| Programme | BS Botany | Course Code | BOT-301 | Credit Hours | 2 |
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| Course Title | **Advanced Plant Ecology ( Theory)** | | | | |

## Introduction

This course introduces the concepts of the population and community ecology along with the understanding of the plant ecosystems. This course will also emphasis on current ecological events and global issues.

## Learning Outcomes

The course is designed to:

- To provide an adequate knowledge about concepts of population and community ecology
- To give an insight about ecosystems and emergent properties associated with ecosystems
- Describe different aspects of current ecological events and global issues in order to understand its nature and impact on plants
- Analyze current ecological issues and evaluate potential solutions

## Course Contents

- **Concepts of species**
- **Population Ecology:** Plant population structure; Plant population dynamics; Density dependent and density independent growth, Life Tables and Plant demography
- **Community Ecology:** Community concepts and attributes; Analytic & synthetic characteristics; Plant community structure; Plant community dynamics; Types of changes, succession, its types and climax concept.
- **Ecosystem and Biogeochemical cycles:** Concept, components, type's structure and function of ecosystem, Biogeochemical cycles; Hydrologic cycle and P cycles.
- **Air Pollution:** Sources, Nature and impact of primary and secondary air pollution, Effect of major and minor phytotoxic air pollutions on plants
- **Water Pollution:** Introduction, sources of water pollution, nature of water pollution and their impacts and control measures
- **Current Ecological Issues:** Nature, origin and impacts of

  i) Ozone Hole ii) Smog iii) Green House effects iv) Acid rain v) Global Warming vi) Climate Change vii) Noise Pollution viii) Radiation Pollution ix) Particulate Matter