GOVT. DIGVIJAY AUTONOMOUS P.G. COLLEGE

RAJNANDGAON (C.G.)

FYUP

(Four Year Undergraduate Programme)

Course Curriculum

FOR

B.Sc. BOTANY

Semester V and Semester VI
SESSION – 2025-26

Approved by

Central Board Of Studies & Board Of Studies

DEPARTMENT OF BOTANY

Govt. Digvijay Autonomous P.G. College, Rajnandgaon, C.G.
Bachelor of Science (B.Sc.) Four Years UG Programme (FYUP)

Botany

2025-26

Year	Sem.	Course Type	Course Title	Credit	IA	ESE	Max Marks
First Year	I Sem.	DSC-01	Elementary Botany	3+0+0	30	70	100
		DSC-01-LAB	Elementary Botany – LAB	0+0+1	15	35	50
		GE-01	Elementary Botany	3+0+0	30	70	100
		GE-01-LAB	Elementary Botany – LAB	0+0+1	15	35	50
	II Sem.	DSC-02	Microbes and Thallophyta	3+0+0	30	70	100
		DSC-02-LAB	Microbes and Thallophyta - LAB	0+0+1	15	35	50
		GE-02	Microbes and Thallophyta	3+0+0	30	70	100
		GE-02-LAB	Microbes and Thallophyta - LAB	0+0+1	15	35	50
		SEC-01	Gardening and Floriculture	0+0+2	10	40	50
Second Year	III Sem.	DSC-03	Archegoniate and Fossils	3+0+0	30	70	100
		DSC-03-LAB	Archegoniate and Fossils – LAB	0+0+1	15	35	50
		DSE- 01	Natural resources and management	3+0+0	30	70	100
		DSE-01-LAB	Natural resources and management- LAB	0+0+1	15	35	50
		VAC- 01	Herbal Plants & Human Health	2+0+0	10	40	50
	IV Sem.	DSC- IV	Angiosperms	3+0+0	30	70	100
		DSC-IV- LAB	Angiosperms- LAB	0+0+1	15	35	50
		DSE-02	Microbiology and Phytopathology	3+0+0	30	70	100
		DSE-02-LAB	Microbiology and Phytopathology- LAB	0+0+1	15	35	50
		SEC- 02	Flower Decoration	0+0+2	10	40	50

Third Year	V Sem.	DSC-05	Plant Physiology	3+0+0	20	80	100
		DSC-05-LAB	Plant Physiology- LAB	0+0+1	10	40	50
		DSE-03	Plant Metabolism	3+0+0	20	80	100
		DSE-03-LAB	Plant Metabolism- LAB	0+0+1	10	40	50
		DSE-04	Plant Diseases	3+0+0	20	80	100
		DSE-04-LAB	Plant Diseases-LAB	0+0+1	10	40	50
		SEC-03	Biofertilizer and Biopesticides	0+0+2	10	40	50
	VI Sem.	DSC-06	Plant Pathology	3+0+0	20	80	100
		DSC-06-LAB	Plant Pathology-LAB	0+0+1	10	40	50
		DSE-05	Molecular Biology and Plant Biotechnology	3+0+0	20	80	100
		DSE-05-LAB	Molecular Biology and Plant Biotechnology-LAB	0+0+1	10	40	50
		DSE-06	Economic Botany	3+0+0	20	80	100
		DSE-06-LAB	Economic Botany-LAB	0+0+1	10	40	50
		SEC-04	Mushroom Culture Technology-Project	0+0+2	10	40	50
Fourth Year **Bachelor of Honors**	VII Sem.	DSC-07	Ecology and Phytogeography	3+0+0	20	80	100
		DSC-07-LAB	Ecology and Phytogeography-LAB	0+0+1	10	40	50
		DSE-07	Research Methodology and Ethics	4+0+0	20	80	100
		DSE-08	Biosystematics and Biodiversity	3+0+0	20	80	100
		DSE-08-LAB	Biosystematics and Biodiversity-LAB	0+0+1	10	40	50
		DSE-09	Plant Breeding and Seed Technology	3+0+0	20	80	100
		DSE-09-LAB	Plant Breeding and Seed Technology-LAB	0+0+1	10	40	50
		GE-	Growth and Stress Physiology	3+0+0	20	80	100
		GE-LAB	Growth and Stress Physiology-LAB	0+0+1	10	40	50
	VIII Sem	DSC-08	Molecular Biology and Biostatistics	3+0+0	20	80	100
		DSC-08-LAB	Molecular Biology and Biostatistics- LAB	0+0+1	10	40	50
		DSE-10	Plant Biotechnology and	3+0+0	20	80	100

