Environmental Science

Environmental science is an interdisciplinary and quantitative approach to the study of the relationships between living things and their environment.

Environmental science strives to understand the many interactions between the environment and its components, including the impact of human activities on the environment on one hand and how the environment affects humans on the other. Environmental science goes to the heart of environmental issues in terms of understanding the science behind them as well as in developing scientifically sound solutions.

Major in Environmental Science (http://catalog.neiu.edu/arts-sciences/physics/environmental-science/)

Kenneth Nicholson, Associate Professor, Department of Chemistry, Chair

Greg Anderson, Professor, Department of Physics
Paulo Acioli, Professor, Department of Physics
Pamela Geddes, Professor, Department of Biology
Elisabet Head, Associate Professor, Department of Earth Science
Nadja Insel, Associate Professor, Department of Earth Science
John Kasmer, Associate Professor, Department of Biology and Coordinator of Environmental Science
Beth Reinke, Associate Professor, Department of Biology
Kenneth Voglesonger, Associate Professor, Department of Earth Science

Students will need to take the following three ENVI designated courses in addition to 42 credit hours of STEM core courses, 17-20 credit hours of STEM elective courses, and 9 credit hours of Social Science/Humanities courses, for a program total of 82 to 85 credit hours for a major in Environmental Science.

ENVI-101. Introduction To Environmental Science. 3 Hours.
This course introduces environmental science as the interdisciplinary study of environmental issues related to human impact on the natural environment. The course addresses environmental science literacy and scientific methods through inquiry into and discussion of biogeochemical cycles, ecosystem dynamics, climate change, conventional and renewable energy, resources, and sustainability. Lecture (2 hrs) and laboratory (2 hrs).
Prerequisite: (MATH-091 - 499 or MATH-091A - 499Z or NEIU Math Placement Result 02 - 45 or ACT Math 19 - 36 or Accuplacer Elementary Algebra 060 - 084 or Accuplacer College Level Math 020 - 120 or Accuplacer Adv. Algebra & Func 200 - 300 or SAT Math 500 - 800).

ENVI-180. Fundamentals Of Data Science. 4 Hours.
Foundations of data science considers data from three perspectives: inferential thinking, computational thinking, and real-world relevance. Given data arising from some real-world phenomenon, how does one analyze that data to understand that phenomenon? The course teaches critical concepts and skills in computation and statistical inference, in conjunction with hands on analysis of real-world datasets, including economic data, document collections, geographical data, and data from social networks. It delves into social, ethical, and legal issues surrounding data analysis, including privacy and data ownership.
Prerequisite: MATH-173 with a minimum grade of C or MATH-185 with a minimum grade of C or MATH-187 with a minimum grade of C.

ENVI-301. Methods In Environmental Science. 4 Hours.
This problem-based interdisciplinary course builds on the knowledge and skills acquired in introductory biology, chemistry, earth science, mathematics, and physics. Topics covered include experimental design, sampling, and analytical techniques that are standard to the different scientific disciplines. Students are introduced to interdisciplinary field, laboratory, and data science methods, and develop skills in group collaboration as well as written and oral presentation. Laboratory activities will include both laboratory and fieldwork.
Prerequisite: BIO-202 with a minimum grade of C and CHEM-212 with a minimum grade of C and ENVI-101 with a minimum grade of C and MATH-275 with a minimum grade of C and (ESCI-121 with a minimum grade of C or ESCI-211 with a minimum grade of C) and (PHYS-202L with a minimum grade of C or PHYS-207L with a minimum grade of C).

ENVI-302. Beyond The Textbook: Science In Popular Literature. 2 Hours.
In this course, students will read, discuss, and explore the foundations and implications of science literature written for a popular audience. The books chosen for this course vary from semester to semester and will be chosen to cover a broad, interdisciplinary range of perspectives in STEM. The books selected will provide insight into the pursuit of objective truth, while providing the lens that science is done and implemented by individuals and societies, and therefore has ethical, moral, and social implications. [This course can count toward meeting the ELE requirements if ENVI-303 is not used to fulfill the requirement.].
Prerequisite: (100 - 399 or 100A - 399Z or).

ENVI-303. Beyond Textbooks: Science In Popular Literature. 3 Hours.
In this course, students will read, discuss, and explore the foundations and implications of science literature written for a popular audience. The books chosen for this course vary from semester to semester and will be chosen to cover a broad, interdisciplinary range of perspectives in STEM. The books selected will provide insight into the pursuit of objective truth, while providing the lens that science is done and implemented by individuals and societies, and therefore has ethical, moral, and social implications. [This course can count toward meeting the ELE requirements if ENVI-302 is not used to fulfill the requirement.].
Prerequisite: (100 - 399 or 100A - 399Z or).

ENVI-390. Environmental Science Research & Practice. 4 Hours.
This course puts into practice the knowledge and skills acquired by students throughout the Environmental Science Program. Through case studies, literature review, group discussions, and a research project, students apply concepts from the various scientific disciplines. Working in small teams, students conduct practical scientific research on environmental issues relevant to the local, regional or global community.
Requirements: three electives in BIO, CHEM, ESCI, MATH, and/or PHYS; program approval
Prerequisite: ENVI-301 with a minimum grade of C.