Environmental Technology (ET)

ET 105 Introduction to Environmental Regulations (3 credit hours)
ET 105 is a 3-hour lecture class, required of all environmental technology majors. The course will introduce students to the major federal and state environmental regulations with emphasis on air, water, waste (non-hazardous, hazardous) and toxic substances. ET 105 will also introduce the student to voluntary environmental standards incorporating regulatory compliance into business planning and operations, as well as compliance audits. The course will consist of a mixture of lectures, student discussions of material, application assignments, case studies, and media presentations.

Typically offered in Spring only

ET 120 Introduction to Renewable Energy Technologies and Assessments (3 credit hours)
Overview of the various renewable energy assessment technologies. Students will learn what assessments and measurements can be taken to determine if renewable energy technologies will be effective in a particular location. Topics include biomass and biofuels, geothermal systems, solar thermal systems, photovoltaics, wind energy, and hydroelectric.

Typically offered in Spring only

ET 201 Environmental Technology Laboratory I (1 credit hours)
Use of field and laboratory instrumentation for monitoring water quantity and quality. Management, analysis, interpretation, and oral and written reporting of complex environmental data sets. Hands-on, real-world experience in water quality monitoring and maintenance. Required field trips may extend beyond class time.

Typically offered in Fall only

ET 202 Environmental Technology Laboratory II (1 credit hours)
Use of field and laboratory instrumentation for monitoring plants, soils, and natural systems. Management, analysis, interpretation, and oral and written reporting of complex environmental datasets. Hands-on, real-world experience in plant and soil quality monitoring and maintenance. Required field trips may extend beyond class time.

Typically offered in Spring only

ET 203 Pollution Prevention (1 credit hours)
This course studies the prevention of the pollution of air, water, and terrestrial ecosystems. State of the art technological solutions are discussed. The social, economic, legal and ethical dimensions of pollution prevention are integrated into the scientific and technological challenges facing developed and developing economies.

Prerequisite: ES 100
Typically offered in Fall only

ET 220 Solar Photovoltaics Assessment (3 credit hours)
This course introduces specific elements in photovoltaic (PV) systems technologies including efficiency, modules, inverters, charge controllers, batteries, and system installation. Topics include National Electric Code (NEC), electrical specifications, photovoltaic system components, array design and power integration requirements that combine to form a unified structure. upon completion, students should be able to demonstrate an understanding of various photovoltaic designs and proper installation of NEC compliant solar electric power systems.

Prerequisite: ET 120
Typically offered in Fall only

ET 255 Hydro, Wind, and Bioenergy Assessment (3 credit hours)
Overview of the historical and current role of wind, hydro-electric, and bioenergy power technologies globally and the direction of each sector's evolution for the future particularly in the USA. The course emphasizes the technology behind power generation for wind, hydro, and bioenergy sectors. Students will evaluate policy and permitting issues and, consequently, determine if a site is appropriate for implementation of either or all of these technologies.

Prerequisite: ET 120
Typically offered in Spring only

ET 262 Renewable Energy Adoption: Barriers and Incentives (3 credit hours)
The understanding of the economic, social, and legal barriers and incentives to renewable energy adoption is an important facet to helping renewable energies reach their potential. This course explores mechanisms that can be used and that have been used successfully in the US and in other parts of the world to remove those barriers and to promote greater use of renewable resources, particularly in rural areas and on agricultural and forested lands.

Typically offered in Fall only

ET 293 Independent Study in Environmental Technology & Management (1-6 credit hours)
Independent Study for Environmental Technology & Management students at the freshman and sophomore level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a "Course Agreement for Students Enrolled in Non-Standard Courses" be completed by the student and faculty member prior to registration by the department.

Typically offered in Summer only

ET 294 Independent Study in Environmental Technology & Management (1-6 credit hours)
Independent Study for Environmental Technology & Management students at the freshman and sophomore level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a "Course Agreement for Students Enrolled in Non-Standard Courses" be completed by the student and faculty member prior to registration by the department.

Typically offered in Summer only

ET 295 Special Topics in Environmental Technology & Management (1-6 credit hours)
Special Topics in Environmental Technology & Management at the 200 Level for offering courses on an experimental basis.

Typically offered in Fall, Spring, and Summer

ET 301 Environmental Technology Laboratory III (1 credit hours)
Assessment of and response to environmental hazards caused by hazardous materials releases. Regulatory requirements associated with hazardous materials releases. Utilization of chemical protective clothing and respiratory protection. Students passing the class will be able test to receive Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. Required field trips may extend beyond lab time.

