Anekant Education Society's
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati
(Autonomous Status)
(Affiliated to Savitribai Phule Pune University, Pune)

DEPARTMENT OF BOTANY

Course outcome (2019 Pattern)

Class : T. Y. B. Sc. (Semester - V)

Paper Code: BOT 3501 Cryptogamic Botany

Course Outcome:

1) Students can be experts in identification of lower plants.
2) Students can be start their own business based on applications of cryptogams.
3) Identify, describe and study in detail life cycle of cryptogams.
4) Provide plant description, describe the morphology and reproductive structure of cryptogams.
5) Gain the proficiency in the identification of cryptogams.
6) Knowledge of comparison between cryptogams and other plant groups.
7) Students get basic idea and comparative study of cryptogams.

Paper Code : BOT3502 Spermatophyta and Palaeobotany

Course Outcome:

1. Understanding the concepts of gymnosperms, angiosperm and palaeobotany.
2. Knowledge of different families and classification systems.
3. Understanding the tools of taxonomy and fossil types.
4. Learn the basic concepts, principles and techniques in plant biotechnology.
5. Knowledge acquired students will be able to apply techniques in other branches such as biological,medical, agricultural etc.
6. Use of bio techniques to explore plant to its molecular level.
7. Understand the local flora with respect to Phanerogams.

Paper Code : BOT 3503 Cell and Molecular Biology

Course Outcome:

1. The main outcome of this course is to acquaint students with some cytological techniques.
2. Experts required in future for genetic library of plants.
3. Acquaint the students with synthesis of nucleic acids and PCR technique.

4. Expert with some cytological techniques.

5. Understand current findings in cell biology.

6. Demonstrate and explain different phases of cell cycle.

7. Get knowledge of different types of cell communication.

Paper Code : BOT 3504 Industrial Botany

Course Outcome:

1. Preparation of different garden at personal level and to encourage people
2. Hands on techniques of packaging, harvesting and hydroponics.
3. Students can start their own business in cold storage, packing of flowers and fruits.
4. Develop plant tissue culture industry.
5. Get expertise to develop agro based industries.
6. Get expertise in field of Industrial Botany.
7. Understand basics of plant resource based industries

Paper Code : BOT 3505 Biostatistics

Course Outcome:

1) Students will be expert in use of computer to solve biological problems.
2) Students can be master in solving biological problems with the help of statistics.
3) Students will apply their knowledge in various branches of biology.
4) Students will be expert in use of computer to solve biological problems.
5) Students can be master in solving biological problems with the help of statistics.
6) Students will apply their knowledge in various branches of biology.
7) Students' expertise in microscopic techniques.

Paper Code: BOT 3506 Research Methodology

Course Outcome:

1. Comprehensive knowledge in research areas.
2. Knowledge of preparation of Manuscript, Review article and Project Report.
3. Students will understand the basics of research.
4. Data analyzer will be expert to conclude the significance of biological experiments
5. Students will be expert in use of computer to solve biological problems.
6. Students can be master in solving biological problems with the help of statistics.
7. Students will apply their knowledge in various branches of biology.

Paper Code: BOT 3507 Practical Course I

Course Outcome:

1 To aware the students about lower plants diversity.
2 To enhance the knowledge of students up to the molecular level.
3 To make students expert in molecular biology techniques.
4 It will help to conserve the biodiversity of lower and higher plants.
5 Students will get job in gene bank, gene mapping and bioinformatics disciplines.
6 Data analyzer will be expert to conclude the significance of biological experiments.
7 It will help to conserve the biodiversity of lower plants.

Paper Code: BOT 3508 Practical Course II

Course Outcome:

1 It will help to conserve the biodiversity of higher plants.
2 Students can expert in evolutionary and advanced characters of plants.
3 Students will get the job in the field of plant taxonomy and allied sciences.
4 It will help to conserve the biodiversity of lower plants.
5 Students will get job in gene bank, gene mapping and bioinformatics disciplines.
6 Data analyzer will be expert to conclude the significance of biological experiments
7 Use of bio techniques to explore plant to its molecular level.

Paper Code: BOT 3509 Practical Course III

Course Outcome:

By the end of course students will be able to

CO1. Explain basic cell structure.

CO2. Understand basic biological concepts.

CO3.Get acquainted with some cytological techniques.

CO4. Understand basic knowledge about structure of cell organelles.

CO5. Explain mechanism of cells in plant.

CO6. Train in different isolation techniques in cell organelle.

CO7. Interprets cell structure and their function.

Class : T. Y. B. Sc. (Semester - VI)

Paper Code : BOT 3601 Plant Physiology and Biochemistry

Course Outcome:

1. Use knowledge for improvement of agricultural yield
2. Students aware about the plant to response environmental conditions.
3. Students get knowledge of internal activities in plant.
4. Development of expertise in plant physiology.
5. Get knowledge of plant metabolism.
6. Students get knowledge of plant cycle.
7. Students get knowledge of biomolecules.

