DEPARTMENT OF BOTANY
LESSON PLAN
Session 2023-24
SEMESTER – I

Name of Teacher: Bhanumati Sarkar

Paper Allotted: Microbiology and Phycology, Microbiology(BOTDSC101T and Phycology Practical ((BOTDSC101P), Biodiversity (Microbes, Algae, Fungi and Archegoniate) (BOTMIN101T/BOTCOR101T), Mushroom cultivation technique (BOTHSE101M)

Month	Paper	Content	No of classes
August 08.08.2023	Microbiology and Phycology (BOTDSC101T)	Unit 2: Viruses Physiochemical and biological characteristics; general structure with special reference to subviral particles.	4
	Microbiology and Phycology (BOTDSC101P)	1. Electron micrographs/Models of viruses – T-Phage.	2
	Biodiversity (Microbes, Algae, Fungi and Archegoniate) BOTMIN101T/BOTCOR101T	Unit 1: Microbes: Viruses – discovery, general structure, replication (general account), DNA virus (T-phage).	4
	Mushroom cultivation technique (BOTHSE201M)	Unit -1. Introduction to Mushrooms	2
September 2023	Microbiology and Phycology(BOTDSC101T)	Unit 2: Satellite virus, Viroid and Prions groups of virus, DNA virus (T-phage, λ phage.)	4
	Microbiology and Phycology (BOTDSC101P)	1. Electron micrographs/Models of viruses –TMV,	2
	Biodiversity (Microbes, Algae, Fungi and Archegoniate) BOTMIN101T/BOTCOR101T	Unit 1: Microbes: Viruses –Lytic and lysogenic cycle, RNA virus (TMV).	4

	Mushroom cultivation technique (BOTHSE101M)	**Unit -1. Introduction to Mushrooms**	**2**
October 2023	**PUJA VACATION** **19.10.2023 to 15.11.2023**		
November 2023	**Microbiology and Phycology (BOTDSC101T)**	**Unit 2: lytic and lysogenic cycle**	**2**
	Microbiology and Phycology (BOTDSC101P)	**1.Line drawings/ Photographs of Lytic Cycle.** **Line drawings/ Photographs of Lysogenic Cycle**	**4**
	Biodiversity (Microbes, Algae, Fungi and Archegoniate) BOTMIN101T/BOTCOR101T	**Unit 1: Microbes: Bacteria: economic importance; bacteria – discovery, general characteristics and cell structure; Reproduction – vegetative & asexual**	**4**
	Mushroom cultivation technique (BOTHSE101M)	**Unit -1. Introduction to Mushrooms (Short questions & answers)**	**3**
December 2023	**Microbiology and Phycology (BOTDSC101T)**	**Unit 2:RNA virus (TMV) – physico-chemical characteristics and its mode of multiplication.** **Revision of DNA phage virus ((T-phage, λ phage.) lytic cycle and lysogenic cycle.**	**4**
	Microbiology and Phycology (BOTDSC101P)	**Practical revision all (about virology)**	**4**
	Biodiversity (Microbes, Algae, Fungi and Archegoniate) BOTMIN101T/BOTCOR101T	**Unit 1: Microbes: Bacteria: Reproduction – recombination (conjugation, transformation and transduction)** **Unit 3: Fungi and Phytopathology** **Fungi- general characteristics, ecology and significance, life cycle of Rhizopus (Zygomycota)**	**4**

1st Week of January 2024	**ALL**	**Revision class., Peer learning, Class for Slow Learners**	**4**
2nd week of January 2024	**ALL**	**Class test, revision, Revision Class, Solve model questions student's seminar on virology.**	**3**
18.01.2024-20.01.2024		**Internal Examination**	
27.01.2024		**End Semester Examination**	
Total Classes			**56**

NAME OF TEACHER: MADHURIMA ROY

PAPER ALLOTTED: MICROBIOLOGY AND PHYCOLOGY (MAJOR DS-1T), BIODIVERSITY (MICROBES, ALGAE, FUNGI AND ARCHEGONIATE) (MINOR-1 MA-1T & MA-1P), MUSHROOM CULTIVATION (SEC-1)

