SEMESTER I DISCIPLINE SPECIFIC COURSE-I (DSC-1)

Biodiversity (Microbes, Algae, Fungi and Archegoniate) CODE: BOTGCOR01T (4 Credits) & BOTGCOR01P (2 Credits)

Learning Outcomes:

On completion of the course, students are able to:

- 1. Understand the diversity among Algae.
- 2. Know the systematic, morphology and structure, of Algae.
- 3. Understand the life cycle pattern of Algae.
- 4. Understand the useful and harmful activities of Algae.
- 5. Understand the Biodiversity of Fungi
- 6. Know the Economic Importance of Fungi
- 7. Understand the morphological diversity of Bryophytes and Pteridophytes and Gymnosperms.
- 8. Understand the economic importance of the Bryophytes and Pteridophytes and Gymnosperms.
- 9. Know the evolution of Bryophytes and Pteridophytes and Gymnosperms.

SEM: 1 (DSC-1)

LESSON PLAN FOR THEORY BOTGCOR01T

	BASIRHAT COLLEGE LESSON PLAN FOR CBCS (FOR GENERAL) IAME OF THE DEPARTMENT Botany															
NAME OF THE DEPARTMENT Botany																
HOD	DR	. ARUNE	EΜ	A BAI	RDHA	V										
INITIALS OF	AC		ΑB	S	DG	SS		ABJ								
FACULTIES																
PERIOD OF SEMES	TER	FROM	JUL	Y 202	2 TO	DECE	MBE	R 2022			HOI	NS		GEN	IERA	L
		FROM	SEP.	TEME	3ER 20	22 7	ГО ЈА	NUARY 2	022					٧		
SEM 1	Co	re Cours	e	1				REDIT OINT		4		urse ode		вото	COR	.01T
Name of the Cours	se		В	IODI\	VERSI	Y (M	IICRO	BES, ALG	SAE, F	UNG	I AND	AR	CHEGO	TAINC	E)	
Course Co-ordinat	or		D	R. AF	RUNEE	MA	BARD	HAN	-						-	
TOTAL MARKS	50		Т	Ή	٧			TU	Γ				F	PRAC		
TOTAL HOURS	60	hrs						•			•		•			
49 hrs																
UNIT/ SECTION/ G	UNIT/ SECTION/ GROUP/ MODULE/ TOPIC 1															
NAME OF THE UN	T/MC	DULE				Mi	crobe	es								
TOTAL HOURS	10 l		TH	IEOR\	1	٧		TUTOR	IAL				PRA	C		
	8 hr															
	STRIB	UTION (LE/ UNI	T/ SE							
SL					IEAD/					HR		TEA	CHER		MOI	
		Discover	y, ge	enera	ıl stru	cture	and	Economi	С	1	-		AB		S	EPT
-	ortano		-1. 5	2010	/7	-				1			4 D		-	FDT
		(T-phage			irus (IVIV)	,			1			AB AB			EPT OV
		ysogenio Discove			ral cha	ract	oricti	sc and so	.II	1			AB			OV
	ena – cture	PISCOVE	ı y, C	Jenel	iai Cilo	ıı acıt	C11511(.s and CE	:11	1	-		ΑD		IN	ΟV
		tion – ve	geta	ative.	asexu	ıal				1			AB		N	OV
6 Conjugation 1 AB NOV																
		nation, Ti	ans	ducti	ion					1			AB			EC
		importa				3				1			AB		С	EC
9																
 	10															

^{**} Alloted 10 hours adjusted to 8 hours

UNIT	/ SECTION/ GRO	UP/ MODULE,	TOPIC	2				
NAM	IE OF THE UNIT/N	MODULE		Algae			·	
TOTA	AL HOURS	12 hrs	THEORY	٧	TUTORIA	۱L	PRAC	
	DISTRIBU	JTION OF LESS	ON PLAN (M	ODULE/	UNIT/ SEC	CTION/	TOPIC WISE)	
SL		LECTURE H	EAD/TOPIC			HR	TEACHER	MONTH
1	Algae: General o	characteristics	Ecology and	distribu	tion,	1	ABJ	OCT
2	Range of thallus	organization				1	ABJ	OCT
3	Reproduction a	nd alternation	of generation	1		1	ABJ	OCT
4	Classification of	algae (Lee 198	39)			1	ABJ	OCT
5	Morphology and	d life-cycles of	Nostoc			1	ABJ	ОСТ
6	Morphology and	d life-cycles of	Chlamydomo	nas		1	ABJ	NOV
7	Morphology and	d life-cycles of	Oedogonium	(macrar	ndrous)	1	ABJ	NOV
8	Morphology and	d life-cycles of	Oedogonium	(nannad	drous)	1	ABJ	NOV
9	Morphology and	d life-cycles of	Vaucheria			1	ABJ	NOV
10	Morphology and	d life-cycles of	Fucus			1	ABJ	NOV
11	Morphology and	d life-cycles of	Polysiphonia			1	ABJ	NOV
12	Economic impor	rtance of algae						
		TO	TAL			12 HR	S	•

