ENVIRONMENTAL STUDIES (ENVI)

**ENVI F101  Introduction to Environmental Science**
3 Credits
Offered Spring
Introduces the interconnected topics that make up environmental science. By exploring Earth's systems, environmental questions are investigated such as how to sustainably use natural resources and the influence of population growth on ecosystems. The course takes a holistic approach to reinforce scientific principles. Key topics covered include ecosystem functions, energy, biodiversity, resource management, landscape alteration and climate change.

*Recommended:* F100-level biology, chemistry or geology class.

**Lecture + Lab + Other:** 3 + 0 + 0

**ENVI F110  Introduction to Water Quality I: Measurement**
1 Credit
Offered Spring
Introduces students to standard water quality methods used and applies them to rural Alaska. Students will become familiar with EPA water quality standards and programs that help preserve water quality in rural communities. Key topics covered include: stream ecology, wastewater management, storm water runoff and data analysis.

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F111  Introduction to Water Quality II: Monitoring and Assessment**
1 Credit
Offered As Demand Warrants
Course builds upon methods learned in ENVI F110 with emphasis placed upon data quality objectives, electronic storage of data, and information analysis and reporting. Methods and equipment used for surface water monitoring will be introduced. Students start the process of developing an EPA approved Quality Assurance Project Plan for surface water quality monitoring.

*Prerequisites:* ENVI F110.

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F112  Introduction to Water Quality III: Data Quality Assurance**
1 Credit
Offered As Demand Warrants
Students participating in this class will review proper use of surface water quality testing equipment and calibration and operation methods learned in ENVI F110 and ENVI F111. Emphasis in this class will be placed on conducting data quality assurance measures that meet data quality objectives, writing and following a data Quality Assurance Project Plan (QAPP), and data analysis and reporting. Students will continue to develop their own U.S. EPA approved QAPP for surface water quality monitoring.

*Prerequisites:* ENVI F111.

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F115  Rural Solid and Hazardous Waste Management**
1 Credit
Offered as Demand Warrants
An overview of solid and hazardous waste management focusing on rural Alaskan communities. Topics covered include: workplace safety, worker roles, recycling facility operation, solid waste composting, hazardous material and waste inventorying, toxicology principles, risk assessment, hazardous site community open dumpsite assessment and the implications of the National Environmental Policy Act.

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F116  Rural Alaska Landfill Operator**
1 Credit
Offered as Demand Warrants
Covers best practices in managing rural landfills in compliance with State of Alaska regulations and guidelines with an emphasis on operator and public safety. This course is designed to train operators for rural Alaska Class II and Class III landfills and passing grade results in formal recognition by the Solid Waste Association of North America-Alaska (SWANA-Alaska).

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F117  Community Spill Response**
1 Credit
Offered as Demand Warrants
Overview of the responses to petroleum and other spills that threaten community health with emphasis placed upon the issues, techniques and the basic elements of spill response in Alaskan communities. Topics include: storage tanks above and underground, spill contamination site treatment, state and federal governmental regulations related to spills, spill reporting/incident action plans, and practical procedures in spill response.

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F120  Home Energy Basics**
1 Credit
Offered Fall and Spring
Basics of space heating and electricity use and production for Alaskan homes. Main topics include fundamentals of physics related to home energy, lighting and appliances, energy bills, building science, retrofits, home renewable energy systems. Course emphasizes how to decrease fossil fuel consumption of homes.

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F121  Building Ventilation and Energy**
1 Credit
Offered Spring
Basics of indoor air quality and its relationship to ventilation and energy use in buildings. Main topics include types of indoor air pollutants; basic science related to moisture, condensation, and mold; and heat recovery ventilation. Course emphasizes practical ways of how homeowners can maintain healthy indoor air while keeping their energy bill low.

**Lecture + Lab + Other:** 1 + 0 + 0

**ENVI F122  Energy Efficient Building Design and Simulation**
1 Credit
Offered Spring
In this course, students gain basic practical knowledge related to the process of designing energy efficient buildings, as applied to both new construction and retrofits. Main topics covered include basic building science, principles and techniques of energy efficient construction, and building energy simulations.

