

# ENVIRONMENTAL POLICY AND MANAGEMENT

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## Master of Science in Environmental Policy and Management

The Master of Science in Environmental Policy and Management degree may be earned online or in a combination of online, on campus, and hybrid courses at the University of Denver in the evenings to meet the needs of busy adults.

The Master of Science in Environmental Policy and Management degree prepares students to enter the dynamic industry of Environmental Policy and Management, which is emerging in importance and popularity around the world. Students will receive engaging instruction from professional practitioners who work and teach in fields such as sustainability, climate change, natural resource management, renewable energy, law, environmental finance and economics, among many others. Graduates learn to address and manage complex environmental problems.

This degree prepares students to:

- Apply major environmental laws to current policy and environmental challenges to identify limitations and opportunities to improve environmental governance.
- Recommend sustainable actions to high-level stakeholders fluently using the language of both sustainability and fiscal responsibility.
- Apply appropriate research methods/designs to address a research hypothesis and questions.
- Compose research arguments to validate claims based on a variety of professional and academic sources.
- Resolve an authentic problem that is relevant to a current or aspirational position in the discipline.

## Master of Science in Environmental Policy and Management with a Concentration in Emergency Planning and Response

The Emergency Planning and Response master's degree concentration is offered to meet the needs of busy adults and prepares current or aspiring emergency response professionals to effectively strategize and implement emergency plans and responses. Graduates will learn to compare and contrast plans and responses to various events and disasters. Students will learn strategies for effective communication in all phases of emergency management (i.e., mitigation, preparedness, response, and recovery).

Whether an emergency is natural or human caused, emergency preparedness is vital to ensure minimize impacts on the welfare of those affected. The Emergency Planning and Response master's degree concentration covers emergency planning, mitigation of potential hazards, response, and recovery. Professional practitioners who work in the emergency planning and response field teach the Emergency Planning and Response master's degree concentration. Classes focus on the integrated system at every stage of a disaster and define the roles of emergency response teams, government agencies, businesses, and private citizens.

This degree prepares students to:

- Develop emergency response plans to ensure that organizations or communities possess necessary resources (e.g., personnel, equipment, communications, etc.) to respond to emergency incidents;
- Identify the potential hazards within a community or organization that require mitigation to minimize the health, economic, and environmental consequences of potential emergency incidents;
- Develop critical incident management actions that will save lives, protect property and the environment, and meet the basic human needs during a critical incident;
- Construct Recovery Plans to repair damages and restore the health, economy, infrastructure, and environment of the affected community following a large-scale disaster.

## Master of Science in Environmental Policy and Management with a Concentration in Energy and Sustainability

The Energy and Sustainability master's degree concentration may be earned online or in a combination of online, on campus, and hybrid courses at the University of Denver in the evenings to meet the needs of busy adults. Students are prepared to enter the dynamic industry of energy and sustainability, which is emerging in importance and popularity around the world. Students will establish a solid foundation in energy and sustainability concepts, and then learn to integrate environmental systems, put policy into practice, and develop effective sustainability plans. Regulatory and policy issues related to energy development, implementation, and use, energy finance, and alternative and renewable energy processes will be examined, along with renewable energy sources, plans for integration, and trends within the field of energy.

Sustainable systems must be considered and developed in the areas of growth, transportation, energy, policy, and business models in order to head off looming environmental, political, and humanitarian problems. This will be accomplished through a comprehensive study of sustainability in the areas of economic development, green building, land use, transportation, and water resources.

This degree prepares students to:

- Demonstrate a solid understanding of how non-renewable and renewable energy sources are developed, used, regulated, and financed;
- Articulate a strong working knowledge of sustainability concepts;
- Show an understanding of trends and issues in areas of traffic management, climate science, water supplies, and green buildings;
- Develop plans for the integration of sustainable practices into products, business and marketing plans, environmental policies, and organizational processes;
- Build finance schemes and marketing strategies for their plans so they can be presented to an organization leader as an executable idea.

### **Master of Science in Environmental Policy and Management with a Concentration in Environmental Analytics and Reporting**

The Environmental Analytics and Reporting master's degree concentration may be earned online or in a combination of online, on campus, and hybrid courses at the University of Denver in the evenings to meet the needs of busy adults. This certificate and concentration emphasize learning how to utilize the tools and insights of the data analytics revolution to perform sophisticated environmental analyses and reports. Students learn possible uses of data analytics in an era of sustainability and ever-increasing complexity to manage the environmental elements of their organizations more effectively. Constructively reporting these results, trends, and accomplishments is an important avenue of communication in any organization. Environmental professionals will learn to identify and obtain a data set from a publicly traded company, from their own organization, or another public or governmental source suitable to use for carrying out analytics projects. Clear questions will be formulated and framed; analytical algorithms will be run on cloud technologies to reveal relevant insight into environmental issues. Context for these analyses will be provided through study of ISO 14001, fundamental U.S. environmental statutes, and governmental and NGO environmental reporting standards and requirements.

This degree prepares students to:

- Assess the value, function, and application of data analytics to create or enhance organizational value;
- Differentiate the function and limitations of data and analytics methods and tools to inform selection of an optimal approach for a specific need;
- Prepare analyses of environmental data to support preparation of reports for organizations and agencies (e.g., ESG, SEC, SASB, NGO, EPA, OSHA, state and local agencies);
- Conduct analyses of a structured data set to craft the routine environmental reporting elements of organizational reports including sustainability, risk, efficiency, impacts, permit status, routine releases, unplanned events, strategies, operations monitoring, management monitoring, ethics, stakeholder perceptions, innovation, and collaboration;
- Formulate an analytics modeling project and report.

### **Master of Science in Environmental Policy and Management with a Concentration in Environmental, Health and Safety**

The Environmental, Health and Safety master's degree concentration may be earned online or in a combination of online, on campus, and hybrid courses at the University of Denver in the evenings to meet the needs of busy adults. Whether students currently work in environmental health and safety positions for commercial or government operations, or aspire to, the Environmental, Health and Safety master's degree prepares them with the management skills and technical knowledge required to become a health and safety manager or officer. Students will begin with the foundational statutory and regulatory origins of environmental health and safety compliance management and learn how to effectively and efficiently streamline resources to integrate safety and health regulations across sectors and industries.

Critical instruction is given on relevant training, emergency planning, procedural operations, and the management of worker health and safety, in addition to environmental management and reporting systems and business and finance strategy.

This degree prepares students to:

- Evaluate the benefits and barriers to integration of environmental health and safety including the fundamentals of safety management, training requirements, emergency planning, setting goals, objectives, and operating procedures, and how management views environmental health and safety;
- Describe the Occupational Safety and Health Act and other rules governing workplace safety with emphasis on the overlap between safety and environmental laws, OSHA's inspection and enforcement authority, employee and employer rights and record keeping requirements;
- Develop and apply compliance programs including how to reduce losses of direct and indirect costs due to accidents and how to convince management and employees that safety programs are beneficial;

- Investigate workplace safety topics including costs of accidents, investigation programs, practical application of worker's compensation, confined space entry programs, injury/illness records and reporting, programs for new fall protective rules and personal protective equipment programs.

## **Master of Science in Environmental Policy and Management with a Concentration in Environmental Management**

The Environmental Management master's degree concentration may be earned online or in a combination of online, on campus, and hybrid courses at the University of Denver in the evenings to meet the needs of busy adults. Master's degree students will learn environmental management and leadership essentials, providing them with critical knowledge related to technology, law, and economics as they each relate to the environment. Facilitating environmental innovation, development plans, and integration will be discussed, along with essential permitting and regulatory issues that environmental managers need.

Students in the Environmental Management master's concentration will receive engaging instruction from professional practitioners who work in the fields in which they teach in topics ranging from economics to law, leadership to regulations, as each topic relates to the environment. Designed for students seeking a combination of leadership, policy, and environmental issue education, the concentration prepares graduates to address and manage complex environmental systems.

This degree prepares students to:

- Examine the requirements and implementation strategies of the National Environmental Policy Act and the requirements of various federal agencies which are responsible for National Environmental Policy Act implementation;
- Critique Environmental Impact Statements and Environmental Assessments for regulatory compliance and thoroughness in disclosing environmental effects of proposed actions;
- Investigate the Resource Conservation and Recovery Act's regulations governing performance requirements for treatment, storage and disposal of solid and hazardous waste generation and disposal;
- Explain and summarize developing trends in waste minimization, solid waste management and special waste controls;
- Demonstrate how to use the ISO 14001 framework as a proactive and systematic approach to environmental management and develop a complete program that integrates the ISO 14001 requirements with the existing strategic management methods of an organization;
- Assess personal leadership attributes and construct a personal leadership development plan that integrates leadership principles necessary for advancement including interpersonal communication and leading environmental innovation using the natural world as a model.

## **Master of Science in Environmental Policy and Management with a Concentration in Environmental Policy**

Supply chains are everywhere, from the local store to a large multinational electronics manufacturer operating halfway across the world. From cradle to grave, it is the supply chain management system that links all of the numerous stakeholders into one strategic plan for us as customers in markets.

These systems link processes such as product design, sourcing, forecasting, planning, manufacturing, distribution, logistics, retailing and material disposal and reuse. In today's fast paced markets driven by globalization and technology, knowledgeable professionals in supply chain management are increasingly important for companies to achieve their business objectives. Some of the most successful manufacturers (e.g., Apple and Samsung) and retailers (e.g., Wal-Mart and Amazon) are winning as a result of their supply chain strategies. Especially as markets change rapidly, supply chain management professionals will be integral to a company's success.

Earned entirely online, in the Supply Chain Management concentration students learn the six pillars of the field, and how to solve problems through the use of Six Sigma principles and the use of data analytics. Through hands-on projects with companies students gain real-world experience on the challenges facing global supply chains in the 21st-century while learning from current leaders in the field.

