

Teaching Plan

Semester : I

Major Core I

Name of the Course: Plant Diversity I - Algae, Fungi, Lichens and Bryophytes

Subject Code: PB2011

Unit	Module	Topics	Lecture hours	Learning outcome	Pedagogy	Assessment/ Evaluation
1. ALGAE – GENERAL CHARACTERS						
	1	General characters of algae including similarities and diversities ; Classification of algae by Fritsch (1954); Thallus organization in algae (Seminar)	4	To identify and categorize algal organisms	Lecture	Through microscopic examination, class test, quiz, diagrammatic representation, Class test
	2	Life-cycle patterns and alternation of generations	3	To understand the different life cycle patterns	Lecture, Illustration	
	3	Detailed study on occurrence, habitat, structure, reproduction and life history of Cyanophyceae and Chlorophyceae	4	To correlate the different algal organisms between the two families	Lecture, Demonstration with live specimens	
II ALGAE – LIFE HISTORY						
	1	Detailed study on occurrence, habitat, structure, reproduction and life-history of	4	To correlate the different algal organisms	Lecture, Demonstration with live specimens	Microscopic Examination, Test and Quiz

		Xanthophyceae, Bacillariophyceae		between the two families		
	2	Phaeophyceae (Seminar), Rhodophyceae (Seminar)	4	To correlate the different algal organisms between the two families	Lecture, Demonstration with live specimens	
	3	Fossil algae	4	To identify the fossil specimens	Lecture, Microscopic Slides	
	4	Economic importance – Role of algae in soil fertility; Algal blooms; symbiotic associations; nitrogen fixation; Pollution indicators; SCP (Seminar)	4	To understand the role of algae in different fields	Lecture	
III FUNGI – GENERAL CHARACTERS AND LIFE HISTORY						
	1	General characters of fungi; Classification of fungi proposed by C.J Alexopoulos and C.W Mims (1979)	4	To identify and categorize the fungal organisms	Lecture	Through microscopic examination and Continuous Internal Assessment I (CIA -I).
	2	Homothallism and Heterothallism in fungi; Parasexuality in fungi (Seminar)	4	To understand the reproduction strategies in fungi	Lecture, PPT	

	3	An overview and life history of Zygomycetes, Ascomycetes, Basidiomycetes, Deuteromycetes. Economic importance of fungi	5	To correlate the different fungal organisms between the classes	Lecture, Microscopic Slides, Live specimens	
--	---	--	---	---	---	--

IV LICHENS

	1	General account of Lichens; Classification by Miller (1984)	4	To identify and categorize lichens	Lecture, PPT	Microscopic examination, test, open book test and quiz
	2	Structure, nutrition and reproduction of the three major groups – Crustose, Foliose and Fruticose; Economic importance of Lichens	5	To interpret the different groups of lichens	Lecture, Microscopic Slides, Live specimens	

V BRYOPHYTES

	1	Classification, Distribution, Origin (including fossil evidence), Primitive and advanced features of Bryophytes	3	To identify and categorize the bryophytes	Lecture, Illustration	Class test, Question and Answer session, Diagrammatic representation, Discussion, Continuous Internal Assessment I (CIA -II).
	2	Evolution of gametophytes and sporophytes; Ecological adaptations; Economic importance (Seminar)	4	To understand the evolution and importance of bryophytes	Lecture, Illustration	
	3	A comparative study of the morphological and anatomical features of Polytrichales, Bryales, Marchantiales, Jungermanniales and Anthocerotales.	4	To correlate the different bryophytes between the orders	Lecture, Microscopic slides, Live specimens	

Course Instructor: Dr. Celin Pappa Rani J

HOD: Dr. C. Jespin Ida

Semester: I

Name of the Course: Microbiology

Major Core II

Subject code: PB2012

Unit	Module	Topics	Lecture hours	Learning outcome	Pedagogy	Assessment/ Evaluation
I BACTERIA						
	1	Scope and milestones of Microbiology, General properties of bacteria; Morphology and fine structure of	3	To understand the basic structure of bacteria	Lecture, chart	Microscopic observation, Class Test, Group Presentation
		Bacteria				
	2	Classification of bacteria as per Bergey's Manual of Systematic Bacteriology	3	To categorize the bacterial species	Lecture, PPT	