Month	Paper	Topic	No. of classes
August 2023 (8/8/2023)	**Major DS-1T**	**Cyanophyta and Xanthophyta: Ecology and occurrence; range of thallus organization; cell structure; reproduction, morphology and life-cycle of *Vaucheria*. (Unit 6)**	**3**
	Minor 1 MA-1T	**Fungi and Phytopathology: Introduction - General characteristics, ecology and significance, range of thallus organization, cell wall composition, nutrition, reproduction, classification (Hawksworth et al1995). (Unit-3) Continued**	**3**
	Minor 1 MA-1P	**2. Study of vegetative and reproductive structures of *Nostoc* (electron micrographs), *Oedogonium* (Preparation of temporary slides), *Fucus* and *Polysiphonia* through permanent slides. 3. *Rhizopus* and *Penicillium* - Asexual stage from temporary mounts and sexual structures through permanent slides.**	**8**
	SEC-1	**Health benefits of mushrooms- Therapeutic aspects- antitumor effects. (Unit- 4)**	**1**
September 2023	**Major DS-1T**	**Phaeophyta and Rhodophyta: Characteristics; occurrence; range of thallus organization; cell structure; reproduction. Morphology and life-cycles of *Ectocarpus.* (Unit-8) Continued**	**4**
	Minor 1 MA-1T	**Fungi and Phytopathology:**	**4**

		True Fungi- general characteristics, ecology and significance, life cycle of *Puccinia*. Symptoms, Causal organisms, Disease cycle & Control measures of - (a) Tungro virus disease of rice. (Unit-3)	
	Minor 1 MA-1P	**1. Gram staining of bacteria from curd sample/culture. 4. *Puccinia* - herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves (permanent slides) of both the hosts. 5. *Agaricus* - specimens of button stage and full-grown mushroom; sectioning of gills of Agaricus. 6. Lichens - study of growth forms of lichens (crustose, foliose and fruticose).**	**8**
October 2023	**Major DS-1T**	**Phaeophyta and Rhodophyta: Characteristics; occurrence; range of thallus organization; cell structure; reproduction. Morphology and life-cycle of *Fucus*. (Unit-8) Continued**	**3**
	Minor 1 MA-1T	**Gymnosperms: General characteristics, classification (Sporne), systematic position, morphology, anatomy and reproduction of *Cycas*. (Unit 7) Continued**	**3**
	Minor 1 MA-1P	**7. Mycorrhiza - ectomycorrhiza and endomycorrhiza (Photographs). 8. *Marchantia* - morphology of thallus, w.m. rhizoids and scales, v.s. thallus through gemma cup, w.m. gemmae, v.s. antheridiophore, archegoniophore, l.s. sporophyte (all permanent slides).**	**4**
		PUJA VACATION (19.10.2023 to 15.11.2023)	
November 2023	**Major DS-1T**	**Phaeophyta and Rhodophyta: Morphology and life-cycle of *Polysiphonia*. (Unit-8)**	**2**
	Minor 1 MA-1T	**Gymnosperms: systematic position, morphology, anatomy and reproduction of *Pinus*. (Unit 7) Continued**	**3**
	Minor 1 MA-1P	**9. *Funaria*- morphology, w.m. leaf, rhizoids, operculum, peristome, annulus, spores, permanent slides showing antheridial and archegonial heads, l.s. capsule and protonema. 10. *Selaginella*- morphology, w.m. leaf with ligule, t.s. stem, w.m. strobilus, w.m. microsporophyll and megasporophyll, l.s. strobilus (permanent slide). 11. *Equisetum* - morphology, t.s. internode, l.s. strobilus, t.s. strobilus, w.m. sporangiophore, w.m. spores (wet and dry), t.s rhizome (permanent slide).**	**6**
December 2023	**Major DS-1T**	**Revision classes Class tests**	**3**