This degree prepares students to:

- Outline the legal and philosophical underpinnings of the environmental movement, both in the United States and internationally, including the use of international laws and treaties to mitigate, lessen, or eliminate damage to various aspects of the environment;
- Analyze global environmental issues including endangered species, overpopulation, resource depletion, biodiversity, ocean dumping, deforestation, desertification, global warming, and ozone depletion;
- Explain how to encourage sustainability through consumption patterns that ensure a continuing resource supply for future generations and through achieving a balance between environmental protection and economic development;
- Describe the field of public environmental policy including contemporary methods of policy analysis, agenda-setting, models of policy formulation and implementation, and policy evaluation;
- Examine ethical considerations in environmental management and decision making and explore various philosophies of humankind's relationship with the environment;

- Develop and express a personal philosophy addressing one's own role in the regulatory, technical, scientific, and financial management of the environment.

## **Master of Science in Environmental Policy and Management with a Concentration in Natural Resource Management**

The Natural Resource Management master's degree concentration may be earned online or in a combination of online, on campus, and hybrid courses at the University of Denver in the evenings to meet the needs of busy adults. Designed for professionals whose primary interest is the management of natural resources for organizations which plan or regulate the use of natural resources, or commercial operations which extract and use natural resources (e.g., mining or forestry management), the Natural Resource Management concentration prepares students to work in professional roles overseeing natural resource management for commercial or government purposes. Learn historic and contemporary management systems and principles, along with key policies and procedures needed to excel in the public or private sectors related to natural resource management.

Degree-seeking students are exposed to a breadth of knowledge pertaining to natural resources, water management, zoning, forestry management, mining, and land use issues. Focused skills concentrate on technology, management, and communication knowledge that is critical to success in the natural resource management field.

This degree prepares students to:

- Analyze the practical and theoretical basis of recreational land use in the context of ecosystem management and explore the responsibilities of various federal, state and local agencies, environmental and wildlife interest groups, and other organizations involved in wildlife management issues;
- Discuss the statutory and regulatory policies and current issues regarding the management and use of lands in wilderness systems, wild and scenic river corridors, parks, and open spaces;
- Explain historic and contemporary management systems and principles by examining key policies, guidelines, and planning procedures of governmental agencies, resource-based industry and the public;
- Describe how the biological, physical, social, and economic aspects of lands, waters, and natural resources work together to achieve sustainable conditions that encourage preservation and management of natural resources for recreation;
- Investigate the basic principles, trends, challenges, and controversies of the administration of maintaining certain wildlife species including threats from water and air pollution, poaching and other illegal actions;
- Characterize the field of public environmental policy including contemporary methods of policy analysis, agenda-setting, models of policy formulation and implementation, and policy evaluation.

## **Master of Science in Environmental Policy and Management with a Concentration in Supply Chain Management**

The Supply Chain Management master's degree concentration is offered online or on campus at the University of Denver in the evenings, or in a combination of both, to meet the needs of busy adults. Students learn tactical innovation and change management using vision, values, and mission as an overall guide. Led by professional practitioners who work in the fields in which they teach, leadership classes provide professionals the skills to manage change, encourage innovation, and develop effective strategic initiatives while fulfilling an organization's mission.

The Supply Chain Management concentration will teach students to apply principles of environmental sustainability as they plan for and manage the end-to-end flow of products, including closed loop supply chains. Students will explore the many links in the supply chain that have significant impact on the environment, from raw material sourcing to energy use to transportation. Students will gain hands-on experience, learn new technologies, and develop skills ranging from logistics to organizational development.

This degree prepares students to:

- Articulate the six pillars of supply chain management to diagram the process to appraise their role in the market system;
- Apply the six pillars of supply chain management to realistic problem scenarios to develop strategies to diagnose and address future supply chain problems;
- Assess supply chains using a multidimensional perspective that includes connections between supply chain processes and fundamental business topics such as financial management and technology;
- Solve supply chain problems using a nonlinear process that addresses connections between supply chain pillars, market trends, and business best practices;
- Apply best practices to address an authentic supply chain problem in a work setting.

## **Graduate Certificate in Environmental Policy and Management with a Concentration in Energy and Sustainability**

The graduate certificate in Energy and Sustainability concentration may be earned online to meet the needs of busy adults. Busy adults who already hold master's degrees, or professionals who work within the field of energy development, will benefit from a graduate certificate in Energy and Sustainability, a dynamic field that is emerging in importance and popularity. Ideal for students seeking further study related to sustainable systems, energy development and use, energy finance, and alternative and renewable energy process, the graduate certificate in Energy and Sustainability may

be earned online or on campus in the evenings. Students will develop integration strategies, build finance schemes and marketing plans, articulate a strong working knowledge of sustainability concepts, and learn about energy and sustainability systems. Students will also gain additional skills and knowledge in environmental policy and management through elective coursework.

Sustainable systems must be considered and developed in the areas of growth, transportation, energy, policy, and business models in order to head off looming environmental, political, and humanitarian problems. This will be accomplished through a comprehensive study of sustainability in the areas of economic development, green building, land use, transportation, and water resources. Credits earned through this graduate certificate may apply toward a master's degree in Environmental Policy and Management.

### **Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental Analytics and Reporting**

The Environmental Analytics and Reporting certificate may be earned online to meet the needs of busy adults. This certificate emphasizes learning how to utilize the tools and insights of the data analytics revolution to perform sophisticated environmental analyses and reports. Students learn possible uses of data analytics in an era of sustainability and ever-increasing complexity to manage the environmental elements of their organizations more effectively. Constructively reporting these results, trends, and accomplishments is an important avenue of communication in any organization. Environmental professionals will learn to identify and obtain a data set from a publicly traded company, from their own organization, or another public or governmental source suitable to use for carrying out analytics projects. Clear questions will be formulated and framed; analytical algorithms will be run on cloud technologies to reveal relevant insight into environmental issues. Context for these analyses will be provided through study of ISO 14001, fundamental U.S. environmental statutes, and governmental and NGO environmental reporting standards and requirements. Students will also gain additional skills and knowledge in environmental policy and management through elective coursework.

### **Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental, Health and Safety**

The graduate certificate in Environmental, Health and Safety concentration may be earned online to meet the needs of busy adults. Designed and delivered for professionals who already holds a master's degree, or for professionals looking to further their environmental career with a new skillset, the graduate certificate in Environmental, Health and Safety concentration may be earned online or on campus in the evenings. Certificate students will explore the foundational statutory and regulatory origins of environmental health and safety compliance management and learn how to effectively and efficiently streamline resources to integrate safety and health regulations across sectors and industries. Students will also gain additional skills and knowledge in environmental policy and management through elective coursework.

Students pursuing this graduate certificate will acquire environmental management skills and technical knowledge that prepare them to work with health and safety statutes and regulations, management of worker health and safety issues, environmental management and reporting systems, and business and finance. Credits earned through this graduate certificate may apply toward a master's degree in Environmental Policy and Management.

### **Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental Management**

The graduate certificate in Environmental Management concentration may be earned online to meet the needs of busy adults. Environmental Management certificate students will develop essential management skills and technical knowledge required to function in a variety of managerial positions within the environmental field. Certificate students learn to facilitate environmental innovation and integrate systems while complying with regulatory and policy matters.

The Environmental Management certificate is designed for busy adults who already hold a master's degree, or for professionals looking to further their environmental career with a new skillset in leadership, policy, and environmental issues. The graduate certificate in Environmental Management concentration provides detailed instruction on statutes and regulations, management and reporting systems, business and finance strategy, and communication and negotiation skills as they each relate to environmental management. Students will also gain additional skills and knowledge in environmental policy and management through elective coursework. Environmental Management graduate certificate students take master's-level classes but do not complete a capstone project. Credits earned through this graduate certificate may apply toward a master's degree in Environmental Policy and Management.

### **Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental Policy**

The graduate certificate in Environmental Policy concentration may be earned online to meet the needs of busy adults. Designed and delivered for professionals who already hold master's degrees or for those looking to further their environmental career with a new skillset, the graduate certificate in Environmental Policy concentration is ideal for adult students seeking an innovative, career relevant graduate certificate. Environmental policy analysis at the public level will be discussed, including contemporary methods for analytical model development, implementation, and evaluation. Students will also gain additional skills and knowledge in environmental policy and management through elective coursework.

Environmental Management and Policy students who are currently in the field of environmental policy, or for those aspiring to join the field, will develop skills through the online graduate certificate program that will serve them well in a policy making organization, such as values and ethics, communication and negotiation, policy analysis, and environmental laws and regulations. Environmental Policy graduate certificate students take master's level classes, but do not complete a capstone project. Credits earned through this graduate certificate may apply toward a master's degree in Environmental Policy and Management.

## **Graduate Certificate in Environmental Policy and Management with a Concentration in Natural Resource Management**

The Natural Resource Management graduate certificate concentration may be earned online to meet the needs of busy adults. Designed for professionals who already hold master's degrees, or for busy adults looking to further their environmental career with a new skillset, the graduate certificate in Natural Resource Management will prepare students to work in natural resource management roles for commercial or government organizations. Certificate students will learn historic and contemporary management systems and principles, in addition to essential policies and procedures needed to thrive in natural resource management in the public or private sectors. Students will also gain additional skills and knowledge in environmental policy and management through elective coursework.

The graduate certificate is designed for professionals whose primary interest is the management of natural resources for organizations which plan or regulate the use of natural resources, or commercial operations which extract and use natural resources. Graduate certificate students will develop organizational leadership skills and learn environmental statutes and regulations pertaining to natural resource management. Credits earned through this graduate certificate may apply toward a master's degree in Environmental Policy and Management.

### **Specialized Graduate Certificate in Environmental Analytics and Reporting**

The Environmental Analytics and Reporting specialized graduate certificate emphasizes learning how to utilize the tools and insights of the data analytics revolution to perform sophisticated environmental analyses and reports. Students learn possible uses of data analytics in an era of sustainability and ever-increasing complexity to manage the environmental elements of their organizations more effectively. Constructively reporting these results, trends, and accomplishments is an important avenue of communication in any organization. Environmental professionals will learn to identify and obtain a data set from a publicly traded company, from their own organization, or another public or governmental source suitable to use for carrying out analytics projects. Clear questions will be formulated and framed; analytical algorithms will be run on cloud technologies to reveal relevant insight into environmental issues. Context for these analyses will be provided through study of fundamental U.S. environmental statutes, and governmental and NGO environmental reporting standards and requirements.