UNIT/	SECTION	I/ GROUP/ N	ODULE/ TOPIC	3					
NAME	OF THE	UNIT/MODU	ILE	Fungi					
TOTA	L	12 hrs	THEORY	٧	TUTORIAL		PRAC		
HOUR	RS	10 hrs							
	D	ISTRIBUTIO	N OF LESSON PLAN (N	/IODULE/	UNIT/ SECTION	ON/ 1	TOPIC WISE	:)	
SL			LECTURE HEAD/TOPI	С		HR	R TEACH	HER	MONTH
1	Fungi: Ir	ntroduction-	General characteristic	cs, ecolog	gy and	1	AC		OCT
	significa	nce,							
	Range o	f thallus org	anization						
2	Cell wal	l compositio	n, Nutrition and repro	duction		1	AC		OCT
3	Classific	ation (Hawk	sworth et al 1995); Tr	ue Fungi-	General	1	AC		OCT
	characte	eristics							
4	life cycle	e of <i>Rhizopus</i>	s (Zygomycota)			1	AC		NOV
5	Life cycl	e of <i>Penicilli</i>	um			1	AC		NOV
6	Life cycl	e of Alternai	ria (Ascomycota			1	AC		NOV
7	Life cycl	e of <i>Puccinia</i>	1			1	AC		DEC
8	Life cycl	e of Agaricu	s (Basidiomycota)			1	AC		DEC
9	Symbiot	tic Associatio	ns-Lichens: General a	ccount, r	eproduction	1	AC		DEC
	and sign	ificance							
10	Mycorrl	niza: ectomy	corrhiza and endomy	and their	1	AC		DEC	
	significa	nce.							
11									
12									
			TOTAL	<u>-</u>	·	10 H	IRS		

^{**} Alloted 12 hours adjusted to 10 hours

UNIT	/ SECTIO	N/ GROUP	/ MODULE/	4					
TOPIC	2								
NAM	E OF THE	UNIT/MO	DULE	Intro	duction t	o Arche	goniat	е	
TOTA	L	2 hrs	THEORY	٧	TUTOR	IAL		PRAC	
HOUF	RS	1 hr							
		DISTRIBUTI	ON OF LESSO	N PLAN	(MODU	LE/ UNI	T/ SEC	TION/ TOPIC	WISE)
SL		LE	CTURE HEAD/	TOPIC			HR	TEACHER	MONTH
1	Unifyin	g features	of archegonia	tes, Tra	nsition t	О	1	SS	SEPT
	land ha	bit,							
	Alterna	tion of gen	erations						
2					•				
			TOTAL				1 HR		

^{**} Alloted 2 hours adjusted to 1 hour.

UNIT		N/ GROUP/	MODULE/	5					
		UNIT/MOI	DULE	Bryop	hytes				
TOTA	\L	10 Hrs	THEORY	٧	TUTOR	IAL		PRAC	
HOUF	RS	6 Hrs							
	DI	ISTRIBUTIO	ON OF LESSON	PLAN	(MODUI	.E/ UNI	T/ SEC	TION/ TOPIC V	VISE)
SL		LEC	TURE HEAD/	ГОРІС			HR	TEACHER	MONTH
1	Bryophy	ytes: Introd	duction; Gener	al char	racteristi	CS,	1	SS	SEPT
	Adaptat	tions to lan	d habit.						
2	Classific	cation (Pros	skauer 1954 u	p to cla	ass),		1	SS	NOV
	Range c	of thallus o	rganization.						
3	Systema	atic positio	n, morphology	, anat	omy and		1	SS	NOV
	reprodu	iction of M	larchantia						
4	Systema	atic positio	n, morphology	, anat	omy and		1	SS	NOV
	reprodu	iction of Ai	nthoceros						
5		•	n, morphology	, anat	omy and		1	SS	DEC
	reprodu	ıction of <i>Fເ</i>	ınaria.						
6	Ecology	and econo	omic importan	ce of b	ryophyte	es	1	SS	DEC
			on of <i>Sphagnu</i>	ım.					
	QA Disc	ussion.							
7									
8									
			TOTAL				6 HRS		

^{**} Alloted 10 hours adjusted to 6 hours.