	Minor 1 MA-1T	**Gymnosperms: Ecological and economic importance. (Unit 7) Revision Classes**	**3**
	Minor 1 MA-1P	**12. *Pteris* - morphology, t.s. rachis, v.s. sporophyll, w.m. sporangium, w.m. spores, t.s. rhizome, w.m. prothallus with sex organs and young sporophyte (permanent slide). 13. *Cycas* - morphology (coralloid roots, bulbil, leaf), t.s. coralloid root, t.s. rachis, v.s. leaflet, v.s. microsporophyll, w.m. spores, l.s. ovule, t.s. root (permanent slide). 14. *Pinus* - morphology of long and dwarf shoots, male and female cone, t.s. needle, stem, w.m. microsporophyll, w.m. microspores, l.s. female cone, female cone (permanent slide).**	**8**
January 2024	**Major DS-1T**	**Class tests**	**2**
	Minor 1 MA-1P	**Revision Class**	**2**
3rd week of January 2024		**Internal Examination & Class for Slow Learners**	**4**
February 2024		**End Semester Examination**	
Total classes			**74**

NAME OF TEACHER: DR. MOULI SAHA

PAPER ALLOTTED: MICROBIOLOGY AND PHYCOLOGY (BOTDSC101T), BIODIVERSITY (MICROBES, ALGAE, FUNGI AND ARCHEGONIATE) (BOTMIN101T/BOTCOR101T), MUSHROOM CULTIVATION (BOTHSE101M)

Month	Paper	Content	No of classes
August 2023 (8/8/2023)	**BOTDSC101T**	**Bacteria: General characteristics, Microbial nutrition and types. Types – archaebacteria. (Unit-3)**	**3**
	BOTDSC101P	**Study of vegetative and reproductive structures of *Nostoc, Volvox, Oedogonium,,* through temporary preparations and permanent slides Illustration through drawing prism with magnification of vegetative and reproductive structure of *Oedogonium.***	**8**
	BOTMIN101T/BOTCOR101T	**Introduction to Archegoniate: Unifying features of archegoniates, transition to land habit, alternation of generations. (Unit-4) Bryophytes : General characteristics, adaptations to land habit, classification (Proskauer 1954, up to class. (Unit-5)**	**3**
	BOTHSE101M	**Mushrooms - Edible and Poisonous Mushrooms-Vegetative characters. (Unit-2)**	**1**

September 2023	**BOTDSC101T**	**Bacteria: eubacteria, and mycoplasma; cell structure; Reproduction- asexual (Unit-3)**	**4**
	BOTDSC101P	**Study of vegetative and reproductive structures of, *Chara, Ectocarpus, Fucus* through temporary preparations and permanent slides. Illustration through drawing prism with magnification of vegetative and reproductive structure of *Chara***	**8**
	BOTMIN101T/BOTCOR101T	**Bryophytes :range of thallus organization. Systematic position, morphology, anatomy and reproduction of *Marchantia*, *Anthoceros* (developmental details not to be included). (Unit-5)**	**4**
October 2023	**BOTDSC101T**	**Bacteria: recombination (conjugation, transformation). (Unit-3)**	**3**
	BOTDSC101P	**Study of vegetative and reproductive structures of *Vaucheria* through temporary preparations and permanent slides. Illustration through drawing prism with magnification of vegetative and reproductive structure of *Vauchera.* Prochloron through electron micrographs.**	**4**
	BOTMIN101T/BOTCOR101T	**Systematic position, morphology, anatomy and reproduction of *Funaria* (developmental details not to be included). (Unit-5)**	**2**
	PUJA VACATION (19.10.23 to 15.11.2023)		
November 2023	**BOTDSC101T**	**Bacteria: recombination (Transduction). (Unit-3) Discussion Class**	**2**
	BOTDSC101P	**Study of vegetative and reproductive structures of and *Polysiphonia*, through temporary preparations and permanent slides. Revision Classes**	**8**
	BOTMIN101T/BOTCOR101T	**Ecology and economic importance of bryophytes with special mention of Sphagnum. (Unit-5)**	**2**
December 2023	**BOTDSC101T**	**Revision classes Class tests**	**3**
	BOTDSC101P	**Revision Classes Class tests**	**6**
	BOTMIN101T/BOTCOR101T	**Fungi and Phytopathology): life cycle of *Penicillium* (Ascomycota). (Unit-3) Revision Classes**	**3**
January 2024	**BOTDSC101T**	**Class tests**	**2**
	BOTDSC101P	**Revision Class**	**2**

