



University of Maryland University College

**Baccalaureate Degree Program in Environmental Management
Department of Social, Behavioral, Natural, and Mathematical
Sciences**

PROGRAM ASSESSMENT PLAN
Program Outcomes and Learning Assessment Criteria

Summer 2007

Baccalaureate Degree Program in Environmental Management

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Baccalaureate Degree Program in Environmental Management

PROGRAM OVERVIEW

The Bachelor in Environmental Management is designed for students interested in gaining a solid foundation in all aspects of environmental management and in developing skills of critical thinking, problem solving, project management, interpersonal relations, and team building. The program of study includes required coursework in environmental regulations and policy, environmental health and safety, pollution and technology, and a capstone course exploring issues of global environmental management. A degree in Environmental Management prepares students to become environmental managers who plan, implement, and control all facets of environmental management.

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PROGRAM OF STUDY

The program of study for the Baccalaureate Degree Program in Environmental Management is as follows:

GENERAL EDUCATION REQUIREMENTS

Communications	12 credit hours
Arts and Humanities	6 credit hours
Behavioral and Social Sciences	6 credit hours
Biological and Physical Sciences	7 credit hours
Mathematics	3 credit hours
Interdisciplinary or Emerging Issues	7 credit hours

CROSS-CURRICULAR PERSPECTIVE REQUIREMENTS

Historical Perspective	3 credit hours
International Perspective	3 credit hours
Civic Responsibility Perspective	3 credit hours

REQUIRED COURSES

COMM 394/394X	Business Writing	3 credit hours
ENMT 301	Environment and Ecosystems Management	3 credit hours
ENMT 303	Environmental Regulations and Policy	3 credit hours
ENMT 321	Environmental Health	3 credit hours
ENMT 322	Occupational Health and Safety or	3 credit hours
ENMT 405	Pollution Prevention Strategies	

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PROGRAM OF STUDY (continued)

ENMT 340	Environmental Technology	3 credit hours
ENMT 495	Global Environmental Management Issues	3 credit hours
Supplemental major courses		12 credit hours
<u>MINOR AND ELECTIVE COURSES</u>		37 credit hours

Minor and/or elective courses are to be taken in the last 60 hours along with required major courses. Refer to the current UMUC School of Undergraduate Studies Catalog for the minor and/or elective course requirements.

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DEVELOPMENT OF PROGRAM OUTCOMES

The table below identifies the curricular influences that support the program outcomes specific to the Baccalaureate Degree Program in Environmental Management.

SOURCES/RESOURCES PROVIDING CURRICULAR FOUNDATION FOR PROGRAM OUTCOMES Baccalaureate Degree Program in Environmental Management		
SOURCE	DESCRIPTION	WEB ADDRESS OR DOCUMENT NAME (if applicable)
Core Learning Areas of the UMUC School of Undergraduate Studies	<p>All UMUC degree programs are required to imbed identified Core Learning Areas into the program of study. The Core Learning Areas are:</p> <ul style="list-style-type: none"> • Written Communication (COMM) • Technology Fluency (TECH) • Information Literacy (INFO) • Quantitative Literacy (QUAN) • Critical Thinking (THIN) • Scientific Literacy (SCIE) <p>The expanded definition for each Core Learning Area was considered in creating the respective program outcome.</p>	UMUC <u>Institutional Plan for the Assessment of Student Learning</u>
ISO 14000/ISO 14001 Environmental Management Guide	The International Organization for Standardization (ISO) provides guidelines for international standards in environmental management.	<u>http://www.iso14000-iso14001-environmental-management.com/</u>
New Tools for Environmental Protection: Education, Information, and Voluntary Measures	Chapter 9: <i>Perspectives in Environmental Education in the United States</i> was used in articulating the program outcomes.	Dietz, T. and Stern, P.C., Editors (2002). Committee on the Human Dimensions of Global Change. National Research Council, National Academies of Science. <u>(http://fermat.nap.edu/catalog/10401.html)</u>
SUS Environmental Management Advisory Board	The SUS Environmental Management Advisory Board is composed of adjunct faculty working in the environmental management field. This board provides annual feedback and comment on the program objectives and course composition and content of the UMUC program.	

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SOURCES/RESOURCES PROVIDING CURRICULAR FOUNDATION FOR PROGRAM OUTCOMES Baccalaureate Degree Program in Environmental Management		
SOURCE	DESCRIPTION	WEB ADDRESS OR DOCUMENT NAME (if applicable)
Air and Waste Management Association (A&WMA)	The A&WMA has compiled a list of undergraduate degree programs in the air, waste, and environmental fields.	http://www.awma.org/education/programs/ByState.asp

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PROGRAM OUTCOMES

The program outcomes specific to the Baccalaureate Degree Program in Environmental Management are delineated below. The program outcomes describe the expectations for all graduates of the Baccalaureate Degree Program in Environmental Management.

