(Bachelor of Sciences) (Biology)
(B.Sc.) (Biology) Semester (II)

Course Code	US02CBIO52	Title of the Course	Practical
Total Credits of the Course	02	Hours per Week	04

Course Objectives:	1. To get hands on training to use various biology laboratory equipment. 2. To do experiment as per the given syllabus through fresh/preserved specimen/slides/models/charts etc

Course Content		
Unit	Description	Weightage* (%)
1.	Electron Micrographs/Models of viruses –Bacteriophage, TMV/ Lytic and Lysogenic Cycle	
2.	Study of Bacteria from temporary/permanent slides	
3.	Study of vegetative structure of Rhizopus and reproductive structure through temporary mount/ permanent slides	
4.	Study of *Riccia* – Morphology of thallus, capsule/ sporophyte (all Permanent Slides)	
5.	Study of *Nephrolepis* – plant morphology, mounting of sporangia	
6.	Study of Cycas – Morphology, coralloid root, leaflet, male cone, megasporophyll through permanent slide/specimen. T.s. of Cycas leaflet mounting.	
7.	Classification of phylum Protozoa and Porifera, Coelenterata (Amoeba, Paramoecium, Euglena, Leucosolenia, Hyalonema, Euspongia, Hydra, Physalia, Aurelia, Sea anemone)	
8.	Classification of Helminthes and Annelida (Planaria, Liver Fluke, Hookworm, Ascaris, Earthworm, Nereis, Leech)	
9.	Classification of phylum Arthropoda (Peripatus, Millipede, Silverfish, Grasshopper, Cockroach, Butterfly, Crab, lobster,Spider)	

10.	Classification of Mollusca, Echinodermata and Hemichordata (Dentalium, Chiton, Pila, Unio, Octopus, Starfish, Brittle star, Feather star, Sea urchin, Sea cucumber, Balanoglossus)	
11.	Classification of Protochordata, Cyclostomata and Pisces (Ascidia, Amphioxus,Lamprey, Shark, Electric ray, Labeorohita)	
12.	Classification of Amphibians and Reptiles (Salamander, Frog, Turtle, Calotes, Chameleon, Alligator)	
13.	Classification of Aves and Mammals (Pigeon, Koel, Parrot, Shrew, Bat, Rabbit)	
14.	Study of vegetative/ reproductive structure of *Volvox* through temporary preparation / permanent slides	
15.	Study of vegetative/ reproductive structure of *any blue green algae* through temporary preparation / permanent slides	
16.	Different phytogeographic regions of India on map	
17.	Field trip/project/submission	

Teaching-Learning Methodology	Observation of specimen Handling of specimen Using student's microscope Using certain required chemical for test Dissection of specimen Preparing journal though drawing various figures with description Learn through charts/model Field visits for live experience. Preparing field visit note.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Gain hands-on experience of using various optical instruments and making temporary mountings.
2.	Identifying various plant and animal specimen through mountings of fresh specimens/charts/models.
3.	Understand characteristics of biological specimens.
4.	Carried out field visits to explore ecological understanding and learn range of biodiversity.

Suggested References:	
Sr. No.	References
1.	A text book of Practical Botany(vol I&II) by Bendre and Kumar
2.	Modern Practical Botany(vol I&II)byPandey B.P.
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On-line resources to be used if available as reference material
On-line Resources
The virtual library of Botany
https://www.teacheron.com/zoology_practical-tutors
https://www.wiziq.com/tutorials/practical

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