SyllabusBioresources
Undergraduate level
Cluster University Srinagar

Core Course: Bioresources Paper I | Semester 1st | Credits 6(Theory 4+Practical 2)

Fundamentals of Bioresources
Theory
Lectures: 60

Unit: I **(15 Lectures)**

Biodiversity

- Bioresources— Plant, animal and microbialresources(brief concept)
- Concept and levels ofBiodiversity, Mega-biodiversity countries
- Biodiversity hotspots (concept and distribution)
- Valuing biodiversity— direct- and indirect use values
- Role of remote sensing in Biodiversity studies (Brief concept)

Unit: II **(15 Lectures)**

Biodiversity conservation

- Species extinction, causes of biodiversity loss-ultimate and proximate causes
- IUCN threat categories; Red Data Book; Biodiversity surrogates
- *In situ* conservation strategies—National parks, Wildlife sanctuaries and Biosphere reserves (Brief concept)
- *Ex situ* conservation strategies—Botanical gardens, Zoos, Aquaria, Cryo-banks

Unit: III **(16 Lectures)**

Bioresources and Livelihood

- Livelihood and its relation with Bioresources management
- Threats to traditional livelihood,food insecurity; Impact of globalization and urbanization on livelihood
- Sustainable development
- Energy crisis and need of Green Energy
- Green Buildings; Green walls (vertical gardens) (Concept and examples)
- Green washing, eco-labelling (concept and examples).

Unit: IV **(14 Lectures)**

Bioresources Management Policies

- Indian Bioresources Information Network (IBIN)—Organization and role
- Convention on Biological Diversity (CBD) —Aims and Objectives
- Ramsar Convention (Scope and Objectives)
- Environment Protection Act 1986—Scope and Objectives
- Environment Impact Assessment (EIA) —Concept and Stages of EIA
- Bioresources conservation and public participation

SyllabusBioresources
Undergraduate level
Cluster University Srinagar

Core Course: Bioresources Paper I Semester 1st Credits 6(Theory 4+Practical 2)

Practical Work:

- Collection, description and herbarium preparation of various types of leaves, inflorescences and fruits
- Determinationofminimumsizeandnumberofquadratsforphyto-sociologicalstudies
- Computationoffrequency,densityandabundanceofconstituentspeciesofdifferentcommunities
- Prepare well labelled herbarium sheets of economically important plants
- Field demonstration of Global Positioning System (GPS) and its utility in biodiversity studies
- Constituentofaquarium andconstructionofaquarium.
- Field study of various threatened endemic plants of Kashmir Himalaya.
- Prepare a list of *in-situ* conservation sites of Kashmir Himalayas.

Suggested Readings

1. Krishnamurthy, K.V. 2003. Textbook of Biodiversity. Science Publications.
2. Primack, R.2006. Essentials of Conservation Biology. Sinauer associates, Inc., USA
3. Malhotra, KC and ProdyutBhattachrya. 2010. Forest and Livelihood. Pub. Centre for Economic and Social Studies. Hyderabad.
4. King, A., H. Cleveland and G. Streatfeild. 1980. Bioresources for development: The renewable way of life. Pergamon Press.
5. S.P. Palaniappan and K.A. Annadurai Organic Farming: Theory and Practice
6. A hand book of Organic Farming by A. K. Sharma