			Crop Improvement				
		DSE-10-LAB	Plant Biotechnology and Crop Improvement-LAB	0+0+1	10	40	50
		DSE-11	Applied Botany and Intellectual Property Right (IPR)	3+0+0	20	80	100
		DSE-11-LAB	Applied Botany and Intellectual Property Right (IPR)-LAB	0+0+1	10	40	50
		DSE-12	Biochemistry and Enzymology	3+0+0	20	80	100
		DSE-12-LAB	Biochemistry and Enzymology-LAB	0+0+1	10	40	50
		DSE-13	Bioinformatics and Gene Technology	3+0+0	20	80	100
		DSE-13-LAB	Bioinformatics and Gene Technology-LAB	0+0+1	10	40	50
Fourth Year **Bachelor of Honors with Research**	VII Sem.	DSC-07	Ecology and Phytogeography	3+0+0	20	80	100
		DSC-07-LAB	Ecology and Phytogeography-LAB	0+0+1	10	40	50
		DSE-07	Research Methodology and Ethics	4+0+0	20	80	100
		DSE-08	Biosystematics and Biodiversity	3+0+0	20	80	100
		DSE-08-LAB	Biosystematics and Biodiversity-LAB	0+0+1	10	40	50
		DSE-09	Plant Breeding and Seed Technology	3+0+0	20	80	100
		DSE-09-LAB	Plant Breeding and Seed Technology-LAB	0+0+1	10	40	50
		GE-	Growth and Stress Physiology	3+0+0	20	80	100
		GE-LAB	Growth and Stress Physiology-LAB	0+0+1	10	40	50
	VIII Sem	DSC-08	Molecular Biology and Biostatistics	3+0+0	20	80	100
		DSC-08-LAB	Molecular Biology and Biostatistics- LAB	0+0+1	10	40	50
		DSE-10	Plant Biotechnology and Crop Improvement	3+0+0	20	80	100
		DSE-10-LAB	Plant Biotechnology and Crop Improvement-LAB	0+0+1	10	40	50
		Research Project/ Dissertation		12			

B.Sc. – V Semester

BOTANY

B. Sc. – V Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: V	**Subject: Botany**
Course type: DSC/ Core course- 05	**Course code:**
Title of DSC/Core Course- 05	**Plant Physiology**
Credits: 03	**Lecture: 45**
Maximum Marks: 100	**Minimum Passing Marks: 40**

Title	Plant Physiology
Course outcomes	➢ This course aims to educate student about the mechanism and physiology life processes in plants. ➢ It focus on the plant nutrient uptake and translocation, ➢ Know about how photosynthesis and respiration occur in plants. ➢ Know about how respiration & nitrogen metabolism occur in plants.
Learning outcomes	➢ Students will be able to understand the various physiological life processes in plants ➢ They will also gain about the various uptake and transport mechnisms in plants and are able to coordinate the various processes. ➢ They understand the role of various harmones, signaling compounds, thermodynamics and enzyme kinetics. ➢ During the course students will gain knowledge about various mechanisms such as channel or transport proteins involved in nutrient uptake in plants.

B. Sc. V Semester (BOTANY)
DSC/ Core Course –05

2025-26

Title	Plant Physiology		
Units	**Lectures**	**Credit**	**Syllabus**
I	**12**	**3**	Plant Water Relation: Diffusion, Permeability, Osmosis, Imbibition, Plasmolysis, Osmotic Potential and Water Potential, Types of Soil water, Water holding capacity, Wilting, Absorption of Water, Theories of Ascent of Sap.
II	**10**		Mineral Nutrition and Absorption, Deficiency Symptoms. Transpiration, Stomatal movement, Significance of Transpiration, Factors affecting Transpiration, Guttation.
III	**13**		Photosynthesis: Photosynthetic apparatus and Pigments, Light reaction, Mechanism of ATP Synthesis. C3 cycle, C4 cycle, CAM pathway of Carbon reduction, Photorespiration, factors affecting Photosynthesis. Respiration: Aerobic and Anaerobic respiration, Glycolysis, Krebs cycle, R.Q., Factors affecting respiration.
IV	**10**		Plant Growth Hormones: Auxin, Gibberellin, Cytokinin, Ethylene and Abscissic acid. Physiology of Flowering, Florigen concept, Photoperiodism and Vernalization, Seed dormancy and Germination, Plant Movement.
Total	**45 Lectures**	**3 Credit**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam	80
Internal Exam	20
Total marks	**100**