### **Specialized Graduate Certificate in Environmental, Health and Safety**

The specialized graduate certificate in Environmental, Health and Safety may be earned online to meet the needs of busy adults. Students will explore the foundational statutory and regulatory origins of environmental health and safety compliance management and learn how to effectively and efficiently streamline resources to integrate safety and health regulations across sectors and industries.

Students pursuing this certificate, will acquire environmental management skills and technical knowledge that prepare them to work with health and safety statutes and regulations, management of worker health and safety issues, environmental management and reporting systems, and business and finance. Credits earned through the specialized graduate certificate may apply toward a master's degree in Environmental Policy and Management.

### **Specialized Graduate Certificate in Environmental Management**

The specialized graduate certificate in Environmental Management may be earned online to meet the needs of busy adults. The Environmental Management specialized graduate certificate is designed for busy adults who already hold a master's degree, or for professionals looking to further their environmental career with a new skillset in leadership, policy, and environmental issues. The graduate certificate in Environmental Management concentration provides detailed instruction on statutes and regulations, management and reporting systems, business and finance strategy, and communication and negotiation skills as they each relate to environmental management. Students will take master's-level classes but do not complete a capstone project. Credits earned through this certificate may apply toward a master's degree in Environmental Policy and Management.

### **Specialized Graduate Certificate in Environmental Policy**

The specialized graduate certificate in Environmental Policy may be earned online to meet the needs of busy adults. Designed and delivered for professionals who already hold master's degrees or for those looking to further their environmental career with a new skillset. Environmental policy analysis at the public level will be discussed, including contemporary methods for analytical model development, implementation, and evaluation.

Environmental Management and Policy students will develop skills that will serve them well in a policy making organization, such as values and ethics, communication and negotiation, policy analysis, and environmental laws and regulations. Environmental Policy specialized graduate certificate students take master's level classes, but do not complete a capstone project. Credits earned through this graduate certificate may apply toward a master's degree in Environmental Policy and Management.

### **Specialized Graduate Certificate in Energy and Sustainability**

The specialized graduate certificate in Energy and Sustainability may be earned online to meet the needs of busy adults. Students will develop integration strategies, build finance schemes and marketing plans, articulate a strong working knowledge of sustainability concepts, and learn about energy and sustainability systems.

Sustainable systems must be considered and developed in the areas of growth, transportation, energy, policy, and business models in order to head off looming environmental, political, and humanitarian problems. This will be accomplished through a comprehensive study of sustainability in the areas of economic development, green building, land use, transportation, and water resources. Credits earned through this certificate may apply toward a master's degree in Environmental Policy and Management.

## **Specialized Graduate Certificate in Natural Resource Management**

The Natural Resource Management specialized graduate certificate may be earned online to meet the needs of busy adults. Students will learn historic and contemporary management systems and principles, in addition to essential policies and procedures needed to thrive in natural resource management in the public or private sectors.

The certificate is designed for professionals whose primary interest is the management of natural resources for organizations which plan or regulate the use of natural resources, or commercial operations which extract and use natural resources. Students will develop organizational leadership skills and learn environmental statutes and regulations pertaining to natural resource management. Credits earned through this certificate may apply toward a master's degree in Environmental Policy and Management.

### **Master's Degree Admission**

#### **Degree and GPA Requirements**

- Bachelor's degree: All graduate applicants must hold an earned baccalaureate from a regionally accredited college or university or the recognized equivalent from an international institution.
- Grade point average: The minimum undergraduate GPA for admission consideration for graduate study at the University of Denver is a cumulative 2.5 on a 4.0 scale or a 2.5 on a 4.0 scale for the last 60 semester credits or 90 quarter credits (approximately two years of work) for the baccalaureate degree. An earned master's degree or higher from a regionally accredited institution supersedes the minimum standards for the baccalaureate. For applicants with graduate coursework but who have not earned a master's degree or higher, the GPA from the graduate work may be used to meet the requirement. The minimum GPA is a cumulative 3.0 on a 4.0 scale for all graduate coursework undertaken.
- Program GPA requirement: The minimum undergraduate GPA for admission consideration for this program is a cumulative 2.5 on a 4.0 scale.

#### **English Language Proficiency Test Score Requirements**

The minimum TOEFL/IELTS/C1 Advanced/Duolingo English Test score requirements for this degree program are:

- Minimum TOEFL Score (Internet-based test): 80 with minimum of 20 on each sub-score
- Minimum IELTS Score: 6.5 with minimum of 6.0 on each band score
- Minimum C1 Advanced Score: 176
- Minimum Duolingo English Test Score: 115 with individual subscore minimum of 105 for Literacy, Comprehension, and Conversation and minimum subscore of 95 for Production

English Conditional Admission: No, this program does not offer English Conditional Admission.

## **Certificate Admission**

#### **Degree and GPA Requirements**

- Bachelor's degree: All graduate applicants must hold an earned baccalaureate from a regionally accredited college or university or the recognized equivalent from an international institution.
- Grade point average: The minimum undergraduate GPA for admission consideration for graduate study at the University of Denver is a cumulative 2.5 on a 4.0 scale or a 2.5 on a 4.0 scale for the last 60 semester credits or 90 quarter credits (approximately two years of work) for the baccalaureate degree. An earned master's degree or higher from a regionally accredited institution supersedes the minimum standards for the baccalaureate. For applicants with graduate coursework but who have not earned a master's degree or higher, the GPA from the graduate work may be used to meet the requirement. The minimum GPA is a cumulative 3.0 on a 4.0 scale for all graduate coursework undertaken.
- Program GPA requirement: The minimum undergraduate GPA for admission consideration for this program is a cumulative 2.5 on a 4.0 scale.

#### **English Language Proficiency Test Score Requirements**

The minimum TOEFL/IELTS/C1 Advanced/Duolingo English Test score requirements for this degree program are:

- Minimum TOEFL Score (Internet-based test): 80 with minimum of 20 on each sub-score
- Minimum IELTS Score: 6.5 with minimum of 6.0 on each band score
- Minimum C1 Advanced Score: 176
- Minimum Duolingo English Test Score: 115 with individual subscore minimum of 105 for Literacy, Comprehension, and Conversation and minimum subscore of 95 for Production.

English Conditional Admission: No, this program does not offer English Conditional Admission.

## Master's Degree Programs

### Master of Science in Environmental Policy and Management

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4910	Research Practices and Applications	4
EPM 4901	Capstone Project	4
or EPM 4902	Capstone Seminar	
<b>AND Select 5 courses</b>		<b>20</b>
EPM 4001	Environmental Foundations and Principles	
EPM 4002	Integrated Environmental Systems	
EPM 4040	Wetland Ecology and Management	
EPM 4108	Impacts of Recreational Use	
EPM 4115	Introduction to Ecology	
EPM 4120	Introduction to Natural Resource Management	
EPM 4140	National Environmental Policy Act (NEPA)	
EPM 4150	Global Environmental Law and Policy	
EPM 4220	Endangered Species and Wildlife	
EPM 4230	Renewable and Alternative Energies	
EPM 4232	Sustainability: Policy and Practice	
EPM 4233	Sustainable Transportation	
EPM 4234	Climate Change and Science	
EPM 4235	Green Building	
EPM 4236	Nuclear, Hydrogen, and Energy Storage Technologies	
EPM 4238	Water and Food Sustainability	
EPM 4280	Resource Conservation and Recovery Act (RCRA)	
EPM 4355	Systems, Standards, and Certifications for Environmental Management	
EPM 4390	Environmental Policy Analysis	
EPM 4400	Environmental Values and Ethics	
EPM 4465	Environmental Restoration and Waste Management	
EPM 4500	Leadership for Environmental Managers	
EPM 4510	Environmental, and Health & Safety Management	
EPM 4520	Occupational Safety and Health Act (OSHA)	
EPM 4525	Workplace Safety Management	
EPM 4610	Analytics I	
EPM 4615	Analytics II	
EPM 4620	Environmental Reporting Standards and Models	
EPM 4625	Environmental Analysis and Reporting Project	
EPM 4705	Land Use Planning	
EPM 4710	Environmental Project Management	
<b>Electives requirements (select three courses)</b>		<b>12</b>
<b>Total Credits</b>		<b>48</b>

#### Minimum number of credits required: 48

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

In University College graduate-level programs, grades of C or greater are considered passing, whereas grades of C- or lower are considered failing. Courses with a grade of C- or below will not count toward meeting degree or certificate requirements. Also, no more than one-fourth of the hours accepted toward the degree be grades of "C". A cumulative and program grade-point average of 3.0 or better must be maintained at all times.



## Master of Science in Environmental Policy and Management with a Concentration in Emergency Planning and Response

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4910	Research Practices and Applications	4
EPM 4901	Capstone Project	4
or EPM 4902	Capstone Seminar	
<b>Concentration requirements</b>		
SMGT 4210	Critical Incident Management	4
SMGT 4230	Mitigation for Emergency Managers	4
SMGT 4240	Emergency Incident Recovery	4
SMGT 4400	Emergency Planning	4
<b>Elective requirements (Choose four courses)</b>		<b>16</b>
<b>Total Credits</b>		<b>48</b>

**Minimum number of credits required: 48**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

## Master of Science in Environmental Policy and Management with a Concentration in Energy and Sustainability

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4910	Research Practices and Applications	4
EPM 4901	Capstone Project	4
or EPM 4902	Capstone Seminar	
<b>Concentration requirements (Select 6 courses)</b>		<b>24</b>
EPM 4002	Integrated Environmental Systems	
EPM 4040	Wetland Ecology and Management	
EPM 4120	Introduction to Natural Resource Management	
EPM 4140	National Environmental Policy Act (NEPA)	
EPM 4150	Global Environmental Law and Policy	
EPM 4220	Endangered Species and Wildlife	
EPM 4230	Renewable and Alternative Energies	
EPM 4232	Sustainability: Policy and Practice	
EPM 4233	Sustainable Transportation	
EPM 4234	Climate Change and Science	
EPM 4235	Green Building	
EPM 4236	Nuclear, Hydrogen, and Energy Storage Technologies	
EPM 4238	Water and Food Sustainability	
EPM 4390	Environmental Policy Analysis	
EPM 4610	Analytics I	
EPM 4620	Environmental Reporting Standards and Models	
EPM 4705	Land Use Planning	
<b>Elective requirements (Select two courses)</b>		<b>8</b>
<b>Total Credits</b>		<b>48</b>

