

KATWA COLLEGE

DEPARTMENT OF BOTANY

Syllabus of 3-Year Degree/4 Year Honours in Botany Under Curriculum and Credit Framework for Undergraduate Programme (CCFUP) as per National Education Policy 2020 with effect from 2023 -24

Course Introduction

The new curriculum of B.Sc. Botany offers holistic knowledge and technical skills to study plants. Exposure will be given to all areas of plant science using a unique combination of core, elective and vocational papers with significant inter-disciplinary components. Students would be exposed to both conceptual ideas and cutting-edge technologies that are presently used in the study of diverse plant life forms, processes, their evolution and interactions with other organisms within the ecosystem. Students would also become aware of the social, economic, and environmental significance of plants and their relevance to the national economy. B.Sc. Botany Programme covers academic activities within the classroom sessions along with practical concepts. Candidates will develop strong philia in plants kingdom, ecosystem, life processes, their application in making technology, exploring exotic places which might help them to work as researchers or professions like Botanist, Conservationist, Ecologist, Geneticist, Biochemists, Biotechnologist etc.

Programme outcomes (POs):

Transformed curriculum shall develop educated outcome-oriented candidature, fostered with discovery- learning, equipped with practice & skills to deal practical problems and versed with recent pedagogical trends in education including e-learning, flipped class and hybrid learning to develop into responsible citizen for nation-building and transforming the country towards the future with their knowledge gained in the field of plant science.

Shall produce competent plant biologists who can employ and implement their gained knowledge in basic and applied aspects that will profoundly influence the prevailing paradigm of agriculture, industry, healthcare and environment to provide sustainable development.

Will increase the ability of critical thinking, development of scientific attitude, handling of problems and generating solutions, improve practical skills, enhance communication skill, social interaction, and increase awareness in judicious use of plant resources by recognizing the ethical value system.

The training provided to the students will make them competent enough for doing jobs in Govt. and private sectors of academia, research and industry along with graduate preparation for national as well as international competitive examinations, especially UGC-CSIR NET.

Programme specific objectives (PSOs): B.Sc. 1st Year Course in Botany

- This course will provide knowledge on various fields of basic Botany as well as knowhow of basic cell biology and biomolecules.
- Students will be given exposure to evolutionary trend in plant kingdom
- Syllabus is prepared to enable students for competitive exams in frontier areas of plant sciences.

Course Outcomes of Paper I (CO)

1. Develop understanding about the classification and diversity of different microbes including Bacteria, Viruses, Fungi, etc. and other diverse plant groups like, Algae, Fungi & Lichens, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms.
2. Gain knowledge about developing commercial enterprise of microbial products.
3. Understand the structure and reproduction of certain selected bacteria, algae, fungi and lichens
4. Develop critical understanding on morphology, anatomy and reproduction of Microbes, Algae, fungi, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms.
5. Understand the instruments, techniques, lab etiquettes and practices for working in a microbiology laboratory.
6. Develop skills for identifying microbes and using them for Industrial, Agriculture and Environmental purposes.

Course Outcome - Paper II (CO)

1. Develop understanding on the basic chemistry of biomolecules, their involvement in cellular life processes.
2. Develop knowledge on plant cell architecture, their functioning in transducing life processes.
3. Develop practical knowledge on biomolecule identification and basic cellular processes.