

Shri Agrasen Kanya Post Graduate College

Bulanala/Parmanandpur Varanasi

Department of Botany (PG)

Programme : M.Sc. I<sup>st</sup> Semester

Subject : Botany , Paper : I<sup>st</sup>

Course Code : B040701T

Course Title : Diversity of Plant Microbes

Course outcome :

After completion of the course the students will be able to know,

- The diversity of microbes could be explored in the environment.
- The Microbes and their roles for the economy, could be assessed.
- Assessment of habit and habitat of microbes.
- The significance of microbial relationship could be justified.

Programme : M.Sc. I<sup>st</sup> Semester  
Subject : Botany, Paper : II<sup>nd</sup>  
Course Code : B040702T  
Course Title : Algae and Bryophyte

Course outcome :

After completion of the course the students will be able to know,

- The thalbus organization, distribution, life cycle with respect to habit and habitat could be known.
- Economical values & ecological role ploy.

Programme : M.Sc. II<sup>nd</sup> Semester  
Subject : Botany, Paper : III<sup>rd</sup>  
Course Code : B040703T  
Course Title : Pteridophytes

Course outcome :

After the completion of the course the students will be able to,

- 1- Develop critical understanding on morphology, anatomy and reproduction of pteridophytes.
- 2- Understanding of plant evolution and their transition to land habitat.
- 3- Understand the typological study and create a knowledge base in understanding the basis of plant diversity, economic value.

Programme : M.Sc. I<sup>st</sup> Semester  
Subject : Botany, Paper : IV<sup>th</sup>  
Course Code : B040704T  
Course Title : Gymnosperm

Course outcome :

- Knowledge of different groups of gymnosperms with respect to morphological, anatomical, economical roles etc.
- Study of fossils as well.

Programme : M.Sc. I<sup>st</sup> Semester  
Subject : Botany, Paper : V<sup>th</sup>  
Course Code : B040705T  
Course Title : Practical

Course outcome :

After completion of the course the students will be able to know,

- The habit and habitat, cell structure, special structures of micro and macroflora, could be studied.
- Characteristic features of different groups could be helpful for the knowledge of phylogenetic relationship.

Programme : M.Sc. II<sup>nd</sup> Semester

Subject : Botany, Paper : I<sup>st</sup>

Course Code : B040801T

Course Title : Taxonomy of Higher Plants and Economic Botany

Course outcome :

After completion of the course the students will be able to know,

- Taxonomy of seed plants could be known.
- Phylogenetic relationships of flowering plants could be evaluated.
- Economical roles of plants could be known.

Programme : M.Sc. II<sup>nd</sup> Semester  
Subject : Botany, Paper : II<sup>nd</sup>  
Course Code : B040802T  
Course Title : Cell Biology of Plants.

Course outcome :

After completion of the course the students will be able to know,

- Mystery of cell as the building block of the living being could be evaluated.
- Different cell types, cell division and division of labour in the cell could be explored.

Programme : M.Sc. II<sup>nd</sup> Semester  
Subject : Botany, Paper : III<sup>rd</sup>  
Course Code : B040803T  
Course Title : Genetics

Course outcome :

After completion of the course the students will be able to know,

- Advance knowledge of gent structure and functions, could be explored.
- Genetic variations of the organisms could be evaluated.
- Study of recombinants, linkage and crossing over.



Programme : M.Sc. II<sup>nd</sup> Semester

Subject : Botany, Paper : IV<sup>th</sup>

Course Code : B040804T

Course Title : Structure, Development and Reproduction of Flowering Plant.

Course outcome :

After completion of the course the students will be able to know,

- Anatomical features of root, stem and leaf could be explored.
- Root and stem meristematic tissues could be studied.
- Knowledge of male, female gametophytes, pollination types, fertilization and fruit development.

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Programme : M.Sc. II<sup>nd</sup> Semester  
Subject : Botany, Paper : V<sup>th</sup>  
Course Code : B040805T  
Course Title : Practical

Course outcome :

After completion of the course the students will be able to know,

- Identification and systematic position of local genera and their Monograph study.
- Knowledge of cell structure types and cell division types.
- Study of genes and their characters through samples.

Programme : M.Sc. III<sup>rd</sup> Semester

Subject : Botany, Paper : I<sup>st</sup>

Course Code : B040901T

Course Title : Microbiology

Course outcome :

After completion of the course the students will be able to know,

- Students get a diversified knowledge of microbes.
- Students also becomes perfect role in various technique used in commercial uses.
- students develop their knowledge through this course outcome that how microbes play a role to maintenance of environment.