**Minimum number of credits required: 48**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### Master of Science in Environmental Policy and Management with a Concentration in Environmental Analytics and Reporting

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4910	Research Practices and Applications	4
EPM 4901 or EPM 4902	Capstone Project Capstone Seminar	4
<b>Concentration requirements</b>		
EPM 4610	Analytics I	4
EPM 4615	Analytics II	4
EPM 4620	Environmental Reporting Standards and Models	4
EPM 4625	Environmental Analysis and Reporting Project	4
<b>Elective requirements (Choose four courses)</b>		<b>16</b>
<b>Total Credits</b>		<b>48</b>

Minimum number of credits required: 48

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### Master of Science in Environmental Policy and Management with a Concentration in Environmental, Health and Safety

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4910	Research Practices and Applications	4
EPM 4901 or EPM 4902	Capstone Project Capstone Seminar	4
<b>Concentration requirements</b>		
EPM 4280	Resource Conservation and Recovery Act (RCRA)	4
EPM 4510	Environmental, and Health & Safety Management	4
EPM 4520	Occupational Safety and Health Act (OSHA)	4
EPM 4525	Workplace Safety Management	4
<b>Elective requirements (Choose four courses)</b>		<b>16</b>
<b>Total Credits</b>		<b>48</b>

Minimum number of credits required: 48

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### Master of Science in Environmental Policy and Management with a Concentration in Environmental Management

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4

EPM 4910	Research Practices and Applications	4
EPM 4901 or EPM 4902	Capstone Project Capstone Seminar	4
<b>Concentration requirements</b>		
EPM 4140	National Environmental Policy Act (NEPA)	4
EPM 4280	Resource Conservation and Recovery Act (RCRA)	4
EPM 4355	Systems, Standards, and Certifications for Environmental Management	4
EPM 4500	Leadership for Environmental Managers	4
<b>Elective requirements (Choose four courses)</b>		<b>16</b>
<b>Total Credits</b>		<b>48</b>

**Minimum number of credits required: 48**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### Master of Science in Environmental Policy and Management with a Concentration in Environmental Policy

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4910	Research Practices and Applications	4
EPM 4901 or EPM 4902	Capstone Project Capstone Seminar	4
<b>Concentration requirements</b>		
EPM 4150	Global Environmental Law and Policy	4
EPM 4232	Sustainability: Policy and Practice	4
EPM 4390	Environmental Policy Analysis	4
EPM 4400	Environmental Values and Ethics	4
<b>Elective requirements (Choose four courses)</b>		<b>16</b>
<b>Total Credits</b>		<b>48</b>

**Minimum number of credits required: 48**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### Master of Science in Environmental Policy and Management with a Concentration in Natural Resource Management

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4910	Research Practices and Applications	4
EPM 4901 or EPM 4902	Capstone Project Capstone Seminar	4
<b>Concentration requirements</b>		
EPM 4108	Impacts of Recreational Use	4
EPM 4120	Introduction to Natural Resource Management	4
EPM 4220	Endangered Species and Wildlife	4
EPM 4390	Environmental Policy Analysis	4

<b>Elective requirements (Choose four courses)</b>	<b>16</b>
<b>Total Credits</b>	<b>48</b>

Minimum number of credits required: 48

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives..

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## Master of Science in Environmental Policy and Management with a Concentration in Supply Chain Management

Code	Title	Credits
<b>Core coursework requirements</b>		
EPM 4910	Research Practices and Applications	4
EPM 4003	Environmental Finance and Economics	4
EPM 4200	Environmental Protection Law	4
EPM 4901 or EPM 4902	Capstone Project Capstone Seminar	4
<b>Concentration requirements</b>		
TRAN 4100	Fundamentals of Supply Chain Management	4
TRAN 4110	Fundamentals of Supply Chain Planning	4
TRAN 4120	Fundamentals of Supply Chain Execution	4
TRAN 4130	Structured Problem Solving in Supply Chain Management	4
<b>Elective requirements (Choose four courses)</b>		<b>16</b>
<b>Total Credits</b>		<b>48</b>

Minimum number of credits required: 48

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

## Graduate Certificate Programs

### Graduate Certificate in Environmental Policy and Management with a Concentration in Energy and Sustainability

Code	Title	Credits
<b>Concentration requirements</b>		
EPM 4002	Integrated Environmental Systems	4
EPM 4230	Renewable and Alternative Energies	4
EPM 4232	Sustainability:Policy and Practice	4
EPM 4233	Sustainable Transportation	4
<b>Elective requirements (Choose two courses)</b>		<b>8</b>
<b>Total Credits</b>		<b>24</b>

Minimum number of credits required: 24

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental Analytics and Reporting

Code	Title	Credits
<b>Concentration requirements</b>		
EPM 4610	Analytics I	4
EPM 4615	Analytics II	4
EPM 4620	Environmental Reporting Standards and Models	4
EPM 4625	Environmental Analysis and Reporting Project	4

<b>Elective requirements (Choose two courses)</b>	<b>8</b>
<b>Total Credits</b>	<b>24</b>

**Minimum number of credits required: 24**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### **Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental, Health and Safety**

<b>Code</b>	<b>Title</b>	<b>Credits</b>
<b>Concentration requirements</b>		
EPM 4280	Resource Conservation and Recovery Act (RCRA)	4
EPM 4510	Environmental, and Health & Safety Management	4
EPM 4520	Occupational Safety and Health Act (OSHA)	4
EPM 4525	Workplace Safety Management	4
<b>Elective requirements (Choose two courses)</b>		<b>8</b>
<b>Total Credits</b>		<b>24</b>

**Minimum number of credits required: 24**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### **Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental Management**

<b>Code</b>	<b>Title</b>	<b>Credits</b>
<b>Concentration requirements</b>		
EPM 4140	National Environmental Policy Act (NEPA)	4
EPM 4280	Resource Conservation and Recovery Act (RCRA)	4
EPM 4355	Systems, Standards, and Certifications for Environmental Management	4
EPM 4500	Leadership for Environmental Managers	4
<b>Elective requirements (Choose two courses)</b>		<b>8</b>
<b>Total Credits</b>		<b>24</b>

**Minimum number of credits required: 24**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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### **Graduate Certificate in Environmental Policy and Management with a Concentration in Environmental Policy**

<b>Code</b>	<b>Title</b>	<b>Credits</b>
<b>Concentration requirements</b>		
EPM 4150	Global Environmental Law and Policy	4
EPM 4232	Sustainability: Policy and Practice	4
EPM 4390	Environmental Policy Analysis	4
EPM 4400	Environmental Values and Ethics	4
<b>Elective requirements (Choose two courses)</b>		<b>8</b>
<b>Total Credits</b>		<b>24</b>

**Minimum number of credits required: 24**

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

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## Graduate Certificate in Environmental Policy and Management with a Concentration in Natural Resource Management

Code	Title	Credits
<b>Concentration requirements</b>		
EPM 4108	Impacts of Recreational Use	4
EPM 4120	Introduction to Natural Resource Management	4
EPM 4220	Endangered Species and Wildlife	4
EPM 4390	Environmental Policy Analysis	4
<b>Elective requirements (Choose two courses)</b>		<b>8</b>
<b>Total Credits</b>		<b>24</b>

Minimum number of credits required: 24

Students will work with their Academic Advisor to determine the best set of courses to choose for their electives.

## Specialized Graduate Certificate Programs

### Specialized Graduate Certificate in Environmental Analytics and Reporting

Code	Title	Credits
EPM 4610	Analytics I	4
EPM 4615	Analytics II	4
EPM 4620	Environmental Reporting Standards and Models	4
EPM 4625	Environmental Analysis and Reporting Project	4
<b>Total Credits</b>		<b>16</b>

### Specialized Graduate Certificate in Environmental, Health and Safety

Code	Title	Credits
EPM 4280	Resource Conservation and Recovery Act (RCRA)	4
EPM 4510	Environmental, and Health & Safety Management	4
EPM 4520	Occupational Safety and Health Act (OSHA)	4
EPM 4525	Workplace Safety Management	4
<b>Total Credits</b>		<b>16</b>

### Specialized Graduate Certificate in Environmental Management

Code	Title	Credits
EPM 4500	Leadership for Environmental Managers	4
EPM 4280	Resource Conservation and Recovery Act (RCRA)	4
EPM 4355	Systems, Standards, and Certifications for Environmental Management	4
EPM 4140	National Environmental Policy Act (NEPA)	4
<b>Total Credits</b>		<b>16</b>

### Specialized Graduate Certificate in Environmental Policy

Code	Title	Credits
EPM 4232	Sustainability: Policy and Practice	4
EPM 4150	Global Environmental Law and Policy	4
EPM 4400	Environmental Values and Ethics	4
EPM 4390	Environmental Policy Analysis	4
<b>Total Credits</b>		<b>16</b>

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## **Specialized Graduate Certificate in Energy and Sustainability**

Code	Title	Credits
EPM 4002	Integrated Environmental Systems	4
EPM 4230	Renewable and Alternative Energies	4
EPM 4232	Sustainability:Policy and Practice	4
EPM 4233	Sustainable Transportation	4
<b>Total Credits</b>		<b>16</b>

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## **Specialized Graduate Certificate in Natural Resource Management**

Code	Title	Credits
EPM 4108	Impacts of Recreational Use	4
EPM 4120	Introduction to Natural Resource Management	4
EPM 4220	Endangered Species and Wildlife	4
EPM 4390	Environmental Policy Analysis	4
<b>Total Credits</b>		<b>16</b>

### **EPM 4001 Environmental Foundations and Principles (4 Credits)**

This course investigates the field's history, current activities and issues, ethics, systems, and economics; and an overview of key necessary knowledge and skills to work and learn within the field. Students will: gain a strong historical understanding of how environmental and natural resource issues have influenced economic development and societal growth throughout the ages; learn about the complexity of environmental issues and the value of interdisciplinary and systems thinking when applied to making decisions about natural resource usage; understand the role that empirical science, policy analysis and advocacy play in how governments and private companies address complex environmental issues; become aware of the stressors that ecosystems around the globe are experiencing and the value of multidisciplinary approaches to addressing these challenges; and understand the diverse organizations and employment opportunities available in the environmental field.