	3	Bacterial Nutrition, Growth curve; Sterilization and disinfection; Culture media and its types	3	To know the growth dynamics and culture patterns of bacteria	Lecture, Illustration, Hands on training	
	4	Methods of isolation - Pure culture; Identification of bacteria(Seminar)	4	To maintain pure culture and identification of Gram positive and Gram negative bacteria	Lecture, Models	

II VIRUS AND ANTIMICROBIAL DRUGS

	1	General properties of Viruses; (Seminar) Classification and nomenclature; Structure of virus; Cultivation of virus;	4	To categorize viruses and cultivate them	Lecture	Diagrammatic representation, Question – answer session, class test
	2	Morphology of bacteriophages; life cycle – Lytic cycle and Lysogenic cycle	3	To understand the basic structure and life cycle of bacteriophages	Lecture, Charts	
	3	General properties of Actinomycetes and Mycoplasma	4	To know about the characters of Actinomycetes	Lecture	

				and mycoplasma		
	4	General characteristics of antimicrobial drugs; Antibacterial drugs – Sulfonamides, Penicillins; Drug resistance	4	To evaluate the different antimicrobial drugs	Lecture, PPT	

III MICROBIAL FLORA OF SOIL, WATER AND MILK

	1	Microbial flora of soil - Significance of soil microorganisms. Microbial flora of municipal water and its Purification	4	To know the significance of bacteria in soil and water	Lecture, Group Discussion	Continuous Internal Assessment I (CIA -I), Multiple choice questions
	2	Bacteriological examination of drinking water; Microbial flora of milk - Pasteurization of milk; Phosphatase Tests for grading milk sample (Seminar)	3	To analyze the bacteria present in milk and water	Lecture, Lab test	
	3	Food spoilage by bacteria – <i>Clostridium botulinum</i> , (Seminar) <i>Salmonella sps</i> , <i>Shigella sps</i> , <i>Staphylococcus sps</i>	4	To know about the food spoilage organisms	Lecture, PPT	

IV IMMUNOLOGY

	1	Immunity – Definition and its types; Properties of Antigens; Antibodies – Basic structure and its types	3	To understand the properties of antigens and antibodies	Lecture, PPT	Lab tests, Class test, open book test.
	2	Strength of Antigen - Antibody interactions; Agglutination reactions; Precipitation reactions	3	To learn antigen-antibody interactions	Lecture, Experimental learning	

3	Cytokines - Properties and attributes; Monoclonal antibody production	3	To know about cytokines and monoclonal antibodies	Lecture, Group discussion
4	Immunodiffusion; ELISA (Seminar); Immune response during bacterial (Tuberculosis), parasitic (Malaria) and viral (HIV) infections.	3	To apply the techniques to detect the antigens	Lecture, PPT

V PLANT PATHOLOGY

1	Classification of plant diseases - Symptoms - Infection process - Host parasite interaction - Defense mechanisms in plants	3	To identify the plant pathogens	Lecture	Class tests, Group discussions, Continuous Internal Assessment II (CIA -II).
---	--	---	---------------------------------	---------	--

2	Disease control methods - Physical, chemical, Cultural and Biological - Integrated disease management.	2	To understand the disease control strategies	Lecture, PPT
3	Detailed study of the plant diseases- Citrus	3	To know about different plant	Lecture, Video Clippings

		cancer, White rust disease, Blast of rice, Red rot of Sugercane (Seminar), Little leaf of Brinjal		diseases		
--	--	---	--	----------	--	--

Course Instructor: Dr. J. Albino Wins

HOD: Dr. C. Jespin Ida

Semester : I Major Core III

Name of the Course : Plant Anatomy and Embryology

Subject code : PB2013

Unit	Module	Topics	Lecture hours	Learning outcome	Pedagogy	Assessment/ Evaluation
I INTRODUCTION						
	1	Introduction to Developmental Botany- Nuclear- Cytoplasmic interaction	3	To learn the basics of Developmental Botany	Lecture, Charts	Tests, Discussions, Group presentations,
	2	Division- Differentiation- Polarity and Symmetry (Seminar)	3	To differentiate about Polarity and Symmetry	Lecture , Charts	Class test.
	3	Organization of Shoot Apical Meristem (SAM) and Root Apical Meristem (RAM)	3	To understand the organization of SAM and RAM	Lecture, Question – Answer sessions	
	4	Vascular cambium- origin, structure and seasonal activity	3	To know about Vascular cambium	Lecture , PPT	
II COMPLEX TISSUE AND SECONDARY GROWTH						

