DEPARTMENT OF BOTANY TEACHING PLAN FOR HONOURS AND GENERAL COURSES (UNDER CBCS SYSTEM) ACADEMIC SESSION 2018-2019

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL BP- BISWANATH PATI

(JULY- DECEMBER- 2018)

SEMESTER I- HONOURS

CC-1 (THEORITICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	General account	3		CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Classification	3	RP	DISCUSSION
	Cyanobacteria	1	KP	
	Bacillariophyta	2		
	Life History	6		
MICROBIOLOGY	Virus	3	ММ	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Bacteria	4		DISCUSSION

CC-1 (PRACTICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	Work out	4		DEMONSTRATION,
	Identification	2	RP	INTERACTION, WORK OUT, FIELD VISIT
MICROBIOLOGY	Preparation of bacterial media	2		DEMONSTRATION, INTERACTION, WORK
	Sub-culturing	1		OUT
	Gram staining from	2	ММ	
	Microscopic	2		
	examination of			
	bacteria from			
	natural habitat			

CC-2 (THEORY)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
MYCOLOGY	General	2		
	Account			CLASS LECTURE, POWER POINT
	Classification	2	BP	PRESENTATION, INTERACTIVE DISCUSSION
	Life history	4	DI	DISCOSSION
	Mycorrhiza	2		
	Lichen	1	DS	
PHYTO-	Terms and	2		
PATHOLOGY	Definitions			
	Host – Parasite	3	MM	CLASS LECTURE, POWER POINT
	Interaction			PRESENTATION, INTERACTIVE
	Plant Disease	3		DISCUSSION
	Management			
	Symptoms ,	4		
	Causal			
	organism,			
	Disease cycle			
	and Control			
	measures of			
	different			
	diseases			

CC-2 (PRACTICAL)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MYCOLOGY	Work out	8		DEMONSTRATION,
	Study from	2		INTERACTION, WORK
	permanent		BP	OUT, FIELD VISIT
	slides		Dr	
	Morphological	2		
	study of Fungi			
PHYTO-	Preparation of	2		DEMONSTRATION,
PATHOLOGY	fungal media			INTERACTION, WORK OUT
	Sterilization	1		
	process			
	Isolation of	2		
	pathogen		MM	
	from diseased			
	leaf			
	Inoculation of	2		
	fruit and			
	subculturing			
	Identification	2		

SEMESTER I- GENERAL

GE-1/CC-1 PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PHYCOLOGY	6	RP	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION
	MYCOLOGY	5	RP	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION
PLANT	РНҮТОРАТНО	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
DIVERSITY I	LOGY			INTERACTIVE DISCUSSION
	BRYOPHYTES	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION
	ANATOMY	5	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION

GE-1/CC-1 PRACTICAL- PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	PHYCOLOGY	3	BP	DEMONSTRATION, INTERACTION, WORK OUT, FIELD VISIT
PRACTICAL-	MYCOLOGY	2	Dr	DEMONSTRATION, INTERACTION, WORK OUT, FIELD VISIT
PLANT	PHYTOPATHOLOGY	2		DEMONSTRATION, INTERACTION
DIVERSITY I	BRYOPHYTES	2		DEMONSTRATION, INTERACTION
DIVERSITIT	ANATOMY	6		DEMONSTRATION, INTERACTION, WORK
				OUT

TEACHING PLAN

FOR HONOURS AND GENERAL COURSES

(UNDER CBCS SYSTEM)

ACADEMIC SESSION 2018-2019

(JANUARY- JUNE- 2019)

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL BP- BISWANATH PATI

SEMESTER- II HONOURS

CC- 3 PLANT ANATOMY (THEORY) (BOT-A-CC-2-3-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT	Cell wall	2		CLASS LECTURE,
ANATOMY	Stomata	1		POWER POINT
	Stele	1	ММ	PRESENTATION, INTERACTIVE
	Primary structure of stem and root	2	IVIIVI	DISCUSSION
	Secondary growth	3		
	Mechanical tissues and the	2		
	Principles governing their			
	distribution in plants		BP	
	Developmental Anatomy	2	DI	
	Ecological Anatomy	1		
	Scope of plant anatomy:	4		
	application in systematics,			
	forensics and pharmacognosy			

CC-3 PLANT ANATOMY (PRACTICAL) (BOT-A-CC-2-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Microscopic studies	2		
	Study of anatomical details	2	104	
	through permanent slides/		MM	
PLANT	temporary stained mounts			DEMONSTRATION,
ANATOMY	Study of anomalous secondary	5		INTERACTION, WORK
	structure			OUT
	Study of adaptive anatomical	2	BP	
	features			

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	8	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	PTERIDOPHYTES	8	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	GYMNOSPERMS	7	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	CC A (PRACTICAL)	ADCUAE	CONLATE (D	$OT \land CC \land A D$

CC-4 (THEORITICAL) ARCHAEGONIATE (BOT-A-CC-2-4-TH)

CC-4 (PRACTICAL) ARCHAEGONIATE (BOT-A-CC-2-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	4	DS	DEMONSTRATION,
	PTERIDOPHYTES	6		INTERACTION, WORK OUT,
	GYMNOSPERMS	4		FIELD VISIT

SEMESTER- II GENERAL

GE-2/CC-2 PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	PTERIDOPHYTES	4	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	GYMNOSPERMS	6	DS	CLASS LECTURE, POWER POINT
PLANT				PRESENTATION, INTERACTIVE
DIVERSITY				DISCUSSION
II	PALAEOBOTANY	4	MM	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	MORPHOLOGY	5	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	TAXONOMY	7	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION

GE-2/CC-2 PRACTICAL- PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PRACTI	MORPHOLOGY AND TAXONOMY	6		DEMONSTRATION, INTERACTION,
CAL-			BP	WORK OUT, FIELD VISIT
PLANT DIVERS	PTERIDOPHYTES, GYMNOSPERMS	6		
ITY II				

DEPARTMENT OF BOTANY

TEACHING PLAN

FOR HONOURS AND GENERAL COURSES

(UNDER CBCS SYSTEM)

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(JULY- DECEMBER- 2019)

SEMESTER I- HONOURS

CC-1 (THEORITICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	General account	3		CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Classification	3	RP	DISCUSSION
	Cyanobacteria	1	Kr	
	Bacillariophyta	2		
	Life History	6		
MICROBIOLOGY	Virus	3	ММ	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Bacteria	4	171171	DISCUSSION

CC-1 (PRACTICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	Work out	4		DEMONSTRATION,
	Identification	2	RP	INTERACTION, WORK OUT, FIELD VISIT
MICROBIOLOGY	Preparation of bacterial media	2		DEMONSTRATION, INTERACTION, WORK
	Sub-culturing	1		OUT
	Gram staining from	2	MM	
	Microscopic	2		
	examination of			
	bacteria from			
	natural habitat			

CC-2 (THEORY)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
MYCOLOGY	General	2		
	Account			CLASS LECTURE, POWER POINT
	Classification	2	BP	PRESENTATION, INTERACTIVE DISCUSSION
	Life history	4	DI	DISCOSSION
	Mycorrhiza	2		
	Lichen	1	DS	
PHYTO-	Terms and	2		
PATHOLOGY	Definitions			
	Host – Parasite	3	MM	CLASS LECTURE, POWER POINT
	Interaction			PRESENTATION, INTERACTIVE
	Plant Disease	3		DISCUSSION
	Management			
	Symptoms ,	4		
	Causal			
	organism,			
	Disease cycle			
	and Control			
	measures of			
	different			
	diseases			

CC-2 (PRACTICAL)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MYCOLOGY	Work out	8		DEMONSTRATION,
	Study from	2		INTERACTION, WORK
	permanent		BP	OUT, FIELD VISIT
	slides		Dr	
	Morphological	2		
	study of Fungi			
PHYTO-	Preparation of	2		DEMONSTRATION,
PATHOLOGY	fungal media			INTERACTION, WORK OUT
	Sterilization	1		
	process			
	Isolation of	2		
	pathogen		MM	
	from diseased			
	leaf			
	Inoculation of	2		
	fruit and			
	subculturing			
	Identification	2		

SEMESTER I- GENERAL

GE-1/CC-1 PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PHYCOLOGY	6	RP	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION
	MYCOLOGY	5	RP	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION
PLANT	РНҮТОРАТНО	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
DIVERSITY I	LOGY			INTERACTIVE DISCUSSION
	BRYOPHYTES	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION
	ANATOMY	5	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION

GE-1/CC-1 PRACTICAL- PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PHYCOLOGY	3		DEMONSTRATION, INTERACTION, WORK
			DD	OUT, FIELD VISIT
PRACTICAL-	MYCOLOGY	2	BP	DEMONSTRATION, INTERACTION, WORK
FRACTICAL-				OUT, FIELD VISIT
PLANT	PHYTOPATHOLOGY	2		DEMONSTRATION, INTERACTION
DIVERSITY I	BRYOPHYTES	2		DEMONSTRATION, INTERACTION
	ANATOMY	6		DEMONSTRATION, INTERACTION, WORK
				OUT

SEMESTER- III HONOURS

CC-5 (THEORETICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PALAEOBOTANY	PALAEOBOTANY	8	MM	CLASS LECTURE, POWER POINT PRESENTATION,
AND		4		INTERACTIVE DISCUSSION
PALYNOLOGY	PALYNOLOGY			

CC-5 (PRACTICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PALAEOBOTANY	PALAEOBOTANY	4	MM	DEMONSTRATION, INTERACTION,
AND		4		WORK OUT
PALYNOLOGY	PALYNOLOGY			

CC 6 (THEORETICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	MORPHOLOGY	8	DS	CLASS LECTURE, POWER POINT
REPRODUCTIVE	OF			PRESENTATION, INTERACTIVE
BIOLOGY OF	ANGIOSPERMS			DISCUSSION
ANGIOSPERMS	EMBRYOLOGY	4		

CC- 6 (PRACTICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
REPRODUCTIVE	Inflorescence	2	DS	DEMONSTRATION, INTERACTION,
BIOLOGY OF	types			WORK OUT, FIELD VISIT
ANGIOSPERMS	Flowers	2		
	Fruits-	2		
	Study of	2		
	ovules			

CC - 7 (THEORETICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Introduction	2		
	Nomenclature	2		
TAXONOMY	Systems of classification	2		CLASS LECTURE,
OF	Phenetics and Cladistics	2	RP	POWER POINT
ANGIOSPERMS	Data sources in Taxonomy	2		PRESENTATION,
	Diagnostic features, Systematic	6		INTERACTIVE
	position (Bentham & Hooker and			DISCUSSION
	Cronquist), Economically			
	important plants (parts used and			
	uses) of different families			

CC7 (PRACTICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ANGIOSPERMS	Workout on Angiosperms	12	DS	DEMONSTRATION, INTERACTION, WORK OUT, FIELD VISIT
	Spot Identification	2		

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC) SEC-A BIOFERTILIZERS (BOT-A-SEC-A-3-2) (THEORETICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	GENERAL ACCOUNT	2		CLASS LECTURE, POWER
	ABOUT THE			POINT PRESENTATION,
BIOFERTILIZERS	MICROBES USED AS		BP	INTERACTIVE DISCUSSION
	BIOFERTILIZERS,			
	RHIZOBIUM			
	AZOSPIRILLUM	2		
	AZOTOBACTER	2		
	CYANOBACTERIA	2		
	(BLUE GREEN			
	ALGAE)			
	MYCORRHIZAL	2		
	ASSOCIATION			
	ORGANIC FARMING	2		

SEMESTER- III GENERAL

GE-3/CC-3 CELL BIOLOGY, GENETICS AND MICROBIOLOGY (BOT-G-CC-3-3-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	CELL BIOLOGY	4	MM	CLASS LECTURE, POWER POINT
	GENETICS	6		PRESENTATION, INTERACTIVE
CELL BIOLOGY,				DISCUSSION
GENETICS AND MICROBIOLOGY	MICROBIOLOGY	4	DS	CLASS LECTURE, POWER POINT
MICKUBIOLOGI				PRESENTATION, INTERACTIVE
				DISCUSSION

GE-3/CC-3 PRACTICAL- CELL BIOLOGY, GENETICS AND MICROBIOLOGY

(BOT-G-CC-3-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PRACTICAL-	CELL BIOLOGY,	6	MM	DEMONSTRATION,
CELL BIOLOGY,	GENETICS			INTERACTION, WORK OUT
GENETICS AND	MICROBIOLOGY	4	DS	DEMONSTRATION,
MICROBIOLOGY				INTERACTION, WORK OUT

SEC-A BIOFERTILIZERS (BOT-G-SEC-A-3/5-2)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Biofertilizers	2		CLASS LECTURE, POWER POINT
	Azospirillum	2	חח	PRESENTATION, INTERACTIVE DISCUSSION
BIOFERTILIZERS	Cyanobacteria	2	BP	
DIOI ENTILIZERS	Mycorrhizal	2		
	association			
	Organic	2		
	farming			