CORE LEARNING AREA	PROGRAM OUTCOMES Baccalaureate Degree Program in Environmental Management
	Upon completion of a Baccalaureate Degree Program in Environmental Management, graduates will be able to:
COMM	Create written communication appropriate for the purpose and which meets standards of style and grammatical correctness.+
	Create an integrated environmental management plan.*
TECH	Evaluate technological concepts related to computers and components of information systems. +
	Use information technology to present advantages and disadvantages of pollution prevention strategies for industrial processes.*
INFO	Address recognized research needs by retrieving, evaluating, and using information appropriately.+
	Utilize library databases to identify health risks associated with agents found in the environment, including heavy metals, pesticides, solvents, environmental toxicants, and radiation.*
QUAN	Apply mathematical and numerical reasoning skills.+
	Determine concentrations of airborne and waterborne pollutants.*
THIN	Evaluate the impact of human activities on the environment and how these activities can lead to ecological changes.*
SCIE	Identify key concepts and principles of natural sciences.+
	Explain the organization of the biosphere and how this organization is affected by the atmosphere, lithosphere and hydrosphere.*

+ Denotes a program outcome specific to core skills, knowledge, and values gained from completion of the general education requirements. This program outcome is common across all UMUC baccalaureate degree programs.

* Denotes a program outcome specific to core skills, knowledge, and values gained from completion of requirements in the baccalaureate degree program. This program outcome is unique to each UMUC baccalaureate degree program.

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ALIGNMENT OF PROGRAM OUTCOMES WITH LEARNING OBJECTIVES AND ASSESSMENT METHODS

The following grid aligns the program outcomes of the Baccalaureate Degree Program in Environmental Management with: 1) learning objectives from the designated program coursework and 2) specific methods used to assess student learning within the degree program.

CURRICULAR ALIGNMENT			
Baccalaureate Degree Program in Environmental Management			
CORE LEARNING AREA	PROGRAM OUTCOMES	LEARNING OBJECTIVE(S) AND CORRELATING COURSEWORK	METHOD(S) OF ASSESSMENT
COMM	Create written communication appropriate for the purpose and which meets standards of style and grammatical correctness.+	Plan and write a research-based essay that makes effective use of resources found in databases available from UMUC's Office of Information and Library Services as well as resources located through Web search engines. (WRTG 101)	Research Paper
		Research, compile, and document relevant, credible information and use it to support ideas presented in your writing. (WRTG 393)	Research Paper
		Collect, select, analyze, interpret, and organize data, and use it appropriately in business communications, including a long formal report. (WRTG 394)	Research Paper
		Conduct a systematic audience analysis and apply it to a report, essay, or research paper. (WRTG 391)	Research Paper
	Create an integrated environmental management plan.*	Comprehend fundamental elements of an integrated environmental management program, planning, and implementation. (ENMT 495)	Project (Capstone/Program)

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CURRICULAR ALIGNMENT			
Baccalaureate Degree Program in Environmental Management			
CORE LEARNING AREA	PROGRAM OUTCOMES	LEARNING OBJECTIVE(S) AND CORRELATING COURSEWORK	METHOD(S) OF ASSESSMENT
TECH	Evaluate technological concepts related to computers and components of information systems.+	Analyze issues faced by information system professionals, including security, ethical, and privacy problems. (IFSM 201)	Exam (Course/Chapter)
	Use information technology to present advantages and disadvantages of pollution prevention strategies for industrial processes.*	Identify, quantify, and present a pollution prevention option for an industrial process. (ENMT 405)	Case Study
INFO	Address recognized research needs by retrieving, evaluating, and using information appropriately.+	Select relevant print and electronic sources to answer research questions. (LIBS 150)	Exam (Course/Chapter)
	Utilize library databases to identify health risks associated with agents found in the environment, including heavy metals, pesticides, solvents, environmental toxicants, and radiation.*	Retrieve and evaluate information from reputable sources on the health risks associated with certain specific agents, such as metals, pesticides, solvents, environmental toxicants, and radiation. (ENMT 305)	Individual Report/Paper
QUAN	Apply mathematical and numerical reasoning skills.+	Solve linear, quadratic, higher-order polynomial, fractional, radical, exponential, logarithmic, and absolute value equations and inequalities. (MATH 107)	Exam (Course/Chapter)
		Develop problem solving skills. (MATH 105 or MATH 106)	Exam (Course/Chapter)
	Determine concentrations of airborne and waterborne pollutants.*	Understand the fundamentals of multimedia environmental pollution, transport and fate of contaminants, economic and social impacts, health and safety hazards, potential environmental risks, regulatory requirements and the need for clean-up. (ENMT 340)	Project (Course/Chapter)

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CURRICULAR ALIGNMENT			
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CORE LEARNING AREA	PROGRAM OUTCOMES	LEARNING OBJECTIVE(S) AND CORRELATING COURSEWORK	METHOD(S) OF ASSESSMENT
THIN	Evaluate the impact of human activities on the environment and how these activities can lead to ecological changes.*	Discuss the various perspectives of the environment, how systems interrelate, and how human changes have led to our current environmental state. (ENMT 301)	Case Study
SCIE	Identify key concepts and principles of natural sciences.+	Recognize the differences and the interrelationships among physics, chemistry, the earth sciences, and astronomy. (NSCI 100)	Exam (Course/Chapter)
	Explain the organization of the biosphere and how this organization is affected by the atmosphere, lithosphere and hydrosphere.*	Explain the significance of DNA in determining the composition, characteristics, reproduction, and behavior of an organism. (BIOL 101)	Exam (Course/Chapter)
		Understand the ecosphere and the basic ecological principles of the environment. (ENMT 301)	Exam (Course/Chapter)

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