3rd week of January 2024		**Internal Examination & Class for Slow Learners**	**4**
February 2024		**End Semester Examination**	
		Total Classes	**72**

NAME OF TEACHER: NANDITA DEY

PAPER ALLOTTED: MICROBIOLOGY AND PHYCOLOGY (BOTDSC101T), BIODIVERSITY (MICROBES, ALGAE, FUNGI AND ARCHEGONIATE) (BOTMIN101T/BOTCOR101T,BOTMIN101P/BOTCOR101P),MUSHROOM CULTIVATION(BOTHSE101M)

Month	Paper	Content	No of classes
August 2023 (8/8/23)	**BOTDSC101T**	**Cyanophyta and Xanthophyta (unit-6) Ecology and occurrence;range of thallus organization;cell structure;reproduction;morphology and life cycle of *Nostoc***	**4**
	BOTHSE101M	**Mushroom cultivation technique (Unit-4) health benefits of mushrooms-nutritional and medicinal values of mushrooms.**	**1**
	BOTDSC101T	**Chrorophyta & Charophyta (Unit-7) General characteristics;occurrence;range of thallus organization;cell structure;reproduction;morphology and life cycle of *Volvox* .**	**3**
	BOTMIN101T/ BOTCOR101T	**Pteridophytes (unit-6) General characteristics;classification(Sporne-1975);early land plants(*Cooksonia,Rhynia*)**	**4**
September 2023	**BORDSC101T**	**Chrorophyta & Charophyta (Unit-7) General characteristics;occurrence;range of thallus organization;cell structure;reproduction;morphology and life cycle of *Oedogonium.***	**4**
	BOTMIN101T/ BOTCOR101T	**Pteridophytes(UNIT-6): Systematic position,morphology,anatomy,reproduction of- *Selaginella,Equisetum,Pteris***	**9**
	BOTDSC101T	**Chrorophyta & Charophyta (Unit-7) General characteristics;occurrence;range of thallus organization;cell structure;reproduction;morphology and life cycle of *Chara.***	**4**
	BOTMIN101P/ BOTCOR101P	**Gram staining of bacteria from curd sample**	**3**
0ctober 2023	**BOTMIN101T/ BOTCOR101T**	**Pteridophytes Heterospory and seed habit,stelar evolution,ecological and economical importance of Pteridophytes.**	**4**

October 2023	**PUJA VACATION (19.10.2023 to 15.11.2023)**		
November 2023	**BOTDSC101T**	**Evolutionary significance of *Prochloon***	**1**
	BOTMIN101P/ BOTCOR101P	**Study of vegetative and reproductive structure of *Nostoc,Oedogonium,Fucus,Polysiphonia* through temporary and permanent slides** ***Rhizopus,Penicillium*-asexual stage from temporary mounts and sexual structures through permanent slides** **.** ***Puccinia*-herbarium specimens of black stem rust of wheat and infected barberry leaves,section ofspores on wheat and permanent slides of both the hosts.** **Agaricus-specimens of button stage and full grown mushroom,sectioning of gills of *Agaricus.*** **Lichen-study of growth forms of lichen(crustose,foliose,fructicose)** **Mycorrhiza-ecto and endo mycorrhiza(photographs)**	**8**
December 2023	**BOTMIN101T/ BOTCOR101T**	**Fungi and Phytopathology(Unit-3)** **True fungi-general characteristics;ecology and significance;life cycle of *Agaricus*(Basidiomycota)**	**2**
	BOTMIN101P/ BOTCOR101P	***Marchantia*-morphology of thallus,w.m. rhizizoids and scales,v.s thallus through gemma cup,w.m. gemmae,v.s.antheridiophore,archegoniophore,l.s.sporophyte(all permanent slides)** ***Funaria*-morphology,w.m.leaf,rhizoids,operculum,peristome teeth,annulus,spores,antheridial and archegonial heads,l.s. capsule and protonema. (permanent slides)** ***Selaginella*-morphology,w.m.leaf with ligule,t.s.stem,w.m. strobilus,w.m. microsporophyll and megasporophyll,l.s. of strobilus(permanent slides)** ***Equisetum*-morphology,t.s.internode,l.s. strobilus,t.s. strobilus,w.m.sporangiophore,w.m.spores,t.s.rhizome. (permanent slides)** ***Pteris*-morphology,t.s.rachis,v.s sporophyll,w.m.sporangium,w.m.spores,t.s.rhizome,w.m.prothallus with sex organs and young sporophyte. (permanent slides)** ***Cycas*-morphology(coralloid roots,bulbil,leaf),t.s. of coralloid roots,t.s.rachis,v.s.leaflet,v.s**	**8**