TEACHING PLAN

FOR HONOURS AND GENERAL COURSES

(UNDER CBCS SYSTEM)

ACADEMIC SESSION 2019-2020

(JANUARY- JUNE- 2020) BLENDED MODE

(ONLINE CLASS FROM 1st APRIL, 2020)

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL

SEMESTER- II HONOURS

CC- 3 PLANT ANATOMY (THEORY) (BOT-A-CC-2-3-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT	Cell wall	2		CLASS LECTURE,
ANATOMY	Stomata	1		POWER POINT
	Stele	1	ММ	PRESENTATION, INTERACTIVE
	Primary structure of stem and root	2	IVIIVI	DISCUSSION, ONLINE
	Secondary growth	3		CLASS THROUGH
	Mechanical tissues and the	2		GOOGLE CLASSROOM
	Principles governing their			
	distribution in plants			
	Developmental Anatomy	2		
	Ecological Anatomy	1		
	Scope of plant anatomy:	4		
	application in systematics,			
	forensics and pharmacognosy			

CC-3 PLANT ANATOMY (PRACTICAL) (BOT-A-CC-2-3-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Microscopic studies	2		
PLANT ANATOMY	Study of anatomical details through permanent slides/ temporary stained mounts Study of anomalous secondary structure Study of adaptive anatomical	2 5 2	ММ	DEMONSTRATION, INTERACTION, WORK OUT, ONLINE CLASS THROUGH GOOGLE CLASSROOM
	features			

CC-4 (THEORITICAL) ARCHAEGONIATE (BOT-A-CC-2-4-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
ARCHAEGONIATE	BRYOPHYTES	8	RP	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE DISCUSSION, ONLINE CLASS THROUGH GOOGLE CLASSROOM
	PTERIDOPHYTES	8	DS	CLASS LECTURE, POWER POINT
	GYMNOSPERMS	7	DS	PRESENTATION, INTERACTIVE DISCUSSION, ONLINE CLASS THROUGH GOOGLE CLASSROOM

CC-4 (PRACTICAL) ARCHAEGONIATE (BOT-A-CC-2-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	4	DS	DEMONSTRATION,
	PTERIDOPHYTES	6		INTERACTION, WORK OUT,
	GYMNOSPERMS	4		FIELD VISIT (11.01.20-16.01.20),
				ONLINE CLASS THROUGH
				GOOGLE CLASSROOM

SEMESTER- II GENERAL

GE-2/CC-2 PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PTERIDOPHYTES	4	DS	CLASS LECTURE, POWER POINT
	GYMNOSPERMS	6	DS	PRESENTATION, INTERACTIVE
				DISCUSSION, ONLINE CLASS
				THROUGH GOOGLE CLASSROOM
PLANT	PALAEOBOTANY	4	MM	CLASS LECTURE, POWER POINT
DIVERSITY				PRESENTATION, INTERACTIVE
II				DISCUSSION, ONLINE CLASS
				THROUGH GOOGLE CLASSROOM
	MORPHOLOGY	5	RP	CLASS LECTURE, POWER POINT
	TAXONOMY	7	RP	PRESENTATION, INTERACTIVE
				DISCUSSION

GE-2/CC-2 PRACTICAL- PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	MORPHOLOGY	6	RP	
PRACTI	AND TAXONOMY			DEMONSTRATION, INTERACTION,
CAL-				WORK OUT, ONLINE CLASS
PLANT				THROUGH GOOGLE CLASSROOM
DIVERS	PTERIDOPHYTES,	6	DS	DEMONSTRATION, INTERACTION,
ITY II	GYMNOSPERMS			WORK OUT, ONLINE CLASS
				THROUGH GOOGLE CLASSROOM

SEMESTER IV- HONOURS

CC-8 (THEORETICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	PLANT	4		CLASS LECTURE, POWER POINT
GEOGRAPHY,	GEOGRAPHY		DS	PRESENTATION, INTERACTIVE
ECOLOGY	ECOLOGY	4		DISCUSSION, ONLINE CLASS THROUGH
AND	EVOLUTION	3	RP	GOOGLE CLASSROOM
EVOLUTION				

CC-8 (PRACTICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT GEOGRAPHY	Study of local flora and submission of a project report highlighting phytogeographical characteristics of the region	4	DS	DEMONSTRATION, INTERACTION, WORK OUT, ONLINE CLASS THROUGH GOOGLE
ECOLOGY	Study of community structure by quadrat method	3		CLASSROOM
	Comparative anatomical studies of leaves form polluted and less polluted areas	2		
	Measurement of dissolved O2 by Azide modification of Winkler's method	2		
	Comparison of free CO2 from different sources	2		

CC-9 (THEORETICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-TH)

TOPIC	SUBTOPIC	CLASS	TEACH	TEACHING METHODS
		HOUR	ER	
ECONOMIC	Origin of cultivated crops	1	MM	CLASS LECTURE,
BOTANY				POWER POINT
	Cereals	2		PRESENTATION,
	Legumes	2		INTERACTIVE
	v	2		DISCUSSION, ONLINE
	Sugar and starches	-	CLASS T	CLASS THROUGH
	Spices	2		GOOGLE CLASSROOM
	Beverages	2	DS	CLASS LECTURE,
	Oil and fats	2		POWER POINT
		2	-	PRESENTATION,
	Drug-yielding plants	2		INTERACTIVE
	Timber	1		DISCUSSION, ONLINE
	Fibers	2		CLASS THROUGH
				GOOGLE CLASSROOM

CC-9 (PRACTICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACH	TEACHING METHODS
		HOUK	ER	
ECONOMIC	Cereals	2	DS	DEMONSTRATION,
BOTANY	Legume	2		INTERACTION, WORK OUT,
	Sugars and starches	2		ONLINE CLASS THROUGH GOOGLE CLASSROOM
	Теа	1		GOOGLE CLASSICOOM
	Mustard	2		
	Habit sketch of Digitalis,	1		
	Papaver and Cannabis			
	Sal, Teak	2		
	Jute	2		

CC-10 (THEORETICAL) GENETICS (BOT-A-CC-4-10-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
GENETICS	Introduction: Mendelian genetics and its extension	2	MM	CLASS LECTURE, POWER POINT
	Linkage, Crossing over and Gene Mapping	3		PRESENTATION, INTERACTIVE DISCUSSION, ONLINE
	Epistasis and Polygenic inheritance in plants	2		CLASS THROUGH GOOGLE
	Aneuploidy and Polyploidy	2		CLASSROOM
	Chromosomal aberration	2		
	Mutation	3]	
	Structural organisation of Gene	2		

CC-10 (PRACTICAL) GENETICS (BOT-A-CC-4-10-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Introduction to chromosome	2		
	preparation			
	Determination of mitotic index	4		
	and frequency of different			
	mitotic stages in pre-fixed root			
GENETICS	tips of Allium cepa		MM	DEMONSTRATION,
	Study of mitotic chromosome	4		INTERACTION, WORK OUT,
	Study of chromosomal	2		ONLINE CLASS THROUGH GOOGLE CLASSROOM
	aberrations developed due to			GOOGLE CLASSROOM
	exposure to any two			
	pollutants/ pesticides etc.			
	Study of meiotic chromosome	4		
	Identification from permanent	2		
	slides			

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC)

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-A-SEC-B-4-4) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	INTRODUCTION	2		
	CULTIVATION	2		CLASS LECTURE, POWER POINT
MUSHROOM	TECHNOLOGY		MM	PRESENTATION, INTERACTIVE
CULTURE				DISCUSSION, ONLINE CLASS
TECHNOLOGY				THROUGH GOOGLE CLASSROOM
	STORAGE AND	2	RP	
	NUTRITION			CLASS LECTURE, POWER POINT
	FOOD	2		PRESENTATION, INTERACTIVE
	PREPARATION			DISCUSSION, ONLINE CLASS
				THROUGH GOOGLE CLASSROOM

SEMESTER IV GENERAL

GE-4/CC-4 (THEORETICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT	Proteins	2		
PHYSIOLOGY	Transport in	2		
AND METABOLISM	plants			
METADOLISM	Transpiration	2		CLASS LECTURE, POWER POINT
	Photosynthesis	2	DS	PRESENTATION, INTERACTIVE
	Respiration	2		DISCUSSION, CLASS LECTURE,
	Nitrogen	2		POWER POINT PRESENTATION,
	metabolism			INTERACTIVE DISCUSSION, ONLINE CLASS THROUGH GOOGLE
	Plant Growth	2		CLASSROOM
	regulators			
	Photoperiodism	1		
	Senescence	1		

GE-4/CC-4 (PRACTICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Experiment on Plasmolysis	2		DEMONSTRATION
	Measurement of leaf area	2		, INTERACTION,
	(graphical method) and			WORK OUT,
PLANT				CLASS LECTURE,
PHYSIOLOGY AND	determination of			POWER POINT
METABOLISM	transpiration rate per unit			PRESENTATION,
	area by weighing method		DS	INTERACTIVE
	Imbibition of water by dry	2		DISCUSSION,
	seeds			ONLINE CLASS
	Evolution of O ₂ during	2		THROUGH
	photosynthesis			GOOGLE CLASSROOM
	Evolution of CO ₂ during	2		
	aerobic respiration and			
	measurement of volume			

TOPIC	SUBTOPIC	CLASS	TEACH	TEACHING
		HOUR	ER	METHODS
	Mushroom	2		
MUSHROOM	Cultivation techniques/	2		CLASS LECTURE,
CULTURE	technology of edible		DD	POWER POINT
TECHNOLOGY	mushrooms in India		RP	PRESENTATION, INTERACTIVE
	Storage	2		DISCUSSION,
	Food preparation	2		CLASS LECTURE,
	Research centers	2		POWER POINT
	hesearen centers			PRESENTATION,
				INTERACTIVE
				DISCUSSION,
				ONLINE CLASS
				THROUGH
				GOOGLE
				CLASSROOM

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-G-SEC-D-4/6-4) THEORETICAL

DEPARTMENT OF BOTANY TEACHING PLAN FOR HONOURS AND GENERAL COURSES (UNDER CBCS SYSTEM) ACADEMIC SESSION 2020-20221

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL

(JULY- DECEMBER- 2020)- ONLINE MODE

SEMESTER I- HONOURS

CC-1 (THEORITICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	General	3		ONLINE CLASS THROUGH GOOGLE
	account			CLASSROOM
	Classification	3	RP	
	Cyanobacteria	1	Kr	
	Bacillariophyta	2		
	Life History	6		
MICROBIOLOGY	Virus	3	ММ	ONLINE CLASS THROUGH GOOGLE CLASSROOM
	Bacteria	4		CLASSKOOM

CC-1 (PRACTICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PHYCOLOGY	Work out:	4	מת	ONLINE CLASS THROUGH
	Identification	2	RP	GOOGLE CLASSROOM
MICROBIOLOGY	Preparation	2		
	of bacterial			
	media			ONLINE CLASS THROUGH
	Sub-culturing	1	ММ	GOOGLE CLASSROOM
	Gram staining	2		
	from			
	Microscopic	2		
	examination			
	of bacteria			
	from natural			
	habitat			

CC-2 (THEORY)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
MYCOLOGY	General	2		
	Account			ONLINE CLASS THROUGH GOOGLE
	Classification	2	RP	CLASSROOM
	Life history	4	Ň	
	Mycorrhiza	2		
	Lichen	1		
PHYTO-	Terms and	2		
PATHOLOGY	Definitions		D.C.	ONLINE CLASS THROUGH GOOGLE
	Host – Parasite	3	DS	CLASSROOM
	Interaction			
	Plant Disease	3		
	Management			
	Symptoms,	4		
	Causal			
	organism,			
	Disease cycle			
	and Control			
	measures of			
	different			
	diseases			

CC-2 (PRACTICAL)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MYCOLOGY	Work out	8		
	Study from	2		ONLINE CLASS THROUGH
	permanent		RP	GOOGLE CLASSROOM
	slides		NI NI	
	Morphological	2		
	study of Fungi			
PHYTO-	Preparation of	2		
PATHOLOGY	fungal media		-	ONLINE CLASS THROUCH
	Sterilization	1		ONLINE CLASS THROUGH GOOGLE CLASSROOM
	process			
	Isolation of	2		
	pathogen		DS	
	from diseased			
	leaf			
	Inoculation of	2		
	fruit and			
	subculturing			
	Identification	2		

SEMESTER I- GENERAL

GE-1/CC-1 PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PHYCOLOGY	6	RP	ONLINE CLASS THROUGH GOOGLE CLASSROOM
	MYCOLOGY	5	RP	ONLINE CLASS THROUGH GOOGLE CLASSROOM
PLANT	РНҮТОРАТНО	6	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM
DIVERSITY I	LOGY			
DIVERSITIT	BRYOPHYTES	6	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM
	ANATOMY	5	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM

AND ANATOMY) (BOT-G-CC-1-1-TH) THEORETICAL

GE-1/CC-1 PRACTICAL- PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY,

BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	PHYCOLOGY	3	RP	ONLINE CLASS THROUGH GOOGLE CLASSROOM
PRACTICAL-	MYCOLOGY	2	RP	ONLINE CLASS THROUGH GOOGLE CLASSROOM
PLANT DIVERSITY I	PHYTOPATHOLOGY	2	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM
	BRYOPHYTES	2	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM
	ANATOMY	6	RP	ONLINE CLASS THROUGH GOOGLE CLASSROOM

SEMESTER- III HONOURS

CC-5 (THEORETICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PALAEOBOTANY	PALAEOBOTANY	8	MM	ONLINE CLASS THROUGH GOOGLE CLASSROOM
AND		4		
PALYNOLOGY	PALYNOLOGY			

CC-5 (PRACTICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PALAEOBOTANY	PALAEOBOTANY	4	MM	ONLINE CLASS THROUGH
AND		4		GOOGLE CLASSROOM
PALYNOLOGY	PALYNOLOGY			

CC 6 (THEORETICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
REPRODUCTIVE	MORPHOLOGY	8	DS	ONLINE CLASS THROUGH GOOGLE
BIOLOGY OF	OF			CLASSROOM
ANGIOSPERMS	ANGIOSPERMS			
	EMBRYOLOGY	4		

CC- 6 (PRACTICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
REPRODUCTIVE	Inflorescence	2	DS	ONLINE CLASS THROUGH GOOGLE
BIOLOGY OF ANGIOSPERMS	types			CLASSROOM
ANGIOSPERIVIS	Flowers	2		
	Fruits-	2		
	Study of	2		
	ovules			

CC - 7 (THEORETICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Introduction	2		
	Nomenclature	2		ONLINE CLASS
TAYONOMY	Systems of	2	DS	THROUGH GOOGLE
TAXONOMY OF	classification			CLASSROOM
ANGIOSPERMS	Phenetics and	2	RP	ONLINE CLASS
	Cladistics			THROUGH GOOGLE
	Data sources in	2		CLASSROOM
	Taxonomy			
	Diagnostic features,	6		
	Systematic position			
	(Bentham & Hooker		DS	ONLINE CLASS
	and Cronquist),		D3	THROUGH GOOGLE CLASSROOM
	Economically			
	important plants			
	(parts used and uses)			
	of different families			

CC7 (PRACTICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ANGIOSPERMS	Workout on	12	DS	ONLINE CLASS THROUGH GOOGLE
	Angiosperms			CLASSROOM
	Spot	2		
	Identification			

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC) SEC-A BIOFERTILIZERS (BOT-A-SEC-A-3-2) (THEORETICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	GENERAL ACCOUNT	2	MM	
	ABOUT THE			ONLINE CLASS THROUGH
BIOFERTILIZERS	MICROBES USED AS			GOOGLE CLASSROOM
	BIOFERTILIZERS,			
	RHIZOBIUM			
	AZOSPIRILLUM	2		
	AZOTOBACTER	2		

CYANOBACTERIA	2		
(BLUE GREEN			
ALGAE)			
MYCORRHIZAL	2		
ASSOCIATION			
ORGANIC FARMING	2		

SEMESTER- III GENERAL

GE-3/CC-3 CELL BIOLOGY, GENETICS AND MICROBIOLOGY (BOT-G-CC-3-3-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	CELL BIOLOGY	4	MM	ONLINE CLASS THROUGH
	GENETICS	6		GOOGLE CLASSROOM
CELL BIOLOGY,				
GENETICS AND	MICROBIOLOGY	4	DS	ONLINE CLASS THROUGH
MICROBIOLOGY				GOOGLE CLASSROOM

GE-3/CC-3 PRACTICAL- CELL BIOLOGY, GENETICS AND MICROBIOLOGY

(BOT-G-CC-3-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PRACTICAL-	CELL BIOLOGY,	6	MM	ONLINE CLASS THROUGH
CELL BIOLOGY,	GENETICS			GOOGLE CLASSROOM
GENETICS AND	MICROBIOLOGY	4	DS	ONLINE CLASS THROUGH
MICROBIOLOGY				GOOGLE CLASSROOM

SEC-A BIOFERTILIZERS (BOT-G-SEC-A-3/5-2)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Biofertilizers	2		ONLINE CLASS THROUGH GOOGLE
	Azospirillum	2	DD	CLASSROOM
BIOFERTILIZERS	Cyanobacteria	2	RP	
DIOI ENTILIZERS	Mycorrhizal	2		
	association			
	Organic	2		
	farming			

SEMESTER V HONOURS

CC-11 (THEORETICAL)

CELL AND MOLECULAR BIOLOGY (BOT-A-CC-5-11-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	CELL	8	MM	ONLINE CLASS THROUGH GOOGLE
	BIOLOGY			CLASSROOM
CELL AND	MOLECULAR	6	MM	ONLINE CLASS THROUGH GOOGLE
MOLECULAR	BIOLOGY			CLASSROOM
BIOLOGY				

CC-11 (PRACTICAL) CELL AND MOLECULAR BIOLOGY (BOT-A-CC-5-11-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
CELL AND MOLECULAR BIOLOGY	Work out Identification Preparation of models/charts	10 2 2	MM	ONLINE CLASS THROUGH GOOGLE CLASSROOM

CC-12 (THEORETICAL) BIOCHEMISTRY (BOT-A-CC-5-12-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHOD
BIOCHEMISTRY	Biochemical Foundations	2	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM
	Molecules of life	2		
	Energy flow and enzymology	3		
	Cell membrane	2		
	Phosphorylation	2		

CC-12 (PRACTICAL) BIOCHEMISTRY (BOT-A-CC-5-12-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
BIOCHEMISTRY	Biochemistry- qualitative	8	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM
DIOCHEMISTICI	Biochemistry-	12	25	
	quantitative			

DISCIPLINE SPECIFIC ELECTIVE COURSES

DSE-A BIOSTATISTICS (BOT-A-DSE-A-5-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Biostatistics	2		
	Biometry	2		ONLINE CLASS THROUGH
	Central tendency	2		GOOGLE CLASSROOM
BIOSTATISTICS	Test of	2		
	significance			
	Probability	3	DS	
	Measurement of	2		
	gene frequency			

TONG				
TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
BIOSTATISTICS	Univariate analysis of	2		ONLINE CLASS
	statistical data			THROUGH
	Calculation of correlation	2		GOOGLE
	coefficient values and finding			CLASSROOM
	out the probability			
	Determination of goodness	4		
	of fit in Mendellian and		DS	
	modified mono-and dihybrid			
	ratios			
	Calculation of 'F' value and	2		
	finding out the probability			
	value for the F value			
	Basic idea of computer	2		
	programme for statistical			
	analysis of correlation			
	coefficient,'t' test, standard			
	error, standard deviation.			

DSE-A BIOSTATISTICS (BOT-A-DSE-A-5-1-P) (PRACTICAL)

DSE-B PLANT BIOTECHNOLOGY (BOT-A-DSE-B-5-5-TH) (THEORETICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PLANT TISSUE	1		
	CULTURE –			
	INTRODUCTION			ONLINE CLASS THROUGH
PLANT	CALLUS CULTURE	2	MM	GOOGLE CLASSROOM
BIOTECHNOLOGY	PLANT	2		
	REGENERATION			
	HAPLOID CULTURE	2		
	PROTOPLAST	2		
	CULTURE			
	PLANT GENETIC	2		
	ENGINEERING			

DSE-B PLANT BIOTECHNOLOGY (BOT-A-DSE-B-5-5-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT	Familiarization of basic equipments in plant tissue culture	2		ONLINE CLASS
BIOTECHNO LOGY	Study through photographs/ charts/ models of anther culture, somatic embyogenesis, endosperm and embryo culture, micropropagation	4	ММ	THROUGH GOOGLE CLASSROOM
	Preparation of basal media. Sterilization techniques	4		

SEMESTER V GENERAL

DSE A PHYTOCHEMISTRY AND MEDICINAL BOTANY

(BOT-G-DSE-A-5-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PHYTOCHEMISTRY	Medicinal	2		ONLINE CLASS
AND MEDICINAL	botany			THROUGH GOOGLE
BOTANY	Phramacognosy	2	DS	CLASSROOM
	Organoleptic	2	05	
	evaluation of			
	crude drugs			
	Pharmcologically	1		
	active			
	constituents			
	Ethnobotany	2		
	and folk			
	medicine			

DSE-A PRACTICAL- PHYTOCHEMISTRY AND MEDICINAL BOTANY (BOT-G-DSE-A-5-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Preparations of	2		
	solution and buffers			
	Acquaintance with	3		
	laboratory			
	instruments			
PHYTOCHEMISTRY	Qualitative test for	4		
AND MEDICINAL	proteins and			ONLINE CLASS
BOTANY	carbohydrates		DC	THROUGH GOOGLE
	Tests (chemical) for	2	DS	CLASSROOM
	tannin and alkaloid			
	Identification of	1		
	medicinal plants			

SEC-A BIOFERTILIZERS (BOT-G-SEC-A-3/5-2)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
BIOFERTILIZERS	Biofertilizers	2	RP	ONLINE CLASS THROUGH GOOGLE
	Azospirillum	2		CLASSROOM
	Cyanobacteria	2		
	Mycorrhizal	2		
	association			
	Organic	2		
	farming			

TEACHING PLAN FOR HONOURS AND GENERAL COURSES (UNDER CBCS SYSTEM) ACADEMIC SESSION 2020-2021

(JANUARY- JUNE- 2021)

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL

SEMESTER- II HONOURS

TOPIC SUBTOPIC CLASS TEACHER TEACHING METHODS HOUR PLANT Cell wall 2 MM ONLINE CLASS ANATOMY THROUGH GOOGLE Stomata 1 CLASSROOM AND 1 Stele GOOGLE MEET 2 Primary structure of stem and root 3 Secondary growth 2 Mechanical tissues and the Principles governing their distribution in plants 2 Developmental Anatomy **Ecological Anatomy** 1 4 Scope of plant anatomy: application in systematics, forensics and pharmacognosy

CC- 3 PLANT ANATOMY (THEORY) (BOT-A-CC-2-3-TH)

CC-3 PLANT ANATOMY (PRACTICAL) (BOT-A-CC-2-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Microscopic studies	2		
	Study of anatomical	2		
	details through			
PLANT	permanent slides/			ONLINE CLASS
ANATOMY	temporary stained		MM	THROUGH GOOGLE
	mounts			CLASSROOM AND
	Study of anomalous	5		GOOGLE MEET
	secondary structure			
	Study of adaptive	2		
	anatomical features			

HOUR		
0		
8	RP	ONLINE CLASS THROUGH
		GOOGLE CLASSROOM AND
		GOOGLE MEET
8	DS	ONLINE CLASS THROUGH
		GOOGLE CLASSROOM AND
		GOOGLE MEET
7	RP	ONLINE CLASS THROUGH
		GOOGLE CLASSROOM AND
		GOOGLE MEET
	7	

CC-4 (THEORITICAL) ARCHAEGONIATE (BOT-A-CC-2-4-TH)

CC-4 (PRACTICAL) ARCHAEGONIATE (BOT-A-CC-2-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	4	DS	ONLINE CLASS THROUGH
	PTERIDOPHYTES	6		GOOGLE CLASSROOM AND
	GYMNOSPERMS	4		GOOGLE MEET

SEMESTER- II GENERAL

GE-2/CC-2 PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PTERIDOPHYTES	4	DS	ONLINE CLASS THROUGH GOOGLE
				CLASSROOM
	GYMNOSPERMS	6	DS	ONLINE CLASS THROUGH GOOGLE
				CLASSROOM
PLANT	PALAEOBOTANY	4	MM	ONLINE CLASS THROUGH GOOGLE
DIVERSITY				CLASSROOM
II	MORPHOLOGY	5	RP	ONLINE CLASS THROUGH GOOGLE
				CLASSROOM
	TAXONOMY	7	RP	ONLINE CLASS THROUGH GOOGLE
				CLASSROOM

GE-2/CC-2 PRACTICAL- PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PRACTI CAL-	MORPHOLOGY AND TAXONOMY	6	RP	DEMONSTRATION, INTERACTION, WORK OUT, FIELD VISIT
PLANT DIVERS ITY II	PTERIDOPHYTES, GYMNOSPERMS	6	DS	DEMONSTRATION, INTERACTION, WORK OUT

SEMESTER IV- HONOURS

CC-8 (THEORETICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	PLANT	4		ONLINE CLASS THROUGH GOOGLE
GEOGRAPHY,	GEOGRAPHY		DS	CLASSROOM AND GOOGLE MEET
ECOLOGY	ECOLOGY	4		
AND	EVOLUTION	3		
EVOLUTION				

