

Department of Botany
Liberal College, Luwangsangbam

Program outcomes:

After completing the graduation in BSc Botany, the students are able to

1. Understand the world of plants and its correlation with animals as well as human beings as “No existence of plants, no animals can survive” idea.
2. Figuring the idea for further advance knowledge and investigating the hidden activities of plants and their valuable impact to the humans.
3. Resuming the higher studies and to become research fellowship, publishing many remarkable results oriented in connection with the various function and unfamiliar miracle of plants.
4. Accomplish in international seminars, workshops and exchange knowledge with highly reputed universities of world.
5. Wait the famous personality in the field of plant world.

Course outcomes: BSc Botany Semester I

After completing BSc Botany semester I, the students are able to

1. Know the world of microbes and role of virus and bacteria as harmful and beneficial to various field of agriculturally, industrially, pathologically to the planta and animal world.
2. Know and explain that fungi belong to a large group as a separate kingdom. To understand the food value and identification of edible and non-edible group of fungi. To understand the symbiotic relationship between fungi and algae namely lichen and their pollution indicator as well as food for animals and humans.

3. Understand that algae account 50% of photosynthesis takes place on the surface of earth. To know the protein content of algae e.g., Chlorella (single cell protein) as a food for humans.
4. Know that land plants were evolved or migrated from water to land. To know that bryophytes are amphibian of plant kingdom.
5. Know that the plants started the level of tissue system and seed borne started, by producing heterosporous type of spores.
6. Understand the difference among various group of cryptogamic plants by observing under microscope. To know various structure developed by the bodies of cryptogamic plants and roles of the structure to various habitat adaptation also.

Course outcomes – BSc Botany Semester II

After completing the course students are able to

- Course 1** – To know the gymnospermic plants are naked seeded plants group.
To know that gymnospermic plants gives valuable timber as well as many oils for human.
To know that they flourished one time to the surface of earth in large nos., from the studies of fossils.
- Course 2** – To understand the very hard work of famous taxonomists exploration of different plants groups.
To know their similarities belonging to different families like the identify of its own genetic stock, evolutionary sequences of plant World.
To know how to identify and naming of plants by the binomial system of nomenclature.
- Course 3** – To understand the knowledge of economically important plants, their origin and migrated to all areas.
Know the different parts of plants that are medicinal, food, fibers and many more to human.
- Course 4** – Understand about various cell organelles. Have proper knowledge about anomalous secondary growth.
- Course 5** – Have clear knowledge about micro and megasporogenesis and embryo development

Course outcomes – BSc Botany Semester III

Students are able to

Course 1 – Have knowledge about the phytogeographical regions of India and factor affecting distribution of plants. Understand endemism and barrier of plant distribution.

Course 2 – Understand ecosystem and its theme. Learn how minerals are cycled back and forth between the living and non-living environment. Have knowledge of energy flow in ecosystem.

Course 3 – Learn how plants absorb water and translocate it. Understand the process of various physiological process namely photosynthesis, respiration, mineral nutrition growth etc.

Course 4 – Learn classification & function of biomolecules like carbohydrates, lipids & amino acids. Nomenclature & classification of enzymes.

Course 5 – Learn about the gene organization of prokaryotes & eukaryotes. Understand the structure & physical properties of DNA & RNA and mechanism of protein synthesis.

Course 6 – Perform the ecological, physiological and biochemical experiments. Have clear knowledge about the mandatory of submitting field report.

Course outcomes – BSc Botany Semester IV

Students are able

Course 1 – Understand the structure and functions of cell and its component with experience the organisation and function of chromosomes and identification of different stages of mitotic cell and meiotic cell division.

Course 2 – Understand the complete history of Mendelian, crossing over, variations in chromosomes number and sex determination in plants.

Course 3 – Understand the plant hybridisation technique, selection of hybrid and principles and methods of plant breeding.

Course 4 – Understand the crop improvement through biotechnology such as plant tissue culture, genetic engineering & various aspects in medicine, agriculture and human welfare.

Course 5 – Understand,

1. The collection of data, mean, mode, median and standard division and probability
2. Theory and methods, analysis of mean, mode, median and standard division.

Course outcomes – BSc Botany Semester V (PaperV)

After completing the course students are able to

Course 1 – Know the world of diversity life and their system of classification.

- Understand the five (5) kingdom system of classification.
- Know the three (3) domain of life proposed by Carl Woese, the upper ranks of kingdom

Course 2 – Understand the various role of microbes for the welfare of human life.

- Know the environment friendly products form the microbes to various field like Biopesticides, Biofertilizers, Biogas.

Course 3 – Know the new pattern of control system of disease management by quarantive method , cultural practices and producing of high resistant varieties.

- Understand the application of insect, pests management in modern agriculture and farming.

Course 4 – Understand the different types of diseases of plants caused by bacteria, fungi and virus.

- Know the life cycle, disease recycle and control measure by different methods.
- Know the famous postulate of Robert Koch

Course 5 – Understand the evolutionary pattern of bryophytes and pteridophytes.

- Know the economic importance of bryophytes and pteridophytes
- Know the origin of seed habit pattern.

Course outcomes – BSc Botany Semester V (Paper VI)

After completing the course students are able to

Course 1 – Know the pattern of evolutionary sequence of plants life by knowing different fossil type form different era and period of the past.

Course 2 – Understand the advance type of classification of plants by observing cells, number and DNA pattern of different plants form different Taxa.

-Understand the knowledge of numerical taxonomy.

-Know the survey of north-eastern floristic region by botanical survey of India.

Course 3 – Try and understand the planting of economically valuable plants and their harvesting knowledge for the benefits of our lives.

Course 4 – Understand the various growth pattern of different tissue, role of cambium, anomalous secondary growth of plants and seasonal pattern of wood etc.

Course 5 – Understand and explain the developmental structure and function of embryos.

-Know the compatibility and incompatibility system of two species.

Course outcomes – BSc Botany Semester VI (Paper VIII)

Students are able to

Course 1 – Learn about the different floristic regions of India. Natural resources and its conservation process. Have knowledge of renewable & non-renewable resources.

Course 2 – Learn about components of ecosystem, the interaction of biotic & abiotic component of ecosystem. Have knowledge of environmental pollution & its control measures.

Course 3 – Understand the physiological process of water & mineral absorption. Learn about plant hormones & it's functions. Have knowledge on photosynthesis, growth, biological N₂ fixation etc.

Course 4 – Understand well about enzymes & enzyme regulation. Process of glycolysis, Kreb's cycle, fermentation etc. Learn about biosynthesis of nucleic acids & protein synthesis.

Course 5 – Learn about the gene structure, gene expression & regulation. Operon concept knowledge of recombinant DNA technology.

Course outcomes – BSc Botany Semester VI (Paper IX)

After completing the course students are able to

Course 1 – Understand all cellular organelles and their functions for becoming a living organism.

Know the difference of prokaryotic and eukaryotic nature of cell.

Course 2 – Know the roles of genetic material of plants and various interaction with their different genes resulted to different structure and Function

Course 3 – Understand the hybridization process and production of hybrids and their uses to human life.

Course 4 – Know the potentiality of cells and various techniques of tissue culture.

Understand the production of transgenic plants.

Observe the achievement of biotechnology producing various products for the human welfare.

Course 5 – Know the knowledge of computer and its application to the biological science.

Understand the update of many software for solving and calculation of various data system related to life science.

Target the uses of bioinformation.