		microsporophyll,w.m.spores,l.s.ovule,t.s.root(permanent slides) ***Pinus*****-morphology,(long and dwarf shoots,w.m. dwarf shoot,male and female),w.m. dwarf shoot,t.s.needle,t.s stem,l.s/t.s.male cone,w.m.microsporophyll,w.m.microspores,l.s.female cone,t.l.s and r.l.s. stem(permanent slides)**	
	BOTMIN101T/ BOTCOR101T	**Fungi and phytopathology(Unit-3) Symbiotic associations Lichen-general characteristics;reproduction and significance;Mycorrhiza-ectomycorrhiza and endomycorrhiza and their significance.**	**5**
January 2024	**BOTDSC101T**	**Revision class Class test**	**4**
	BOTMIN101T/ BOTCOR101T	**Revision class Class test**	**4**
	BOTMIN101P/ BOTCOR101P	**Revision class**	**2**
3rd week of January 2024		**Internal examination Class for slow learners**	**4**
February 2024		**End Semester Examination**	
Total Classes			**74**

NAME OF TEACHER: MR. RAJATESH CHAKRABORTY

PAPER ALLOTTED: MICROBIOLOGY AND PHYCOLOGY (BOTDSC101T), BIODIVERSITY (MICROBES, ALGAE, FUNGI AND ARCHEGONIATE) (BOTMIN101T/BOTCOR101T), MUSHROOM CULTIVATION (BOTHSE101M)

Month	Paper	Content	No of classes
August 2023 (8/8/2023)	**BOTDSC101T**	**Unit 5:General characteristics; ecology and distribution-brief introduction; range of thallusorganization; cell structure andcomponents; cell wall, pigment system, reserve food (only groups represented in the syllabus),**	**3**
	BOTDSC101P	**Study of vegetative and reproductive structures of *Nostoc, Volvox, Oedogonium,,* through temporary preparations and permanent slides Illustration through drawing prism with magnification of vegetative and reproductive structure of *Oedogonium.***	**8**
	BOTMIN101T/BOTCOR101T	**General characteristics; ecology anddistribution;rangeofthallusorganizationandreproduction;cl**	**3**