CC-8 (PRACTICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT GEOGRAPHY	Study of local flora and submission of a project report highlighting phytogeographical characteristics of the region	4	DS	ONLINE CLASS THROUGH GOOGLE CLASSROOM AND GOOGLE MEET
ECOLOGY	Study of community structure by quadrat method	3		
	Comparative anatomical studies of leaves form polluted and less polluted areas	2		
	Measurement of dissolved O2 by Azide modification of Winkler's method	2		
	Comparison of free CO2 from different sources	2		

CC-9 (THEORETICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-TH)

TOPIC	SUBTOPIC	CLASS	TEACH	TEACHING METHODS
		HOUR	ER	
ECONOMIC	Origin of cultivated crops	1	RP	ONLINE CLASS
BOTANY				THROUGH GOOGLE
	Cereals	2		CLASSROOM AND
	Legumes	2		GOOGLE MEET
	Sugar and starches	2		
	Spices	2		
	Beverages	2	DS	ONLINE CLASS
	Oil and fats	2		THROUGH GOOGLE
	Drug-yielding plants	2		CLASSROOM AND GOOGLE MEET
	Timber	1		GOOGLE WILLI
	Fibers	2		

CC-9 (PRACTICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACH ER	TEACHING METHODS
ECONOMIC	Cereals	2	DS	ONLINE CLASS THROUGH
BOTANY	Legume	2		GOOGLE CLASSROOM AND
	Sugars and starches	2		GOOGLE MEET
	Теа	1		
	Mustard	2		
	Habit sketch of Digitalis,	1		
	Papaver and Cannabis			
	Sal, Teak	2		
	Jute	2		

CC-10 (THEORETICAL) GENETICS (BOT-A-CC-4-10-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
GENETICS	Introduction: Mendelian genetics and its extension	2	MM	ONLINE CLASS THROUGH GOOGLE
	Linkage, Crossing over and Gene Mapping	3		CLASSROOM AND GOOGLE MEET
	Epistasis and Polygenic inheritance in plants	2		
	Aneuploidy and Polyploidy	2		
	Chromosomal aberration	2		
	Mutation	3		
	Structural organisation of Gene	2		

CC-10 (PRACTICAL) GENETICS (BOT-A-CC-4-10-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Introduction to chromosome	2		
	preparation			
	Determination of mitotic index	4		
	and frequency of different			
	mitotic stages in pre-fixed root			
GENETICS	tips of Allium cepa		MM	ONLINE CLASS THROUGH
	Study of mitotic chromosome	4		GOOGLE CLASSROOM AND
	Study of chromosomal	2		GOOGLE MEET
	aberrations developed due to			
	exposure to any two			
	pollutants/ pesticides etc.			
	Study of meiotic chromosome	4		
	Identification from permanent	2		
	slides			

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC)

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-A-SEC-B-4-4) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	INTRODUCTION	2		ONLINE CLASS THROUGH GOOGLE
	CULTIVATION	2		CLASSROOM AND GOOGLE MEET
MUSHROOM	TECHNOLOGY		MM	
CULTURE				
TECHNOLOGY	STORAGE AND	2	RP	ONLINE CLASS THROUGH GOOGLE
	NUTRITION			CLASSROOM AND GOOGLE MEET
	FOOD	2		
	PREPARATION			

SEMESTER IV GENERAL

GE-4/CC-4 (THEORETICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT	Proteins	2		
PHYSIOLOGY	Transport in	2		
AND METABOLISM	plants			
METADOLISM	Transpiration	2		ONLINE CLASS THROUGH GOOGLE
	Photosynthesis	2	DS	CLASSROOM
	Respiration	2		
	Nitrogen	2		
	metabolism			
	Plant Growth	2		
	regulators			
	Photoperiodism	1		
	Senescence	1		

GE-4/CC-4 (PRACTICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Experiment on Plasmolysis	2		
	Measurement of leaf area	2		
PLANT	(graphical method) and			ONLINE CLASS
PHYSIOLOGY AND	determination of transpiration			THROUGH
METABOLISM	rate per unit area by weighing			GOOGLE
	method		DS	CLASSROOM
	Imbibition of water by dry seeds	2		
	Evolution of O ₂ during	2		
	photosynthesis			
	Evolution of CO ₂ during aerobic	2		
	respiration and measurement of			
	volume			

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-G-SEC-D-4/6-4) THEORETICAL

monra	27.15 m o 57.2	ar 1 a a		
TOPIC	SUBTOPIC	CLASS	TEACH	TEACHING
		HOUR	ER	METHODS
	Mushroom	2		
MUSHROOM	Cultivation techniques/	2		ONLINE CLASS
CULTURE TECHNOLOGY	technology of edible		RP	THROUGH GOOGLE
TECHNOLOGI	mushrooms in India		KP	CLASSROOM
	Storage	2		
	Food preparation	2		
	Research centers	2		

SEMESTER VI HONOURS

CC-13 (THEORETICAL) PLANT PHYSIOLOGY (BOT-A-CC-6-13-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	Plant-water relations	2	DS	ONLINE CLASS THROUGH
PHYSIOLOGY	Mineral nutrition	2		GOOGLE CLASSROOM
	Organic Translocation	2		AND GOOGLE MEET
	Plant Growth Regulators	3		
	Photomorphogenesis	2		
	Seed dormancy	2		
	Physiology of	2		
	Senescence and Ageing			

CC-13 (PRACTICAL) PLANT PHYSIOLOGY PLANT PHYSIOLOGY (BOT-A-CC-6-13-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Determination of loss of water per	2		
	stoma per hour			
	Relationship between transpiration and	2		
	evaporation			
	Measurement of osmotic pressure of	2		ONLINE CLASS
	storage tissue by weighing method			THROUGH
	Measurement of osmotic pressure of	2		GOOGLE
PLANT	Rhoeo leaf by plasmolytic method.		DS	CLASSROOM AND GOOGLE MEET
PHYSIOLOGY	Effect of temperature on absorption of	2	05	GOOGLE MEET
	water by storage tissue and			
	determination of Q_{10}			
	Rate of imbibition of water by starchy,	2		
	proteinaceous and fatty seeds and			
	effect of seed coat			
	To study the phenomenon of seed	2		
	germination			
	To study the induction of amylase	2		
	activity in germinating grains			
	To study the effect of different	2		
	concentrations of IAA on Avena			
	coleopotile elongation			

CC-14 (THEORETICAL) PLANT METABOLISM (BOT-A-CC-6-14-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT	Concept of metabolism	1	MM	ONLINE CLASS
METABOLISM	Photosynthesis	2		THROUGH GOOGLE
	Respiration	2		CLASSROOM AND GOOGLE MEET
	Nitrogen Metabolism	1		
	Lipid metabolism	1		
	Mechanism of signal	2		
	transduction			

CC-14 (PRACTICAL) PLANT METABOLISM (BOT-A-CC-6-14-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Chromatography	2		
	Separation of plastidial	2		
	pigments			
PLANT	Estimation of total chlorophyll	2	MM	ONLINE CLASS
METABOLISM	content			THROUGH GOOGLE
	Effect of HCO3 concentration	2		CLASSROOM AND
	on oxygen evolution during			GOOGLE MEET
	photosynthesis in an aquatic			
	plant			
	Measurement of oxygen	2		
	uptake by respiring tissue			
	Determination of the RQ of	2		
	germinating seeds			
	Test of seed viability by TTC	2		
	method			

DISCIPLINE SPECIFIC ELECTIVE COURSES

DSE-A MEDICINAL AND ETHNOBOTANY (BOT-A-DSE-A-6-3-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Medicinal botany	2		
	Pharmacognosy	2		
MEDICINAL	Secondary metabolites	2		ONLINE CLASS THROUGH
AND	Pharmacologically	2	DS	GOOGLE CLASSROOM AND
ETHNOBOTANY	active constituents			GOOGLE MEET
	Ethnobotany and folk	3		
	medicine			

DSE-A MEDICINAL AND ETHNOBOTANY (BOT-A-DSE-A-6-3-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	~	HOUK		
	Chemical tests	4		ONLINE CLASS THROUGH
	Powder	4	DS	GOOGLE CLASSROOM AND
MEDICINAL AND	microscopy			GOOGLE MEET
ETHNOBOTANY	Histochemical	3		
	tests			

DSE-B NATURAL RESOURCE MANAGEMENT (BOT-A-DSE-B-6-8-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	NATURAL RESOURCES	2	MM	ONLINE CLASS THROUGH GOOGLE CLASSROOM AND
NATURAL	SUSTAINABLE UTILIZATION	2		GOOGLE MEET
RESOURCE	LAND	2		
MANAGEMENT	WATER	2		
	BIOLOGICAL	2		
	RESOURCES			
	FORESTS	2		
	ENERGY	2		
	CONTEMPORARY	2		
	PRACTICES IN			
	RESOURCE			
	MANAGEMENT			
	NATIONAL AND	2		
	INTERNATIONAL			
	EFFORTS			

DSE-B NATURAL RESOURCE MANAGEMENT (BOT-A-DSE-B-6-8-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Estimation of solid waste	2		
	generated by a domestic			
NATURAL	system		MM	ONLINE CLASS
RESOURCE	Estimation of foliar dust	2	IVIIVI	THROUGH GOOGLE
MANAGEMENT	deposition			CLASSROOM AND
	Determination of total solid	4		GOOGLE MEET
	in water			
	Determination of chemical	2		
	properties of soil by rapid			
	spot test			
	Estimation of organic	2		
	carbon percentage present			
	in soil sample			

SEMESTER VI GENERAL

DSE-B HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY

(BOT-G-DSE-B-6-4-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Horticulture	2		
	Ornamental plants	2		ONLINE CLASS
HORTICULTURAL	Identification of some	4		THROUGH GOOGLE
PRACTICES AND	fruits and vegetable		DS	CLASSROOM
POST HARVEST	plants			
TECHNOLOGY	Horticultural techniques	2		
	Post harvest technology	2		
	Disease control and	1		
	management			

DSE-B PRACTICAL- HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY

(BOT-G-DSE-B-6-4-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY	Field trips to gardens, standing crop sites, nurseries, vegetable gardens, horticultural fields and cold storages.	8	RP	ONLINE CLASS THROUGH GOOGLE CLASSROOM AND GOOGLE MEET

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-G-SEC-D-4/6-4) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MUSHROOM	Mushroom	2		
CULTURE TECHNOLO GY	Cultivation techniques/ technology of edible mushrooms in India	2		ONLINE CLASS THROUGH GOOGLE CLASSROOM AND
01	Storage	2	RP	GOOGLE MEET
	Food preparation	2		
	Research centres	2		

DEPARTMENT OF BOTANY TEACHING PLAN FOR HONOURS AND GENERAL COURSES (UNDER CBCS SYSTEM) ACADEMIC SESSION 2021-2022

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL

(JULY- DECEMBER- 2021)- BLENDED MODE

SEMESTER I- HONOURS

CC-1 (THEORITICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	General account	3		CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Classification	3	RP	DISCUSSION, GOOGLE CLASSROOM
	Cyanobacteria	1	KI	
	Bacillariophyta	2		
	Life History	6		
MICROBIOLOGY	Virus	3	MM	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Bacteria	4	1,11,1	DISCUSSION, GOOGLE CLASSROOM

CC-1 (PRACTICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	Work out:	4	DD	DEMONSTRATION,
	Identification	2	RP	INTERACTION, WORK OUT,
MICROBIOLOGY	Preparation of bacterial media	2		DEMONSTRATION, INTERACTION, WORK OUT
	Sub-culturing	1	ММ	
	Gram staining	2		
	from			
	Microscopic	2		
	examination			
	of bacteria			
	from natural			
	habitat			

CC-2 (THEORY)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MYCOLOGY	General Account	2		CLASS LECTURE, POWER POINT
	Classification	2	RP	PRESENTATION, INTERACTIVE DISCUSSION, GOOGLE CLASSROOM
	Life history	4	Ň	DISCUSSION, GOODLE CLASSROOM
	Mycorrhiza	2		
	Lichen	1		
PHYTO- PATHOLOGY	Terms and Definitions	2		
	Host – Parasite Interaction	3	DS	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Plant Disease Management	3		DISCUSSION, GOOGLE CLASSROOM
	Symptoms , Causal organism, Disease cycle and Control measures of different diseases	4		

CC-2 (PRACTICAL)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MYCOLOGY	Work out	8		DEMONSTRATION,
	Study from	2		INTERACTION, WORK OUT
	permanent		RP	
	slides			
	Morphological	2		
	study of Fungi			
PHYTO-	Preparation of	2		DEMONSTRATION,
PATHOLOGY	fungal media			INTERACTION, WORK OUT
	Sterilization	1		
	process			
	Isolation of	2		
	pathogen		DS	
	from diseased			
	leaf			
	Inoculation of	2		
	fruit and			
	subculturing			
	Identification	2		

SEMESTER I- GENERAL

GE-1/CC-1 PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	PHYCOLOGY	6	RP	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM
	MYCOLOGY	5	RP	CLASS LECTURE, POWER POINT PRESENTATION,
PLANT				INTERACTIVE DISCUSSION, GOOGLE
DIVERSITY I				CLASSROOM
	РНҮТОРАТНО	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
	LOGY			INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM
	BRYOPHYTES	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM
	ANATOMY	5	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM

GE-1/CC-1 PRACTICAL- PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY,

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PHYCOLOGY	3	RP	DEMONSTRATION, INTERACTION, WORK
				OUT, FIELD VISIT
PRACTICAL-	MYCOLOGY	2	RP	DEMONSTRATION, INTERACTION, WORK
PRACTICAL-				OUT, FIELD VISIT
PLANT	PHYTOPATHOLOGY	2	DS	DEMONSTRATION, INTERACTION
DIVERSITY I	BRYOPHYTES	2	DS	DEMONSTRATION, INTERACTION
	ANATOMY	6	RP	DEMONSTRATION, INTERACTION, WORK
				OUT

BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-P)

SEMESTER- III HONOURS

CC-5 (THEORETICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PALAEOBOTANY	PALAEOBOTANY	8	MM	CLASS LECTURE, POWER POINT PRESENTATION,
AND		4		INTERACTIVE DISCUSSION, GOOGLE
PALYNOLOGY	PALYNOLOGY			CLASSROOM

CC-5 (PRACTICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PALAEOBOTANY	4	MM	DEMONSTRATION, INTERACTION,
AND		4		WORK OUT
PALYNOLOGY	PALYNOLOGY			

CC 6 (THEORETICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-TH)

TOPIC	SUBTOPIC	021.00	TEACHER	TEACHING METHODS
		HOUR		
	MORPHOLOGY	8	DS	CLASS LECTURE, POWER POINT
REPRODUCTIVE	OF			PRESENTATION, INTERACTIVE
BIOLOGY OF	ANGIOSPERMS			DISCUSSION, GOOGLE CLASSROOM
ANGIOSPERMS	EMBRYOLOGY	4		

CC- 6 (PRACTICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
REPRODUCTIVE BIOLOGY OF	Inflorescence types	2	DS	DEMONSTRATION, INTERACTION, WORK OUT
ANGIOSPERMS	Flowers	2		
	Fruits-	2		
	Study of	2		
	ovules			

CC - 7 (THEORETICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Introduction	2		
	Nomenclature	2		
TAXONOMY	Systems of	2		CLASS LECTURE, POWER POINT
OF	classification		DS	PRESENTATION, INTERACTIVE
ANGIOSPERMS	Phenetics and	2		DISCUSSION, GOOGLE CLASSROOM
	Cladistics			
	Data sources in	2		
	Taxonomy			
	Diagnostic	6		
	features,			
	Systematic			
	position			
	(Bentham &			
	Hooker and			
	Cronquist),			
	Economically			
	important plants			
	(parts used and			
	uses) of different			
	families			

CC7 (PRACTICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
ANGIOSPERMS	Workout on Angiosperms Spot Identification	12 2	DS	DEMONSTRATION, INTERACTION, WORK OUT

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC) SEC-A BIOFERTILIZERS (BOT-A-SEC-A-3-2) (THEORETICAL)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
BIOFERTILIZERS	GENERAL ACCOUNT ABOUT THE MICROBES USED AS BIOFERTILIZERS,	2	MM	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE DISCUSSION, GOOGLE CLASSROOM
	RHIZOBIUM AZOSPIRILLUM	2		
	AZOTOBACTER CYANOBACTERIA (BLUE GREEN	$\frac{2}{2}$		
	ALGAE)			
	MYCORRHIZAL ASSOCIATION	2		
	ORGANIC FARMING	2		

SEMESTER- III GENERAL

GE-3/CC-3 CELL BIOLOGY, GENETICS AND MICROBIOLOGY (BOT-G-CC-3-3-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	CELL BIOLOGY	4	MM	CLASS LECTURE, POWER POINT
	GENETICS	6		PRESENTATION, INTERACTIVE
CELL BIOLOGY,				DISCUSSION, GOOGLE
GENETICS AND				CLASSROOM
MICROBIOLOGY	MICROBIOLOGY	4	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION, GOOGLE
				CLASSROOM

GE-3/CC-3 PRACTICAL- CELL BIOLOGY, GENETICS AND MICROBIOLOGY

(BOT-G-CC-3-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PRACTICAL-	CELL BIOLOGY,	6	MM	DEMONSTRATION,
CELL BIOLOGY,	GENETICS			INTERACTION, WORK OUT
GENETICS AND	MICROBIOLOGY	4	DS	DEMONSTRATION,
MICROBIOLOGY				INTERACTION, WORK OUT

SEC-A BIOFERTILIZERS (BOT-G-SEC-A-3/5-2)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Biofertilizers	2		CLASS LECTURE, POWER POINT
	Azospirillum	2	DD	PRESENTATION, INTERACTIVE DISCUSSION,
BIOFERTILIZERS	Cyanobacteria	2	RP	GOOGLE CLASSROOM
DIOPERTILIZERS	Mycorrhizal	2		
	association			
	Organic	2		
	farming			

SEMESTER V HONOURS

CC-11 (THEORETICAL)

CELL AND MOLECULAR BIOLOGY (BOT-A-CC-5-11-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	CELL	8	MM	CLASS LECTURE, POWER POINT
	BIOLOGY			PRESENTATION, INTERACTIVE
CELL AND				DISCUSSION, GOOGLE CLASSROOM
MOLECULAR	MOLECULAR	6	MM	CLASS LECTURE, POWER POINT
BIOLOGY	BIOLOGY			PRESENTATION, INTERACTIVE
				DISCUSSION, GOOGLE CLASSROOM

CC-11 (PRACTICAL) CELL AND MOLECULAR BIOLOGY (BOT-A-CC-5-11-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
CELL AND	Work out	10	MM	DEMONSTRATION, INTERACTION,
MOLECULAR	Identification	2		WORK OUT
BIOLOGY	Preparation	2		
	of			
	models/charts			

CC-12 (THEORETICAL) BIOCHEMISTRY (BOT-A-CC-5-12-TH)

BIOCHEMISTRY Biochemical 2 DS CLASS LECTURE, P	ETHOD
Foundations PRESENTATION, IN DISCUSSION, GOOGLE Molecules of 2 1 life III Energy flow and 3 3 enzymology Cell membrane 2 Phosphorylation 2 2	JTERACTIVE

CC-12 (PRACTICAL) BIOCHEMISTRY (BOT-A-CC-5-12-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Biochemistry-	8		DEMONSTRATION, INTERACTION,
BIOCHEMISTRY	qualitative		DS	WORK OUT
	Biochemistry-	12		
	quantitative			

DISCIPLINE SPECIFIC ELECTIVE COURSES

DSE-A BIOSTATISTICS (BOT-A-DSE-A-5-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Biostatistics	2		
	Biometry	2		CLASS LECTURE, POWER POINT
	Central tendency	2		PRESENTATION, INTERACTIVE
BIOSTATISTICS	Test of	2		DISCUSSION, GOOGLE
	significance			CLASSROOM
	Probability	3	DS	
	Measurement of	2		
	gene frequency			

DSE-A BIOSTATISTICS (BOT-A-DSE-A-5-1-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
BIOSTATISTICS	Univariate analysis of	2		
	statistical data			
	Calculation of correlation	2		
	coefficient values and finding			
	out the probability			
	Determination of goodness	4		
	of fit in Mendellian and		DS	DEMONST
	modified mono-and dihybrid			RATION,
	ratios			INTERACTI ON, WORK
	Calculation of 'F' value and	2		OUT
	finding out the probability			
	value for the F value			
	Basic idea of computer	2		
	programme for statistical			
	analysis of correlation			
	coefficient,'t' test, standard			
	error, standard deviation.			

DSE-B PLANT BIOTECHNOLOGY (BOT-A-DSE-B-5-5-TH) (THEORETICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PLANT TISSUE	1		
	CULTURE –			
	INTRODUCTION			CLASS LECTURE, POWER
PLANT	CALLUS CULTURE	2	MM	POINT PRESENTATION,
BIOTECHNOLOGY	PLANT	2		INTERACTIVE
	REGENERATION			DISCUSSION, GOOGLE
	HAPLOID CULTURE	2		CLASSROOM
	PROTOPLAST	2		
	CULTURE			
	PLANT GENETIC	2		
	ENGINEERING			

DSE-B PLANT BIOTECHNOLOGY (BOT-A-DSE-B-5-5-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Familiarization of	2		
	basic equipments in			
PLANT	plant tissue culture			DEMONSTRATION,
BIOTECHNOLOGY	Study through	4	ММ	INTERACTION, WORK
	photographs/ charts/			OUT
	models of anther			
	culture, somatic			
	embyogenesis,			
	endosperm and			
	embryo culture,			
	micropropagation			
	Preparation of basal	4		
	media. Sterilization			
	techniques			

SEMESTER V GENERAL

DSE A PHYTOCHEMISTRY AND MEDICINAL BOTANY

(BOT-G-DSE-A-5-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYTOCHEMISTRY AND MEDICINAL	Medicinal botany	2	RP	CLASS LECTURE, POWER POINT
BOTANY	Phramacognosy	2		PRESENTATION, INTERACTIVE
	Organoleptic evaluation of crude drugs	2		DISCUSSION, GOOGLE CLASSROOM
	Pharmcologically active constituents	1		
	Ethnobotany and folk medicine	2		

DSE-A PRACTICAL- PHYTOCHEMISTRY AND MEDICINAL BOTANY (BOT-G-DSE-A-5-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Preparations of	2		
	solution and buffers			
	Acquaintance with	3		
	laboratory			
	instruments			
PHYTOCHEMISTRY	Qualitative test for	4		
AND MEDICINAL	proteins and			DEMONSTRATION,
BOTANY	carbohydrates		DS	INTERACTION, WORK OUT
	Tests (chemical) for	2	DS	001
	tannin and alkaloid			
	Identification of	1		
	medicinal plants			

SEC-A BIOFERTILIZERS (BOT-G-SEC-A-3/5-2)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
BIOFERTILIZERS	Biofertilizers	2	RP	CLASS LECTURE, POWER POINT
	Azospirillum	2		PRESENTATION, INTERACTIVE
	Cyanobacteria	2		DISCUSSION, GOOGLE CLASSROOM
	Mycorrhizal	2		
	association			
	Organic	2		
	farming			

TEACHING PLAN FOR HONOURS AND GENERAL COURSES (UNDER CBCS SYSTEM) ACADEMIC SESSION 2021-2022 (JANUARY- JUNE- 2022)

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA **RP- RIMLI PAUL**

SEMESTER- II HONOURS

TOPIC SUBTOPIC CLASS TEACHER TEACHING METHODS HOUR

CC- 3 PLANT ANATOMY (THEORY) (BOT-A-CC-2-3-TH)

PLANT	Cell wall	2	MM	CLASS LECTURE,
ANATOMY	Stomata	1		POWER POINT
	Stele	1		PRESENTATION, INTERACTIVE
	Primary structure of stem	2		DISCUSSION
	and root			
	Secondary growth	3		
	Mechanical tissues and the	2		
	Principles governing their			
	distribution in plants			
	Developmental Anatomy	2		
	Ecological Anatomy	1		
	Scope of plant anatomy:	4		
	application in systematics,			
	forensics and			
	pharmacognosy			

CC-3 PLANT ANATOMY (PRACTICAL) (BOT-A-CC-2-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Microscopic studies	2		
	Study of anatomical	2		
	details through			
PLANT	permanent slides/			DEMONSTRATION,
ANATOMY	temporary stained		MM	INTERACTION, WORK
	mounts			OUT
	Study of anomalous	5		
	secondary structure			
	Study of adaptive	2		
	anatomical features			

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	8	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	PTERIDOPHYTES	8	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	GYMNOSPERMS	7	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	CC A (PRACTICAL)	ADCUAE	CONLATE (D	$OT \land CC \land AD$

CC-4 (THEORITICAL) ARCHAEGONIATE (BOT-A-CC-2-4-TH)

CC-4 (PRACTICAL) ARCHAEGONIATE (BOT-A-CC-2-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	4	DS	DEMONSTRATION,
	PTERIDOPHYTES	6		INTERACTION, WORK OUT,
	GYMNOSPERMS	4		FIELD VISIT

SEMESTER- II GENERAL

GE-2/CC-2 PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	PTERIDOPHYTES	4	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	GYMNOSPERMS	6	DS	CLASS LECTURE, POWER POINT
PLANT				PRESENTATION, INTERACTIVE
DIVERSITY				DISCUSSION
II	PALAEOBOTANY	4	MM	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	MORPHOLOGY	5	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	TAXONOMY	7	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION

GE-2/CC-2 PRACTICAL- PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	MORPHOLOGY	6	RP	DEMONSTRATION, INTERACTION,
PRACTI	AND TAXONOMY			WORK OUT, FIELD VISIT
CAL-				
PLANT	PTERIDOPHYTES,	6	DS	DEMONSTRATION, INTERACTION,
DIVERS	GYMNOSPERMS			WORK OUT
ITY II				