	1	Xylem, Phloem and their elements- primary and secondary structures, phylogenetic trends and specialization of xylem and phloem	4	To differentiate the primary and secondary structures of Xylem and Phloem	Lecture , PPT	Class test, Quiz, Group discussions
	2	Secondary growth- Periderm- structure- development of lenticels (Seminar)	3	To know about the Secondary growth patterns	Lecture, Illustration	
	3	Anomalous secondary growth- Bougainvillea, Bignonia, Achyranthes and Dracaena	4	To differentiate the Anomalous secondary growth of different plants	Lecture , Models	

III WOOD ANATOMY

	1	Wood anatomy- physical, chemical and mechanical properties. Defects in wood- natural defects, knots and defects due to diseases	3	To know the basics of wood anatomy	Lecture	Class tests, Multiple choice questions, Quiz, Continuous Internal Assessment I
--	---	---	---	------------------------------------	---------	--

	2	Reaction wood- Tension and Compression wood- Durability of wood (Seminar)	4	To understand about the Reaction wood	Lecture , Models	(CIA -I).
	3	Ontogeny of dicot and monocot leaves. Differentiation of epidermis with special reference to stomata and trichomes	4	To differentiate epidermis with stomata and trichomes	Lecture , Charts	

IV MICROSPOROGENESIS AND MEGASPOROGENESIS

	1	Microsporogenesis Pollen morphology- pollen wall- pollen development- pollen dimorphism- pollen storage, pollen allergy. - Pollen- Pistil interaction	5	To know about the Basics of Pollen morphology	Lecture, Charts and models	Assignment on different structures of pollen, Class test, Open book test.
		(Seminar)- structure of style- stigma and significance				
	2	Megasporogenesis. Different types of embryo sac development- fertilization- barriers of fertilization	5	To evaluate the different types of embryo sacs	Lecture, Group discussion s	
	3	Self- incompatibility- types, physiology and biochemistry, methods to overcome self- incompatibility	4	To understand about Self- incompatibilit y	Lecture	
V FERTILIZATION						

	1	Fertilization- changes, physiological and biochemical changes during maturation. Seed- seed coat development and specialization	4	To analyze the fertilization changes	Lecture, PPT, Group discussion	Short test, Discussion , Continuou s Internal Assessme nt II(CIA - II).
	2	Endosperm- types- haustoria. Embryogenesis and organogenesis of dicot and monocot embryos	4	To differentiat e the different types of endosperm	Lecture , Charts	

	3	Apomixis- Polyembryony- parthenocarpy (Seminar)	4	To evaluate the importance of apomixes, Polyembryon y, parthenocarpy	Lecture , Models
--	---	--	---	--	------------------------

Course Instructor: Dr. N. Benit

HOD: Dr. C. Jespin Ida

Semester : **I** **Elective I(a)**

Name of the Course : **Marine Biology**

Subject code : **PB2014**

Unit	Module	Topics	Lecture hours	Learning outcome	Pedagogy	Assessment/ Evaluation
I. MARINE HABITAT						
	1	Classification of marine habitat – pelagic – neritic and oceanic province, benthic – zonation – shore environment – muddy, rocky and sandy, waves and tides,	4	To understand the basics of marine habitat	Lecture	Group discussions, Quiz.

		deep sea bottom – pelagic deposits (Seminar)				
	2	Characteristics of marine habitat – physical parameters – temperature, illumination, specific gravity, pressure and buoyancy, ocean current	3	To know about the characteristic s of marine habitat e	Lecture , PPT	

	3	Chemical constituents – major and minor constituents, deep sea nodules. Plate tectonics – earthquakes and tsunami.	3	To be able to evaluate the causes and preventive measures of Plate tectonics	Lecture, Charts, Discussion	
--	---	--	---	--	-----------------------------	--

II MARINE BIODIVERSITY

	1	Marine biodiversity – phytoplankton – characteristics, sampling and measuring.	4	To understand the basics of Marine biodiversity	Lecture, PPT	Assignments on marine diversity, Group discussions, Quiz
	2	Marine bacteria, marine fungi, seaweeds and sea grasses (Seminar)	3	To evaluate the importance of marine organisms	Lecture, Illustrations	
	3	Energy relationship – primary production, grazing food chain, detritus chain and energy balance sheet	4	To be able to understand the Energy relationship	Lecture, Charts	
	4	Green house effect, Carbon pump	3	To evaluate the impact of Green house effect	Lecture, Illustrations	