		assification of algae(Lee1989); (Unit -2)	
	BOTMIN101P/BOTCOR101P	**Study of vegetative and reproductive structures of *Nostoc*(electronmicrographs), *Oedogonium* (Preparation of temporary slides), *Fucus* and *Polysiphonia* through permanent slides.3. *Rhizopus* and *Penicillium* - Asexual stage from temporary mounts and sexual structures through permanent slides**	**8**
	BOTHSE101M	**Mushrooms -Taxonomical rank-History andScope of mushroomcultivation (Unit-2)**	**1**
September 2023	**BOTDSC101T**	**flagellar roots;methods of reproduction; classification; criteria,evolution of sex inalgae;SET(serialendo symbiotic) theory;**	**4**
	BOTDSC101P	**Study of vegetative and reproductive structures of, *Chara, Ectocarpus,Fucus* through temporary preparations and permanent slides. Illustration through drawing prism with magnification of vegetative and reproductive structure of *Chara***	**8**
	BOTMIN101T/BOTCOR101T	**morphology and life-cycles of *Nostoc,Oedogonium (Unit -2)***	**4**
	BOTMIN101P/BOTCOR101P	**1. Gram staining of bacteria from curd sample/culture.4. *Puccinia* - herbarium specimens of Black Stem Rust of Wheat and infectedBarberry leaves (permanent slides) of both the hosts.5. *Agaricus* - specimens of button stage and full-grown mushroom; sectioning ofgills of Agaricus.6. Lichens - study of growth forms of lichens (crustose, foliose and fruticose).**	**8**
October 2023	**BOTDSC101T**	**Classification of Lee2015(only uptogroups);significant contributions of importantphycologists (F.E. Fritsch, G.M.Smith, M.O.P. Iyengar).(Unit -5)**	**4**
	BOTDSC101P	**Study of vegetative and reproductive structures of*Vaucheria* through temporary preparations and permanent slides. Illustration through drawing prism with magnification of vegetative and reproductive structure of *Vauchera.* Prochloron through electron micrographs.**	**4**
	BOTMIN101T/BOTCOR101T	**Morphology and life-cycles of *Fucus*, *Polysiphonia*. Economic importance of algae.(Unit-2)**	**4**
	BOTMIN101P/BOTCOR101P	**Mycorrhiza - ectomycorrhiza and endomycorrhiza (Photographs).8. *Marchantia* - morphology of thallus, w.m. rhizoids and scales, v.s. thallusthrough gemma cup, w.m. gemmae, v.s. antheridiophore, archegoniophore, l.s.sporophyte (all permanent slides).**	**4**

	PUJA VACATION (19.10.23 to 15.11.2023)		
November 2023	**BOTDSC101T**	**Applied Phycology, Role of algae in the environment, agriculture, biotechnology and industry, bioremediation (Unit-9)**	**4**
	BOTDSC101P	**Study of vegetative and reproductive structures of and *Polysiphonia*, through temporary preparations and permanent slides. Revision Classes**	**8**
	BOTMIN101T/BOTCOR101T	**Phytopathology: Terms &Definitions-Pathogen, Propagule, Vector, Inoculum, Infection, Symptoms (necrosis, wilt, spot,blight,hypoplastic &hyperplastic).//Disease & DiseaseCycle,DiseaseTriangle, Disease Management // Koch'spostulates //Phytoalexins (Unit-3)**	**4**
	BOTMIN101P/BOTCOR101P	**9. *Funaria*- morphology, w.m. leaf, rhizoids, operculum, peristome, annulus,spores, permanent slides showing antheridial and archegonial heads, l.s.capsule and protonema.10. *Selaginella*- morphology, w.m. leaf with ligule, t.s. stem, w.m. strobilus, w.m.microsporophyll and megasporophyll, l.s. strobilus (permanent slide).11. *Equisetum* - morphology, t.s. internode, l.s. strobilus, t.s. strobilus, w.m.sporangiophore, w.m. spores (wet and dry), t.s rhizome (permanent slide).**	**6**
December 2023	**BOTDSC101T**	**Revision classes Class tests**	**3**
	BOTDSC101P	**Revision Classes Class tests**	**6**
	BOTMIN101T/BOTCOR101T	**Symptoms, Causal organisms, Disease cycle &Control measuresof- Late blight of potato (Unit -3) Revision Classes**	**3**
	BOTMIN101P/BOTCOR101P	**12. *Pteris* - morphology, t.s. rachis, v.s. sporophyll, w.m. sporangium, w.m.spores, t.s. rhizome, w.m. prothallus with sex organs and young sporophyte(permanent slide).13. *Cycas* - morphology (coralloid roots, bulbil, leaf), t.s. coralloid root, t.s. rachis,v.s. leaflet, v.s. microsporophyll, w.m. spores, l.s. ovule, t.s. root (permanentslide).14. *Pinus* - morphology of long and dwarf shoots, male and female cone, t.s.needle, stem, w.m. microsporophyll, w.m. microspores, l.s. female cone, femalecone (permanent slide).**	**8**

