

## BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
<b>BOT-413</b>	<b>Challenges of a Changing Earth</b>	<b>3</b>	<b>VIII</b>
Year	Discipline		
<b>4</b>	<b>BOTANY</b>		

**Syllabus Outline:** Impact of Air Pollution on Plant Growth, Impact of Industrial Waste Effluents on Plant Growth, Climate Change in Pakistan.

### Course Outline:

Achievements and Challenges; Food, Land, Water and Oceans, Out of Breath, Air Quality in the 21<sup>st</sup> Century, Managing Planetary Metabolism, The Carbon Cycle, Global Change and the Challenge for the Future, Advances in Understanding Global Biogeochemistry, Understanding the Metabolic System of the Planet, Land Ocean Interactions, Regional Global Linkages, The Climate System: Prediction, Change and Variability, Hot Spots of Land Use Change, The Climate System; A Regional or Global Concern, Looking at the Future: Stimulating and Observing the Earth System, Does the Earth System need Biodiversity? Can Technology spare the Planet towards Global Sustainability?

**Module Aims:** This course is designed to provide the knowledge about the present Conditions of the Earth, major Challenges and possible Strategies to coup the Present Day Earth's Crisis.

### Learning Strategies:

1. Lectures
2. Group Discussion
3. Laboratory Work
4. Seminar/ Workshop

**Learning Outcome:** After studying this subject, student will have an insight of learning the major achievements of modern day earth and various global challenges that earth is facing. Student may also have knowledge of past, present climate prospects and future's plans to combat these challenges.

### Assessment Strategies:

1. Lecture Based Examination (Objective and Subjective)
2. Assignments
3. Class Discussion
4. Quiz

## 5. Tests

### **Books Recommended:**

1. **Bell, J.N.B. and Treshow, M. (2002).** *Air Pollution and Plant Life*. John Wiley & Sons, Inc. New York.
2. **IGBP New Letter, (2002).** The Newsletter of the International Geosphere Biosphere Programme: A study of Global Change. The Royal Swedish Academy of Science, Stockholm, Sweden.
3. **Newman, E.I. (2000).** *Applied Ecology and Environmental Management*. Blackwell Science Ltd., Oxford.
4. **Burrough, T. (2001).** *Climate Change: A Multidisciplinary Approach*. Cambridge Univ. Press, Cambridge, U.K.

\*\*\*\*\*