

DEPARTMENT OF BOTANY				CLASS: I M.Sc. Botany				
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
II	Practical	21P2BMP4	Practical IV	2	4	40	60	100

Nature of Course			
Knowledge and skill	✓		Employability oriented
Skill oriented	✓		Entrepreneurship oriented

### Course objectives

The course will enable the students to

1. understand and analyze adaptations that prevail in various plant groups,
2. study the distribution of various plant communities in the college campus for conservation,
3. determine the various chemicals present in the soil and water samples and
4. observe the flora in their original (natural) habitats through field visits.

### Practicals Ecology and Conservation Biology

1. Study of morphological and anatomical adaptations of hydrophytes and xerophytes.
2. Analysis of vegetation to find out frequency, density and abundance of different species by using quadrat method in the college campus.
3. Analysis of vegetation by using line transects to find out frequency, density and abundance of different species.
4. Determination of field capacity and pH of soil types.
5. Determination of soil moisture and texture of soil types.
6. Determination of carbonate and nitrate content of various soil types.
7. Determination of phosphate, sulphate and chloride content of various soil types.
8. Determination of free carbon dioxide of water samples.
9. Determination of alkalinity of water samples.
10. Determination of dissolved oxygen in water samples (Winkler method).
11. Experiment on soil conductivity.
12. To locate the hotspots, phyto-geographical regions and distribution of endemic plants in the map of India.
13. Field study of any one or two of the following area (s) (not less than a period of 2 days) to document environmental assets and to study the ecosystems and different types of vegetation (Forest / Grassland / Mountain / National parks / Sanctuary / Botanical garden / Lake / Pond / River / Waterfalls / Estuary / Mangrove / Sea coast) and submit a report of the study trip (during the internal practical examination).

### Rationale of the Course:

The practical course focuses on the skills and practices to be inculcated in the students relevant to the theory studied, to analyse information practically in the laboratory and in the field using standard scientific protocols and methodologies.

**Activities having direct bearing on Skill development /Employability/ Entrepreneurship:**

The knowledge and skills acquired by the students will enable them to get entry level jobs as junior consultant and project officers in environmental consulting / agencies and volunteer coordinator in non-profits.

**Pedagogy:** Chalk and Talk, PPT, Group Discussion, Seminar, Interaction, Quiz, Virtual Labs, Google classroom and Learning Management System (CANVAS).

**Course Learning Outcomes:**

CLOs	CLO Statement	Knowledge Level
<b><u>Students will be able to know, understand, apply, and analyze</u></b>		
<b>CLO-1</b>	The outline and associate the adaptations and distribution of plant communities for effective conservation	<b>Up to K4</b>
<b>CLO-2</b>	the information, to infer the various chemicals present in the soil, thereby manage soil efficiently for plant growth.	<b>Up to K4</b>
<b>CLO-3</b>	The quality of various water samples.	<b>Up to K4</b>
<b>CLO-4</b>	Discuss the various method of plant propagation	<b>Up to K4</b>
<b>CLO-5</b>	Explain the landscape	<b>Up to K4</b>

**Mapping Programme Specific Outcomes with Course Learning Outcomes:**

	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
<b>CLO-1</b>	1	3	2	2	3
<b>CLO-2</b>	1	2	2	2	3
<b>CLO-3</b>	1	2	3	2	3
<b>CLO-4</b>	1	2	2	2	3
<b>CLO-5</b>	1	2	2	2	2

## Lesson Plan

Practical	Description	Hours	Mode
1.	Study of morphological and anatomical adaptations of hydrophytes and xerophytes.	3	Chalk and talk CANVAS
2.	Analysis of vegetation to find out frequency, density and abundance of different species by using quadrat method in the college campus.	3	Chalk and talk Google classroom
3	Analysis of vegetation by using line transects to find out frequency, density and abundance of different species.	4	Chalk and talk CANVAS
4	Determination of field capacity and pH of soil types.	3	Chalk and talk Google classroom
5	Determination of soil moisture and texture of soil types.	2	Chalk and talk CANVAS
6	Determination of carbonate and nitrate content of various soil types.	3	Chalk and talk You tube videos
7	Determination of phosphate, sulphate and chloride content of various soil types.	3	Chalk and talk You tube videos CANVAS
8	Determination of free carbon di oxide of water samples.	3	Chalk and talk You tube videos CANVAS
9	Determination of alkalinity of water samples	2	Chalk and talk You tube videos CANVAS
10	Determination of dissolved oxygen in water samples (Winkler method).	3	You tube videos CANVAS
11	Experiment on soil conductivity	3	You tube videos
12	To locate the hotspots, phyto-geographical regions and distribution of endemic plants in the map of India	3	Chalk and talk  You tube videos
13	Field study of any nearby area to document environmental assets and study the ecosystems and different types of vegetation (Forest / Grassland / Mountain / National parks / Sanctuary / Botanical garden / Lake / Pond / River / Waterfalls / Estuary / Mangrove / Sea coast) submit a report (during the internal practical examination).	25	<b>Field visit</b>
	<b>Total</b>	<b>60</b>	

Course Designer: **Dr. S. Gnaana Saraswathi**, Assistant Professor.