B. Sc. V Semester (BOTANY)
2025-26
DSC/ Core Course Practical –05
Plant Physiology-LAB

Practical Scheme (1 Credit)

1.	**Physiological experiment major**	**10**
2.	**Physiological experiment minor**	**10**
3.	**Instrumentation based on physiology**	**10**
4.	**Spotting**	**10**
5.	***Viva-voce***	**05**
6.	**Sessional**	**05**

Total Marks: 50

B. Sc. – V Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: V	**Subject: Botany**
Course type: DSE – 03	**Course code:**
Title of DSE – 03	**Plant Metabolism**
Credits: 03	**Lecture: 45**
Maximum Marks: 100	**Minimum Passing Marks: 40**

Title	Plant Metabolism
Course outcomes	➢ This course aims to educate student about the various metabolic pathways. ➢ Know about enzymes, its classification and their mode of action. ➢ Know about lipid metabolism, structure and functions. ➢ Know about Biological nitrogen fixation and nodule formation in plants ➢ Study thermodynamics and its application in plant sciences. ➢ Study the role of signaling and different signaling pathways.
Learning outcomes	➢ The student will enrich themselves with the phenomenon of metabolism process and their role in plants. ➢ Understand the signaling mechanism in plants. ➢ Learn about enzymes structure and mechanism of action. ➢ Understand about lipid metabolism and nitrogen fixation mechanism. ➢ Understand the thermodynamics laws and its role in plant biology.

B. Sc. V Semester (BOTANY)
DSE – 03

Title			Plant Metabolism
Units	**Lectures**	**Credit**	**Syllabus**
I	**13**	**3**	Enzymes: Classification of enzyme, Chemical nature and structure of enzymes, Properties of enzymes. Co-enzyme. Mechanism of enzyme action, Different mechanism of enzyme action, inhibition of enzyme action, enzyme kinetics: Michaelis-Menten equation, Biological significance of enzyme.
II	**12**		Lipid metabolism: Structure and function of lipids, Fatty acid biosynthesis. Synthesis and breakdown of triglycerides, β-oxidation, glyoxylate cycle, gluconeogenesis. Protein: Structure of Amino acid, Peptide bonds, Structure of protein: Primary, Secondary, Tertiary and Quaternary.
III	**10**		Nitrogen metabolism: Biological nitrogen fixation, Nodule formation and Nod factors. Mechanism of nitrate uptake and reduction, Nitrate assimilation, Ammonia assimilation and trans-amination.
IV	**10**		Energy Flow: Principals of Thermodynamics, Free energy and Redox reaction Signal Transduction: Receptors and G-Protein, Phospholipid signaling, Calcium–Calmodulin Cascade.
Total	**45 Lectures**	**3 Credit**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam	80
Internal Exam	20
Total marks	**100**

B. Sc. V Semester (BOTANY)
2025-26
DSE- 03 - Plant metabolism-LAB

Practical Scheme (1 Credit)

1.	**Enzymology**	**10**
2.	**Extraction & estimation of proteins, carbohydrates & Fats**	**10**
3.	**Nitrogen fixation/plant growth regulators**	**10**
4.	**Spotting**	**10**
5.	***Viva-voce***	**05**
6.	**Sessional**	**05**

Total Marks: 50

B. Sc. – V Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: V	**Subject: Botany**
Course type: DSE 04	**Course code:**
Title of DSE- 04	**Plant Diseases**
Credits: 3	**Lecture: 45**
Maximum Marks: 100	**Minimum Passing Marks: 40**

Title	Plant Diseases
Course outcomes	➢ This course aims to know the basic concepts of plant pathology. ➢ To know the various diseases, pathogens and mode of action of plant disease. ➢ Also known the plant disease control management.
Learning outcomes	The students will be able to learnin: ➢ They will be understand the basic concept of plant pathogensis. ➢ Learn about the various disease name and its causative pathogens. ➢ Understand the basic concept of plant disease control management.