UNIT	_	/ GROUP/ N	MODULE/	6					
NAM	E OF THE	UNIT/MODU	JLE	Pterid	ophytes			<u> </u>	
TOTA	۱L	8 hrs	THEORY	٧	TUTOR	IAL		PRAC	
HOUI	RS	7 hrs							
	DIST	RIBUTION C	OF LESSON PLA	OM) NA	DULE/ U	NIT/ SE	CTION	/ TOPIC WISI	E)
SL		LEC	TURE HEAD/T	OPIC			HR	TEACHER	MONTH
1	General	characterist	ics of Pterido	ohytes a	ınd		1	SS	DEC
	classifica	ation (Sporn	e 1975),)						
2	Early lar	nd plants (<i>Co</i>	oksonia and F	Rhynia)			1	SS	JAN
3	Systema	atic position,	morphology,	anatom	y and		1	SS	JAN
	reprodu	ction of Sela	ıginella						
4			morphology,	anatom	y and		1	SS	JAN
	reprodu	ction of <i>Equ</i>	isetum						
5	Systema	atic position,	morphology,	anatom	y and		1	SS	JAN
	reprodu	ction of <i>Ptei</i>	ris						
6	Heteros	pory and see	ed habit				1 ABJ		JAN
7	Stelar ev	volution, Eco	ological and ed	onomic	al impor	tance	1	ABJ	JAN
	of Pteri	dophytes.							
8									
			TOTAL				7 HRS		

^{**} Alloted 8 hours adjusted to 7 hours.

UNIT TOPI	•	/ GROUP/ M	ODULE/	7					
NAM	IE OF THE U	JNIT/MODU	LE	Gymn	osperms				
TOTA	AL HOURS	6 hrs	THEORY	٧	TUTOR	IAL		PRAC	
		4 hrs							
	DIST	RIBUTION O	F LESSON PLA	N (MOD	ULE/ UN	IIT/ SE	CTION	TOPIC WISE	<u>:</u>)
SL		LEC	TURE HEAD/T	OPIC			HR	TEACHER	MONTH
1	Gymnos	perms: Gene	ral characteri	stics, cla	ssificatio	n	1	AB	DEC
	(Sporne))							
2	Systema	tic position,	morphology, a	anatomy	and		1	AB	JAN
	reprodu	ction of <i>Cyca</i>	S						
3	Systema	tic position,	morphology, a	anatomy	and		1	AB	JAN
4	Reprodu	iction of <i>Pinu</i>	S				1	AB	JAN
5	Ecologic	al and econo	mical importa	nce.			1	AB	JAN
			TOTAL				5 HRS		

^{**} Alloted 6 hours adjusted to 5 hours.

SEM: 1 (DSC-1)

PRACTICAL (BOTGCOR01P)

BASIRHAT COLLEGE LESSON PLAN FOR CBCS (FOR GENERAL) NAME OF THE DEPARTMENT Botany HOD DR. ARUNEEMA BARDHAN																		
NAME OF	THE DE	PARTM	ENT								Вс	tany						
HOD		DR. A	4 BAF	RDHA														
INITIALS (OF	AB	SD															
FACULTIE	S																	
PERIOD C	F	F	ROM	JUL	/ 202	2 TO	DECE	MBER	2022			HON	S		GEN	NERAL		
SEMESTE	R	F	ROM	SEP	TEME	BER 20	022 T	O JANI	UARY :	2022	2				٧			
SEM	SEM 1 Core 1 CREDIT POINT															BOTG	COR01	LP
	DSC POINT												de					
Name of	me of the Course BIODIVERSITY (MICROBES, ALGAE, urse Co-ordinator DR. AYANA CHAKRABORTY													HEG	SON	IATE)		
Course Co	o-ordina																	
TOTAL M	TOTAL MARKS 25 TH TUTOTAL HOURS 60																PRA	C V
TOTAL HO	DURS																	
UNIT/ SE	UNIT/ SECTION/ GROUP/ MODULE/ TOPIC PRACTICAL																	
NAME OF	THE U	NIT/MO	DULE															
TOTAL HO	OURS	60 hrs					THE	ORY		TU	TOR	RIAL			PR/	AC .	٧	
		(Adjust	ed to	52 l	nrs)													
		DISTRIB	UTIC	ON O	F LES	SON	PLAN	(MOD	ULE/ (TINL	'/ SE	CTIO	N/ TO	PIC '	WIS	E)		
SL			LEC	CTUR	RE HE	AD/T	OPIC				F	IR	TEAC	HER			MON.	ТН
1	Introd	uction to	mic	rosco	ру, s	tainir	ng pro	cedure	e and			2	AB	J			SEP	Γ
	slide p	reparati	on															
2		staining dology)	from	card	sam	ple (p	rincip	les and	d			2	SS				SEP	Γ
3		of veget	ativo	and	ronro	duct	ivo ctr	ucturo	oc of		-	2	AB	1			SEP	т
3	•	from te			•							_	Ab	J			JLF	ı
		/ photog	•		рісро	ai atic	iii aiia	perm	anciic									
4			•		renro	duct	ive str	ucture	es of			2	SS				SEP	Г
7	Study of vegetative and reproductive structures of Oedogonium (macrandrous) and Oedogonium												55				JLI	•
	(nannandrous temporary preparation and permanen																	
	slides / photographs																	
5		of veget			repro	duct	ive str	ucture	es of			2	AB	J			ОСТ	<u> </u>
=	-	from ter			-									-				
		/ photog	•		-		· ·-· r											