III MARINE PRODUCTS

	1	Marine products – Production and uses of Agar-agar, Alginates, Carrageenan; Marine lipids	4	To produce marine products	Lecture, Illustrations	Class tests, Question – Answer sessions, Continuous Internal Assessment I (CIA - I).
	2	Marine pharmacology – Bioactive compounds from marine organisms	4	To assess bioactive compounds from marine organisms	Lecture, PPT	

	3	Sea grasses – structure, reproduction and ecological roles (Seminar)	4	To know about sea grasses	Lecture , Charts	
IV MICROALGAE						
	1	Culture of microalgae – Open pond method, Photobioreactors, Batch culture, Continuous Culture	4	To acquire skills to culture microalgae	Lecture , PPT	Class tests, Case study on different pollutions in different areas, Open book test.
	2	Maintenance of culture – Stock culture and Sub culture; Commercial cultivation of seaweeds	4	To assess the maintenance of culture	Lecture, Illustration	
	3	Marine pollution – thermal pollution, oil pollution, heavy metal pollution, radioactive pollution ; Eutrophication (Seminar)	4	To analyse the impact of marine pollution	Lecture, Group discussions	
V MANGROVES						
	1	Mangroves - Structure, Reproduction and ecological roles (Seminar)	3	To understand about mangrove ecosystem	Lecture , PPT	Class tests, Question – Answer sessions, Group

2	Present status of mangroves with special reference to Pitchavaram	3	To recall the status of mangroves in Pitchavaram	Lecture	discussions, Continuous Internal Assessment II (CIA -II).
3	Salt marsh plants – Structure, Adaptations and ecological roles; Restoration of mangroves	3	To understand about Salt marsh plants	Lecture, PPT	
4	Coral reefs – Formation, Types, Ecology, Species interaction and economic importance	3	To assess the importance of Coral reefs	Lecture, Charts	

Course Instructor: Dr.J.Albino Wins

HOD: Dr. C. Jespin Ida

Semester : III Major Core VII

Name of the Course : Taxonomy of Angiosperms

Subject code : PB2031

Unit	Module	Topics	Lecture hours	Learning outcome	Pedagogy	Assessment/ Evaluation
I CLASSIFICATION						
	1	Aim and scope of plant taxonomy – Taxonomic tools, Systems of angiosperm classification; Linnaeus, Bentham and Hooker and Engler and Prantle, Merits and demerits of these classification	3	To categorize the classification of plant taxonomy	Lecture, PPT	Short test, Group discussions, Question – Answer session.
	2	Taxonomic literatures – floras, revisions, manuals, monographs and check lists	3	To be aware of taxonomic literatures	Lecture, Models	

	3	Identification and preparation of intended keys and bracketed keys	3	To be able to identify and prepare keys	Lecture , Models	
	4	Herbarium techniques (Seminar) – Types and functions of herbarium; Digital Herbarium	3	To know the different herbarium techniques	Lecture , Charts	

II NOMENCLATURE

	1	Botanical nomenclature – ICN, Principles and Role of ICN, Rules – principle of priority, rejection of names, limitations in the principle of priority, typification, author citation, effective and valid publications	4	To understand the role and principle of ICN	Lecture	Short test, Assignment to learn the molecular tools, Quiz.
	2	Taxonomical Evidences - Numerical taxonomy, chemotaxonomy, cytotaxonomy, and	4	To be able to evaluate the importance of	Lecture , PPT	
		phytotaxonomy		taxonomical evidences		
	3	Molecular tools used in taxonomy (Seminar)	4	To critically analyze plants with molecular tools	Lecture, Video clipings	

III FAMILY DESCRIPTION

	1	Systematic position, diagnostic features, distribution, description and economic importance of Cappariaceae, Polygalaceae	3	To diagnose the features of different families		Quiz, Dissect and Display, Class test, Continuous Internal Assessment I
--	---	---	---	--	--	---

	2	Caryophyllaceae, Tiliaceae	3	To diagnose the features of different families	Lecture , PPT , Field visit	(CIA -I).
	3	Zygophyllaceae (Seminar)	2	To diagnose the features of the family	Lecture , PPT, Field visit	