### **EPM 4002 Integrated Environmental Systems (4 Credits)**

The earth as a whole is comprised of many systems that affect the environment. Some have large wide ranging reach, while others are restricted to a relatively small area. Included is everything in between. Actions in one area or system may have unintended secondary and tertiary consequences in that system or others. This course uses various tools and materials to study a few environmental systems and determine connections, consequences, impacts, barriers, decision making, life cycle costs, etc.

### **EPM 4003 Environmental Finance and Economics (4 Credits)**

The class provides an overview of economics, finance, and sustainability in an environmental and social context. The class examines traditional and alternative performance metrics, such as "Green GDP", and explores the relationship between risk and return, return on investments, including environmental, social, and governance (ESG) investing. The course emphasizes relationships between business management and environmental quality, and provides students with a financial and economic decision-making framework for understanding and analyzing environmental issues. The course utilizes a case-study approach to cover economic and finance concepts in real world scenarios involving natural resource and environmental decisions. Students will leave this course with the ability to confidently converse regarding sustainability in a finance and economics context.

### **EPM 4040 Wetland Ecology and Management (4 Credits)**

This course provides a detailed examination of wetlands and deepwater habitats of the United States, with an emphasis on wetlands. The definition, identification, classification, and management requirements of various wetland communities are stressed. Students identify and classify wetlands and analyze wetlands in the context of federal, state, and local regulatory processes. Students evaluate activities with adverse and beneficial effects to wetlands. Students explore concepts related to wetland management in the public, private and non-profit sectors.

### **EPM 4108 Impacts of Recreational Use (4 Credits)**

The practical and managerial theoretical basis of recreational use of public and private lands is examined in the context of ecosystem management. #The statutory and regulatory policies and current issues regarding the management and use of lands in wilderness systems, wild and scenic river corridors, parks, and open spaces are discussed in detail. #The impacts of recreational uses on the environment and conflicts with other uses of land and resources are discussed. Land use planning policies and decisions, decisions which respond to recreation, wilderness, wilderness and open space issues will be examined. At the end of this course, students will create a visitor impact use assessment using the Inter-agency Visitor Use Management Framework (IVUMF).

**EPM 4115 Introduction to Ecology (4 Credits)**

This course examines the concepts of the ecosystem, populations, communities, the flows of energy, material cycles, and biotic diversity. Students will analyze ecological concepts including the unity of organisms and inseparable interactions with the physical environment. Class discussions include topics such as the formation, distribution, and organization of ecological communities, plant succession, and nutrient cycling. Students will also evaluate aspects of evolutionary trends within plant and animal communities as they relate to ecological principles. The goals of this class are to transmit the principles, methods, and vocabulary of ecology. Students will critically analyze and discuss issues concerning population ecology, community ecology, and ecosystem ecology. Students will relate concepts of ecology to their personal and professional interests in environmental issues. The ability and necessity of communicating ecological principles within a commercial and/or regulatory environment will be developed. An assignment will provide experience in the collection, interpretation, and analysis of data. The skills learned will be relevant in environmental reporting, discussions, and presentations within a professional environment.

**EPM 4120 Introduction to Natural Resource Management (4 Credits)**

In this course, students gain an understanding of the roles and responsibilities of federal, state, and local agencies, environmental and wildlife interest groups, and other organizations involved in natural resources management. Students will learn the content and purpose of natural resources management plans, then apply this knowledge to assess and develop policies that will improve natural resources management.

**EPM 4140 National Environmental Policy Act (NEPA) (4 Credits)**

This course examines the National Environmental Policy Act (NEPA) and its applications. Students will gain both academic and practical experience in studying the intent and application of NEPA by federal agencies. Students will gain practical application by critically reviewing various NEPA documents and examining the components of NEPA documents. Students will prepare an Environmental Assessment (EA) of their choosing for their final project in this course.

**EPM 4150 Global Environmental Law and Policy (4 Credits)**

International environmental agreements provide a mechanism to address domestic environmental issues caused by foreign countries. However, some agreements have been more successful than others based on various aspects within the agreement and a country's domestic actions taken to enforce the agreement. This course teaches students how international environmental agreements are created, managed, and improved in order to improve environmental issues in different countries and international waters. Students will analyze and comment on existing agreements and create strategies for improving the agreements to strengthen agreements to be more effective in addressing environmental issues. Students learn about the stakeholders involved in creating and improving these agreements. Students will develop marketable analytical skills that help guide organizations toward more robust advocacy strategies designed to make the agreements more enforceable and effective in addressing environmental issues. Prerequisite: Recommended - EPM 4200.

**EPM 4200 Environmental Protection Law (4 Credits)**

This course provides an examination of the fundamental laws which protect our environment and health. Students will analyze the purpose, context, implementation, and implications of the most important laws, regulations, policies, and court cases that affect the environment, human health, and our economy. Coverage includes: National Environmental Policy Act (NEPA), Clean Air Act (CAA), Clean Water Act (CWA), Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Emergency Planning and Community Right-to-Know Act (EPCRA), related toxics laws, and species and habitat protection statutes. It provides an examination of the legal system and the roles of Congress, the President, executive agencies, states, and courts in shaping and implementing environmental laws. The course also asks students to apply this knowledge to current events in environmental policy and litigation.

**EPM 4220 Endangered Species and Wildlife (4 Credits)**

This course provides an examination of the basic principles, trends, challenges, and controversies surrounding the administration of maintaining certain wildlife species, specifically through the administration of the Endangered Species Act. Students gain an understanding of the roles and responsibilities of various federal, state and local agencies, environmental and wildlife interest groups, and other organizations involved in endangered species and wildlife management issues. This course will also apply the principles of human dimensions to understand the complex social systems at work to conserve endangered species.

**EPM 4230 Renewable and Alternative Energies (4 Credits)**

This course provides a well-rounded primer on energy as a resource and its importance in the economy and the world today. Students will examine renewable and alternative energies and alternative transportation fuels. This course analyzes issues surrounding the development, enforcement and application of energy regulatory policies.

**EPM 4232 Sustainability: Policy and Practice (4 Credits)**

This course teaches students how organizations practice sustainability and how they plan for, shape, and react to the emerging environmental policies necessary to limit global warming. The investment community continues its quest to identify strong sustainability organizations, making public reporting more important than ever. NGOs and governments are pushing for higher ambition. Students will learn to make sustainability reports more meaningful to garner support from NGOs and attract investors. Students will develop marketable analytical skills that help guide organizations toward more robust sustainability actions and reporting, or help NGOs evaluate corporate reports for strengths and gaps.



**EPM 4233 Sustainable Transportation (4 Credits)**

21st Century transportation planning on the local and global scale involves consideration of environmental policies and sustainable practices. Development of an efficient system for moving goods and people along highways, airways and public transit networks must coordinate with legal requirements governing automobile source emissions, water pollution, mitigation of congestion, and crisis management. Conflicts occur along political fault lines between public interest groups, environmental justice advocates, the business community, government regulators, and the ordinary commuter. Consideration is given to different fuel sources, including carbon-based, hydrogen, electricity, and biofuels. The course also examines fuel efficiency (CAFE) and trends in emission science and regulation.

**EPM 4234 Climate Change and Science (4 Credits)**

Global Warming" is a cause celebre, but how much do we really know about the science involved in studying the earth's climate? Moving beyond the social and political opinions espoused in the current debate on climate change, this course delves into the chemical and physical forces at play in the arena. This course covers scientific processes used in measuring climate dynamics, among them ozone chemistry, carbon and oxygen cycles, and heat and water budgets. It explores scales and methods for detecting climate change, including analyzing ice cores, instrumental records, and time series. Some attention will be dedicated to "climate forcing" caused by such things as orbital variations, volcanism, plate tectonics, and solar variability.

**EPM 4235 Green Building (4 Credits)**

Builders, developers and designers increasingly are promoting the use of green construction practices in the pursuit of healthier, smarter buildings. Students in this course examine sustainable building strategies and tools, including LEED (Leadership in Energy and Environmental Design), the nationally-accepted benchmark for the design, construction and operation of high-performance green buildings. LEED promotes a whole-building approach by recognizing performance in five areas: sustainable site development water savings, energy efficiency, materials selection and indoor air quality. What materials are best in the design and operation of green building? How can a designer or building owner make better use of power and water efficiency programs? What are the recent developments, trends and case studies of green buildings and materials?.

**EPM 4236 Nuclear, Hydrogen, and Energy Storage Technologies (4 Credits)**

The necessity and urgency of moving away from fossil fuels-based energy production to reduce global warming has been well documented. Renewable energy technologies (solar, wind, and water-based) have been widely embraced as alternative energy solutions. However, like all energy production technologies, renewable energy technologies have shortcomings that prevent them from being standalone energy production solutions. Nuclear and fuel cell energy production technologies address the shortcomings of renewable energy technologies and can be considered symbiotic options in the move away from fossil fuels. Improving energy storage technologies will also be required to complete this symbiosis. This course will examine renewable energy technologies shortcomings and how nuclear, fuel cell, and energy storage technologies may be implemented to further facilitate the move away from fossil fuels-based energy production.

**EPM 4238 Water and Food Sustainability (4 Credits)**

Concurrent food, water, and climate crises amidst widespread hunger and undernutrition have re-focused public attention on the deficiencies and complexities of global food and water systems. This course examines the science and sustainability of our water resources as well as food production with an emphasis on the connections between the two. Increasing water and food system sustainability requires working along multiple disciplines, reconnecting agriculture with ecological systems and ensuring that policies and institutions that impact food and water systems protect social equity and the environment. The course draws from interdisciplinary research and education bridging worldviews and values implicit in different disciplinary and theoretical perspectives. Linking theory and practice is also essential thus the course will incorporate multiple perspectives and case studies from local to global levels. Demand is growing for interdisciplinary scholars and other professionals who are equipped to analyze and address the complex challenges of sustainable water resources, sustainable food production, and water and food security. Students will synthesize information from water, food, and the environment from a systems perspective. They will examine the interactions between science, policy, and ethics and analyze the trade-offs and synergies between different objectives, solutions, and outcomes. Students will devise solutions to problems that incorporate the intricacies and interdependencies of water and food systems.