6	Study of vegetative and reproductive structures of <i>Polysiphonia</i> temporary preparation and permanent slides / photographs	2	SS	NOV
7	 Rhizopus: study of vegetative body and asexual and sexual reproductive structure from temporary preparation/ photographs description and drawing Penicillium: study of vegetative body and asexual and sexual reproductive structure from temporary preparation / photographs 	2	ABJ	NOV
8	Agaricus: study of vegetative structure of button stage and full grown mushrooms from photographs; study from t.s. of gills, descriptons and drawing from photographs	2	SS	NOV
9	Lichen: study of crustose, foliose and fruiticose lichen from photographs	2	ABJ	NOV
10	Mycorrhiza: study of ecto- and endomycorrhiza, their characteristic features from photographs	2	SS	NOV
11	Marchantia: study of morphology of thallus, rhizoids and scales and structure of gemma cup and gemma, antheridiophore, archegoniophore and sporophyte from permanent slides/ photographs	2	ABJ	NOV
12	Funaria: study of morphology, leaf, rhizoids from photographsdrawing and description;	2	ABJ	NOV
13	Funaria: Study of sporophyte(annulus, spores, peristome teeth), antheridial and archegonial head from permanent slides / photographs.	2	ABJ	DEC
14	Selaginella: study of morphology,leaf with ligule, t.s. of stem, microsporophyll, megasporophyll and sporophyte through permanent slides / photographs	2	SS	DEC
15	Equisetum: study of morphology, t.s. of internode, t.s of rhizome, sporophyte(both l.s and t.s), sporangiophore, spores from permanent slides / photographs.	2	ABJ	DEC
16	Pteris: study of morphology, t.s. of rachis, t.s. of rhizome, sporophyte (v.s of sporophyll, sporangium, w.m. of spores) and gametophytic prothallus with sex organs from permanent slides / photographs.	2	SS	DEC
17	Pteris: study of morphology, t.s. of rachis, t.s. of rhizome from permanent slides / photographs.	2	ABJ	DEC
18	Pteris: study of sporophyte (v.s of sporophyll, sporangium, w.m. of spores) and gametophytic prothallus with sex organs from permanent slides / photographs.	2	SS	DEC
19	Cycas: Study of morphology (coralloid roots, bulbil, leaf), t.s. coralloid root from permanent slides / photographs.	2	ABJ	JAN

20	Cycas: Study of t.s. rachis, v.s. leaflet, t.s. root from permanent slides / photographs.	SS	JAN
21	Cycas: v.s.microsporophyll, w.m. spores, l.s. ovule from permanent slides / photographs.	ABJ	JAN
22	Pinus: Study of morphology (long and dwarf shoots, w.m. dwarf shoot, male and female), w.m. dwarf shoot from permanent slides / photographs.	SS	JAN
23	<i>Pinus:</i> Study of t.s. needle, t.s. stem, t.l.s. &r.l.s. stem from permanent slides / photographs.	ABJ	JAN
24	Pinus: l.s./ t.s. male cone, w.m. microsporophyll, w.m. microspores, l.s. female cone from permanent slides / photographs.	SS	JAN
25	Practice class	ABJ	JAN
26	Practice class	ABJ	JAN
27			
28			
29			
30			
_	TOTAL	52 HRS	

^{**} Alloted 60 hours adjusted to 52 hours keeping the course content unchanged.

