



SEMESTER – II

BRANCH	Subject Title	Subject Code
B.Sc. (Botany – Minor/GE)	Applied Botany	BOM2/GE-121

Course Learning Outcomes (CLO)

By the end of this course the student should have:

- Understood the significance and role of botany.
- Learnt the basic aspects of applied botany.
- Gained knowledge about employment opportunities in the field of botany.
- Gained knowledge about start-up opportunities in the field of botany.
- Learnt about opportunities of social services.
- Gain knowledge about best health practices.

Content

Unit - I

1.1 Introduction, objectives and importance of Applied botany

1.2 History and evolution of botany

1.3 Relation of plants to man and relation with other services

1.4 Various disciplines of botany and their applications to human welfare

Unit - II

1.1 Definition and types of pollution and pollutants

1.2 **Phytoremediation:** Air, water, soil, noise and thermal pollutants (Any 5 plants with botanical name, family) and their role in pollution control.

1.3 Bioremediation: definition and types



Unit - III

1.1 Ancient agricultural practices.

1.2 **Modern agriculture practices:** Polyhouse, Drip irrigation, hydroponics, computer-based agriculture, terrace farming.

1.3 **Organic farming:** Introduction, objective and brief technique.

1.4 **Horticulture:** Definition and role in human welfare

1.5 **Forestry:** Definition, branches and role in human

1.6 **Silviculture:** Definition and management practices

Unit - IV

1.1 Role of Botany in Rural development

1.2 Ethnobotany: Introduction and importance

1.3 Ethnomedicine: Definition and examples. (Local name, Botanical name, family and importance of Neem, Aloe, Clove, Ginger, Tulsi, Turmeric, Giloy, Emblica, Ashwagandha, Arandi)

1.4 **Ethno-fibres:** Definition and examples (Local name, Botanical name, family and importance of Jute, Coconut, elephant grass, cotton)

1.5 **Ethno-food crops:** Definition and examples (Local name, Botanical name, family and importance of Garadu, Singada, Kutaki, Sama, Kodo, Bathua, Sehjan, Jowar, Makka, Bajra, Jau)

Unit - V

1.1 **Plant tissue culture:** Definition, types and Importance.

1.2 **DNA Recombinant technique:** Introduction, tools and importance.

1.3 Role of recombination in present era

1.4 **Bioinformatics:** Definition, concept and tools

1.5 **Introduction of bioinformatics software:** Basic idea of BLAST and FASTA Importance of bioinformatics.



Practical

1. Identification of ethnomedicinal plants
2. Preparation of soil health card of any agricultural field.
3. Study of vermin compost and composting of kitchen waste.
4. Use of BLAST and FASTA
5. Prepare the list of important air, water and soil pollutants of local areas.
6. Plant tissue culture technique: sterilization, inoculation, culture media, acclimatization and hardening,
7. Preparation of list of ethnomedicinal, food, fibre
8. Tools of recombinant DNA technology Restriction, enzymes, plasmid vectors; other enzymes.
9. Study of global warming, acid rain and water quality (pH and Conductivity),
10. Study of local plants grown around agricultural field.
11. *Case and field study can be designed accordingly.