Paper Code : BOT 3602 Plant Biotechnology

Course Outcome:

1. Develop plant tissue culture industry.
2. Get expertise to develop agro based industries.
3. Get expertise in field of Industrial Botany.
4. Understand basics of plant resource based industries.
5. Learn the basic concepts, principles and techniques in plant biotechnology.
6. Knowledge acquired students will be able to apply techniques in other branches such as biological,medical, agricultural etc.
7. Use of bio techniques to explore plant to its molecular level.

Paper Code : BOT 3603 Genetics and Plant Breeding

Course Outcome:

1. Students get knowledge of genetical heredity.
2. Students become expertise in Plant Breeding Techniques.
3. Get knowledge for improving the new crop variety.
4. Get knowledge about gene expression and regulation of gene.
5. Demonstrate emasculation and pollination methods.
6. Explain floral biology for breeding techniques.
7. Demonstrate mutation in plant cells.

Paper Code: BOT 3604 Plant Pathology

Course Outcome:

1) Students can be confident about basic idea and comparative study of cryptogams.
2) Students can be experts in identification of lower plants.
3) Students can be start their own business based on applications of cryptogams.
4) Get knowledge about life history of algae, fungi bryophytes.

5) Students can be understood the details of meteorological factors and pathogens involved in disease development. So, it will help as prerequisite for avoiding the disease spreading.
6) Knowledge of plant pathology will helpful to use diseases resistant varieties of crop plants and their disease management.
7) Students can be start their own business related to eco-friendly management of plant diseases and its consultancy.

Paper Code: BOT3605 Pharmacognosy

Course Outcome:

1. Knowledge of traditional and alternative systems of medicines.
2. To increase desire Ayurveda.
3. Knowledge of drug adulteration and its evaluation methods.
4. Awareness of herbal drugs cultivation methods, collection, processing and marketing.
5. Vision of scientific approach towards Ayurveda.
6. Get knowledge of plant metabolism.
7. Students get knowledge of plant cycle.

Paper Code: BOT 3606 Botanical Techniques

Course Outcome:

By the end of course students will be able to

CO1.Get acquainted in advance botanical techniques.

CO2.Understand different types and working of microscopes.

CO3.Students' expertise in microscopic techniques.

CO4. Expertise in different centrifugation techniques.

CO5.Train to use different electrochemicaltechniques.

CO6.Understand DNA sequencing techniques.

CO7. Analyze antigen –antibody interaction.

Paper Code: BOT 3607 Practical-I

Course Outcome:

1 Students will be expert in tissue culture techniques.
2 Students can get employment in agro-industries.
3 Expertise of students in plant pathogenecity will help to identify and eradicate pathogens which will help to enhance plant production.
4 Students will be expert in tissue culture techniques.
5 Students can get employment in agro-industries.
6 Expertise of students in plant pathogenecity will help to identify and eradicate pathogens which will help to enhance plant production.
7 Train in different isolation techniques in cell organelle.

Paper Code: BOT 3608 Practical-II

Course Outcome:

1 Students will be expert in tissue culture techniques.
2 Students can get employment in agro-industries.
3 Expertise of students in plant pathogenecity will help to identify and eradicate pathogens which will help to enhance plant production.
4 To aware the students about lower plants diversity.
5 To enhance the knowledge of students up to the molecular level.
6 To make students expert in molecular biology techniques.
7 Information acquired about research work.

Paper Code: 3609 Practical-III Project Work

Course Outcome:

1. Information acquired about research work.
2. Getting of awareness of innovative methodology.
3. Significant conclusions and outputs.
4. Information acquired about research work.
5. Getting of awareness of innovative methodology.
6. Significant conclusions and outputs.
7. Information acquired about research work.

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Course outcome (2019 Pattern)

Class : S. Y. B. Sc. (Semester - III)

Paper Code: BOT 2301 Angiosperms Taxonomy
Course Outcome:

By the end of the course, students will be able to:

CO1.Describe the morphology and reproductive structure of Phanerogams.

CO2.Identify, describe and study in detail life cycle of Phanerogams.

CO3.Know scope of the Phanerogams diversity with specia lreference to Gymnosperms and Angiosperms.

CO4.Know different methods of conservation of Phanerogams.

CO5.Study the applications of cryptogams.

CO6.Describe and identify flowering plants.

CO7.Understand the local flora with respect to Phanerogams.

Paper Code: BOT 2302 Plant Physiology

Course Outcome:

1. Use knowledge for improvement of agricultural yield
2. Students aware about the plant to response environmental conditions.
3. Students get knowledge of internal activities in plant.
4. Development of expertise in plant physiology.
5. Get knowledge of plant metabolism.
6. Students get knowledge of plant cycle.
7. Students get knowledge of biomolecules.

Paper Code: BOT 2303 Practical based on BOT 2301 and BOT 2302

Course Outcome:

By the end of course students will be able to

CO1. Develop identification skill in cryptogams.

CO2. Train in cell biology techniques.

CO3. Understand basic knowledge about life cycle of cryptogams.

CO4. Internal and external structure of cryptogams.

CO5. Explain basic knowledge about evolution of lower cryptogams.

CO6. Discuss spore dispersal mechanism.