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SEMESTER I GENERIC ELECTIVE COURSE-I (GE-1)

Biodiversity (Microbes, Algae, Fungi and Archegoniate) CODE: BOTHGEC01T (4 Credits) & BOTHGEC01P (2 Credits)

Learning Outcomes:

On completion of the course, students are able to:

- 1. Understand the diversity among Algae.
- 2. Know the systematic, morphology and structure, of Algae.
- 3. Understand the life cycle pattern of Algae.
- 4. Understand the useful and harmful activities of Algae.
- 5. Understand the Biodiversity of Fungi
- 6. Know the Economic Importance of Fungi
- 7. Understand the morphological diversity of Bryophytes and Pteridophytes and Gymnosperms.
- 8. Understand the economic importance of the Bryophytes and Pteridophytes and Gymnosperms.
- 9. Know the evolution of Bryophytes and Pteridophytes and Gymnosperms.

SEM: 1 (GE-1)

LESSON PLAN FOR THEORY (BOTHGEC01T)

	BASIRHAT COLLEGE LESSON PLAN FOR CBCS (FOR GENERAL) IAME OF THE DEPARTMENT Botany																				
NAMI	NAME OF THE DEPARTMENT Botany																				
HOD	D DR. ARUNEEMA BARDHAN TIALS OF DAY AC AB SDG SS ABJ CULTIES MORN IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII																				
INITIA	ALS OF		DA	Υ	AC		AB	1	SDG	SS			AB.	J							
FACU	LTIES		MC	ORN																	
DEDIC	DD OF SEME	CTED		EDON	/ II I	II V 2	021	TO	DECEI	ADED	20	121			HON	ıc		Τ,	L GENEI	DAI	
PERIC	D OF SEIVIE	SIEK							DEC 20		- 26	/21			пОІ	13			GENEI V	NAL	
			C -	re Cou			1 1	10	JEC 20			.			C						
9	SEM	1	Co	GE	rse	1				CR PC)IN.			4	Co. Co	irse de	•	В	OTHG	EC01T	•
Name	of the Cou	rse				BIO	DIVE	RSI	ITY (MI	CROE	BES	, ALG	4Ε, F	UNGI	AND	AR	CHEC	SON	IIATE)		
Cours	e Co-ordina	tor				DR.	ARUI	NE	EMA B	ARDH	IAN	J									
TOTA												TUT						PR	AC		
TOTA	AL HOURS 60 hrs TH √											TUT						PR	AC		
	49 hrs																				
UNIT	SECTION/	GROU	P/ N	10DUL	.E/1	TOPI	С		1												
NAMI	E OF THE UN				•				Micro	bes											
TOTA	L HOURS		10 h		Т	ГНЕО	RY		√ TUTORIAL							PR	AC				
			8 hr																		
	1	DIST	RIBU						N (MO	DULE	/ U	NIT/	SECT								
SL				LECTU			•							HR	1	ΓΕΑ	CHEF	₹	M	ONTH	
1	Viruses – [<u> </u>				nd	Econoi	mic ir	npo	ortano	ce	1			AB		\bot	SEPT	
2	DNA virus				irus	s (TV	1V);							1			AB		\perp	SEPT	
3	Lytic and ly													1			AB		\perp	NOV	
4	Bacteria –							sti	cs and	cell s	tru	cture		1			AB		+	NOV	
5	Reproduct		vege	tative,	ase	exual								1			AB		\perp	NOV	
6	, ,													1			AB		\perp	NOV	
7	Transform													1			AB		\bot	DEC	
8	Economic	impor	tanc	e of b	acte	eria								1			AB		\bot	DEC	
9																					
10																			\bot		
					Т	OTA	\L							8 HR	S						

