

PRE-REQUISITES: F.Sc. or equivalent

LEARNING OUTCOMES

Upon completion of the course the students will be able to:

- To critically examine the core questions of sustainability science.
 - To explore the implications of societal, economic and political dimensions of sustainability.
 - To explore the role of science and technology (S&T) in policy and decision-making.
 - To review and assess options, strategies, and outcome for moving towards sustainability
- Have an understanding of fundamental concepts of micro and macro economics

CONTENTS

This integrated course is designed specifically for students of Environmental Sciences to familiarize them with the basic concepts of sustainability as applied to solving environmental problems /issues. It will equip them with the knowledge of economic variables, sustainability laws. This course will form the basis for understanding practice of sustainable development.

Unit 1: Introduction

- 1.1 The Millennium Development Goals
- 1.2 Concept of scarcity and choice
- 1.3 An Instrument for Achieving Millennium Development Goals
- 1.4 National Developmental Plans/ Legislation of Pakistan

Unit 2: Sustainable Development

- 2.1. Brundtland Commission & Agenda 21
- 2.2. Concept of ecological foot print
- 2.3. Principles of Sustainable Development
- 2.4. Applying the Principles of Sustainable Development to Human Systems
- 2.5. Systems and Principles of Sustainability Matrix
- 2.6. Indicators of sustainable development
- 2.7. Creating sustainable cities, Suburbs and Towns, Cities and Towns as Networks of Systems

Unit 3: Sustainable Development

- 3.1. Sustainable land management
- 3.2. Environmental degradation and poverty
- 3.3. Environmental management and innovative strategies for sustainable development
- 3.4. Sustainable Transportation Systems
- 3.5. Urban growth boundaries, urban sprawl and control, densification of urban centers
- 3.6. Globalization and Impact on Sustainability
- 3.7. Millennium Development Goals, Melbourne Principles
- 3.8. Case studies on cleaner production, Boundary position
- 3.9. Third world problems in transition to sustainable development

Unit 4: Dilemma of sustainability

- 4.1. The dilemma of sustainability
- 4.2. The Concept & Historical Perspective of Sustainable Development
- 4.3. Medium Term Development Framework

TEACHING – LEARNING STRATEGIES

- Lecture based examination
- Presentation/seminars
- Class discussion
- Quizzes

ASSIGNMENTS – TYPE AND NUMBER WITH CALENDAR

It is continuous assessment. The weightage of Assignments will be 25% before and after midterm assessment. It includes:

- classroom participation,
- attendance, assignments and presentation,
- homework
- attitude and behavior,
- hands-on-activities,
- Short tests, quizzes etc.

ASSESSMENT AND EXAMINATIONS:

Sr. No.	Elements	Weightage	Details
1.	Mid Term Assessment	35%	It takes place at the mid-point of the semester
2.	Formative Assessment	25%	It is continuous assessment. It includes: classroom participation, attendance, assignments and presentation, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.
3.	Final Assessment	40%	It takes place at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

RECOMMENDED TEXT BOOKS / SUGGESTED READINGS

5. Pearce, D., Barbier, E., & Markandya, A. (2013). *Sustainable development: economics and environment in the Third World*. Routledge
6. Adams, W.M. (2009) *Green Development: Environment and Sustainability in a Developing World*. Routledge: Oxon.
7. UNDP. (2004) *Reducing Disaster Risk: A Challenge for Development: A Global Report*. New York: UNDP

Further Reading: As suggested by the instructor.