

Programme Specific Outcome for Department of Botany (UG)

Name of the Programme: B.Sc. Botany (H) (Under CBCS)

Year of Introduction: 2018

Programme Specific Outcome

PSO1 Students develop a comprehensive knowledge of all the classical and applied fields of plant sciences included in the undergraduate cbcS syllabus. They are also familiarized with the natural habitats of different groups of plants (Algae, Fungi, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms) and their identification via field study.

PSO2 Students develop a practical knowledge on the different domains of plant science. They are acquainted with good laboratory practices and safety measures.

PSO3 Educational tours helps to expand their knowledge about the local flora and flora of phytogeographic regions of the state in their natural habitat. Field studies also help them to know about the evolutionary stages of past and present day flora including.

PSO4 Community study develop awareness on rural and urban biodiversity and environment and environmental issues.

PSO5 Students got motivation for higher studies, research or administrative jobs. The present course helps them to prepare for competitive exams in the country and also for abroad to pursue higher studies. They develop individual and leadership qualities to work in a team and management skills to qualify and take biological sciences as career.

PSO6 Skill Enhancement Courses and Discipline Specific Elective papers open up new avenues and job opportunities for the students.

Course Outcome

CO of Semester I:

CO1 A basic knowledge of the two core courses Phycology and Microbiology (CC1) and Mycology and Phytopathology (CC2) is included in this course. Students study classification, identification and economic importance of algae and fungi via theoretical classes, workout algal and fungal in practical classes and identify the common fungal and algal genera. via local field trips.

CO2 Students learn about the basics of bacteria and viruses, microscopy and staining techniques, get hands on training on microbiological and plant pathological methods.

CO3 There are high prospects in the field of industrial microbiology, plant pathology like agriculture, crop protection and disease management.

CO of Semester II:

CO1 There are two core courses included, Plant Anatomy (CC3) and Archaeogoniate (CC4) in Sem-II. Students gain a detailed knowledge on anatomy of different plant parts, cryptogams and phanerogams.

CO2 In the anatomy paper they learn to differentiate dicots and monocots based on their internal structural organization. They develop knowledge on double staining techniques and able to work-out plant specimens in the practical classes.

CO3 Students study about Bryophytes, Pteridophytes and Gymnosperms in Archaeogoniate and work out the specimens from all the above groups during practical classes. The educational trips help them to identify the different plant groups in their natural habitat.

CO of Semester III:

- CO1 Semester-III consist of Palaeobotany and Palynology (CC5), Reproductive Biology of Angiosperms (CC6) and Plant systematics paper (CC7) as three core course papers. Students gain a detailed knowledge on plant fossils and pollen in palaeobotany and palynology, on morphology of angiosperms and embryology in Reproductive Biology of Angiosperms and taxonomy of angiosperms in Plant systematics.
- CO2 Students study different plant fossils from permanent preparations and workout on different pollen specimens in practical classes.
- CO3 Students are able to work out, describe and identify plants upto genus from different angiosperm families included in the syllabus. They get a comprehensive idea on different reproductive parts and family of angiosperms from local and long educational trips.
- CO4 Students learn to prepare field notebook, voucher specimen book and develop skills about herbarium techniques. There are high prospects in the fields of applied palynology, forest services and taxonomy.

CO of Semester IV:

- CO1 Three core courses are offered in Semester-IV. In Plant Geography, Ecology and Evolution paper (CC8), students develop knowledge on different phytogeographical regions of the state, ecology and environment and their conservation. In Economic Botany (CC9) students about different economically important plants. In Genetics (CC10) paper study students get a basic knowledge on cytogenetics.
- CO2 Students develop awareness on biodiversity and environment and knowledge in community Study via field trips to phytogeographical region of the state. Also, they are able to identify the economically important plants from diverse field via morphological, anatomical and biochemical practicals.
- CO3 They develop hands on training on different cytological techniques that includes stain preparation and mitosis and meiosis study of plant chromosomes.