SEMESTER IV- HONOURS

CC-8 (THEORETICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	PLANT	4		CLASS LECTURE, POWER POINT
GEOGRAPHY,	GEOGRAPHY		DS	PRESENTATION, INTERACTIVE
ECOLOGY	ECOLOGY	4		DISCUSSION
AND	EVOLUTION	3		
EVOLUTION				

CC-8 (PRACTICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT GEOGRAPHY	Study of local flora and submission of a project report highlighting phytogeographical characteristics of the region	4	DS	DEMONSTRATION, INTERACTION, WORK OUT, FIELD VISIT
ECOLOGY	Study of community structure by quadrat method	3		
	Comparative anatomical studies of leaves form polluted and less polluted areas	2		
	Measurement of dissolved O2 by Azide modification of Winkler's method	2		
	Comparison of free CO2 from different sources	2		

CC-9 (THEORETICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-TH)

TOPIC	SUBTOPIC	CLASS	TEACH	TEACHING METHODS
		HOUR	ER	
ECONOMIC	Origin of cultivated crops	1	RP	CLASS LECTURE,
BOTANY				POWER POINT
	Cereals	2		PRESENTATION,
	Legumes	2		INTERACTIVE
	Sugar and starches	2		DISCUSSION
	Spices	2		
	Beverages	2		
	Oil and fats	2		
	Drug-yielding plants	2		
	Timber	1		
	Fibers	2		

CC-9 (PRACTICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACH ER	TEACHING METHODS
ECONOMIC	Cereals	2	RP	DEMONSTRATION,
BOTANY	Legume	2		INTERACTION, WORK OUT,
	Sugars and starches	2		FIELD VISIT
	Теа	1		
	Mustard	2		
	Habit sketch of Digitalis,	1		
	Papaver and Cannabis			
	Sal, Teak	2		
	Jute	2		

CC-10 (THEORETICAL) GENETICS (BOT-A-CC-4-10-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
GENETICS	Introduction: Mendelian genetics and its extension	2	MM	CLASS LECTURE, POWER POINT
	Linkage, Crossing over and Gene Mapping	3		PRESENTATION, INTERACTIVE DISCUSSION
	Epistasis and Polygenic inheritance in plants	2		Discossion
	Aneuploidy and Polyploidy	2		
	Chromosomal aberration	2		
	Mutation	3		
	Structural organisation of Gene	2		

CC-10 (PRACTICAL) GENETICS (BOT-A-CC-4-10-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Introduction to chromosome	2		
	preparation			
	Determination of mitotic index	4		
	and frequency of different			
	mitotic stages in pre-fixed root			
GENETICS	tips of Allium cepa		MM	DEMONSTRATION,
	Study of mitotic chromosome	4		INTERACTION, WORK OUT
	Study of chromosomal	2		
	aberrations developed due to			
	exposure to any two			
	pollutants/ pesticides etc.			
	Study of meiotic chromosome	4		
	Identification from permanent	2		
	slides			

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC)

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-A-SEC-B-4-4) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	INTRODUCTION	2		
	CULTIVATION	2		CLASS LECTURE, POWER POINT
MUSHROOM	TECHNOLOGY		MM	PRESENTATION, INTERACTIVE
CULTURE	STORAGE AND	2		DISCUSSION
TECHNOLOGY	NUTRITION			
	FOOD	2		
	PREPARATION			

SEMESTER IV GENERAL

GE-4/CC-4 (THEORETICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	Proteins	2		
PHYSIOLOGY	Transport in	2		
AND METABOLISM	plants			
METADOLISM	Transpiration	2		CLASS LECTURE, POWER POINT
	Photosynthesis	2	MM	PRESENTATION, INTERACTIVE
	Respiration	2		DISCUSSION
	Nitrogen	2		
	metabolism			
	Plant Growth	2		
	regulators			
	Photoperiodism	1		
	Senescence	1		

GE-4/CC-4 (PRACTICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Experiment on Plasmolysis	2		
	Measurement of leaf area	2		
PLANT	(graphical method) and			
PHYSIOLOGY AND	determination of transpiration			
METABOLISM	rate per unit area by weighing			
	method		DS	DEMONSTRA
	Imbibition of water by dry seeds	2		TION,
	Evolution of O ₂ during	2		INTERACTIO N, WORK
	photosynthesis			N, WOKK OUT
	Evolution of CO ₂ during aerobic	2		001
	respiration and measurement of			
	volume			

TOPIC	SUBTOPIC	CLASS HOUR	TEACH ER	TEACHING METHODS
	Mushroom	2		
MUSHROOM CULTURE TECHNOLOGY	Cultivation techniques/ technology of edible mushrooms in India	2	RP	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Storage	2		DISCUSSION
	Food preparation]	
	Research centers	2		

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-G-SEC-D-4/6-4) THEORETICAL

SEMESTER VI HONOURS

CC-13 (THEORETICAL) PLANT PHYSIOLOGY (BOT-A-CC-6-13-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	Plant-water relations	2	DS	CLASS LECTURE, POWER
PHYSIOLOGY	Mineral nutrition	2		POINT PRESENTATION, INTERACTIVE
	Organic Translocation	2		DISCUSSION
	Plant Growth Regulators	3		DISCOSSION
	Photomorphogenesis	2		
	Seed dormancy	2		
	Physiology of	2		
	Senescence and Ageing			

CC-13 (PRACTICAL) PLANT PHYSIOLOGY PLANT PHYSIOLOGY (BOT-A-CC-6-13-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Determination of loss of water per	2		
	stoma per hour			
	Relationship between	2		
	transpiration and evaporation			
	Measurement of osmotic pressure	2		
	of storage tissue by weighing			
	method			
PLANT	Measurement of osmotic pressure	2	DS	DEMONSTRATION.
PHYSIOLOGY	of Rhoeo leaf by plasmolytic		05	INTERACTION,
THISIOLOGI	method.			WORK OUT
	Effect of temperature on	2		
	absorption of water by storage			
	tissue and determination of Q_{10}			
	Rate of imbibition of water by	2		
	starchy, proteinaceous and fatty			
	seeds and effect of seed coat			
	To study the phenomenon of seed	2		
	germination			
	To study the induction of amylase	2		
	activity in germinating grains			
	To study the effect of different	2		
	concentrations of IAA on Avena			
	coleopotile elongation			

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT METABOLISM	Concept of metabolism	1	MM	CLASS LECTURE, POWER POINT PRESENTATION,
METADOLISM	Photosynthesis	2		INTERACTIVE
	Respiration	2		DISCUSSION
	Nitrogen Metabolism	1		
	Lipid metabolism	1		
	Mechanism of signal	2		
	transduction			

CC-14 (THEORETICAL) PLANT METABOLISM (BOT-A-CC-6-14-TH)

CC-14 (PRACTICAL) PLANT METABOLISM (BOT-A-CC-6-14-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Characteristic			METHODS
	Chromatography	2		
	Separation of plastidial	2		
	pigments			
PLANT	Estimation of total chlorophyll	2	ММ	DEMONSTRATION,
METABOLISM	content			INTERACTION,
	Effect of HCO3 concentration	2		WORK OUT
	on oxygen evolution during			
	photosynthesis in an aquatic			
	plant			
	Measurement of oxygen	2		
	uptake by respiring tissue			
	Determination of the RQ of	2		
	germinating seeds			
	Test of seed viability by TTC			
	method			

DISCIPLINE SPECIFIC ELECTIVE COURSES

DSE-A MEDICINAL AND ETHNOBOTANY (BOT-A-DSE-A-6-3-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Medicinal botany	2		
	Pharmacognosy	2		
MEDICINAL	Secondary metabolites	2		CLASS LECTURE,
AND	Pharmacologically	2	DS	POWER POINT
ETHNOBOTANY	active constituents			PRESENTATION,
	Ethnobotany and folk	3		INTERACTIVE DISCUSSION
	medicine			

DSE-A MEDICINAL AND ETHNOBOTANY (BOT-A-DSE-A-6-3-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Chemical tests	4		DEMONSTRATION,
	Powder	4	DS	INTERACTION, WORK OUT
MEDICINAL AND	microscopy			
ETHNOBOTANY	Histochemical	3		
	tests			

DSE-B NATURAL RESOURCE MANAGEMENT (BOT-A-DSE-B-6-8-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	NATURAL RESOURCES	2	MM	CLASS LECTURE, POWER POINT PRESENTATION,
NATURAL	SUSTAINABLE UTILIZATION	2		INTERACTIVE DISCUSSION
RESOURCE	LAND	2		
MANAGEMENT	WATER	2		
	BIOLOGICAL	2		
	RESOURCES			
	FORESTS	2		
	ENERGY	2		
	CONTEMPORARY	2		
	PRACTICES IN			
	RESOURCE			
	MANAGEMENT			
	NATIONAL AND	2		
	INTERNATIONAL			
	EFFORTS			

DSE-B NATURAL RESOURCE MANAGEMENT (BOT-A-DSE-B-6-8-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Estimation of solid waste	2		
	generated by a domestic			
NATURAL	system		ММ	DEMONSTRATION,
RESOURCE	Estimation of foliar dust	2	IVIIVI	INTERACTION,
MANAGEMENT	deposition			WORK OUT
	Determination of total solid	4		
	in water			
	Determination of chemical	2		
	properties of soil by rapid			
	spot test			
	Estimation of organic	2	2	
	carbon percentage present			
	in soil sample			

SEMESTER VI GENERAL

DSE-B HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY

(BOT-G-DSE-B-6-4-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Horticulture	2		
	Ornamental plants	2		CLASS LECTURE,
HORTICULTURAL	Identification of some	4		POWER POINT
PRACTICES AND	fruits and vegetable		RP	PRESENTATION,
POST HARVEST	plants			INTERACTIVE
TECHNOLOGY	Horticultural techniques	2		DISCUSSION
	Post harvest technology	2		
	Disease control and	1		
	management			

DSE-B PRACTICAL- HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY

(BOT-G-DSE-B-6-4-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY	Field trips to gardens, standing crop sites, nurseries, vegetable gardens, horticultural fields and cold storages.	8	DS	DEMONSTRATION, INTERACTION, FIELD VISIT

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-G-SEC-D-4/6-4) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MUSHROOM	Mushroom	2		
CULTURE TECHNOLO GY	Cultivation techniques/ technology of edible mushrooms in India	2		CLASS LECTURE, POWER POINT PRESENTATION,
01	Storage	2	RP	INTERACTIVE
	Food preparation	2		DISCUSSION
	Research centres	2		

DEPARTMENT OF BOTANY TEACHING PLAN FOR HONOURS AND GENERAL COURSES (UNDER CBCS SYSTEM) ACADEMIC SESSION 2022-2023

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL BM- DR. BISWAJIT MUKHERJEE

(JULY- DECEMBER- 2022)

SEMESTER I- HONOURS

CC-1 (THEORITICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	General account	3		CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Classification	3	RP	DISCUSSION
	Cyanobacteria	1	КГ	
	Bacillariophyta	2		
	Life History	6		
MICROBIOLOGY	Virus	3	ММ	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Bacteria	4		DISCUSSION

CC-1 (PRACTICAL)

PHYCOLOGY AND MICROBIOLOGY (BOT-A-CC-1-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PHYCOLOGY	Work out:	4		DEMONSTRATION,
	Identification	2	RP	INTERACTION, WORK OUT, FIELD VISIT
MICROBIOLOGY	Preparation of	2		DEMONSTRATION,
	bacterial media			INTERACTION, WORK
	Sub-culturing	1		OUT
	Gram staining from	2	ММ	
	Microscopic	2		
	examination of			
	bacteria from			
	natural habitat			

CC-2 (THEORY)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MYCOLOGY	General	2		
	Account			CLASS LECTURE, POWER POINT
	Classification	2	BM	PRESENTATION, INTERACTIVE DISCUSSION
	Life history	4	DIVI	DISCUSSION
	Mycorrhiza	2		
	Lichen	1		
PHYTO-	Terms and	2		
PATHOLOGY	Definitions		DS	
	Host – Parasite	3	BM	CLASS LECTURE, POWER POINT
	Interaction			PRESENTATION, INTERACTIVE
	Plant Disease	3		DISCUSSION
	Management		DC	
	Symptoms,	4	DS	
	Causal			
	organism,			
	Disease cycle			
	and Control			
	measures of			
	different			
	diseases			

CC-2 (PRACTICAL)

MYCOLOGY AND PHYTO-PATHOLOGY (BOT-A-CC-1-2-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MYCOLOGY	Work out	8		DEMONSTRATION,
	Study from	2		INTERACTION, WORK
	permanent		BM	OUT, FIELD VISIT
	slides		DIVI	
	Morphological	2		
	study of Fungi			
PHYTO-	Preparation of	2		DEMONSTRATION,
PATHOLOGY	fungal media			INTERACTION, WORK OUT
	Sterilization	1		
	process			
	Isolation of	2		
	pathogen		DS	
	from diseased			
	leaf			
	Inoculation of	2		
	fruit and			
	subculturing			
	Identification	2		