**EPM 4280 Resource Conservation and Recovery Act (RCRA) (4 Credits)**

The Resource Conservation and Recovery Act (RCRA) course is a detailed review of the Resource Conservation and Recovery Act that was passed in 1976 and has been continuously updated since that time. RCRA is also known as "the cradle to grave law" dealing with hazardous waste generation and disposal. This course not only covers the important parts of the regulation, but students will also learn how to navigate and practically apply the law and regulations.

**EPM 4355 Systems, Standards, and Certifications for Environmental Management (4 Credits)**

Students will analyze and apply common environmental management systems, which can be used to ensure and improve quality during the management of a wide range of environmental operations. They will synthesize this knowledge via a project which establishes portions of an environmental management system. Students will execute the plan-do-check-act cycle to improve quality. They will evaluate options to minimize environmental impacts using root cause analysis and generalize common system components that are necessary for an environmental organization to achieve its objectives (establishing environmental policy, establishing performance objectives, monitoring results, evaluating performance, understanding and managing risks, etc.) Course assignments will allow students to practice systemizing and standardizing environmental management processes to improve performance (common procedures, data management, analytical methods, performance monitoring, etc.) Throughout the course, students will discover that management systems beyond subject matter expertise are necessary to do well in environmental careers.

**EPM 4390 Environmental Policy Analysis (4 Credits)**

This course investigates key issues in environmental policy analysis, including the importance of environmental justice, federalism versus state policy, techniques of environmental assessment, the impacts of politics and case law on environmental policy, and policy decision-making. The class sets a foundation with an overview of the U.S. and international environmental movements. Students look at stakeholder engagement, policy formulation and implementation, and policy evaluation in different institutions. The course emphasizes the important role that the political and judicial process plays in the creation of policy solutions, and assesses the strengths and weaknesses of different techniques of environmental analysis including environmental impact assessments, modeling and simulation, sustainability analysis, and how best to weave environmental justice/equity throughout policy development and implementation.

**EPM 4400 Environmental Values and Ethics (4 Credits)**

Students examine ethical considerations in environmental management and decision making. Discussions cover personal versus organizational attitudes; cultural, economic, and historic values; science versus politics; and international and intergenerational policies. The course also explores various philosophies of humankind's relationship with the environment. Students are encouraged to develop and express a personal philosophy relative to their role in the regulatory, technical, scientific, and financial management of the environment.

**EPM 4465 Environmental Restoration and Waste Management (4 Credits)**

Environmental Restoration is the identification and elimination of hazardous materials from a designated site such that the risks to human health and the environment are reduced to an acceptable level for an intended future land use. This course examines successful environmental restoration activities that were used to reduce and mitigate risk associated with past operations of nuclear and nuclear-related facilities and the significant potential to release harmful contaminants. Environmental restoration effects on the ecological and human health risk assessments and analyses related to the transport, treatment, storage, and disposal of waste from the contaminated site are presented. Remediation processes for radioactive materials and other hazardous wastes and the eventual storage, processing, and disposal and the potential effect on humans and the environment is studied. An overview is given on the development of a radiological protection program for an EIS report. External and internal hazards: control measures and monitoring, and other important limits and measurements are explored.

**EPM 4500 Leadership for Environmental Managers (4 Credits)**

This course provides students with fundamental leadership skills with an emphasis on topics and contexts relevant to environmental professionals. It addresses three main subject areas: leadership principles necessary to positively influence their work environment; how to effectively communicate; and developing a vision and mission for their personal leadership success. Students will assess their own leadership attributes, characteristics, and skills and construct a personal leadership development plan. The class will make use of reading assignments, written assignments, video assignments, situational role-play, and class participation.

**EPM 4510 Environmental, and Health & Safety Management (4 Credits)**

This course presents the intricacies of establishing environmental and health and safety programs in the workplace. The course is divided into specific environmental and health and safety topics that are relevant to environmental and safety management. There are multiple topics that address the benefits and barriers to designing, implementing, and maintaining environmental and health and safety programs.

**EPM 4520 Occupational Safety and Health Act (OSHA) (4 Credits)**

This course provides an in-depth review of the laws and regulations that govern the safety and health of workers. The course is of value to students seeking to expand knowledge of the Occupational Safety and Health Act. Emphasis is on the areas of overlap between safety and environmental laws, OSHA's inspection and enforcement authority, employee and employer rights, record keeping requirements and an outline of labor's interest in OSHA cases. Current topics such as OSHA reform legislation and regulatory agenda are discussed.

**EPM 4525 Workplace Safety Management (4 Credits)**

This course introduces students to core elements in a health and safety management systems approach to identifying and preventing workplace injuries and illnesses. Students examine the five elements of developing an effective occupational health and safety management program. The course also explores the common challenges and obstacles encountered during the development and implementation of these programs. This course includes a general overview of common OSHA regulations, rights, and responsibilities for developing a safety and health program. The format of this class is highly interactive, affording students an opportunity to engage with case studies and their peers, as well as to practice developing health, safety, and environmental programs at their respective establishments.

**EPM 4610 Analytics I (4 Credits)**

Data and analytics are key for any business domain; data tells us about our customers and markets and analytics make information and knowledge out of data. It's now possible to be inundated with data but gain no new knowledge from it. Analytics help companies demonstrate their ESG behavior and its impact. Companies that can prove and display the environmental impact gain a market advantage. Analytics also demonstrate real environmental impact versus greenwashing. This course has a managerial focus rather than a technical one, though students will perform some data analytics in this course. It is designed to provide managers with sufficient background on the potential value of data analytics, the business process change associated with data analytics, and the underlying technologies, to enable them to interface effectively with analysts and data scientists.

**EPM 4615 Analytics II (4 Credits)**

Business professionals including those in environmental health and safety (EHS) management, use statistics every day in making decisions. In this graduate-level course, you will gain an overview of the data analytic process and data mining techniques used for discovery knowledge from datasets. The course is designed to highlight the practical aspects of data mining methods and their applications, rather than theoretical aspects of statistical machine learning or optimization. The course also introduces emerging trends in Data Analytics and their applications in decision making process on environmental issues such as sustainability which includes waste management, water, and energy conservation. In summary, data is now an integral part of our lives and to be successful in today's business landscape, we need to be able to leverage data to make critical business decisions on environmental sustainability. This course will teach students how to use data to make those decisions confidently. Prerequisite: EPM 4610.

**EPM 4620 Environmental Reporting Standards and Models (4 Credits)**

Students learn the reporting requirements of existing and emerging environmental reporting standards, e.g., SEC requirements, EU standards, NGO standards, Global Reporting Initiative environmental performance indicators, and Sustainability Accounting Standards Board recommendations, and how to craft mandatory and optional reports that conform to these standards and requirements.

**EPM 4625 Environmental Analysis and Reporting Project (4 Credits)**

This is the concluding class for the Environment Analytics and Reporting concentration and graduate certificate. The class centers on performing sophisticated investigations of sustainability-related data sets utilizing the tools and insights of the data analytics revolution. The focus of the course is on applying advanced data analytics techniques (e.g., data mining, predictive analytics, and prescriptive analytics) to support innovative approaches for organizational sustainability, business performance, stakeholder relations, and/or environmental policy. Students will engage in readings, develop an analysis project using Watson Analytics, and prepare a report covering conclusions and recommendations. Prerequisites: EPM 4610, 4615, and 4620.

**EPM 4701 Topics in EPM (2-5 Credits)**

The content of this course will vary each time it is offered. The topics may include time-sensitive issues in the field of environmental policy and management, elective courses that are not scheduled regularly during the course of the year, or advanced inquiry into core-course subjects. Each time the course is offered, the specific content will be announced in the quarterly course schedule. Depending on the subject matter, students may be required to have completed prerequisite courses.

**EPM 4705 Land Use Planning (4 Credits)**

This course provides a comprehensive examination of land use planning efforts by federal, state, and local governments. The legal authorities, responsibilities, and conflicts held by these governmental entities are examined in detail. The course examines the interrelationship between home rule authority, local zoning and planning requirements, and federal/state natural resource plans, as well as public participation in land use plans. Students will learn how to set goals and objectives for specific components of ecosystems, design projects to achieve desired ecologic conditions, and use new technologies in planning.

**EPM 4710 Environmental Project Management (4 Credits)**

In this course, students will learn about project management concepts and gain practical experience applying basic project management skills. As a part of class assignments, students will work on selected projects while covering the entire project management process, from project initiation to close-out. These projects will cover a range of environmental and / or sustainability project management perspectives, including governmental, industry, and advocacy or non-profit organizations. By the end of the course, students should have a strong understanding of project management skills and terminology, and be able to successfully complete some requirements for project manager certification. They will also understand the similarities and differences in project management for environmental professionals. Please note that while this course will provide a foundation in project management, it will not cover all concepts and terminology in depth or provide the required work hours necessary for project manager certification.

**EPM 4901 Capstone Project (4 Credits)**

The Capstone Project provides students the opportunity to research a topic, problem, or issue within their field of study, and work individually with a Capstone advisor. Similar in weight to a thesis, but more flexible, this final project will synthesize and apply core concepts acquired from the program. The student will select an appropriate Capstone advisor who is knowledgeable in the field of study to work closely with and whom can guide the research project. Evaluation will be focused on the quality and professionalism of applied research and writing; critical and creative thinking; problem-solving skills; knowledge of research design, method, and implementation; and contribution to the field and topic of study. Please see the Capstone Guidelines for additional details. Prerequisites: A Capstone Proposal that has been approved by both the Capstone Advisor and the Academic Director, acceptance as a degree candidate, completion of at least 40 quarter-hours (including all core courses) with a cumulative GPA of 3.0 or better.

**EPM 4902 Capstone Seminar (4 Credits)**

The purpose of the Capstone Seminar is to develop and apply transferable professional skills to persuade decision-makers. The course requires students to identify a Capstone subject matter, develop a premise, and argue for an applied solution. Students will conduct research to create a strong argument that supports their premise by considering purpose, need, and audience and will provide evidence that the premise can be implemented. Tasks include gathering and evaluating appropriate source information, writing a strong solution in support of the premise, and then defending the solution. Students will write a Capstone paper and prepare a presentation suitable for professional exposure through publication and/or presentation.