Programme : M.Sc. III<sup>rd</sup> Semester  
Subject : Botany, Paper : II<sup>nd</sup>  
Course Code : B040902T  
Course Title : Plant Physiology

Course outcome :

Students get the advance knowledge of the following -

- Role of green plant as primary producer physiology of conversion of radiant energy into chemical energy by green plants.
- Role of water and phytohormones in the maintenance of structure and various activities of plant life.
- Light dependent plant growth and movement.

Programme : M.Sc. III<sup>rd</sup> Semester  
Subject : Botany, Paper : III<sup>rd</sup>  
Course Code : B040903T  
Course Title : Biochemistry

Course outcome :

After the completion of the course the students will able to :

- Understand the role of Biochemistry and Metabolic process for plant growth.
- Learn the assimilate knowledge about Biochemical constitution of plant diversity.
- Know the role of plants in development of natural products, nutraceuticals, dietary supplements, antioxidants etc.

Programme : M.Sc. III<sup>rd</sup> Semester  
Subject : Botany, Paper : IV<sup>th</sup>  
Course Code : B040904T  
Course Title : Plant Ecology

Course outcome :

After completion of the course the students will be able to know,

- Students to achieve knowledge of environment including vegetation development.
- Students get knowledge about analysis of community.
- Students get knowledge about energy flow pathway and ecological efficiency

Programme : M.Sc. III<sup>rd</sup> Semester  
Subject : Botany, Paper : V<sup>th</sup>  
Course Code : B040905T  
Course Title : Botany Practical

Course outcome :

After completion of the course the students will be able to know,

- Students get knowledge, identification of microbes, preparation and culturing process of various food product (Chase, butter milk etc.) and study about role of microbiology in water treatment etc.
- Students will set up an experiment of plant physiology to know how receptors influence the plant body and their function.
- Students learn practically about test of various chemical found in plant and plant parts by treating reagents.
- Students learn about ecological parameters going in the local field by using various apparatus concern.

Programme : M.Sc. IV<sup>th</sup> Semester  
Subject : Botany, Paper : I<sup>st</sup>  
Course Code : B040001T  
Course Title : Molecular Biotechnology

Course outcome :

After completion of the course the students will be able to know,

- Students achieve knowledge about steps of recombinant DNA technology.
- Students achieve various steps for development of transgenic plants.
- Students get knowledge about genetic, physical mapping, DNA marker, genomics and proteomics.
- Students get knowledge about bioinformatics and G M plants.



Programme : M.Sc. IV<sup>th</sup> Semester  
Subject : Botany, Paper : II<sup>nd</sup>  
Course Code : B040002T  
Course Title : Environmental Biology

Course outcome :

- After completion of the course the students will be able to know,
- Students will be able to know about the concept of an environment and their component and impact of factors on environment.
  - Students get knowledge of biodiversity concept and their utility concern.
  - Students get knowledge of various method to adopt for its conjugation in-site and ex-site, cryopreservation and seed bank technique.

Programme : M.Sc. IV<sup>th</sup> Semester  
Subject : Botany, Paper : III<sup>rd</sup>  
Course Code : B040003T  
Course Title : Plant Pathology

Course outcome :

After completion of the course the students will be able to know,

- Students know about disease causing agents, types of diseases and work done or contribution of various plant pathologists.
- Students studied various disease symptoms caused by microbes.
- Students learn management of diseases of plants through various ways.
- Students know about local disease of plants caused by pathogen and their control measures.

Programme : M.Sc. IV<sup>th</sup> Semester

Subject : Botany, Paper : IV<sup>th</sup>

Course Code : B040004T

Course Title : Plant Tissue Culture (Special Paper - II)

Course outcome :

After the completion of the course the students will be able to -

- Understand the function of plant tissue, cell and embryo culture and their propagation.
- Understand about the uses of artificial propagational hybrid, cross plants one employment.
- Know about important techniques use to obtain traditional medicines, herbs, economically important plants in our daily life.

Programme : M.Sc. IV<sup>th</sup> Semester

Subject : Botany, Paper : V<sup>th</sup>

Course Code : B040005T

Course Title : Practical

Course outcome :

After completion of the course the students will be able to know,

- Students get knowledge by preparation of slide, study herbarium, section cutting of pathological material of concern syllabus of their locality.
- Students get knowledge of various parameters of environmental characteristic using by apparatus, instruments in water, soil and air quality of their surrounding.
- Students get instruction to do lab field project work to improve their knowledge in minor reassured work.
- Students develop their knowledge of instrumentation culture technique and preparation artificial products by tissue culture technique Synthetic seed, embryo etc.