EARTH SCIENCE (ESCI)

ESCI-1030 Earth
3 Credits

Survey of geology of Earth and its impact on the environment. Earth's structure and composition, earthquakes, plate tectonics, hydrologic cycle, weather, resources and energy alternatives, and current related issues. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0985 Introduction to College Literacies or appropriate score on English Placement Test. Note: ENG-0980 Language Fundamentals I taken prior to Fall 2021 will also meet prerequisite requirements.
OAN Approved: Ohio Transfer 36 TMNS.

ESCI-103L Earth Laboratory
1 Credit

Intended for non-science majors. Exercises on rocks and minerals, soils, weather, plate tectonics, energy and may include other related earth science activities. Laboratory activities complement and enrich related lecture course.
Laboratory: 3 hours
Prerequisite(s): ESCI-1030 Survey of Earth or concurrent enrollment.
OAN Approved: Ohio Transfer 36 TMNS.

ESCI-1040 Weather Studies
3 Credits

An integrated science course that covers current facts, theories, and technological methods regarding the study of the weather and climate. Weather prediction and real-time weather data analyses are important facets of this course.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-0995 Applied College Literacies, or appropriate score on English Placement Test; or departmental approval. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

ESCI-1050 Introduction to Ocean Studies
3 Credits

Introduction to Ocean Studies will focus on the world's oceans, emphasizing both the physical and chemical properties, circulation, and interaction between the ocean and other components of the Earth system. This course is for general science majors and non-majors, and will expose the student to the worlds oceans and the vital role in the earth system.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment; and MATH-0990 Math Literacy for College Students or concurrent enrollment, or MATH-0955 Beginning Algebra or concurrent enrollment; or qualified Math placement.
OAN Approved: Ohio Transfer 36 TMNS.

ESCI-1310 Physical Geography
3 Credits

The course is an introductory study of physical elements of geography. Exploration of the natural systems that shape our physical environment, including anthropogenic influences, and the resultant spatial patterns discernible on Earth's surface. Study includes earth-sun relationships, maps, atmospheric components and interactions, elements and controls of weather and climate, water resources and their distribution, vegetation associations, ecological relationships, soil types, landforms, and plate tectonics. The importance of spatial data literacy is highlighted. To fulfill laboratory science requirements, students should also enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0985 Introduction to College Literacies or appropriate score on English Placement Test. Note: ENG-0980 Language Fundamentals I taken prior to Fall 2021 will also meet prerequisite requirements.
OAN Approved: Ohio Transfer 36 TMNS and Transfer Assurance Guide OSS006.

ESCI-131L Lab in Physical Geography
1 Credit

The course provides laboratory exercises which use the scientific method to explore topics covered in Physical Geography. This includes the Earth's atmosphere, hydrosphere, biosphere and lithosphere. The laboratory experience includes the observation and interpretation of weather data, statistical analysis of climate data, hydrology, map analysis, remote sensing and spatial data interpretation, analysis of earth materials, along with landform processes, plate tectonics, and biogeography. Concurrent enrollment in Lecture in Physical Geology is strongly suggested.
Laboratory: 3 hours
Prerequisite(s): ESCI-1310 Physical Geography or concurrent enrollment.
OAN Approved: Ohio Transfer 36 TMNS.

ESCI-1410 Physical Geology
3 Credits

This introductory course covers Earth history, materials, and the processes that develop and modify the structure, composition and dynamic topography of the earth. Included is an overview of minerals, rocks, volcanoes, earthquakes, plate tectonics, geologic time, water resources, glaciation, coastal and aeolian processes, ocean basins and their features, energy and mineral resources. Students will identify patterns, interpret surface features, and explore their connection to our physical world through scientific exploration and understanding. Social implications of geological processes are emphasized throughout the course, including geological hazards, the benefits and complications of data monitoring, and the anthropogenic impacts on the planet.
Lecture: 3 hours
Prerequisite(s): ENG-0985 Introduction to College Literacies or appropriate score on English Placement Test. Note: ENG-0980 Language Fundamentals I taken prior to Fall 2021 will also meet prerequisite requirements.
OAN Approved: Ohio Transfer 36 TMNS, Transfer Assurance Guide OSC011 and OSC025 (2 of 2 courses, both must be taken).

