

RANIGANJ GIRLS' COLLEGE

DEPARTMENT OF BOTANY

Programme Outcomes (POs):

- Students acquire immense knowledge about 'Fundamentals of Botany' which includes the relevant topic of botany as well as diverse area.
- Students should acquire the skills to deal with various forms of plants, their preservation techniques and future commercialization.
- To acquire knowledge about different flora through study tour.
- To develop skills on mushroom cultivation, biofertilizer production, horticulture, floriculture etc.
- Graduates should have developed positive attitudes and ethical values towards environment.

Program Specific Outcomes (PSOs):

- Students develop their writing and communication skills in communicating botany related topics.
- Students have the ability to classify, identify of plant groups according to their mode of evolution.
- Students will acquire the proficiency to handle variety of laboratory instruments.
- To receive indigenous traditional knowledge about different plants in respect to ethnobotanical uses by tribal communities and in advance ayurvedic system.
- Towards sustainable development and ecological integrity, used knowledge about bioremediation, phytoremediation etc.

Course Outcomes for B.Sc. Botany (Honours/Programme/Generic):

SEMESTER-I:

PHYCOLOGY, LICHENOLOGY, MYCOLOGY, PHYTOPATHOLOGY

- To learn and handle various lower non-vascular plants life forms and their diversity.
- Acquire knowledge about autotrophic, heterotrophic and symbiotic forms.
- To know about ancient life and their mode of compactization from simple to complex form.
- To learn about various plant diseases and pathogen related to plant diseases.
- To develop ability to collect plant samples from various flora and how to preserve them.
- To learn about resource utilization, ecological signification and use them in phyto-remediation.
- Workshop on Mushroom cultivation and commercialization.

SEMESTER-II:

BRYOLOGY, PALEOBOTANY AND PALYNOLOGY, MORPHOLOGY AND EMBRYOLOGY, PLANT ANATOMY

- To learn about plant amphibians, their diversity and economic as well as ecological importance towards sustainable development.
- To know about prehistoric life forms, environmental condition, and various fossils forms.
- To learn about various plants parts, embryonic development, breeding activity and conservation techniques.
- To know about pants internal organization and their relation against different ecological conditions.

SEMESTER-III:

PLANT SYSTEMATICS, ECONOMIC BOTANY AND PHARMACOGNOSY, PTERIDOPHYTA AND GYMNOSPERMS

- Knowledge about identification, nomenclature and classification of plants.
- To learn about economic utilization of plants and their economic importance.
- To know about medicinal properties and uses of plants by folklore and ayurveda system (ITK).
- To learn about diversity and uses of various fern and fern allies and gymnosperms.
- Ability of conserve rare and threatened plant species both in in-vivo and in-vitro conditions.

SEMESTER- IV:

BIOCHEMISTRY, PLANT METABOLISM, ECOLOGY AND PHYTOGEOGRAPHY, MICROBIOLOGY

- To learn about the basic biochemistry and knowledge of all macromolecular and bio-molecular structure including biophysical parameters.
- To know about bioenergetics and there reactions involving all spontaneous processes.
- To learn many qualitative and quantitative measurements of bio-molecules.
- Students assimilate the adequate knowledge of metabolism in plants.
- The students became gathering knowledge about ecology and environment and Phytogeographical classifications, vegetations of Eastern Himalayas and Sunderbans.
- Students acquire the skill about Sterilization, preparation of culture medium, subculturing, Gram staining etc.

- Students gathered knowledge on microbiota, characterization, identification and their economical aspects against human welfare.

SEMESTER-V:

PLANT PHYSIOLOGY, CELL BIOLOGY AND GENETICS, ANALYTICAL TECHNIQUES IN PLANT SCIENCES, PLANT BREEDING

- To acquire adequate knowledge about translocation in plants, carbon dioxide concentrating mechanisms, growth regulators and flowering of plants.
- To learn about cell organelles, cell divisions, chromosome mapping, chromosomal aberrations, gene mutations etc.
- To handle many Biophysical instruments for biochemical and qualitative and quantitative analysis of biomolecules.
- To learn many techniques about cell fractionation by centrifugation, measurement of biomolecules in Colorimeter and Spectrophotometer.
- To learn the separation techniques of amino acids and identifications.
- Students are trained for utilization of gel electrophoresis and its applications.
- To know about quantitative inheritance, crop improvement and breeding.

SEMESTER-VI:

MOLECULAR BIOLOGY, PLANT BIOTECHNOLOGY AND TISSUE CULTURE, HORTICULTURE PRACTICES AND POST-HARVESTING TECHNOLOGY, INDUSTRIAL AND ENVIRONMENTAL MICROBIOLOGY.

- To knowledge about genetic information's, gene structure and regulations in prokaryotes.
- Isolation of plant DNA and chromosomal DNA from bacteria.
- To develop skill about human blood grouping techniques.

- To learn about gene cloning, recombinant DNA technology and bioinformatics includes recent biotechnological advancement related to genomics and proteomics.
- To gathering the knowledge about gene transfer and applications of biotechnology.
- To acquire the knowledge about tissue culture techniques, restriction digestion, isolation and electrophoresis of plasmid DNA.
- An introduction to fruit, vegetable crops, ornamental plants and many horticultural practices such as grafting, cutting, layering, budding, bonsai production.
- To learn about post harvesting technology like micropropagation.
- To knowledge about microbial flora of water, microbial production of industry products and scope of microbes.