CO of Semester V:

- CO1 Semester V consist of two core courses, Cell and Molecular Biology paper (CC11) and Plant Biochemistry (CC12). In CC11 Students develop basic knowledge on Cell biology, molecular biology and plant biotechnology. In CC12, they learn about basic biochemistry, energetics, enzymology and biochemical processes of plant cell.
- CO2 Students develop hands on training in different cell biology practicals, qualitative and quantitative aspects of plant biochemistry.
- CO3 There are high prospects in the field of cell biology, molecular biology, plant biotechnology and biochemistry.

CO of Semester VI:

- CO1 In this semester students acquaint with the physiological and metabolic functions of a plant cell via two core courses, Plant Physiology (CC13) and Plant Metabolism (CC14).
- CO2 Students develop hands on training on different physiological techniques. They learn about chromatographic techniques and how to prepare experimental setups to study plant metabolism.

Skill enhancement course and Discipline specific elective course:

- CO1 Students have to select one Skill Enhancement Course (SEC) from Applied Phycology, Mycology and Microbiology; Biofertilizers in Semester-III and from Plant Breeding; Mushroom Culture Technology in Semester-IV. They enhance skills on the applied aspects of plant sciences particularly in the industrial sector via skill enhancement courses.

- CO2 Students have to select two Discipline Specific Elective (DSEA and B) courses in fifth and sixth semesters. For 5th Semester students have to take one from Biostatistics, industrial and Environmental Microbiology as DSEA and from Plant Biotechnology, Horticultural Practices and Post- harvest Technology as DSEB. For 6th Semester students have to take one from Medicinal and Ethnobotany and Stress Biology as DSEA and from Research Methodology and Natural Resources as DSEB. Students learn to design and perform biological experiments independently and develop communication skills through presentations. These special courses helps to open up new avenues for the students. They acquire knowledge in the applied fields of Plant Sciences.
- CO3 These special courses enhance skills and develop entrepreneurship qualities, higher studies, research and job opportunities in applied aspects of plant sciences.

Name of the Programme: B.Sc. Botany (General Course) (Under CBCS)

Year of Introduction: 2018

Programme Specific Outcome

- PSO1 Students develop a comprehensive knowledge of the different fields of plant sciences included in the general course of cbcS syllabus. They are also familiarized with the natural habitats of different groups of plants (Algae, Fungi, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms) and their identification via field study.
- PSO2 Students develop a practical knowledge on the different domains of plant science. They are acquainted with good laboratory practices and safety measures.
- PSO3 The present course open up new avenues and job opportunities for the students. Students got motivation for higher studies and administrative jobs also. They develop individual and leadership qualities to work in a team and management skills to qualify and take biological sciences as career.

Course Outcome

CO of Semester I:

- CO1 One core course, Plant Diversity I (G-CC1) is included in Sem-I. Students gain a detailed knowledge on phycology, mycology, phytopathology, bryology, anatomy and their practical aspects.
- CO2 Students identify the common algae, fungi and bryophytes via local field trips. Students learn about the basics of microscopy and staining techniques.

CO of Semester II:

- CO1 One core course, Plant Diversity II (G-CC2) is included in Sem-II. Students gain a detailed knowledge on the Pteridophytes, Gymnosperms, Palaeobotany, Morphology and Taxonomy.
- CO2 Students work out, describe and identify plants upto angiosperm families included in the syllabus. They develop knowledge on double staining techniques and practical knowledge on plant anatomy.
- CO3 Students develop skills and knowledge about field study and herbarium techniques. They get a comprehensive idea on different family of angiosperms included in their syllabus via local educational trips.

CO of Semester III:

- CO1 One core course, Cell Biology, Genetics and Microbiology(G-CC3) is included in Sem-III. Students understand plant cellular structure and functioning mechanism in Cell Biology and Genetics. In Microbiology they learn the basics of bacteria and viruses and their application.
- CO2 Students develop hands on training on gram staining, cytological staining and chromosome techniques .

CO of Semester IV:

- CO1 One core course, Plant Physiology and Metabolism (G-CC4)is included in Sem-IV. Students gain a detailed knowledge on plant physiology and metabolism.
- CO2 Students develop hands on training on different plant physiological experiments.