

Sustainability

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UMUC Approach to Sustainability

Environmental Management Program (ENVM)

- This is a MS program
- Offered for 2 decades
- Includes twelve 3-credit courses
- Offered every semester of the year

UNIQUE FORMAT

EXPERIMENTAL LEARNING

OLR

SOFTWARE SOLUTIONS

AUDIO/VIDEO MATERIAL

The List of courses is as follows

ENVM 641 ENVIRONMENTAL AUDITING
ENVM 643 ENVIRONMENTAL COMMUNICATIONS AND REPORTING
ENVM 644 NEW TECHNOLOGIES IN ENVIRONMENTAL MANAGEMENT
ENVM 646 ENVIRONMENTAL/ENERGY LAW AND POLICY DEVELOPMENT
ENVM 647 ENVIRONMENTAL RISK ASSESSMENT
ENVM 648 FUNDAMENTALS OF ENVIRONMENTAL SYSTEMS
ENVM 649 PRINCIPLES OF WASTE MANAGEMENT AND POLLUTION CONTROL
ENVM 650 ENVIRONMENTAL AND NATURAL RESOURCES ECONOMICS
ENVM 651 WATER RESOURCE MANAGEMENT
ENVM 652 PRINCIPLES OF AIR QUALITY MANAGEMENT
ENVM 653 LAND USE MANAGEMENT
ENVM 670 ENVIRONMENTAL MANAGEMENT CAPSTONE

Definition of Sustainability

The UN defines sustainability as the confluence of Environmental, Social, and Economic issues. This refers to the *Brundtland* definition of sustainable development.

Business Definition of Sustainability

- The Elkington's triple bottom line.
- It basically extends the UN definition into the business world. Since most companies are already addressing financial concerns, this really translates into social and environmental risk management (also often called corporate social responsibility).

ENVM 647

Ecological risk assessment that includes loss of habitat, species decline, and even climate change.

A key issue in the course is the tradeoff among different risks and costs. These tradeoffs are constituent parts of the discussion on sustainability.

ENVM 649

The 649 Waste Management class has a focus toward sustainability and the triple bottom line in such areas as RCRA, Part C (hazardous wastes), brownfields, radiological impacts, Superfund.

ENVM 653

The course has expanded the concept of sustainability to cover community livability and resilience as well as the use of innovative technology to build smart cities. One of the key assumptions of the course is that the development of innovative energy and environmental technologies is critical to sustainability.

Students are required to evaluate two communities anywhere in the U.S., in terms of sustainability, livability, resilience, and smart technology criteria. The students are required to develop the criteria for each category and then apply them through either a quantitative or qualitative ranking system that they develop in a team environment.

ENVM 653 continue

Students evaluate a jurisdiction using the AARP livability tool to determine the tool's overall accuracy and utility in assessing livability.

ENVM 670

Find and critique the environmental or sustainability report for an organization of your choice. A critique should summarize the organization's sustainability program, comment on its strengths and weaknesses, provide recommendations for improvement, and be specific."

ENVM 670 continued

Focus on ISO 14001 Standard on EMS
How metrics are used and misused
by organizations when measuring
sustainability progress. We also
discuss life cycle analysis which is
critical for sustainability.

Conclusions

- Sustainability should be a core organizing element of any undergraduate or graduate environmental planning and management program.
- Principles of sustainability can be integrated into any course related to the environment.
- Sustainability is an evolving concept; therefore, *curricula developers* must constantly be on the look-out for new concepts that have been integrated into sustainability such as livability, reliance, and smart city technologies. They should also be constantly searching for inexpensive tools that can be used by undergraduate and graduate students

Conclusions

- Students should be provided multiple experiences with using various tools and methodologies for evaluating sustainability such as Geographic Information System (GIS mapping and analysis) tools, risk assessment tools and EPA remediation and technology selection tools.
- Many-times tools developed by third parties such as the AARP (that are free) can provide valuable experiences in evaluating various aspects of sustainability

Contact

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