

3.	Porta Miquel. A Dictionary of Epidemiology, Oxford University Press, USA, 2014
4.	Somerville Margaret, et al., Public Health and Epidemiology at a Glance, Second Edition, Wiley-Blackwell, 2016
5.	Beaglehole. R. Bonita, et. al Basic Epidemiology, 2nd Edition, WHO Publication, Geneva, 2006.

## **Biodiversity and Bio-resource Planning**

### **Details of course :-**

Course Title	Course Structure			Pre-Requisite
	L	T	P	
<b>Biodiversity and Bio-resource Planning (BT342)</b>	3	0	2	NIL

### **Course Objective:**

The curriculum gives holistic coverage to the extremely valuable field of Biodiversity. Biodiversity—the variety of genes, species, and ecosystems—is the basis for long-term ecosystem health and stability. The world's biodiversity is diminishing and dwindling before our eyes at an alarming rate day by day. Half of the world's wetlands have been lost in the past century; 80 percent of grasslands are suffering from soil degradation; and 20 percent of drylands are in danger of becoming deserts.

### **Course Outcome (CO):**

1. Discuss biodiversity different aspects like agriculture and animal flora and fauna , factors affecting biodiversity changes
2. Outline roles of plants, microbes and animal in natural ecosystems and life supports also importance of traditional cultivators and wild species in agriculture
3. Discuss management of agro-biodiversity, human animal conflict and its impact on distribution and consequences.
4. List uses and applications of animal, domestic livestock. Also primary and secondary metabolites from plants animals and microbes.
5. Discuss international conventions, national laws policies, action plans and treaties for conservations of forest, wildlife, biodiversity and other bioresources

S.No.	Content	Contact Hours

1.	<b>INTRODUCTION TO BIODIVERSITY</b> Man – nature interactions, Role of bioresources in shaping human culture. Agriculture and Animal Husbandry- Origin, Spread, Changes, Challenges; Resource Use Patterns – Diversity, Specificity, Sustainable utilization of bioresources; Biodiversity, components, scope, and constraints of biodiversity, genetic diversity, species diversity, ecosystem diversity – aquatic biodiversity, agro-biodiversity, urban-peri-urban biodiversity, forest biodiversity; Wealth of India: Flora & Fauna with respect to western Ghats, Himalayan and sub-Himalayan regions, Freshwater and marine water biodiversity in India; biodiversity indices, Role of biodiversity in ecology and natural balance, threats to biodiversity. Factors affecting biodiversity changes.	8
2.	<b>RESOURCES FROM PLANT, ANIMAL &amp; MICROBES</b> Role of plants, animals and microbes in natural ecosystems and life support systems (terrestrial, freshwater and marine), wild and domesticated gene-pool; Importance of traditional cultivars and wild species in agriculture, Value of plants, animals and microbes in scientific research and technological inventions, Traditional healthcare, modern lifestyle and economy.	9
3.	<b>STRATEGIES FOR CONSERVATION OF BIODIVERSITY</b> Management of agro-biodiversity, Human Animal Conflict, Human impact on distribution, consequences, Approaches to conservation of plants and animals (in situ and ex situ)	8
4.	<b>APPLICATIONS OF BIODIVERSITY IN BIOTECHNOLOGY</b> Uses of bio resources- animal uses; food animals (terrestrial and aquatic), non-food uses of animals, domestic livestock. Primary and Secondary metabolites from plants, animals and microbes, Fatty acids, Alkaloids, Steroids, Flavonoids, Essential oils, Bioactive molecules (antimicrobials)	8
5.	<b>LAWs, ACTS AND POLICIES</b> International conventions and treaties for conservation of bio resources, National Laws, policies and action plans for conservation of forests, wildlife, biodiversity, marine resources; National Biodiversity Authority, Role of NGOs in conservation of bio-resources and people's participation in such efforts at global, national and grassroot level.	9
<b>TOTAL</b>		42

### Books:-

S.No.	Name of Books/ Author/Publisher
1.	Krishnamurthy, K.V. 2003. Textbook of Biodiversity. Science Publications.