SEMESTER I- GENERAL

GE-1/CC-1 PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY, BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	PHYCOLOGY	6	RP	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM
	MYCOLOGY	5	RP	CLASS LECTURE, POWER POINT PRESENTATION,
PLANT				INTERACTIVE DISCUSSION, GOOGLE
DIVERSITY I				CLASSROOM
	РНҮТОРАТНО	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
	LOGY			INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM
	BRYOPHYTES	6	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM
	ANATOMY	5	DS	CLASS LECTURE, POWER POINT PRESENTATION,
				INTERACTIVE DISCUSSION, GOOGLE
				CLASSROOM

GE-1/CC-1 PRACTICAL- PLANT DIVERSITY I (PHYCOLOGY, MYCOLOGY, PHYTOPATHOLOGY,

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PHYCOLOGY	3	RP	DEMONSTRATION, INTERACTION, WORK
				OUT, FIELD VISIT
PRACTICAL-	MYCOLOGY	2	RP	DEMONSTRATION, INTERACTION, WORK
FRACTICAL-				OUT, FIELD VISIT
PLANT	PHYTOPATHOLOGY	2	DS	DEMONSTRATION, INTERACTION
DIVERSITY I	BRYOPHYTES	2	DS	DEMONSTRATION, INTERACTION
	ANATOMY	6	RP	DEMONSTRATION, INTERACTION, WORK
				OUT, FIELD VISIT

BRYOPHYTES AND ANATOMY) (BOT-G-CC-1-1-P)

SEMESTER- III HONOURS

CC-5 (THEORETICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PALAEOBOTANY	PALAEOBOTANY	8	BM	CLASS LECTURE, POWER POINT PRESENTATION,
AND		4		INTERACTIVE DISCUSSION
PALYNOLOGY	PALYNOLOGY			

CC-5 (PRACTICAL) PALAEOBOTANY AND PALYNOLOGY (BOT-A-CC-3-5-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PALAEOBOTANY	4	MM	DEMONSTRATION, INTERACTION,
AND		4		WORK OUT
PALYNOLOGY	PALYNOLOGY			

CC 6 (THEORETICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	MORPHOLOGY	8	DS	CLASS LECTURE, POWER POINT
REPRODUCTIVE	OF			PRESENTATION, INTERACTIVE
BIOLOGY OF	ANGIOSPERMS			DISCUSSION
ANGIOSPERMS	EMBRYOLOGY	4		

CC- 6 (PRACTICAL) REPRODUCTIVE BIOLOGY OF ANGIOSPERMS (BOT-A-CC-3-6-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
REPRODUCTIVE BIOLOGY OF ANGIOSPERMS	Inflorescence types Flowers	2 2	DC	DEMONSTRATION, INTERACTION, WORK OUT, FIELD VISIT
	Fruits- Study of	2 2	DS	
	ovules			

CC - 7 (THEORETICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Introduction	2		
	Nomenclature	2		
TAXONOMY	Systems of	2		CLASS LECTURE, POWER POINT
OF	classification		RP	PRESENTATION, INTERACTIVE
ANGIOSPERMS	Phenetics and	2		DISCUSSION
	Cladistics			
	Data sources in	2		
	Taxonomy			
	Diagnostic	6		
	features,			
	Systematic			
	position			
	(Bentham &			
	Hooker and			
	Cronquist),			
	Economically			
	important plants			
	(parts used and			
	uses) of different			
	families			

CC7 (PRACTICAL) PLANT SYSTEMATICS (BOT-A-CC-3-7-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ANGIOSPERMS	Workout on	12	RP	DEMONSTRATION, INTERACTION,
	Angiosperms			WORK OUT, FIELD VISIT
	Spot	2		
	Identification			

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC) SEC-A BIOFERTILIZERS (BOT-A-SEC-A-3-2) (THEORETICAL)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
BIOFERTILIZERS	GENERAL ACCOUNT ABOUT THE MICROBES USED AS BIOFERTILIZERS, RHIZOBIUM	2	ММ	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE DISCUSSION
	AZOSPIRILLUM	2		
	AZOTOBACTER	2		
	CYANOBACTERIA	2		
	(BLUE GREEN ALGAE)			
	MYCORRHIZAL ASSOCIATION	2		
	ORGANIC FARMING	2		

SEMESTER- III GENERAL

GE-3/CC-3 CELL BIOLOGY, GENETICS AND MICROBIOLOGY (BOT-G-CC-3-3-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	CELL BIOLOGY	4	MM	CLASS LECTURE, POWER POINT
	GENETICS	6		PRESENTATION, INTERACTIVE
CELL BIOLOGY,				DISCUSSION
GENETICS AND MICROBIOLOGY	MICROBIOLOGY	4	DS	CLASS LECTURE, POWER POINT
MICROBIOLOGY				PRESENTATION, INTERACTIVE
				DISCUSSION

GE-3/CC-3 PRACTICAL- CELL BIOLOGY, GENETICS AND MICROBIOLOGY

(BOT-G-CC-3-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PRACTICAL-	CELL BIOLOGY,	6	MM	DEMONSTRATION,
CELL BIOLOGY,	GENETICS			INTERACTION, WORK OUT
GENETICS AND	MICROBIOLOGY	4	DS	DEMONSTRATION,
MICROBIOLOGY				INTERACTION, WORK OUT

SEC-A BIOFERTILIZERS (BOT-G-SEC-A-3/5-2)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Biofertilizers	2		CLASS LECTURE, POWER POINT
	Azospirillum	2	DD	PRESENTATION, INTERACTIVE DISCUSSION,
BIOFERTILIZERS	Cyanobacteria	2	RP	GOOGLE CLASSROOM
DIOPERTILIZERS	Mycorrhizal	2		
	association			
	Organic	2		
	farming			

SEMESTER V HONOURS

CC-11 (THEORETICAL)

CELL AND MOLECULAR BIOLOGY (BOT-A-CC-5-11-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	CELL	8	MM	CLASS LECTURE, POWER POINT
	BIOLOGY			PRESENTATION, INTERACTIVE
CELL AND				DISCUSSION
MOLECULAR	MOLECULAR	6	MM	CLASS LECTURE, POWER POINT
BIOLOGY	BIOLOGY			PRESENTATION, INTERACTIVE
				DISCUSSION

CC-11 (PRACTICAL) CELL AND MOLECULAR BIOLOGY (BOT-A-CC-5-11-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
CELL AND	Work out	10	MM	DEMONSTRATION, INTERACTION,
MOLECULAR	Identification	2		WORK OUT
BIOLOGY	Preparation	2		
	of			
	models/charts			

CC-12 (THEORETICAL) BIOCHEMISTRY (BOT-A-CC-5-12-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHOD
		HOUR		
BIOCHEMISTRY	Biochemical	2	DS	CLASS LECTURE, POWER POINT
	Foundations			PRESENTATION, INTERACTIVE
	Molecules of	2	BM	DISCUSSION
	life			
	Energy flow and	3		
	enzymology		DC	
	Cell membrane	2	DS	
	Phosphorylation	2		

CC-12 (PRACTICAL) BIOCHEMISTRY (BOT-A-CC-5-12-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
BIOCHEMISTRY	Biochemistry- qualitative	8	DS	DEMONSTRATION, INTERACTION, WORK OUT
DIOCHLINISTRI	Biochemistry-	12	05	WORK OUT
	quantitative			

DISCIPLINE SPECIFIC ELECTIVE COURSES

DSE-A INDUSTRIAL AND ENVIRONMENTAL MICROBIOLOGY (BOT-A-DSE-A-5-2-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
INDUSTRIAL AND ENVIRONMENTAL MICROBIOLOGY	Scope of microbes in industry and environment Bioreactors/ Fermenters and fermentation process Microbial production of industrial products Microbial enzymes of industrial interest and enzyme immobilization Microbes and quality of environment Microbial flora of water Microbes in agriculture and remediation of	2 2 2 2 3 2 3	RP	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE DISCUSSION
	contaminated soils			

DSE-A INDUSTRIAL AND ENVIRONMENTAL MICROBIOLOGY (BOT-A-DSE-A-5-2-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS	TEACHE	TEACHING
		HOUR	R	METHODS
	Principals and functioning of	2		
	instruments in microbiology			
INDUSTRIAL AND	laboratory			
ENVIRONMENTAL	Hands on sterilization	2		
MICROBIOLOGY	techniques and preparation			
	of culture media		RP	DEMONSTRATION
	Preparation of slant, stab	4		, INTERACTION,
	and pouring petriplate			WORK OUT, FIELD
	A visit to any educational	4		VISIT
	institute/ industry to see an			
	industrial fermenter, and			
	other downstream			
	processing operations			

DSE-B PLANT BIOTECHNOLOGY (BOT-A-DSE-B-5-5-TH) (THEORETICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	PLANT TISSUE	1		
	CULTURE –			
	INTRODUCTION			CLASS LECTURE, POWER
PLANT	CALLUS CULTURE	2	MM	POINT PRESENTATION,
BIOTECHNOLOGY	PLANT	2		INTERACTIVE
	REGENERATION			DISCUSSION
	HAPLOID CULTURE	2		
	PROTOPLAST	2		
	CULTURE			
	PLANT GENETIC	2		
	ENGINEERING			

DSE-B PLANT BIOTECHNOLOGY (BOT-A-DSE-B-5-5-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Familiarization of	2		
	basic equipments in			
PLANT	plant tissue culture			DEMONSTRATION,
BIOTECHNOLOGY	Study through	4	ММ	INTERACTION, WORK
	photographs/ charts/			OUT
	models of anther			
	culture, somatic			
	embyogenesis,			
	endosperm and			
	embryo culture,			
	micropropagation			
	Preparation of basal	4		
	media. Sterilization			
	techniques			

SEMESTER V GENERAL

DSE A PHYTOCHEMISTRY AND MEDICINAL BOTANY

(BOT-G-DSE-A-5-1-TH) THEORETICAL

TODIC	SUDTODIC	CLACC	TEACHED	TEACHING METHODS
TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PHYTOCHEMISTRY	Medicinal	2		CLASS LECTURE,
AND MEDICINAL	botany			POWER POINT
BOTANY	Phramacognosy	2		PRESENTATION,
	Organoleptic	2	RP	INTERACTIVE DISCUSSION
	evaluation of			2150051011
	crude drugs			
	Pharmcologically	1		
	active			
	constituents			
	Ethnobotany	2		
	and folk			
	medicine			

DSE-A PRACTICAL- PHYTOCHEMISTRY AND MEDICINAL BOTANY (BOT-G-DSE-A-5-1-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Preparations of	2		
	solution and buffers			
	Acquaintance with	3		
	laboratory			
	instruments			
PHYTOCHEMISTRY	Qualitative test for	4		
AND MEDICINAL	proteins and		DS	DEMONSTRATION,
BOTANY	carbohydrates			INTERACTION, WORK
	Tests (chemical) for	2		OUT, FIELD VISIT
	tannin and alkaloid			
	Identification of	1		
	medicinal plants			

SEC-A BIOFERTILIZERS (BOT-G-SEC-A-3/5-2)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
BIOFERTILIZERS	Biofertilizers	2	RP	CLASS LECTURE, POWER POINT
	Azospirillum	2		PRESENTATION, INTERACTIVE
	Cyanobacteria	2		DISCUSSION
	Mycorrhizal	2		
	association			
	Organic	2		
	farming			

TEACHING PLAN FOR HONOURS AND GENERAL COURSES (UNDER CBCS SYSTEM) ACADEMIC SESSION 2022-2023 (JANUARY- JUNE- 2023)

TEACHERS:

MM- DR. MRIGANKA MANDAL DS- DR. DIPU SAMANTA RP- RIMLI PAUL BM- DR. BISWAJIT MUKHERJEE

SEMESTER- IIHONOURS

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT	Cell wall	2	MM	CLASS LECTURE,
ANATOMY	Stomata	1		POWER POINT
	Stele	1		PRESENTATION, INTERACTIVE
	Primary structure of stem	2		DISCUSSION
	and root			
	Secondary growth	3		
	Mechanical tissues and the	2		
	Principles governing their			
	distribution in plants			
	Developmental Anatomy	2		
	Ecological Anatomy	1		
	Scope of plant anatomy:	4		
	application in systematics,			
	forensics and			
	pharmacognosy			

CC-3 PLANT ANATOMY (THEORY) (BOT-A-CC-2-3-TH)

CC-3 PLANT ANATOMY (PRACTICAL) (BOT-A-CC-2-3-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
TOTIC	SUBTOTIC	HOUR	TLACILR	TEACHING METHODS
	Microscopic studies	2		
	Study of anatomical	2		
	details through			
PLANT	permanent slides/			DEMONSTRATION,
ANATOMY	temporary stained		MM	INTERACTION, WORK
	mounts			OUT
	Study of anomalous	5		
	secondary structure			
	Study of adaptive	2		
	anatomical features			