B. Sc. V Semester (BOTANY)
2025-26
DSE – 04

UBSDET508

Title			Plant Diseases
Units	**Lectures**	**Credits**	**Syllabus**
I	**10**	**3**	Symptomatology, pathogenic and non-pathogenic symptoms caused by fungi, bacteria, virus, nematode, mycoplasma.
II	**10**		Diseases due to Fungi: Rust disease, Smut disease, Downy mildew, Leaf blight, Tikka disease.
III	**15**		Diseases due to Bacteria: Tundu disease, Citrus canker, Angular leaf spot, Crown gall of stone fruit. Diseases due to Nematodes: Root knot, Ear cockles of wheat. Diseases due to Mycoplasma: Sandal spike, Little leaf of Brinjal.
IV	**10**		Principles of plant disease control: Chemical control, Biological control, Plant Quarantine, Principles and methods of plant disease management.
Total	**45 Lectures**	**3 Credits**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam	80
Internal Exam	20

B. Sc. V Semester (BOTANY)
2025-26
DSE Practical 04: Plant Diseases -LAB

Practical Scheme (1 Credit)

1.	**Fungal diseases**	**10**
2.	**Bacterial diseases**	**10**
3.	**Mycoplasma/Nematode disease**	**10**
4.	**Spotting**	**10**
5.	***Viva-voce***	**05**
6.	**Sessional**	**05**

Total Marks: 50

B. Sc. – V Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: V	**Subject: Botany**
Course type: SEC – 03	**Course code:**
Title of SEC – 03	**Biofertilizer and Biopesticides**
Credits: 02 Credits	**Lecture: 30 Lectures**
Maximum Marks: 50	**Minimum Passing Marks: 20**

Title	Biofertilizer and Biopesticides
Course outcomes	➢ This course aims to educate student about general account about the microbes used as biofertilizer. ➢ Know about Mycorrhizal association and its application. ➢ Know about the history and concept of biopesticides.
Learning outcomes	➢ The student will enrich themselves with biofertilizer and its importance. ➢ Understand the preparation of biofertilizer & agent used in biofertilizer like Cyanobacteria. ➢ Learn about Mycorrhizal association and VAM. ➢ Understand about the biopesticides and its production.

B. Sc. V Semester (BOTANY)
2025-26
SEC – 03

Title			Biofertilizer and Biopesticides
Units	**Lectures**	**Credit**	**Syllabus**
I	**8**	2	General account about the microbes used as biofertilizer. Biofertilizers: Introduction, status and scope. Structure and characteristic features of bacterial biofertilizers- *Azospirillum, Azotobacter, Bacillus, Pseudomonas, Rhizobium* and *Frankia*.
II	**7**		Cyanobacteria (Blue green algae), *Azolla* and *Anabaena* nitrogen fixation, factors affecting growth, blue green algae and *Azolla* in rice cultivation.
III	**8**		Mycorrhizal association, types of mycorrhizal association, colonization of VAM – isolation and inoculum production of VAM and its influence on growth and yield of crop plants.
IV	**7**		History and concept of biopesticides. Importance, scope and potential of biopesticide. Definitions, concepts and classification of biopesticides, Mass production technology of bio-pesticides. Virulence, pathogenicity and symptoms of entomopathogenic pathogens and nematodes. Uses of biopesticide.
Total	**30 Lectures**	**2 Credit**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam/Project	40
Internal Exam	10
Total marks	**50**

B.Sc. – VI Semester

BOTANY

B. Sc. – VI Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: VI	**Subject: Botany**
Course type: DSC/ Core course- 06	**Course code:**
Title of DSC/Core Course- 06	**Plant Pathology**
Credits: 03	**Lecture: 45**
Maximum Marks: 100	**Minimum Passing Marks: 40**

Title	Plant Pathology
Course outcomes	➢ Student will know about general terminology & principles of plant pathology. ➢ Study of pathogens, symptoms and mode of infection. ➢ Know about epidemiology of diseases. ➢ Study about concept of post-harvest diseases.
Learning outcomes	The student will: ➢ Understand the principles of plant pathology. ➢ Understand the symptoms and causative agent of various diseases. ➢ Understand the mode of action and epidemiology of various diseases. ➢ Learn about post-harvest diseases.