January 2024	BOTDSC101T	Class tests	2
	BOTDSC101P	Revision Class	2
	BOTMIN101P/BOTCOR101P	Revision Class	4
3rd week of January 2024		Internal Examination& Class for Slow Learners	4
February 2024		End Semester Examination	
Total Classes			117

NAME OF TEACHER: DR. RAM PRASAD MUKHOPADHYAY

PAPER ALLOTTED: MICROBIOLOGY AND PHYCOLOGY (BOTDSC101T), BIODIVERSITY (MICROBES, ALGAE, FUNGI AND ARCHEGONIATE) (BOTMIN101T/BOTCOR101T), MUSHROOM CULTIVATION (BOTHSE101M)

Month	Paper	Content	No of classes
August 2023 (8/8/2023)	BOTDSC101T	Introduction to the microbial world: Binomial nomenclature, difference between Prokaryotic and Eukaryotic microorganisms, development of microbiology as a discipline, spontaneous generation vs biogenesis.(Unit-1)	3
	BOTDSC101P	1.Types of Bacteria to be observed from temporary/permanent slides/photographs. Electron micrographs of bacteria, binary fission, endospore, conjugation, root nodule.	6
	BOTHSE101M	Principles of mushroom cultivation- Structure and construction of mushroom house and sterilization of substrates. Spawn production culture media preparation- production of pure culture, mother spawn, and multiplication of spawn. Composting technology, mushroom bed preparation, spawning, spawn running, harvesting, oyster and paddy straw mushroom cultivation. Problems in cultivation - diseases, pests and nematodes, weed moulds and their management strategies. (Unit-3)	3
September 2023	BOTDSC101T	Introduction to the microbial world: contribution of Anton Von Leeuwenhoek, Louis Pasteur, Robert Koch, Alexander	4

		Fleming. Primary concept of microorganism – 3 domain concept. (Unit-1)	
	BOTDSC101P	**3. Demonstration of the preparation of media, sterilization and sub culturing.**	**8**
	BOTHSE101M	**Principles of mushroom cultivation-Spawn production culture media preparation- production of pure culture, mother spawn, and multiplication of spawn. Composting technology, mushroom bed preparation, spawning, spawn running, harvesting, oyster and paddy straw mushroom cultivation. Problems in cultivation - diseases, pests and nematodes, weed moulds and their management strategies. (Unit-3)**	**4**
October 2023	**BOTDSC101T**	**Applied Microbiology:Economic importance of viruses with reference to vaccine production, role in research, medicine and diagnostics, as causal organisms of plant diseases. (Unit-4)**	**3**
	BOTDSC101P	**4. Gram staining of bacteria from curd sample/culture continuation**	**4**
	BOTHSE101M	**Post harvest technology -Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship. Value added products of mushrooms. (Unit-5)**	**2**
	PUJA VACATION (19.10.23 to 15.11.2023)		
November 2023	**BOTDSC101T**	**Economic importance of bacteria with reference to their role in agriculture and industry (fermentation and medicine). (Unit-4)**	**2**
	BOTDSC101P	**4. Gram staining of bacteria from curd sample/culture Revision Classes**	**8**
	BOTHSE101M	**Training/ Workshop/ Field visit Sterilization and sanitation of mushroom house, instruments and substrates Preparation of mother culture, media preparation, inoculation, incubation and spawn production Cultivation of oyster mushroom using paddy straw/agricultural wastes. (Unit-6) Continuation**	**4**
December 2023	**BOTDSC101T**	**Revision classes Class tests**	**3**
	BOTDSC101P	**Revision Classes Class tests**	**6**
	BOTHSE101M	**Training: Inoculation, incubation and spawn production Cultivation of oyster mushroom using paddy straw/agricultural wastes**	**3**
January 2024	**BOTDSC101T**	**Class tests**	**2**

	BOTDSC101P	**Revision Class**	**2**
3rd week of January 2024		**Internal Examination & Class for Slow Learners**	**4**
February 2024		**End Semester Examination**	
Total Classes			**71**