Typically offered in Fall only

ET 302 Environmental Technology Laboratory IV (1 credit hours)
Use of field and laboratory instrumentation for monitoring outdoor and indoor air quality. Management, analysis, interpretation, and oral and written reporting of complex environmental data sets. Hands-on, real-world experience in air quality monitoring and maintenance. Required field trips may extend beyond class time.

Typically offered in Spring only

ET 303 Laboratory Safety Systems and Management (1 credit hours)
Theory and practice of regulation, management, and auditing of laboratory safety. Students passing the class will be able test to receive Occupational Safety and Health Administration (OSHA) certification. Laboratory field trips may extend beyond class time.

Typically offered in Spring only

ET 310 Environmental Monitoring and Analysis (3 credit hours)
Theory and application of fundamental frameworks for defensible environmental monitoring and analysis for chemicals of concern (COCs) in soils, sediments, waters, and organisms. Course content covers the theory and application of chemical, physical, and biological monitoring of dispersed chemicals of concern and how professionals plan, design, and execute environmental sampling and monitoring programs to produce defensible data for decision-making.

Prerequisite: CH 101 and CH 102 and BIO 181; Corequisite: CH 220 and CH 220 or CH 221 and CH 222
Typically offered in Spring only

ET 320/MEA 320 Fundamentals of Air Pollution (3 credit hours)
Students will learn fundamental concepts in air pollution and the application of those concepts for compliance with air quality regulations. Topics include air pollutants, their properties, how they are emitted, and relevant atmospheric chemistry and physics processes, National Ambient Air Quality Standards (NAAQS) and how compliance with those regulations is maintained.

Prerequisite: MA 121 or MA 131 or MA 141, CH 101/102, PY 131 or PY 201 or PY 205 or PY 211; Recommended: CH 220/222 or CH 221/222
Typically offered in Spring only

ET 330 Environmental Technology Practicum (3 credit hours)
Preparation for practicum, including resume writing, interviewing skills, cover letters, and practicum search techniques and resources. Professional practice as an environmental technologist. Written and oral communications of the practicum experience.

Typically offered in Fall, Spring, and Summer

ET 401 Environmental Technology Laboratory V (1 credit hours)
Scientific and legal definitions of brownfield and EPA Superfund sites. Physical, chemical, and biological methods for remediating contaminated sites. Impacts of hazardous waste management on public and private sector organizations. Field trips to public and private brownfield and Superfund remediation sites to examine real-world applications of principles. Required field trips may extend beyond class time.

Typically offered in Fall only

ET 455 Adaptive Management and Governance (3 credit hours)
Some environmental and natural resource problems are more difficult to resolve than others. The purpose of this course is to understand the factors that condition intractable or "wicked" environmental and natural resources conflicts. These factors include narrow conceptions of science, rigid bureaucratic structures and narrow policy targets. We also explore some of the alternatives for addressing intractable environmental and natural resource problems- including adaptive management and governance.

Junior standing or above
Typically offered in Fall only

ET 460 Practice of Environmental Technology (3 credit hours)
This capstone course will provide the opportunity to actively learn and apply the theory and practice of environmental project management and monitoring in order to perform a baseline Environmental Management System (EMS) assessment. EMS requires data collection, data analysis, report preparation, and professional recommendations to organizations on how to structure an EMS that conforms to internationally recognized guidelines and standards. Environmental Management Systems are proven tools specifically designed to help organizations manage their activities to meet their environmental policies and goals. Project management and EMS work skills are transferable across private industry, government, and not-for-profit organizations. This course will provide participants opportunities to advance work skills in project planning, stakeholder engagement, budgeting, and resource management when developing EMS initiatives. Course participants, as teams, will create and execute an EMS project work plan through practical hands-on experiences, local field-site visits, class exercises, and relevant case studies.

Prerequisite: ET 310 or SSC 442; and ET Senior Only
Typically offered in Spring only

ET 493 Independent Study in Environmental Technology & Management (1-6 credit hours)
Independent Study for Environmental Technology & Management students at the advanced level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a "Course Agreement for Students Enrolled in Non-Standard Courses" be completed by the student and faculty member prior to registration by the department.

Typically offered in Fall, Spring, and Summer

ET 494 Independent Study in Environmental Technology & Management (1-6 credit hours)
Independent Study for Environmental Technology & Management students at the advanced level developed under the direction of a faculty member. Individualized/Independent Study and Research courses require a "Course Agreement for Students Enrolled in Non-Standard Courses" be completed by the student and faculty member prior to registration by the department.

Typically offered in Summer only

ET 495 Special Topics in Environmental Technology & Management (1-6 credit hours)
Special Topics in Environmental Technology & Management at the 400 level for offering courses on an experimental basis.

Typically offered in Fall, Spring, and Summer