DEPARTMENT OF BOTANY				*CLASS: II B.Sc. Zoology*				
Sem	**Course type**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/week**	**CIA**	**Ext**	**Total**
III&IV	Allied Practical	20U4BAP1	Allied Practical – I	2	2	40	60	100

Course Objectives:

1. To train the students to observe the morphology and anatomy of lower plant groups.
2. To train the students to prepare micro slides of plant parts for observation under microscope.
3. To demonstrate the students to the physiological mechanisms of plants.

Allied Botany-I Practical

1. Make suitable micro preparations, identification and description of the type specimens *Caulerpa, Marchantia*, *Lycopodium* and *Cycas.*
2. Dissection and description of the locally available specimens from Rutaceae, Apocynaceae, Amaranthaceae and Poaceae.
3. Observation of *Puccinia*.
4. Submission of Records.

Allied Botany- II Practical

1. Primary structure of dicot and monocot stem.
2. Primary structure of dicot and monocot root.
3. Primary structure of dorsiventral and isobilateral leaves.
4. Determination of osmotic potential.
5. Determination of photosynthetic rate using Wilmott's bubbler.
6. Imbibitions rate of various seeds.
7. Demonstration-Bell Jar Experiment, Ganong's Potometer, Transpiration Pull Experiment, Ganong's Light Screen Experiment, Test Tube Funnel Experiment and Potato Osmoscope.
8. Spotters - Root apex, Shoot apex, Parenchyma, Sclerenchyma, Xylem, Phloem, Tikka Disease of Groundnut, Red Rot of Sugarcane and Citrus canker.
9. Submission of Record Note Book for Internal and External Evaluation.

Course Learning Outcomes:

	CLO Statement	Knowledge Level
CLO-1	Observation of morphological and anatomical features of lower plant groups.	**K2**
CLO-2	Enable to identify the flowering plants with their morphological characters.	**K4**
CLO-3	Analyze the pathological specimens and its infective agents.	**K4**
CLO-4	Examine the anatomical feature of higher plants.	**K4**
CLO-5	Knowledge on physiological mechanisms of plants system.	**K3**

Mapping Programme Specific Outcomes with Course Learning Outcome:

	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6	PSO-7	PSO-8	PSO-9
CLO-1	-	-	1	2	-	-	-	-	-
CLO-2	-	-	1	1	-	-	-	-	-
CLO-3	-	-	1	1	-	-	-	-	-
CLO-4	-	-	1	2	-	-	-	-	-
CLO-5	-	-	2	1	-	-	-	-	-

3-Advance application; 2- Intermediate level; 1- Basic level

Mapping Programme outcomes with Course Learning Outcome:

	PO-1	PO-2	PO-3	PO-4	PO-5
CLO-1	3	3	3	2	3
CLO-2	3	1	1	3	2
CLO-3	1	2	2	1	2
CLO-4	1	-	2	1	1
CLO-5	-	-	-	-	-

3-Advance application, 2- Intermediate level, 1- Basic level

Lesson Plan:

Practical	Description	Staff Name	Hours	Mode
1	a) Make suitable micro preparations, identification and description of the type specimen: *Caulerpa*	-	3	Permanent Slide
	b) Micro preparation of different parts of *Marchantia*	-	3	Micropreparation
	c) Micro preparation of different parts of *Lycopodium*	-	3	Micropreparation
	d) Micro preparation of different parts of*Cycas*	-	3	Micropreparation
	e) Dissection and description of the locally available specimens from Rutaceae	-	4	Dissection
	f) Dissection and description of the locally available specimens from Apocynaceae	-	4	Dissection
	g) Dissection and description of Amaranthaceae	-	4	Dissection
	h) Dissection and description of Poaceae	-	3	Dissection
	i) Observation and Sectioning of *Puccinia* infected leaf	-	3	Sectioning
2	a) Primary structure of Dicot Stem & Root	-	3	Microtome
	b) Primary structure of Monocot Stem & Root	-	3	Micropreparation
	c) Primary structure of dorsiventral and isobilateral leaves	-	3	Sectioning
	d) Determination of osmotic potential	-	3	Demonstration
	e) Determination of photosynthetic rate using Wilmott's bubbler	-	3	Demonstration
	f) Study the Imbibitions rate of various seeds	-	3	Group
	g) Demonstration - Bell Jar Experiment Ganong's Potometer,	-	3	Experiment
	h) Demonstration - Transpiration Pull Experiment, Ganong's Light Screen Experiment,	-	3	Demonstration
	i) Demonstration - Test Tube Funnel Experiment and Potato Osmoscope	-	3	Demonstration
	j) Spotters - Root apex, Shoot apex, Parenchyma, Sclerenchyma, Xylem, Phloem, Tikka Disease of Groundnut, Red Rot of Sugarcane and Citrus canker	-	3	Permanent Slide
Total			**60**	

Course Designer(s): Dr. P. Kannan, Assistant Professor
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