^{**} Alloted 10 hours adjusted to 8 hours

UNIT	/ SECTION/ GRO	UP/ MODULE,	TOPIC	2				
NAM	IE OF THE UNIT/N	MODULE		Algae			·	
TOTA	AL HOURS	12 hrs	THEORY	٧	TUTORIA	۱L	PRAC	
	DISTRIBU	JTION OF LESS	ON PLAN (M	ODULE/	UNIT/ SEC	CTION/	TOPIC WISE)	
SL		LECTURE H	EAD/TOPIC			HR	TEACHER	MONTH
1	Algae: General o	characteristics	Ecology and	distribu	tion,	1	ABJ	OCT
2	Range of thallus	organization				1	ABJ	OCT
3	Reproduction a	nd alternation	of generatior	1		1	ABJ	OCT
4	Classification of	algae (Lee 198	39)			1	ABJ	OCT
5	Morphology and	d life-cycles of	Nostoc			1	ABJ	ОСТ
6	Morphology and	d life-cycles of	Chlamydomo	nas		1	ABJ	NOV
7	Morphology and	d life-cycles of	Oedogonium	(macrar	ndrous)	1	ABJ	NOV
8	Morphology and	d life-cycles of	Oedogonium	(nannad	drous)	1	ABJ	NOV
9	Morphology and	d life-cycles of	Vaucheria			1	ABJ	NOV
10	Morphology and	d life-cycles of	Fucus			1	ABJ	NOV
11	Morphology and	d life-cycles of	Polysiphonia		•	1	ABJ	NOV
12	Economic impor	rtance of algae			•			
		TO	ΓAL			12 HR	S	

UNIT/	SECTION	I/ GROUP/ N	MODULE/ TOPIC	3						
NAME	OF THE	UNIT/MODU	JLE	Fungi						
TOTA	L	12 hrs	THEORY	٧	TUTORIAL		PRAC			
HOUR	RS	10 hrs								
	D	ISTRIBUTIO	N OF LESSON PLAN (N	/IODULE/	UNIT/ SECTION	ON/ 1	OPIC WISE)		
SL			LECTURE HEAD/TOPI	С		HR	TEACH	IER	MONTH	
1	Fungi: Ir	ntroduction-	General characteristic	cs, ecolo	gy and	1	AC		OCT	
significance,										
	Range o	of thallus org	anization							
2	Cell wal	l compositio	n, Nutrition and repro		1	AC		OCT		
3	Classific	ation (Hawk	sworth et al 1995); Tri	ue Fungi-	-General	1	AC		OCT	
	characte	eristics								
4	life cycle	e of <i>Rhizopus</i>	s (Zygomycota)			1	AC		NOV	
5	Life cycl	e of <i>Penicilli</i>	um			1	AC		NOV	
6	Life cycl	e of <i>Alternai</i>	ria (Ascomycota			1	AC		NOV	
7	Life cycl	e of <i>Puccinia</i>	1			1	AC		DEC	
8	Life cycl	e of <i>Agaricu</i> :	s (Basidiomycota)			1	AC		DEC	
9	Symbiot	tic Associatio	ns-Lichens: General a	ccount, r	eproduction	1	AC		DEC	
	and sign	nificance								
10	Mycorrl	niza: ectomy	and their	1	AC		DEC			
	significa									
11										
12										
			TOTAL			10 H	IRS			

^{**} Alloted 12 hours adjusted to 10 hours

UNIT	/ SECTIO	4									
MODULE/ TOPIC											
NAME OF THE UNIT/MODULE					Introduction to Archegoniate						
TOTAL 2 hrs THEORY			√ TUTORIAL		PRAC						
HOURS 1 hr											
	DIS	TRIBUTION	PLAN	(MODU	ILE/ UI	NIT/ SE	CTION/ TOP	PIC WISE)			
SL		LEC	TURE HEAD/	TOPIC			HR	TEACHER	MONTH		
1	Unifyir	ng feature:	s of archegor	niates,	Transiti	on to	1	SS	SEPT		
	land h										
Alternation of generations											
2											
TOTAL							1 HR				

^{**} Alloted 2 hours adjusted to 1 hour.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC										
NAME OF THE UNIT/MODULE					Bryophytes					
TOTA	\L	10 Hrs	THEORY	٧	TUTOR	RIAL		PRAC		
HOU	RS	6 Hrs								
	DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)									
SL		LEC	TURE HEAD/	TOPIC			HR	TEACHER	MONTH	
1	Bryoph	nytes: Intro	oduction; Ge	neral			1	SS	SEPT	
	charac	teristics, A	daptations to	o land	habit.					
2	Classifi	ication (Pr	oskauer 1954	l up to	class),		1	SS	NOV	
	Range	of thallus	organization.							
3	System	natic positi	ion, morphol	ogy, aı	natomy	and	1	SS	NOV	
	reprod	uction of I	Marchantia							
4	System	natic positi	ion, morphol	ogy, aı	natomy	and	1	SS	NOV	
	reprod	uction of	Anthoceros							
5	System	natic positi	ion, morphol	ogy, aı	natomy	and	1	SS	DEC	
	reprod	uction of I	Funaria.							
6	Ecolog	y and ecor	nomic import	ance o	of		1	SS	DEC	
	bryoph	nytes with	special ment	ion of	Sphagn	um.				
	QA Discussion.									
7										
8										
	TOTAL					6 HRS				

^{**} Alloted 10 hours adjusted to 6 hours.