B. Sc. VI Semester (BOTANY)
2025-26
DSC/ Core Course –06

Title			Plant Pathology
Units	**Lectures**	**Credits**	**Syllabus**
I	**12**	**3**	Terminology in Plant Pathology, concept of disease, cause of plant disease, classification of plant diseases, Koch'spostulates. Growth, reproduction, survival and dispersal of plant pathogens. Factors influencing infection. General Principles of plant pathology.
II	**10**		Study of Symptoms, Mode of Infection and epidemiology of diseases. Diseases due to Fungi: Rust disease, Smut disease, Downy mildew, Leaf blight, Tikka disease. Diseases due to Bacteria: Tundu disease, Citrus canker, Angular leaf spot, Crown gall of stone fruit.
III	**13**		Study of Symptoms, Mode of Infection and epidemiology of diseases. Diseases due to Nematodes: Root knot, Ear cockles of wheat. Diseases due to Mycoplasma: Sandal spike, Little leaf of Brinjal. Diseases due to Virus: Leaf curl of Papaya, Tobacco Mosaic of Tobacco.
IV	**10**		Concept of post-harvest diseases, definitions, importance with reference to environment and health. Types of post-harvest problems both by biotic and abiotic causes. Principals of plant disease control: Chemical control, Biological control, Plant Quarantine. Plant disease epidemiology, disease forecasting and disease assessment. Principles and methods of plant disease management.
Total	**45 Lectures**	**3 Credits**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam	80
Internal Exam	20
Total marks	**100**

B. Sc. VI Semester (BOTANY)
2025-26
DSC/ Core Course Practical –06: Plant Pathology-LAB

Practical Scheme (1 Credit)

1.	**Symptomatology**	**10**
2.	**Epidemiology**	**10**
3.	**Plant disease control**	**10**
4.	**Spotting**	**10**
5.	***Viva-voce***	**05**
6.	**Sessional**	**05**

Total Marks 50

B. Sc. – VI Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: VI	**Subject: Botany**
Course type: DSE – 05	**Course code:**
Title of DSE –05	**Molecular Biology and Plant Biotechnology**
Credits: 03	**Lecture: 45**
Maximum Marks: 100	**Minimum Passing Marks: 40**

Title	**Molecular Biology and Plant Biotechnology**
Course outcomes	➢ The objective of the present course content is to provide a foundation and background in eukaryotic genome structure (including nuclear and organellar), and regulatory mechanisms. ➢ Know about nucleic acid (DNA/RNA), structure and functions. ➢ This course would provide students with an understanding of principles and techniques of plant tissue culture. ➢ Know about micropropagation, and androgenesis process. ➢ Know about secondary metabolite production and cryopreservation.
Learning outcomes	The students will learn about: ➢ Learn about nucleic acid (DNA/RNA), structure and functions. ➢ They understand the principle mechanisms of genome replication, maintenance, function and regulation of expression. ➢ Student will understand the basic properties of plant cell and with apply the basic knowledge of PTC in various fields for conservation, medicine, product development etc. ➢ Understand the concepts, tools and techniques related to in vitro plant tissue culture & micropropagation. ➢ Learn about secondary metabolite production and cryopreservation technique.

B. Sc. VI Semester (BOTANY)
2025-26
DSE – 05

Title			Molecular Biology and Plant Biotechnology
Units	**Lectures**	**Credit**	**Syllabus**
I	**13**	**3**	Nucleic acids: Structure of nitrogenous bases; Structure and function of nucleotides; Types of nucleic acids; Structure of A, B, Z types of DNA; Types of RNA; Structure of tRNA. DNA replication: Types of DNA replication, Enzymes involved in DNA replication.
II	**12**		Mechanism of Transcription: Transcription in prokaryotes and eukaryotes; Regulation of transcription in prokaryotes and eukaryotes. Translation in Prokaryotes and eukaryotes. Protein Synthesis: Various steps in protein synthesis, proteins involved in initiation, elongation and termination of polypeptides.
III	**10**		Plant Tissue Culture: Historical perspective; Aseptic tissue culture techniques, Composition of media; Nutrient and hormone requirements (role of vitamins and hormones). Totipotency; Organogenesis; Embryogenesis (somatic and zygotic). Protoplast Culture: Protoplast isolation, culture and fusion.
IV	**10**		Applications of Biotechnology and Applications of Plant Tissue culture, Micropropagation, Androgenesis, Secondary metabolite production, haploids, triploids and hybrids. Cryopreservation.
Total	**45 Lectures**	**3 Credit**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam	80
Internal Exam	20
Total marks	**100**

B. Sc. VI Semester (BOTANY)
2025-26

DSE Practical 05: Molecular Biology and Plant Biotechnology-LAB

Practical Scheme (1 Credit)

1.	**Plant Tissue Culture**	**10**
2.	**Plant DNA extraction technique**	**10**
3.	**Protoplast isolation and fusion/ Qualitative test/Extraction of secondary metabolites**	**10**
4.	**Spotting**	**10**
5.	***Viva-voce***	**05**
6.	**Sessional**	**05**