IV FAMILY DESCRIPTION

	1	Systematic position, diagnostic features, distribution, description and economic importance of	3	To diagnose the features of	Lecture, PPT ,	Quiz, Dissect and Display,
		Rhamnaceae, Sapindaceae		differen t families	Field visit	Class test
	2	Passifloraceae, Sapotaceae	3	To diagnose the features of different families	Lecture , PPT , Field visit	
	3	Oleaceae, (Seminar) Boraginaceae	3	To diagnose the features of different families	Lecture , PPT , Field visit	
	4	Scrophulariaceae, Bignoniaceae	3	To diagnose the features of different families	Lecture , PPT , Field visit	

V FAMILY DESCRIPTION

	1	Systematic position, diagnostic features, distribution, description and economic importance of Verbenaceae, Nyctaginaceae	3	To diagnose the features of different families	Lecture , PPT , Field visit	Quiz, Dissect and Display, Class test, Continuous Internal Assessment II (CIA -II).
	2	Aristolochiaceae, Casuarinaceae	3	To diagnose the features of different families	Lecture , PPT , Field visit	

3	Orchidaceae, Commelinaceae	3	To diagnose the features of different families	Lecture, PPT, Field visit
4	Araceae, Cyperaceae	3	To diagnose the features of different families	Lecture, PPT, Field visit

Course Instructor: Ms. N. Benit

HOD: Dr. C. Jespin Ida

Semester : III Major Core VIII

Name of the Course : Genetics and Molecular Biology

Subject code : PB2032

Unit	Module	Topics	Lecture hours	Learning outcome	Pedagogy	Assessment/ Evaluation
I GENETICS						

1		Contribution of Gregor Johann Mendel, T.H. Morgan, Karl Landsteiner; Mendel's law of heredity – Monohybrid and Dihybrid cross (Seminar)	3	To differentiate monohybrid and dihybrid crosses and solve the problems	Lecture, Problem based learning	Class test, Group Discussion, Quiz.
2		Gene interaction – Dominant epistasis (12:3:1), Recessive epistasis (9:3:4), Duplicate recessive genes (9:7), Duplicate dominant genes (15:1)	3	Able to solve the problems in gene interaction	Lecture, Problem based learning	
3		Sex determination in plants - theories of sex determination; Sex linked characters (Seminar)	3	To distinguish the sex linked characters	Lecture, PPT	

	4	Linkage and crossing over, construction of chromosome map, and three point cross	2	To learn about crossing over and mapping	Lecture , PPT	
--	---	--	---	--	---------------	--

II DNA AND GENETIC DISEASES

	1	Mutation – Types of mutation, Molecular mechanism of mutation DNA- types (A, B, C & Z), Watson and Crick model of DNA, viral DNA, bacterial DNA	3	To differentiate the different types of DNA and assessing the mutations	Lecture , Charts	Diagrammatic representation, Short test.
	2	Mitochondrial (Seminar) and Chloroplast DNA	2	To distinguish Mitochondrial and Chloroplast DNA	Lecture , Models	
	3	Dissociation and re-association kinetics of DNA; cot value and its significance	3	To evaluate the dissociation and re-association	Lecture	

				kinetics of DNA		
	4	DNA replication of prokaryotes and eukaryotes	2	To understand the replication process	Lecture , Video clippings	
	5	Genetic diseases – Sickle cell anemia, Cystic fibrosis, Duchennes muscular dystrophy	3	To identify and critically analyse genetic diseases	Lecture, Video clippings	

III GENETIC ENGINEERING

1	Damage and DNA repair mechanism – photo reactivation – excision repair - mismatch repair	3	To understand the repair mechanisms	Lecture , PPT	Short test, Question – Answer session, Group discussion, Continuous Internal Assessment I (CIA -I).
2	Genetic recombination - generalised and site specific; Lysogenic and lytic cycle;	3	To analyse the recombination patterns	Lecture , Models	
3	Bacterial Transformation, Transduction and Conjugation	3	To understand the basics of gene transfer	Lecture , PPT	
4	Super vectors - BAC,YAC	3	To differentiate the different super vectors	Lecture , Charts	

IV TOOLS IN GENETICS

1	RNA – types; Transcription - Initiation, elongation, termination, post transcriptional events	3	To differentiate the types of RNA	Lecture	Quiz, Group discussions
2	Genetic code, Wobble hypothesis; Translation – steps in translation	3	To understand the process of	Lecture , PPT	

