

## **Environmental Science Program – Goals and Objectives**

Upon completion of the Bachelor of Science degree in Environmental Science, students will be able to:

### **Goal I – Understand the environment**

To achieve this goal, students will be able to demonstrate the ability to:

- A. Show competency on various aspects of physical and biological environment, including air, water, biodiversity and ecosystem/community structures
- B. Demonstrate understanding of necessary tools to look at environmental concerns or policies from an interdisciplinary perspective
- C. Investigate/critically analyze various environmental damages/deterioration in the environmental quality

### **Goal II – Understand the important concepts in the major sub-disciplines of Environmental Science, and be able to apply them for environmental sustainability**

To achieve this goal, students will be able to demonstrate the ability to:

- A. Relate ecological principles and sustainability
- B. Assess importance of sustaining natural resources and environmental quality
- C. Explain economics and environmental sustainability, and their connection to social and economic issues
- D. Utilize holistic approaches for environmental management

### **Goal III – Develop proficiency in environmental analysis and impact assessment**

To achieve this goal, students will be able to demonstrate the ability to:

- A. Show understanding of major environmental concepts and issues through application of those concepts to specific problems
- B. Analyze environmental samples, e.g., air, soil and water samples for the determination of their constituents/pollutants
- C. Acquire quantitative literacy skills by successfully performing data manipulation and correctly computing a variety of calculations

- D. Develop scientific graphic visualization and interpretation skills from a variety of data types and information sources
- E. Develop critical thinking skills by successfully analyzing a variety of quantitative and logic problems
- F. Perform ecological surveys and environmental impact assessment
- G. Prepare/write report on environmental impact assessment of a variety of projects, and environmental conditions of various ecosystems

**Goal IV – Acquire the skills needed for careers in Environmental Science or graduate study in Environmental Science or allied field**

To achieve this goal, students will be able to demonstrate the ability to:

- A. Understanding of management of energy, materials/minerals, soil, water, etc. resources
- B. Relate global changes such as climate change/global warming issues with environmental/resource use policies
- C. Investigate potential transnational/global impacts of overexploitation of natural resources, and pollution of air, water, soils, etc.
- D. Critically compare and evaluate efficiency and effectiveness of environmental policies
- E. Understand inter-relation between local/regional and global environmental issues/opportunities
- F. Develop environmental project/field study with a scientifically sound hypothesis, and be able to verify or falsify it based on observations/experiments.
- G. Conduct environmental modeling and advanced analysis of scientific data