CO7. Understand variations in cryptogamic diversity.

Class : S. Y. B. Sc. (Semester - IV)

Paper Code: BOT 2401 Plant Anatomy and Embryology

Learning Outcome:

1. Students get knowledge of internal structure o f tissue system in plant.
2. Students are aware about microsporogenesis, megasporogenesis and embryogenesis.
3. Students get knowledge of tissue and tissue systems present in plant.
4. Students get knowledge of secondary growth in plants.
5. Students are able to know reasons for anomalous secondary growth in plants.
6. Students get knowledge of wood anatomy.
7. Students get knowledge of endosperm and seed.

Paper Code: BOT 2402 Plant Ecology

Learning Outcome:

1. The student can analyse and interpret the plant relation with the environment and impactof human interventions on ecosystem.
2. Appreciate the ethical, cross-cultural and historical context of environmental issues and the links between human and natural systems.
3. Provide plant description, describe the morphology and reproductive structure of cryptogams.
4. Gain the proficiency in the identification of cryptogams.
5. Knowledge of comparison between cryptogams and other plant groups.
6. Knowledge of scope of the cryptogams diversity.
7. Knowledge about habitat conservation of cryptogams diversity.

Paper Code: BOT 2403 Practical based on BOT 2401 and BOT 2402

Course Outcome:

1. Students learned internal morphology of plant.
2. Students get knowledge of developmental changes during microsporogenesis, megasporogenesis and embryogenesis.
3. Students learned ecological adaptations in plant.
4. Students are expertise in sectioning and staining technique.
5. Students should know the practical applications of anatomy, embryology and

ecology inrecent advances in plant sciences.

6. Get knowledge of preparation of bio-fertilizers.
7. Students should know the practical applications of anatomy, embryology and ecology in recent advances in plant sciences.

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Course outcome (2019 Pattern)

Class : F. Y. B. Sc. (Semester - I)

Paper Code: BOT 1101 Plant Diversity
Course Outcome:
By the end of the course, students will be able to:

CO1. Identify, describe and study in detail life cycle of cryptogams.
CO2. Provide plant description, describe the morphology and reproductive structure of cryptogams.
CO3. Gain the proficiency in the identification of cryptogams.
CO4. Knowledge of comparison between cryptogams and other plant groups.
CO5. Knowledge of scope of the cryptogams diversity.
CO6. Knowledge about habitat conservation of cryptogams diversity.
CO7. Knowledge about the applications of cryptogams.

Paper Code : BOT 1102 Applications of Botany - I
Course Outcome:
By the end of the course, students will be able to:
CO1. Understand basics of plant resource based industries.
CO2. Knowledge about natural and artificial propagation methods.
CO3. Knowledge about different types of nurseries and its commercial applications.
CO4. Develop floriculture industries on their own.
CO5. Develop plant tissue culture industry.
CO6. Get expertise to develop agro based industries.
CO7. Get expertise in field of Industrial Botany.

Paper Code : BOT 1103 Practical Course
Course Outcome:
By the end of the course, students will be able to:
C01. Expertise in handling of microscope.
CO2. Knowledge of morphological and anatomical variations in cryptogams.
CO3. Identify the cryptogams.
CO4. Develop entrepreneurship in agro products.
CO5. Expertise in artificial plant propagation.
CO6. Get knowledge of career opportunities in plant based industries.
CO7. Expertise in the field of Industrial Botany.

Class : F. Y. B. Sc. (Semester - II)

Paper Code : BOT 1201 Angiosperm Morphology

Course Outcome:

By the end of the course, students will be able to:

CO1.Describe the morphology and reproductive structure of Phanerogams.

CO2.Identify, describe and study in detail life cycle of Phanerogams.

CO3.Know scope of the Phanerogamsdiversitywithspecialreferenceto Gymnosperms and Angiosperms.

CO4.Know different methods of conservation of Phanerogams.

CO5.Study the applications of cryptogams.

CO6.Describe and identify flowering plants.

CO7.Understand the local flora with respect to Phanerogams.

Paper Code : BOT 1202 Applications of Botany - II

Course Outcome:

By the end of the course, students will be able to:

CO1.Get knowledge of Biopesticide and Biofertilizer.

CO2.Acquire knowledge of organic farming with respect to Biopesticides and Biofertilizers.

CO3.Know scope of the industrially important fungi and their applications.

CO4.Get knowledge of Pharmaceutical Industry.

CO5.Know career opportunities in biopesticide and biofertilizer industry.

CO6.Get expertise in preparation of biopesticides and biofertilizers.

CO7.Get expertise in the field of Pharmaceutical industry.

Paper Code : BOT 1203 Practical Course

Course Outcome:

By the end of the course, students will be able to:

CO1.Get expertise in handling of microscope.

CO2.Identify the Phanerogams.

CO3.Describe flowering plants using botanical terms.

CO4.Get knowledge of preparation offungalproducts.

CO5.Get knowledge of preparation of bio-fertilizers.

CO6.Get knowledge of preparation of biopesticides

CO7.Get knowledge of preparation of pharmaceutical products.