			Translation		
3	Molecular tools for studying genes – northern blotting, southern blotting,, (Seminar)	3	To acquire skills to operate molecular tools	Lecture, Operating the instruments	
4	Western blotting FISH	3	To acquire skills to operate molecular tools	Lecture , PPT	

V GENOMICS

	1	Fine structure of the gene; Transposons – Tn3, Tn5	3	To differentiate the types of transposons	Lecture, PPT	Multiple Choice Questions, Group discussions, Continuous Internal Assessment II (CIA - II).
	2	Gene regulations in Prokaryotes -Operon concept – lac operon, trp operon, Gene regulation in Eukaryotes Steps in gene cloning; Pros and Cons in gene cloning	3	To understand the concepts of operon	Lecture, PPT	
	3	Construction of genomic library; Construction of cDNA library	3	To construct the gene libraries	Lecture, Video clippings	
	4	Gene silencing; Human Genome Project (Seminar)	3	To evaluate the human genome project	Lecture, Video clippings	

Course Instructor: Dr. J. Albino Wins

HOD: Dr. C. Jespin Ida

Course Instructor: Dr. Bojaxa A Rosy

H.O.D: C. Jespin Ida

Semester : III Elective III(b)
Name of the Course : Forestry
Subject code : PB2034

Unit	Module	Topics	Lecture hours	Learning outcome	Pedagogy	Assessment/ Evaluation
I TYPES OF FOREST						

	1	Forest – definition, role of forest; forest as a balanced ecosystem	3	To understand the role of forest	Lecture	Short test, Quiz, Group discussion.
	2	Types and distribution of (Champion and Seth’s classification)	3	To categorize the types of forests	Lecture , PPT	
	3	Forest types in Tamilnadu (Seminar)– evergreen forest, deciduous and scrub jungle	3	To categorize the types of forests in Tamilnadu	Lecture , PPT	

II FOREST MANAGEMENT

	1	Forest management and conservation	3	Able to understand the conservation strategies	Lecture	Assignment on forest mensuration, Quiz.
	2	Regeneration; tending operations; sustainable utilization of forest resources – forest organizations	4	To assess the utilization of forest resources	Lecture	
	3	Forest mensuration and remote sensing	3	To know the concept of remote sensing	Lecture , PPT	
	4	Methods of measuring diameter, girth, height, and volume of trees	3	Differentiate the different methods of forest mensuration	Lecture, Video clippings	

	5	Geographic information systems for management (GIS) (Seminar)	3	To understand the concepts of GIS	Lecture	
III FOREST UTILIZATION						
	1	Forest utilization – harvesting, conservation, storage and disposal of wood in forest; major and minor forest products	3	To evaluate the utilization of forest	Lecture , PPT	Short test, Quiz, Continuous Internal Assessment I (CIA -I).
	2	Forest based industries – paper and pulp industry, resin tapping and turpentine manufacture	3	To assess the importance of forest based industries	Lecture, Powerpoint	
	3	Forest education in India (Seminar)	3	To know about forest education	Lecture	
IV FOREST DEGRADATION						
	1	Forest degradation – damage caused by fire, climatic factors and injuries by insects, plants, animals, and diseases	3	To understand the causes of forest degradation	Lecture , PPT	Quiz, Discussions
	2	Activities of man including encroachment and shifting cultivation	3	To know about the encroachment	Lecture	

	3	Measures to protect the forest damage caused by various factors (Seminar)	3	To assess the protective measures	Lecture, Charts	
V AGROFORESTRY						
	1	Agroforestry – objectives, advantages and disadvantages	3	To understand the basis of Agroforestry	Lecture	Quiz, Group Discussions, Continuous Internal Assessment II (CIA - II).
	2	Energy plantations; recreational forestry	2	To assess the energy plantations	Lecture, PPT	
	3	Role of botanical gardens, zoos, national parks and sanctuaries in recreation	3	To evaluate the role of botanical gardens	Lecture, PPT	
	4	Conservation of wild life (Seminar)	3	To acquire skills in conserving wild life	Lecture, Video clippings	
	5	Social forestry	2	To evaluate the impact of social forestry	Lecture, PPT	

Course Instructor: Dr. J. Celin Pappa Rani

HOD: Dr. C. Jespin Ida