**EPM 4910 Research Practices and Applications (4 Credits)**

This course develops competencies including principles and practices of: academic inquiry, writing, and ethics. Students will complete Institutional Review Board (IRB) training, data collection, analysis, and evaluation; and synthesize application of peer-reviewed literature. Competencies will be applied and integrated throughout the course of study and demonstrated in the culminating work of the master's degree. Competencies are additionally developed for use in professional employment settings.

**EPM 4980 Internship (0-4 Credits)**

The EPM Internship is designed to offer students a purposeful experience in the field of environmental policy and management. The internship is an individualized learning experience and a training plan is created for each student in conjunction with the internship site to provide experiences related to the skills and knowledge covered in the certificate and master's programs.

**EPM 4991 Independent Study (1-8 Credits)**

This is an advanced course for students wishing to pursue an independent course of study. The student must be accepted in a degree program, have earned a grade point average of 3.0 or better, obtained the approval of the department director, and have completed the Independent Study form and filed it with all appropriate offices before registering for the independent study. Independent Study is offered only on a for-credit basis.

**Courses****EPM 4001 Environmental Foundations and Principles (4 Credits)**

This course investigates the field's history, current activities and issues, ethics, systems, and economics; and an overview of key necessary knowledge and skills to work and learn within the field. Students will: gain a strong historical understanding of how environmental and natural resource issues have influenced economic development and societal growth throughout the ages; learn about the complexity of environmental issues and the value of interdisciplinary and systems thinking when applied to making decisions about natural resource usage; understand the role that empirical science, policy analysis and advocacy play in how governments and private companies address complex environmental issues; become aware of the stressors that ecosystems around the globe are experiencing and the value of multidisciplinary approaches to addressing these challenges; and understand the diverse organizations and employment opportunities available in the environmental field.

**EPM 4002 Integrated Environmental Systems (4 Credits)**

The earth as a whole is comprised of many systems that affect the environment. Some have large wide ranging reach, while others are restricted to a relatively small area. Included is everything in between. Actions in one area or system may have unintended secondary and tertiary consequences in that system or others. This course uses various tools and materials to study a few environmental systems and determine connections, consequences, impacts, barriers, decision making, life cycle costs, etc.

**EPM 4003 Environmental Finance and Economics (4 Credits)**

The class provides an overview of economics, finance, and sustainability in an environmental and social context. The class examines traditional and alternative performance metrics, such as "Green GDP", and explores the relationship between risk and return, return on investments, including environmental, social, and governance (ESG) investing. The course emphasizes relationships between business management and environmental quality, and provides students with a financial and economic decision-making framework for understanding and analyzing environmental issues. The course utilizes a case-study approach to cover economic and finance concepts in real world scenarios involving natural resource and environmental decisions. Students will leave this course with the ability to confidently converse regarding sustainability in a finance and economics context.

**EPM 4040 Wetland Ecology and Management (4 Credits)**

This course provides a detailed examination of wetlands and deepwater habitats of the United States, with an emphasis on wetlands. The definition, identification, classification, and management requirements of various wetland communities are stressed. Students identify and classify wetlands and analyze wetlands in the context of federal, state, and local regulatory processes. Students evaluate activities with adverse and beneficial effects to wetlands. Students explore concepts related to wetland management in the public, private and non-profit sectors.

**EPM 4108 Impacts of Recreational Use (4 Credits)**

The practical and managerial theoretical basis of recreational use of public and private lands is examined in the context of ecosystem management. #The statutory and regulatory policies and current issues regarding the management and use of lands in wilderness systems, wild and scenic river corridors, parks, and open spaces are discussed in detail. #The impacts of recreational uses on the environment and conflicts with other uses of land and resources are discussed. Land use planning policies and decisions, decisions which respond to recreation, wilderness, wilderness and open space issues will be examined. At this end of this course, students will create a visitor impact use assessment using the Inter-agency Visitor Use Management Framework (IVUMF).

**EPM 4115 Introduction to Ecology (4 Credits)**

This course examines the concepts of the ecosystem, populations, communities, the flows of energy, material cycles, and biotic diversity. Students will analyze ecological concepts including the unity of organisms and inseparable interactions with the physical environment. Class discussions include topics such as the formation, distribution, and organization of ecological communities, plant succession, and nutrient cycling. Students will also evaluate aspects of evolutionary trends within plant and animal communities as they relate to ecological principles. The goals of this class are to transmit the principles, methods, and vocabulary of ecology. Students will critically analyze and discuss issues concerning population ecology, community ecology, and ecosystem ecology. Students will relate concepts of ecology to their personal and professional interests in environmental issues. The ability and necessity of communicating ecological principles within a commercial and/or regulatory environment will be developed. An assignment will provide experience in the collection, interpretation, and analysis of data. The skills learned will be relevant in environmental reporting, discussions, and presentations within a professional environment.

**EPM 4120 Introduction to Natural Resource Management (4 Credits)**

In this course, students gain an understanding of the roles and responsibilities of federal, state, and local agencies, environmental and wildlife interest groups, and other organizations involved in natural resources management. Students will learn the content and purpose of natural resources management plans, then apply this knowledge to assess and develop policies that will improve natural resources management.

**EPM 4140 National Environmental Policy Act (NEPA) (4 Credits)**

This course examines the National Environmental Policy Act (NEPA) and its applications. Students will gain both academic and practical experience in studying the intent and application of NEPA by federal agencies. Students will gain practical application by critically reviewing various NEPA documents and examining the components of NEPA documents. Students will prepare an Environmental Assessment (EA) of their choosing for their final project in this course.

**EPM 4150 Global Environmental Law and Policy (4 Credits)**

International environmental agreements provide a mechanism to address domestic environmental issues caused by foreign countries. However, some agreements have been more successful than others based on various aspects within the agreement and a country's domestic actions taken to enforce the agreement. This course teaches students how international environmental agreements are created, managed, and improved in order to improve environmental issues in different countries and international waters. Students will analyze and comment on existing agreements and create strategies for improving the agreements to strengthen agreements to be more effective in addressing environmental issues. Students learn about the stakeholders involved in creating and improving these agreements. Students will develop marketable analytical skills that help guide organizations toward more robust advocacy strategies designed to make the agreements more enforceable and effective in addressing environmental issues. Prerequisite: Recommended - EPM 4200.

**EPM 4200 Environmental Protection Law (4 Credits)**

This course provides an examination of the fundamental laws which protect our environment and health. Students will analyze the purpose, context, implementation, and implications of the most important laws, regulations, policies, and court cases that affect the environment, human health, and our economy. Coverage includes: National Environmental Policy Act (NEPA), Clean Air Act (CAA), Clean Water Act (CWA), Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Emergency Planning and Community Right-to-Know Act (EPCRA), related toxics laws, and species and habitat protection statutes. It provides an examination of the legal system and the roles of Congress, the President, executive agencies, states, and courts in shaping and implementing environmental laws. The course also asks students to apply this knowledge to current events in environmental policy and litigation.

**EPM 4220 Endangered Species and Wildlife (4 Credits)**

This course provides an examination of the basic principles, trends, challenges, and controversies surrounding the administration of maintaining certain wildlife species, specifically through the administration of the Endangered Species Act. Students gain an understanding of the roles and responsibilities of various federal, state and local agencies, environmental and wildlife interest groups, and other organizations involved in endangered species and wildlife management issues. This course will also apply the principles of human dimensions to understand the complex social systems at work to conserve endangered species.

**EPM 4230 Renewable and Alternative Energies (4 Credits)**

This course provides a well-rounded primer on energy as a resource and its importance in the economy and the world today. Students will examine renewable and alternative energies and alternative transportation fuels. This course analyzes issues surrounding the development, enforcement and application of energy regulatory policies.

**EPM 4232 Sustainability: Policy and Practice (4 Credits)**

This course teaches students how organizations practice sustainability and how they plan for, shape, and react to the emerging environmental policies necessary to limit global warming. The investment community continues its quest to identify strong sustainability organizations, making public reporting more important than ever. NGOs and governments are pushing for higher ambition. Students will learn to make sustainability reports more meaningful to garner support from NGOs and attract investors. Students will develop marketable analytical skills that help guide organizations toward more robust sustainability actions and reporting, or help NGOs evaluate corporate reports for strengths and gaps.

**EPM 4233 Sustainable Transportation (4 Credits)**

21st Century transportation planning on the local and global scale involves consideration of environmental policies and sustainable practices. Development of an efficient system for moving goods and people along highways, airways and public transit networks must coordinate with legal requirements governing automobile source emissions, water pollution, mitigation of congestion, and crisis management. Conflicts occur along political fault lines between public interest groups, environmental justice advocates, the business community, government regulators, and the ordinary commuter. Consideration is given to different fuel sources, including carbon-based, hydrogen, electricity, and biofuels. The course also examines fuel efficiency (CAFE) and trends in emission science and regulation.

**EPM 4234 Climate Change and Science (4 Credits)**

Global Warming" is a cause celebre, but how much do we really know about the science involved in studying the earth's climate? Moving beyond the social and political opinions espoused in the current debate on climate change, this course delves into the chemical and physical forces at play in the arena. This course covers scientific processes used in measuring climate dynamics, among them ozone chemistry, carbon and oxygen cycles, and heat and water budgets. It explores scales and methods for detecting climate change, including analyzing ice cores, instrumental records, and time series. Some attention will be dedicated to "climate forcing" caused by such things as orbital variations, volcanism, plate tectonics, and solar variability.

**EPM 4235 Green Building (4 Credits)**

Builders, developers and designers increasingly are promoting the use of green construction practices in the pursuit of healthier, smarter buildings. Students in this course examine sustainable building strategies and tools, including LEED (Leadership in Energy and Environmental Design), the nationally-accepted benchmark for the design, construction and operation of high-performance green buildings. LEED promotes a whole-building approach by recognizing performance in five areas: sustainable site development water savings, energy efficiency, materials selection and indoor air quality. What materials are best in the design and operation of green building? How can a designer or building owner make better use of power and water efficiency programs? What are the recent developments, trends and case studies of green buildings and materials?.