**Lecture + Lab + Other:** 1 + 0 + 0
ENVI F130  Introduction to the National Environmental Policy Act
1 Credit
Offered Spring
Provides a brief introduction to the National Environmental Policy Act (NEPA). This course will explain what community members need to do to be heard in the NEPA process with special emphasis on public involvement and Environmental Impact Analysis (EIA). The course covers the roles and the content of scoping and Environmental Assessments in relation to key natural resource development projects in rural Alaska.

Lecture + Lab + Other: 1 + 0 + 0

ENVI F150  Viewpoints in Environmental Studies
1 Credit
Offered As Demand Warrants
Discussions and activities will focus on how scientists or research technicians evaluate environmental issues. The course is intended for first year college students and community members. Specific topics may include sustainability, resource development, ecosystem management, indigenous viewpoints, building technology, appropriate energy applications, and analysis of data. Topics announced prior to each offering and course may be repeated for credit towards a certificate or degree program to a maximum of 3 credits.

Lecture + Lab + Other: 1 + 0 + 0

ENVI F160  Internship in Environmental Studies
1-2 Credits
Offered As Demand Warrants
Under the guidance of a UAF Bristol Bay Campus-approved agency or business (public or private that monitors, tests, analyzes or studies the environment), students gain supervised pre-professional experience in environmental studies. The intern will explore the interdisciplinary aspects of field or laboratory research, build practical expertise and make contacts. Internships make one to ten weeks of full-time commitment to the agency or business and when completed make public presentations on the experience.

Prerequisites: ENVI F101.
Lecture + Lab + Other: 0 + 0 + 3.1-15.4

ENVI F220  Introduction to Sustainable Energy
3 Credits
Offered Fall
Introduction to societal problems and solutions related to its energy use and production. Problems discussed are mainly related to the extent of sustainability of current energy practices. Solutions discussed cover both energy efficiency and renewable energy.

Prerequisites: MATH F105 or CTT F106 or TTCH F131.
Recommended: ENVI F101; ENVI F120.
Lecture + Lab + Other: 3 + 0 + 0

ENVI F250  Current Topics in Environmental Studies
1-3 Credits
Offered As Demand Warrants
Using multiple scientific viewpoints, a specific environmental issue is explored through case studies and in-depth discussions with an emphasis on complex connections between ecosystems and society. Themes include sustainability, resource development, indigenous viewpoints, resource management, building technology, and energy applications. Topics announced prior to each offering and course may be repeated for credit towards a certificate or degree program to a maximum of 3 credits.

Prerequisites: ENVI F101; WRTG F111X; 100-level science class.
Lecture + Lab + Other: 3 + 0 + 0

ENVI F260  Field Techniques for Environmental Technicians
2 Credits
Offered Summer
Provides hands-on instruction in interdisciplinary field and laboratory techniques used by environmental technicians. Basic methods for sampling and studying terrestrial or aquatic ecosystems will be introduced. Students will participate in data collection and analysis procedures as part of an independent research project.

Prerequisites: ENVI F101 or NRM F101; ENVI F110; 4 credit lab-based F100-science course.
Recommended: CIOS F100; CIOS F135.
Lecture + Lab + Other: 1 + 3 + 0

ENVI F265  Introduction to Methods in Environmental Studies Reporting
2 Credits
Offered Fall
Introduces basic data collection methods used in environmental studies then concentrates on research skills necessary to analyze, interpret, and document field and laboratory data and the technical reporting processes. The course is designed to integrate raw environmental data into a technical report covered include ecosystem functions, energy, biodiversity that can be presented in scientific meeting format.

Prerequisites: ENVI F101 or NRM F101; ENVI F110; ENVI F260; a lab-based F100 level science course.
Recommended: ENGL F104 or WRTG F111X; ENVI F160.
Lecture + Lab + Other: 1.5 + 0 + 1.5