

DEPARTMENT OF EARTH, ENVIRONMENTAL, AND GEOSPATIAL SCIENCES
EARTH SCIENCE, BS
 CURRICULUM MAP

LEARNING OBJECTIVES (I = introduce; D = Developing; M = Mastering)	--- REQUIRED GEO COURSES ---											350 (GEP)
	100	101	166	167	236	245	340/ 341	348	375	410	448	
Goal I – Understand the origin of Earth and its evolution over geological time (to achieve this goal, students will be able to):												
A. Describe the evolution of the early Earth	ID	ID	ID	IDM								
B. Summarize the Principles of Biological Evolution, Plate Tectonics, and Climate	ID	ID	ID	IDM						M	M	
C. Describe the Relationship between Paleogeography (Plate Tectonic), Climate Change, and Biological Evolution	ID	ID	ID	IDM						M	M	
D. Trace the Chronology of major steps or events in the evolution of Paleogeography, Climate and Biology	ID	ID	ID	IDM							M	
Goal II – Understand the physical and chemical nature of the Earth system (to achieve this goal, students will be able to):												
A. Describe the composition and structure of Oceans	IDM	ID	ID	ID		ID					M	
B. Describe the composition and structure of Continents	ID	ID	ID			ID		M			M	
C. Describe the composition and structure of Atmosphere and Climate	ID		ID	ID	DM					M		
D. Describe the composition and structure of Hydrosphere	IDM	ID	ID	ID	ID					DM		
E. Describe the composition and structure of Biosphere				IDM	DM		DM			DM		
Goal III – Understand the structure and organization of the Earth system components and the												
A. Identify and describe the major biogeochemical cycles – tectonic, rock, hydrologic (nitrogen, carbon)		ID	IDM	ID	DM	M					M	
B. Summarize the nature of cycles – transfer of energy and matter, reservoirs, fluxes		ID	IDM	ID	DM						M	
C. Explain the interconnectivity of biogeochemical cycles		ID	IDM	ID	DM						M	
Goal IV – Develop the skill required for geosciences careers (to achieve this goal, students will be able to):												
A. Read, analyze and interpret maps and other science visualization media	ID	ID	ID	ID			DM	DM	DM		DM	M
B. Use maps as a visualization tool for various types of data	I	I		I					DM		DM	M
C. Employ mapping and geotechnical instrumentation in field work analysis							IDM		IDM			M
D. Demonstrate the ability to collect, record and archive data							IDM		M			
E. Synthesize information from multiple sources (maps, quantitative data, and text)				IDM			IDM		M		M	M

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Goal V – Understand the nature of geosciences and its historical development (to achieve this goal, students will be able to):												
A. Apply the fundamental principles and laws of geology	ID	ID	ID	ID	ID	ID	DM	DM	DM	DM	DM	
B. Describe the Unifying Theory of Plate Tectonics	ID	ID	ID	ID				DM			M	
C. Summarize the historical development of the science of geology			ID	ID		ID					ID	
D. Describe the social, political, and economic context of geosciences throughout history			ID	ID		IDM	DM					IDM
Goal VI – Understand the roles and relationships of human beings within the Earth System (to achieve this goal, students will be able to):												
A. Assess the human impact on biogeochemical systems			ID	ID	IDM	ID	DM			IDM		
B. Evaluate how geosciences careers can impact society			I	ID		ID	DM			DM	DM	
C. Analyze the health, societal, and economic impacts of geological hazards				ID			IDM			DM		IDM
D. Explain the Interdisciplinary nature of geosciences and connectivity with other disciplines	IDM	IDM	IDM	IDM	ID	ID	IDM		DM	DM	DM	