**EPM 4236 Nuclear, Hydrogen, and Energy Storage Technologies (4 Credits)**

The necessity and urgency of moving away from fossil fuels-based energy production to reduce global warming has been well documented. Renewable energy technologies (solar, wind, and water-based) have been widely embraced as alternative energy solutions. However, like all energy production technologies, renewable energy technologies have shortcomings that prevent them from being standalone energy production solutions. Nuclear and fuel cell energy production technologies address the shortcomings of renewable energy technologies and can be considered symbiotic options in the move away from fossil fuels. Improving energy storage technologies will also be required to complete this symbiosis. This course will examine renewable energy technologies shortcomings and how nuclear, fuel cell, and energy storage technologies may be implemented to further facilitate the move away from fossil fuels-based energy production.

**EPM 4238 Water and Food Sustainability (4 Credits)**

Concurrent food, water, and climate crises amidst widespread hunger and undernutrition have re-focused public attention on the deficiencies and complexities of global food and water systems. This course examines the science and sustainability of our water resources as well as food production with an emphasis on the connections between the two. Increasing water and food system sustainability requires working along multiple disciplines, reconnecting agriculture with ecological systems and ensuring that policies and institutions that impact food and water systems protect social equity and the environment. The course draws from interdisciplinary research and education bridging worldviews and values implicit in different disciplinary and theoretical perspectives. Linking theory and practice is also essential thus the course will incorporate multiple perspectives and case studies from local to global levels. Demand is growing for interdisciplinary scholars and other professionals who are equipped to analyze and address the complex challenges of sustainable water resources, sustainable food production, and water and food security. Students will synthesize information from water, food, and the environment from a systems perspective. They will examine the interactions between science, policy, and ethics and analyze the trade-offs and synergies between different objectives, solutions, and outcomes. Students will devise solutions to problems that incorporate the intricacies and interdependencies of water and food systems.

**EPM 4280 Resource Conservation and Recovery Act (RCRA) (4 Credits)**

The Resource Conservation and Recovery Act (RCRA) course is a detailed review of the Resource Conservation and Recovery Act that was passed in 1976 and has been continuously updated since that time. RCRA is also known as "the cradle to grave law" dealing with hazardous waste generation and disposal. This course not only covers the important parts of the regulation, but students will also learn how to navigate and practically apply the law and regulations.

**EPM 4355 Systems, Standards, and Certifications for Environmental Management (4 Credits)**

Students will analyze and apply common environmental management systems, which can be used to ensure and improve quality during the management of a wide range of environmental operations. They will synthesize this knowledge via a project which establishes portions of an environmental management system. Students will execute the plan-do-check-act cycle to improve quality. They will evaluate options to minimize environmental impacts using root cause analysis and generalize common system components that are necessary for an environmental organization to achieve its objectives (establishing environmental policy, establishing performance objectives, monitoring results, evaluating performance, understanding and managing risks, etc.) Course assignments will allow students to practice systemizing and standardizing environmental management processes to improve performance (common procedures, data management, analytical methods, performance monitoring, etc.) Throughout the course, students will discover that management systems beyond subject matter expertise are necessary to do well in environmental careers.

**EPM 4390 Environmental Policy Analysis (4 Credits)**

This course investigates key issues in environmental policy analysis, including the importance of environmental justice, federalism versus state policy, techniques of environmental assessment, the impacts of politics and case law on environmental policy, and policy decision-making. The class sets a foundation with an overview of the U.S. and international environmental movements. Students look at stakeholder engagement, policy formulation and implementation, and policy evaluation in different institutions. The course emphasizes the important role that the political and judicial process plays in the creation of policy solutions, and assesses the strengths and weaknesses of different techniques of environmental analysis including environmental impact assessments, modeling and simulation, sustainability analysis, and how best to weave environmental justice/equity throughout policy development and implementation.

**EPM 4400 Environmental Values and Ethics (4 Credits)**

Students examine ethical considerations in environmental management and decision making. Discussions cover personal versus organizational attitudes; cultural, economic, and historic values; science versus politics; and international and intergenerational policies. The course also explores various philosophies of humankind's relationship with the environment. Students are encouraged to develop and express a personal philosophy relative to their role in the regulatory, technical, scientific, and financial management of the environment.

**EPM 4465 Environmental Restoration and Waste Management (4 Credits)**

Environmental Restoration is the identification and elimination of hazardous materials from a designated site such that the risks to human health and the environment are reduced to an acceptable level for an intended future land use. This course examines successful environmental restoration activities that were used to reduce and mitigate risk associated with past operations of nuclear and nuclear-related facilities and the significant potential to release harmful contaminants. Environmental restoration effects on the ecological and human health risk assessments and analyses related to the transport, treatment, storage, and disposal of waste from the contaminated site are presented. Remediation processes for radioactive materials and other hazardous wastes and the eventual storage, processing, and disposal and the potential effect on humans and the environment is studied. An overview is given on the development of a radiological protection program for an EIS report. External and internal hazards: control measures and monitoring, and other important limits and measurements are explored.

**EPM 4500 Leadership for Environmental Managers (4 Credits)**

This course provides students with fundamental leadership skills with an emphasis on topics and contexts relevant to environmental professionals. It addresses three main subject areas: leadership principles necessary to positively influence their work environment; how to effectively communicate; and developing a vision and mission for their personal leadership success. Students will assess their own leadership attributes, characteristics, and skills and construct a personal leadership development plan. The class will make use of reading assignments, written assignments, video assignments, situational role-play, and class participation.

**EPM 4510 Environmental, and Health & Safety Management (4 Credits)**

This course presents the intricacies of establishing environmental and health and safety programs in the workplace. The course is divided into specific environmental and health and safety topics that are relevant to environmental and safety management. There are multiple topics that address the benefits and barriers to designing, implementing, and maintaining environmental and health and safety programs.

**EPM 4520 Occupational Safety and Health Act (OSHA) (4 Credits)**

This course provides an in-depth review of the laws and regulations that govern the safety and health of workers. The course is of value to students seeking to expand knowledge of the Occupational Safety and Health Act. Emphasis is on the areas of overlap between safety and environmental laws, OSHA's inspection and enforcement authority, employee and employer rights, record keeping requirements and an outline of labor's interest in OSHA cases. Current topics such as OSHA reform legislation and regulatory agenda are discussed.

**EPM 4525 Workplace Safety Management (4 Credits)**

This course introduces students to core elements in a health and safety management systems approach to identifying and preventing workplace injuries and illnesses. Students examine the five elements of developing an effective occupational health and safety management program. The course also explores the common challenges and obstacles encountered during the development and implementation of these programs. This course includes a general overview of common OSHA regulations, rights, and responsibilities for developing a safety and health program. The format of this class is highly interactive, affording students an opportunity to engage with case studies and their peers, as well as to practice developing health, safety, and environmental programs at their respective establishments.

**EPM 4610 Analytics I (4 Credits)**

Data and analytics are key for any business domain; data tells us about our customers and markets and analytics make information and knowledge out of data. It's now possible to be inundated with data but gain no new knowledge from it. Analytics help companies demonstrate their ESG behavior and its impact. Companies that can prove and display the environmental impact gain a market advantage. Analytics also demonstrate real environmental impact versus greenwashing. This course has a managerial focus rather than a technical one, though students will perform some data analytics in this course. It is designed to provide managers with sufficient background on the potential value of data analytics, the business process change associated with data analytics, and the underlying technologies, to enable them to interface effectively with analysts and data scientists.

**EPM 4615 Analytics II (4 Credits)**

Business professionals including those in environmental health and safety (EHS) management, use statistics every day in making decisions. In this graduate-level course, you will gain an overview of the data analytic process and data mining techniques used for discovery knowledge from datasets. The course is designed to highlight the practical aspects of data mining methods and their applications, rather than theoretical aspects of statistical machine learning or optimization. The course also introduces emerging trends in Data Analytics and their applications in decision making process on environmental issues such as sustainability which includes waste management, water, and energy conservation. In summary, data is now an integral part of our lives and to be successful in today's business landscape, we need to be able to leverage data to make critical business decisions on environmental sustainability. This course will teach students how to use data to make those decisions confidently. Prerequisite: EPM 4610.

**EPM 4620 Environmental Reporting Standards and Models (4 Credits)**

Students learn the reporting requirements of existing and emerging environmental reporting standards, e.g., SEC requirements, EU standards, NGO standards, Global Reporting Initiative environmental performance indicators, and Sustainability Accounting Standards Board recommendations, and how to craft mandatory and optional reports that conform to these standards and requirements.

**EPM 4625 Environmental Analysis and Reporting Project (4 Credits)**

This is the concluding class for the Environment Analytics and Reporting concentration and graduate certificate. The class centers on performing sophisticated investigations of sustainability-related data sets utilizing the tools and insights of the data analytics revolution. The focus of the course is on applying advanced data analytics techniques (e.g., data mining, predictive analytics, and prescriptive analytics) to support innovative approaches for organizational sustainability, business performance, stakeholder relations, and/or environmental policy. Students will engage in readings, develop an analysis project using Watson Analytics, and prepare a report covering conclusions and recommendations. Prerequisites: EPM 4610, 4615, and 4620.

**EPM 4701 Topics in EPM (2-5 Credits)**

The content of this course will vary each time it is offered. The topics may include time-sensitive issues in the field of environmental policy and management, elective courses that are not scheduled regularly during the course of the year, or advanced inquiry into core-course subjects. Each time the course is offered, the specific content will be announced in the quarterly course schedule. Depending on the subject matter, students may be required to have completed prerequisite courses.

**EPM 4705 Land Use Planning (4 Credits)**

This course provides a comprehensive examination of land use planning efforts by federal, state, and local governments. The legal authorities, responsibilities, and conflicts held by these governmental entities are examined in detail. The course examines the interrelationship between home rule authority, local zoning and planning requirements, and federal/state natural resource plans, as well as public participation in land use plans. Students will learn how to set goals and objectives for specific components of ecosystems, design projects to achieve desired ecologic conditions, and use new technologies in planning.

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