Total Marks: 50

B. Sc. – VI Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: VI	**Subject: Botany**
Course type: DSE 06	**Course code:**
Title of DSE- 06	**Economic Botany**
Credits: 3	**Lecture: 45**
Maximum Marks: 100	**Minimum Passing Marks: 40**

Title	Economic Botany
Course outcomes	On completion of this course, the students will be able to: ➢ To know economic importance of different plants/crops. ➢ Study the various types of plant used for different purposes such as beverages, medicine, timber, oil etc. ➢ Know about the various parts or organs of plants/crops/vegetables used in daily life.
Learning outcomes	➢ Understand core concepts of economic Botany and relate with environment, populations, communities, and ecosystems. ➢ Student will develop the knowledge about economic importance of plants.

B. Sc. VI Semester (BOTANY)
2025-26
DSE– 06

Title			Economic Botany
Units	**Lectures**	**Credit**	**Syllabus**
I	**15**	**3**	Botanical name, Family, Part used and Uses of following economically important plants: Food Plants: Wheat, Rice, Maize, Pearl millets, Gram. Oil Yielding Plants: Mustard, Sunflower, Groundnut, Soyabean, Coconut.
II	**10**		Botanical name, Family, Part used and Uses of following economically important plants: Spices: Turmeric, ginger, cinnamon, Asafoetida and Cumin. Fruit plants: Pear, Peach, Litchi.
III	**10**		Botanical name, Family, Part used and Uses of following economically important plants: Fiber Yielding Plants: Cotton, Jute, Sun hemp, Coir. Timber Yielding Plants: Sal, Teak, Shisham, Pine.
IV	**10**		Botanical name, Family, Part used and Uses of following economically important plants: Beverages: Tea. Coffee Biodiesel Plants: Jatropha, Pongamia.
Total	**45 Lectures**	**3 Credit**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam	80
Internal Exam	20
Total marks	**100**

B. Sc. VI Semester (BOTANY)
2025-26
DSE Practical 06: Economic Botany-LAB

Practical Scheme (1 Credit)

1.	**Food Plants/ Oil Yielding Plants**	**10**
2.	**Spices/Fruit Plants/Fiber Yielding Plants**	**10**
3.	**Timber Yielding Plants/Beverages/Biodiesel Plants**	**10**
4.	**Spotting**	**10**
5.	***Viva-voce***	**05**
6.	**Sessional**	**05**

Total Marks: 50

B. Sc. – VI Semester (BOTANY)

2025-26

Session: 2025-26	**Program: B.Sc.**
Semester: VI	**Subject: Botany**
Course type: SEC – 04	**Course code:**
Title of SEC – 04	**Mushroom Culture Technology**
Credits: 02 Credit	**Lecture: Project**
Maximum Marks: 50	**Minimum Passing Marks: 20**

Title	**Mushroom Culture Technology**
Course outcomes	➢ Students will know about the general account of mushrooms. ➢ Know about the nutritional and medicinal value of edible mushrooms. ➢ Study about mushroom cultivation and pure culture technique. ➢ Know about the storage and nutrition requirement for mushrooms.
Learning outcomes	➢ Students will learn about the mushroom, its cultivation and pure culture technique. ➢ Understand about medicinal importance of mushrooms. ➢ Learn about nutritional value and edible mushrooms. ➢ Understand the composting technology in mushroom production. ➢ Understand about storage and nutrition condition. ➢ Learn about food preparation from mushrooms.

B. Sc. VI Semester (BOTANY)
2025-26
SEC – 04

Title			Mushroom Culture Technology
Units	**Lectures**	**Credit**	**Syllabus**
I	**8**	2	Mushroom: Introduction, history. Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms. Types of edible mushrooms available in India - *Volvariella volvacea, Pleurotus citrinopileatus, Agaricus bisporus*
II	**7**		Cultivation Technology: Infrastructure: substrates, Polythene bag, vessels, Inoculation hook, inoculation loop, low cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag.
III	**8**		Pure culture: Medium, sterilization, preparation of spawn, multiplication. Mushroom bed preparation - paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation - Low cost technology, Composting technology in mushroom production.
IV	**7**		Storage and nutrition: Short-term storage (Refrigeration - upto 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fibre content, Vitamins. Food Preparation: Types of foods prepared from mushroom.
Total	**30 Lectures**	**2 Credit**	

Evaluation Scheme for Theory

Exam Type	Marks
End Term Exam/Project	40
Internal Exam	10
Total marks	**50**