	UNIT/ SECTION/ GROUP/ MODULE/ TOPIC										
NAM	E OF THE	UNIT/MODU	JLE	Pteridophytes							
TOTA	\L	8 hrs	THEORY	√ TUTORIAL				PRAC			
HOU	RS	7 hrs									
	DIST	RIBUTION (OF LESSON PLA	AN (MO	DULE/ U	NIT/ SE	CTION	TOPIC WISI	Ε)		
SL LECTURE HEAD/TOPIC							HR	TEACHER	MONTH		
1	General characteristics of Pteridophytes and							SS	DEC		
	classific	ation (Sporn	e 1975),)								
2	Early lar	nd plants (Co	ooksonia and F		1	SS	JAN				
3	Systema	atic position,	morphology,	anatom	ny and		1	SS	JAN		
	reprodu	ction of Seld	aginella								
4	Systema	atic position,	morphology,	anatomy and			1	SS	JAN		
	reprodu	ction of Equ	isetum								
5	Systema	atic position,	morphology,	anatom	ny and		1	SS	JAN		
	reprodu	ction of Pte	ris								
6	Heteros	pory and se	ed habit				1	ABJ	JAN		
7	7 Stelar evolution, Ecological and economical importance						1	ABJ	JAN		
of Pteridophytes.											
8											
			TOTAL				7 HRS				

^{**} Alloted 8 hours adjusted to 7 hours.

UNIT/	SECTION	7									
TOPIC	<u> </u>										
NAMI	E OF THE U	JNIT/MODUL	E	Gymnosperms							
TOTA	L HOURS	6 hrs	THEORY	٧	TUTOR	IAL		PRAC			
4 hrs											
	DIST	RIBUTION OF	LESSON PLA	N (MOI	DULE/ UN	IT/ SE	CTION	/ TOPIC WISE	E)		
SL	LECTURE HEAD/TOPIC							TEACHER	MONTH		
1	Gymnosperms: General characteristics, classification							AB	DEC		
	(Sporne))									
2	Systema	tic position, n	norphology, a	anatomy and			1	AB	JAN		
	reprodu	ction of <i>Cycas</i>	;								
3	Systema	tic position, n	norphology, a	natom	y and		1	AB	JAN		
4	Reproduction of <i>Pinus</i> 1 AB					JAN					
5	Ecological and economical importance.						1	AB	JAN		
			TOTAL				5 HRS				

^{**} Alloted 6 hours adjusted to 5 hours.

SEM: 1 (GE-1)

PRACTICAL (BOTHGEC01P)

			BAS	SIRH	AT	COLLI	EGE I	ESSO	N PLA	N FOR	CBO	CS (FOR G	ENER	AL)				
BASIRHAT COLLEGE LESSON PLAN FOR CBC NAME OF THE DEPARTMENT HOD DR. ARUNEEMA BARDHAN										Вс	tany								
HOD		DR	. ARL	JNEE	MA	BAR	DHAI	.N											
INITIALS (OF	AB		AC		MS SDG		G	SS										
FACULTIE	S																		
PERIOD OF			FRC	M J	ULY	2022	TO	DECE	MBER	2022			HONS			GEN	NERAL		
SEMESTER			FRC)M S	EPT	ЕМВ	ER 20)22 T	O JANI	UARY :	2022	2				٧			
SEM	1		Core		1				CREI	DIT		2	Cou	rse			вотн	GEC01	LP
		(Cours	e					POII	NT			Co	de					
			GE																
Name of the Course					BIO	DIVE	RSITY	(MIC	ROBES	S, ALG	4E, F	FUN	GI AN	O ARC	CHEC	GON	IIATE)		
Course Co-ordinator				DR.	AYA	IA CI	HAKR/	ABORT	Υ										
TOTAL MARKS 25					TH					TU	Γ							PRA	C v
TOTAL HO	OURS	60																	
UNIT/ SECTION/ GROUP/ MODULE/ TOPIC					PIC	PRACTICAL													
NAME OF	THE U	NIT/N	10DU	LE															
TOTAL HO	OURS	60 h	rs					THEORY TU			TOF	TORIAL			PRAC √		٧		
		(Adj	usted	to 5	52 h	rs)													
		DIST	RIBU	LION	I OF	LESS	ON F	PLAN	(MOD	ULE/ (TINU	'/ SI	ECTIO	V/ TO	PIC	WIS	E)	•	
SL			[LECT	UR	E HEA	D/T	TOPIC				H	łR	TEACHER		R	MONTH		
1	Introd	uction	า to m	nicro	sco	py, st	taining procedure and					2 ABJ			SEPT				
	slide p	repar	ation																
2			_	m c	ard	samp	le (p	principles and					2	ss			SEPT		
	metho												_						
3	•	•	-			•		tive structures of on and permanent					2	AB	3J			SEP	Γ
				•	ary p	orepa	ratio	n and	perm	anent									
slides / photographs Study of vegetative and reproduct					هـ						2					CED	т		
· · · otaa, o. regetative and represented									2	SS	•			SEP	ı				
Oedogonium (macrandrous) and O				_		manar	.+												
(nannandrous temporary prepara slides / photographs				ıdıdl	ion and permanent														
5	Study	•		•	nd :	ranra	duc+i	vo ctr	uctura	oc of			2	AB	2 1			OC1	<u> </u>
3	Fucus	•	•			•							_	AB	ויי			UCI	I
	slides		•		yρι	chaic	1011	anu þ	Jerma	HEIIL									

