Introduction to Ecology introduces the student to fundamental principles of ecology and focuses on interactions occurring within our natural world. Students will become familiar with interrelationships in nature and investigate population, community, and ecosystem dynamics. A special emphasis will be given to human impacts on the environment. Topics include resource and energy use, biodiversity, climate change and sustainability. This course includes outdoor data collection and off-campus field trips. MNTC Goal Areas 3 and 10. (Prerequisites: READ 0090).

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| Lecture | 3/48 |
| Lab | 1/32 |

READ 0090

Civic Engagement and Social Responsibility - Students will be able to demonstrate the ability to engage in the social responsibilities expected of a community member.

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Describe the scope of scientific inquiry

Identify the strengths and limits of science
Explain the role of science in society
Describe the steps employed in scientific methodologies
Evaluate sources of scientific information


Develop and test hypotheses
Collect and analyze data
Interpret data and form conclusions
Communicate scientific findings


Define ecology including the levels for which it is studied
Identify important figures and events in the history of ecology
Describe the process and importance of ecological assessments


Describe environmental science as a scientific discipline
Compare and contrast ecology and environmental science
Identify important figures and events in the history of environmentalism
Assess the roles of scientific information and social values in environmental decision-making
Compare and contrast different environmental ethics


Identify the basic components of an ecosystem
Compare and contrast the fates of energy and matter in an ecosystem
Describe trophic structure and identify its various levels
Identify numerous services provided by ecosystems
Assess the health of various ecosystems


Identify the basic components of a community
Describe the ecological niche and identify various types of species
Describe various types of interspecies interactions and provide examples
Assess the health of various communities


Identify the components of a population
Interpret population growth models
Identify limits to population growth
Differentiate between biotic potential and carrying capacity
Compare and contrast population distribution patterns


Identify several factors that contribute to evolution
Differentiate between evolution and natural selection
Illustrate the process of natural selection
Explain the relationship between ecology and evolution

State several parameters for which weather and climate are described
Describe several factors that influence Earth's climate and climate patterns
Explain how weather and climate are different
Explain why distinguishing between weather and climate is important

State the current estimated human population
Describe factors that influence the human population
Identify recent trends in fertility rates, growth rates and life expectancy
Explain current projections for future population growth

Describe the history of energy use
Describe various sources of non-renewable energy
Describe various sources of renewable energy
Assess the advantages and disadvantages of different sources of energy

Describe key properties and types of soil
Explain the economic and ecological impacts of conventional agriculture
Describe sustainable agricultural techniques
Explain the ecological impacts of urbanization

Be aware of any hazardous materials used during lab experiments
Handle chemicals and lab equipment in a safe manner


South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need