ESCI-141L Lab in Physical Geology
1 Credit

This Physical Geology lab course focuses on understanding and describing geological phenomena and Earth materials. This includes intensive study of plate tectonic theory and history, origins of rocks and minerals, volcanoes, geologic dating, geologic and topographic maps, determination of depositional and erosional features, earthquake epicenter locations, and exercises in the basic procedures of geologic investigations in the field and lab. The course utilizes near-to-real time data sources to emphasize current geological observations and processes. This class emphasizes the use of maps and models to investigate Earth processes and the distribution of natural resources, with a focus on the Great Lakes.
Laboratory: 3 hours
Prerequisite(s): ESCI-1410 Physical Geology or concurrent enrollment; or ESCI-141H Honors Physical Geology or concurrent enrollment
OAN Approved: Ohio Transfer 36 TMNS (face-to-face and online), Transfer Assurance Guide OSC011 and OSC025 (2 of 2 courses, both must be taken)..

ESCI-1610 Geology of the National Parks
3 Credits

This course is a thorough review of National Parks in the United states, their geologic history, present lithology and topography, and influences of geology and topography on climatic and biotic factors (and vice versa). Ecological and geologic problems that have arisen because of presence of humans in parks are highlighted. Through the framework of plate tectonics, students will become familiar with the geological and cultural processes that are responsible for the creation of National Parks, lakeshores, seashores and monuments.
Lecture: 3 hours
Prerequisite(s): ENG-0985 Introduction to College Literacies or appropriate score on English Placement Test. Note: ENG-0980 Language Fundamentals I taken prior to Fall 2021 will also meet prerequisite requirements.
OAN Approved: Ohio Transfer 36 TMNS.

ESCI-161L Lab in Geology of the National Parks
1 Credit

An introductory laboratory course in geologic concepts with special focus on United States National Parks. Through a series of hands-on labs and literature reviews, students explore how geologic processes are responsible for the physical features in our national parks. Included in this course are the concepts of proper scientific methodologies, measurements, geological history, endogenic and exogenic processes, plate tectonics, and how the geological record can be used to reconstruct the story of select national parks. Laboratory studies include following the scientific method, including topographic maps, satellite imagery analyses, rock and mineral sample identifications, and interactive earth science web-based applications.
Laboratory: 3 hours
Prerequisite(s): ESCI-1610 Geology of the National Parks or concurrent enrollment.
OAN Approved: Ohio Transfer 36 TMNS.

ESCI-1801 Special Topics in Introduction to Sustainability
3 Credits

Introduces the science of meeting present needs without compromising the ability for future generations the ability to meet their needs. The three pillars of sustainability: economic, environmental, and social aspects are explored with the focus on the tie points to the earth sciences. Climatology, the biosphere, land and water usage, renewable energy, environmental policy and management are explored. Ethical and social responsibility as applied to earth's resources are reviewed. Practical applications of concepts are investigated. Use of Microsoft Excel in performing analysis.
Lecture: 3 hours
Prerequisite(s): ENG-0985 Introduction to College Literacies or appropriate score on English Placement Test. Note: ENG-0980 Language Fundamentals I taken prior to Fall 2021 will also meet prerequisite requirements.

ESCI-1820 Independent Study/Research in Earth Science
1-3 Credits

Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test.or appropriate score on English Placement Test. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

ESCI-182H Honors Independent Study in Earth Science
1-3 Credits

Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test. and must have earned an A or B in at least 3 honors courses. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

ESCI-282H Honors Independent Study in Earth Science
1-3 Credits

Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test. and must have earned an A or B in at least 3 honors courses. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.