6	Study of vegetative and reproductive structures of <i>Polysiphonia</i> temporary preparation and permanent slides / photographs	2	SS	NOV
7	 Rhizopus: study of vegetative body and asexual and sexual reproductive structure from temporary preparation/ photographs description and drawing Penicillium: study of vegetative body and asexual and sexual reproductive structure from temporary preparation / photographs 	2	ABJ	NOV
8	Agaricus: study of vegetative structure of button stage and full grown mushrooms from photographs; study from t.s. of gills, descriptons and drawing from photographs	2	SS	NOV
9	Lichen: study of crustose, foliose and fruiticose lichen from photographs	2	ABJ	NOV
10	Mycorrhiza: study of ecto- and endomycorrhiza, their characteristic features from photographs	2	SS	NOV
11	Marchantia: study of morphology of thallus, rhizoids and scales and structure of gemma cup and gemma, antheridiophore, archegoniophore and sporophyte from permanent slides/ photographs	2	ABJ	NOV
12	Funaria: study of morphology, leaf, rhizoids from photographsdrawing and description;	2	ABJ	NOV
13	Funaria: Study of sporophyte(annulus, spores, peristome teeth), antheridial and archegonial head from permanent slides / photographs.	2	ABJ	DEC
14	Selaginella: study of morphology,leaf with ligule, t.s. of stem, microsporophyll, megasporophyll and sporophyte through permanent slides / photographs	2	SS	DEC
15	Equisetum: study of morphology, t.s. of internode, t.s of rhizome, sporophyte(both l.s and t.s), sporangiophore, spores from permanent slides / photographs.	2	ABJ	DEC
16	Pteris: study of morphology, t.s. of rachis, t.s. of rhizome, sporophyte (v.s of sporophyll, sporangium, w.m. of spores) and gametophytic prothallus with sex organs from permanent slides / photographs.	2	SS	DEC
17	Pteris: study of morphology, t.s. of rachis, t.s. of rhizome from permanent slides / photographs.	2	ABJ	DEC
18	Pteris: study of sporophyte (v.s of sporophyll, sporangium, w.m. of spores) and gametophytic prothallus with sex organs from permanent slides / photographs.	2	SS	DEC
19	Cycas: Study of morphology (coralloid roots, bulbil, leaf), t.s. coralloid root from permanent slides / photographs.	2	ABJ	JAN

20	Cycas: Study of t.s. rachis, v.s. leaflet, t.s. root from permanent slides / photographs.	SS	JAN
21	Cycas: v.s.microsporophyll, w.m. spores, l.s. ovule from permanent slides / photographs.	ABJ	JAN
22	Pinus: Study of morphology (long and dwarf shoots, w.m. dwarf shoot, male and female), w.m. dwarf shoot from permanent slides / photographs.	SS	JAN
23	<i>Pinus:</i> Study of t.s. needle, t.s. stem, t.l.s. &r.l.s. stem from permanent slides / photographs.	ABJ	JAN
24	Pinus: l.s./ t.s. male cone, w.m. microsporophyll, w.m. microspores, l.s. female cone from permanent slides / photographs.	SS	JAN
25	Practice class	ABJ	JAN
26	Practice class	ABJ	JAN
27			
28			
29			
30			
	TOTAL	52 HRS	

^{**} Alloted 60 hours adjusted to 52 hours keeping the course content unchanged.

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