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	8	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	PTERIDOPHYTES	8	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	GYMNOSPERMS	7	BM	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	CC A (PRACTICAL)	ADCUAE	CONIATE (D	$OT \land CC ? (ID)$

CC-4 (THEORITICAL) ARCHAEGONIATE (BOT-A-CC-2-4-TH)

CC-4 (PRACTICAL) ARCHAEGONIATE (BOT-A-CC-2-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
ARCHAEGONIATE	BRYOPHYTES	4	DS	DEMONSTRATION,
	PTERIDOPHYTES	6		INTERACTION, WORK OUT,
	GYMNOSPERMS	4		FIELD VISIT

SEMESTER- IIGENERAL

GE-2/CC-2 PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	PTERIDOPHYTES	4	DS	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	GYMNOSPERMS	6	DS	CLASS LECTURE, POWER POINT
PLANT				PRESENTATION, INTERACTIVE
DIVERSITY				DISCUSSION
II	PALAEOBOTANY	4	MM	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	MORPHOLOGY	5	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION
	TAXONOMY	7	RP	CLASS LECTURE, POWER POINT
				PRESENTATION, INTERACTIVE
				DISCUSSION

GE-2/CC-2 PRACTICAL- PLANT DIVERSITY II (PTERIDOPHYTES, GYMNOSPERMS, PALAEOBOTANY, MORPHOLOGY AND TAXONOMY) (BOT-G-CC-2-2-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	MORPHOLOGY	6	RP	DEMONSTRATION, INTERACTION,
PRACTI	AND TAXONOMY			WORK OUT, FIELD VISIT
CAL-				
PLANT	PTERIDOPHYTES,	6	DS	DEMONSTRATION, INTERACTION,
DIVERS	GYMNOSPERMS			WORK OUT
ITY II				

SEMESTER IV- HONOURS

CC-8 (THEORETICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	PLANT	4		CLASS LECTURE, POWER POINT
GEOGRAPHY,	GEOGRAPHY		RP	PRESENTATION, INTERACTIVE
ECOLOGY	ECOLOGY	4		DISCUSSION
AND	EVOLUTION	3		
EVOLUTION				

CC-8 (PRACTICAL) PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT GEOGRAPHY	Study of local flora and submission of a project report highlighting phytogeographical characteristics of the region	4	RP	DEMONSTRATION, INTERACTION, WORK OUT, FIELD VISIT
ECOLOGY	Study of community structure by quadrat method	3		
	Comparative anatomical studies of leaves form polluted and less polluted areas	2		
	Measurement of dissolved O2 by Azide modification of Winkler's method	2		
	Comparison of free CO2 from different sources	2		

CC-9 (THEORETICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-TH)

TOPIC	SUBTOPIC	CLASS	TEACH	TEACHING METHODS
		HOUR	ER	
ECONOMIC	Origin of cultivated crops	1		CLASS LECTURE,
BOTANY				POWER POINT
	Cereals	2		PRESENTATION,
	Legumes	2	RP	INTERACTIVE
	Sugar and starches	2		DISCUSSION
	Spices	2		
	Beverages	2		
	Oil and fats	2	M	
	Drug-yielding plants	2	MM	
	Timber	1		
	Fibers	2		

CC-9 (PRACTICAL) ECONOMIC BOTANY (BOT-A-CC-4-9-P)

TOPIC	SUBTOPIC	CLASS HOUR	TEACH ER	TEACHING METHODS
ECONOMIC	Cereals	2	LK	DEMONSTRATION,
BOTANY	Legume	2		INTERACTION, WORK OUT,
	Sugars and starches	2	RP	FIELD VISIT
	Теа	1	N	
	Mustard	2		
	Habit sketch of Digitalis,	1		
	Papaver and Cannabis			
	Sal, Teak	2		
	Jute	2		

CC-10 (THEORETICAL) GENETICS (BOT-A-CC-4-10-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
GENETICS	Introduction: Mendelian genetics and its extension	2		CLASS LECTURE, POWER POINT
	Linkage, Crossing over and Gene Mapping	3		PRESENTATION, INTERACTIVE DISCUSSION
	Epistasis and Polygenic inheritance in plants	2	BM	Discossion
	Aneuploidy and Polyploidy	2		
	Chromosomal aberration	2		
	Mutation	3]	
	Structural organisation of Gene	2		

CC-10 (PRACTICAL) GENETICS (BOT-A-CC-4-10-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
	Introduction to chromosome	2		
	preparation			
	Determination of mitotic index	4		
	and frequency of different			
	mitotic stages in pre-fixed root			
GENETICS	tips of Allium cepa		BM	DEMONSTRATION,
	Study of mitotic chromosome	4		INTERACTION, WORK OUT
	Study of chromosomal	2		
	aberrations developed due to			
	exposure to any two			
	pollutants/ pesticides etc.			
	Study of meiotic chromosome	4		
	Identification from permanent	2		
	slides			

SKILL ENHANCEMENT COURSE- ELECTIVE (SEC)

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-A-SEC-B-4-4) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	INTRODUCTION	2		
	CULTIVATION	2		CLASS LECTURE, POWER POINT
MUSHROOM	TECHNOLOGY		MM	PRESENTATION, INTERACTIVE
CULTURE	STORAGE AND	2		DISCUSSION
TECHNOLOGY	NUTRITION			
	FOOD	2		
	PREPARATION			

SEMESTER IV GENERAL

GE-4/CC-4 (THEORETICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	Proteins	2		
PHYSIOLOGY	Transport in	2		
AND METABOLISM	plants			
METADOLISM	Transpiration	2		CLASS LECTURE, POWER POINT
	Photosynthesis	2	MM	PRESENTATION, INTERACTIVE
	Respiration	2		DISCUSSION
	Nitrogen	2		
	metabolism			
	Plant Growth	2		
	regulators			
	Photoperiodism	1		
	Senescence	1		

GE-4/CC-4 (PRACTICAL) PLANT PHYSIOLOGY AND METABOLISM (BOT-G-CC-4-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Experiment on Plasmolysis	2		
	Measurement of leaf area	2		
PLANT	(graphical method) and			
PHYSIOLOGY AND	determination of transpiration			
METABOLISM	rate per unit area by weighing			
	method		DS	DEMONSTRATIO,
	Imbibition of water by dry seeds	2		INTERACTION,
	Evolution of O ₂ during	2		WORK OUT
	photosynthesis			
	Evolution of CO ₂ during aerobic	2		
	respiration and measurement of			
	volume			

TOPIC	SUBTOPIC	CLASS HOUR	TEACH ER	TEACHING METHODS
	Mushroom	2		
MUSHROOM CULTURE TECHNOLOGY	Cultivation techniques/ technology of edible mushrooms in India	2	RP	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE
	Storage	2		DISCUSSION
	Food preparation	2]	
	Research centers	2		

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-G-SEC-D-4/6-4) THEORETICAL

SEMESTER VI HONOURS

CC-13 (THEORETICAL) PLANT PHYSIOLOGY (BOT-A-CC-6-13-TH)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING METHODS
		HOUR		
PLANT	Plant-water relations	2		CLASS LECTURE, POWER
PHYSIOLOGY	Mineral nutrition	2		POINT PRESENTATION,
	Organic Translocation	2	DS	INTERACTIVE DISCUSSION
	Plant Growth Regulators	3	25	Discossion
	Photomorphogenesis	2		
	Seed dormancy	2		
	Physiology of	2		
	Senescence and Ageing			

CC-13 (PRACTICAL) PLANT PHYSIOLOGY PLANT PHYSIOLOGY (BOT-A-CC-6-13-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Determination of loss of water per	2		
	stoma per hour			
	Relationship between	2		
	transpiration and evaporation			
	Measurement of osmotic pressure	2		
	of storage tissue by weighing			
	method			
DI ANT	Measurement of osmotic pressure	2	DS	DEMONGTRATION
PLANT PHYSIOLOGY	of Rhoeo leaf by plasmolytic		DS	DEMONSTRATION, INTERACTION,
THISIOLOGI	method.			WORK OUT
	Effect of temperature on	2		
	absorption of water by storage			
	tissue and determination of Q_{10}			
	Rate of imbibition of water by	2		
	starchy, proteinaceous and fatty			
	seeds and effect of seed coat			
	To study the phenomenon of seed	2		
	germination			
	To study the induction of amylase	2		
	activity in germinating grains			
	To study the effect of different	2		
	concentrations of IAA on			
	Avenacoleopotile elongation			

CC-14 (THEORETICAL) PLANT METABOLISM (BOT-A-CC-6-14-TH)

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
PLANT METABOLISM	Concept of metabolism	1		CLASS LECTURE, POWER POINT PRESENTATION,
	Photosynthesis	2		INTERACTIVE DISCUSSION
	Respiration	2	MM	DISCUSSION
	Nitrogen Metabolism	1		
	Lipid metabolism	1		
	Mechanism of signal transduction	2		

CC- 14 (PRACTICAL) PLANT METABOLISM (BOT-A-CC-6-14-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
	Chromatography	2		
	Separation of plastidial	2		
	pigments			
PLANT	Estimation of total chlorophyll	2	MM	DEMONSTRATION,
METABOLISM	content			INTERACTION,
	Effect of HCO3 concentration	2		WORK OUT
	on oxygen evolution during			
	photosynthesis in an aquatic			
	plant			
	Measurement of oxygen	2		
	uptake by respiring tissue			
	Determination of the RQ of	2		
	germinating seeds			
	Test of seed viability by TTC	2		
	method			

DISCIPLINE SPECIFIC ELECTIVE COURSES

DSE-A MEDICINAL AND ETHNOBOTANY (BOT-A-DSE-A-6-3-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	Medicinal botany	2		
	Pharmacognosy	2		
MEDICINAL	Secondary metabolites	2		CLASS LECTURE,
AND	Pharmacologically	2	DS	POWER POINT
ETHNOBOTANY	active constituents			PRESENTATION,
	Ethnobotany and folk	3		INTERACTIVE DISCUSSION
	medicine			

TOPIC SUBTOPIC CLASS TEACHER TEACHING METHODS HOUR Chemical tests 4 DEMONSTRATION, 4 DS INTERACTION, WORK OUT Powder MEDICINAL AND microscopy ETHNOBOTANY Histochemical 3 tests

DSE-A MEDICINAL AND ETHNOBOTANY (BOT-A-DSE-A-6-3-P) (PRACTICAL)

DSE-B NATURAL RESOURCE MANAGEMENT (BOT-A-DSE-B-6-8-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
	NATURAL	2		
	RESOURCES			
	SUSTAINABLE	2		
NATURAL	UTILIZATION			
RESOURCE	LAND	2		CLASS LECTURE, POWER
MANAGEMENT	WATER	2		POINT PRESENTATION,
	BIOLOGICAL	2		INTERACTIVE DISCUSSION
	RESOURCES		BM	
	FORESTS	2		
	ENERGY	2		
	CONTEMPORARY	2		
	PRACTICES IN			
	RESOURCE			
	MANAGEMENT			
	NATIONAL AND	2		
	INTERNATIONAL			
	EFFORTS			

DSE-B NATURAL RESOURCE MANAGEMENT (BOT-A-DSE-B-6-8-P) (PRACTICAL)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
NATURAL RESOURCE MANAGEMENT	Estimation of solid waste	2		
	generated by a domestic			
	system		BM	DEMONSTRATION
	Estimation of foliar dust	2	DIVI	DEMONSTRATION, INTERACTION,
	deposition			WORK OUT
	Determination of total solid	4		
	in water			
	Determination of chemical	2		
	properties of soil by rapid			
	spot test			
	Estimation of organic	2		
	carbon percentage present			
	in soil sample			

SEMESTER VI GENERAL

DSE-B HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY

(BOT-G-DSE-B-6-4-TH) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY	Horticulture	2		
	Ornamental plants	2		CLASS LECTURE, POWER POINT
	Identification of some	4		
	fruits and vegetable		RP	PRESENTATION,
	plants			INTERACTIVE
	Horticultural techniques	2		DISCUSSION
	Post harvest technology	2		
	Disease control and	1		
	management			

DSE-B PRACTICAL- HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY

(BOT-G-DSE-B-6-4-P)

TOPIC	SUBTOPIC	CLASS	TEACHER	TEACHING
		HOUR		METHODS
HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY	Field trips to gardens, standing crop sites, nurseries, vegetable gardens, horticultural fields and cold storages.	8	DS	DEMONSTRATION, INTERACTION, FIELD VISIT

SEC-B MUSHROOM CULTURE TECHNOLOGY (BOT-G-SEC-D-4/6-4) THEORETICAL

TOPIC	SUBTOPIC	CLASS HOUR	TEACHER	TEACHING METHODS
MUSHROOM	Mushroom	2		
CULTURE TECHNOLO GY	Cultivation techniques/ technology	2	RP	CLASS LECTURE, POWER POINT PRESENTATION, INTERACTIVE DISCUSSION
	of edible mushrooms in India			
	Storage	2		
	Food preparation	2		
	Research centres	2		