grade in the course.

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
1. Understand meteorology fundamentals.	1.1 Define and differentiate between weather and climate. 1.2 Identify and explain the variables that measure and affect weather: atmospheric pressure, temperature, wind, precipitation, humidity and cloud cover. 1.3 Define climate and investigate various climate regions, noting climatic shift.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Gain knowledge of the earth`s atmosphere and the physical processes in weather systems.	2.1 Differentiate between the different layers of the earth`s atmosphere. 2.2 Understand atmospheric processes like pressure and circulation, moisture, heating and cooling. 2.3 Consider the Greenhouse Effect and evaluate its impact on changing weather and climate. 2.4 Understand Global processes that influence weather patterns such as Coriolis Effect, Jet Stream and Ocean Currents.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Gain knowledge of fronts, air masses and winds.	3.1 Evaluate the effects of Maritime and Continental Tropical, Polar Equatorial Air Masses on weather. 3.2 Understand the structure of fronts including cold, warm, stationary, occluded. 3.3 Identify various wind types and phenomena, and classify according to Beaufort scale.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Working knowledge of the water cycle, clouds and precipitation.	4.1 Have an awareness of the Water Cycle. 4.2 Relate the formation of Clouds to precipitation. 4.3 Classify Clouds and be aware of their indication of weather. 4.4 Identify different types of precipitation (Rain, snow, sleet, and hail) and the conditions which they form.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Observe weather, interpret weather maps, and make forecasts.	5.1 Understand where to access weather data, maps, images and forecasting tools. 5.2 Utilize a variety of weather scales and technology to collect

	data. 5.3 Observe and record weather over a period of time. 5.4 Make weather forecasts by accessing and interpreting relevant information.

Course Outcome 6	Learning Objectives for Course Outcome 6
6. Consider the importance of meteorology in the context of a changing climate.	6.1 Understand the role meteorology plays in the study of climate change. 6.2 Consider the influence of climate change on weather patterns. 6.3 Be aware of severe weather, weather disasters and their impact. 6.4 Consider strategies for the management of weather emergencies.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Engagement	10%
Final Test	20%
Forecast	10%
Mid Term Test	10%
Quizzes	20%
Weather Journal	10%
Weather Phenomena Presentation	20%

Date: August 19, 2024

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