# B.Sc. Botany
## DEPARTMENT OF BOTANY
## RANAGHAT COLLEGE

## Programme Outcomes (PO's)

**1. Scientific Knowledge:** Apply the knowledge of basic science, life sciences and fundamental process of plants to study and analyze any plant form.

**2. Critical Thinking:** Take informed actions after identifying the assumptions that frame students thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at their ideas and decisions (intellectual, organizational, and personal) from different perspectives.

**3. Problem Solving:** Understand and solve problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired.

**4. Effective Communication:** Speak, read, write and listen scientific ideas in English and in one Indian language, and develop effective communication skills by connecting people, ideas, books, media and technology.

**5. Skill Development:** 1. Use of technological skills in word-processing, internet surfing, statistical packages and databases. 2. Ability to work as part of a team. 3. Ability to use library resources. 4. Time management. 5. Career planning.

**5. Effective Citizenship:** Demonstrate empathetic social concern and equity centered national development and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

**6. Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.

**7. Self-directed and Life-long Learning:** Acquire the ability to engage in independent and lifelong learning in the broadest context of socio-technological changes

## Programme Specific Outcomes (PSO's)

**1. Basic knowledge of plant science:** Successfully completing the course the students will obtain a foundation in classical as well as contemporary aspects of plant science and basic concepts of all the plant groups, their taxonomy, diversity, metabolism, biochemistry, genetics and other advanced interdisciplinary areas which will be fruitful for their future studies.

**2. Scope and importance of Botany:** Understand scope and importance of Botany in every field especially in dealing with societal and environmental issues, agriculture, ethics and healthcare.

**3. Environment and sustainability:** Understand the and the role of plants in sustaining life on earth and the interrelationship between human beings and nature, create awareness on natural resources and their importance in sustainable development, analyse the importance of biodiversity conservation, estimate biodiversity loss and develop conservation strategies.

**4. Scientific temperament & aptitude:** Develop scientific temper and undertake scientific projects logically & rationally.

**5. Practical skills:** Students learn to carry out practical work in the field and in the laboratory and also gain introductory experience in applying each of the following skills 1. Interpreting plant morphology and anatomy. 2. Plant identification. 3. Vegetation analysis techniques. 4. A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry. 5. Analyze data using appropriate statistical methods and computer packages.

**6. Application of skills:** Apply the knowledge gained from the studies for the upliftment of society via addressing health, environmental issues, food scarcity etc. Identify and classify plants according to the principles of plant systematics, apply techniques like plant propagation methods, organic farming, mushroom cultivation, preparation of biofertilizers, biopesticides etc. in daily life. Students will be able to conceive the idea of artificial propagation of plants via vegetative methods and to find a livelihood via establishing miniature plant nurseries.

**7. Awareness on life processes:** Understand plant life processes, biomolecules, and basic hereditary and evolutionary principles.

**8. Problem analysis:** Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.

**9. Design/development of solutions:** Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health

**10. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and development of the information to provide valid conclusions.

**11. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.

**12. Ethics:** Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.

**13. The Botanist and society:** Apply reasoning informed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.

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