

## Programme outcome of M.Sc. Botany

### PO:

From the year 2015-16, the Department is offering M.Sc. as choice based credit system with semesterization of the examination pattern. This course is designed with the scope for learning and deeper understanding of the areas like cytology and genetics, microbiology, phycology, mycology, taxonomy, plant resource utilization, plant physiology and biochemistry, molecular biology, biotechnology, plant pathology and population biology. The course comprises of basic specializations in the fields like stress physiology, plant microbe interaction, mycology and pathology, plant molecular biology and biotechnology, plant systematics and biodiversity, and population biology and desert ecology. The principle outcomes of the course are

1. The students are able to relate the knowledge from fields like cytology and genetics to biotechnology and plant pathology.
2. The course empowers the students to excel in various research fields of life sciences
3. The student develops sense of scientific responsibility for social and environmental awareness

### CO:

1. The first two semesters are designed for students' learning of the various core subjects like cell and molecular biology, genetics, microbiology, phycology, mycology, taxonomy, plant development and reproduction, plant resource utilization etc. From the third semester, two papers in choice based manner are selected by the students with specialization in various selective disciplines

2. The syllabus is prepared keeping in view the undergraduate curriculum, while in the undergraduate course, the students were introduced to many fundamental topics in life sciences, at the post graduate level they are acquainted with new areas and applied aspects of the various fields. For example;

a. In cell and molecular biology the students learn principles of various concepts like structure of cell, transport across membranes, cell communication, cell cycle and cell death, genome structure, gene expression

b. In genetics they learn principles of Mendelian genetics and the exceptions, population genetics, evolution, gene mapping

c. In taxonomy they are able to make use of the standard flora, identify and classify the plants to genus and species level, understand the principles of phylogenetics and modern schemes of classification of plants

3. In various specialization courses the student develops deeper understanding of factors affecting the growth of plants adversely, and the molecular mechanisms adopted by plants to cope up the imposed stress, pathogens responsible for causing diseases to different plants, the molecular mechanisms underlying the invasion of plant tissues and the protective pathways, manner of symbiotic association between microbes and plants with understanding of the relation to molecular levels, advanced plant systematics, plant molecular biology and biotechnology and population biology with respect to plants

### PSO:

1. The course is designed to further groom the students once they have completed the undergraduate course. The course design is based on the motive that the student should develop interdisciplinary understanding of plant biology.

2. The students will be with sufficient background knowledge to be specifically trained in experimental techniques like tissue culture, monitoring and evaluation of conservation programmes

3. After completion of the course, the student could be an asset for various academic and research institutions. He/She could be made specifically suited for roles in the fields like cytogenetics, biotechnology, plant protection, plant resource utilization, plant classification, and environmental conservation.