OSUN STATE UNIVERSITY, OSOGBO

COLLEGE OF AGRICULTURE

DEPARTMENT OF

FOREST PRODUCTION AND PRODUCTS

B. FORESTRY CURRICULUM

100 LEVEL HARMATTAN SEMESTER

COURSE CODE	COURSE TITLE	UNITS	STATUS
BIO 101	Basic Biology I	3	C
BIO 107	Experimental Biology I	1	C
CHM 101	General Chemistry I	3	C
CHM 107	Experimental Chemistry I	1	C
MTH 105	Algebra and Trigonometry for Biological Agricultural Science and Non-Science Major Students	3	C
PHY 101	General Physics I	3	C
PHY 107	Experimental Physics I	1	C
GNS 101	Use of English I	2	R
GNS 103	Use of Library	1	R
	TOTAL	**18**	

100 LEVEL RAIN SEMESTER

COURSE CODE	COURSE TITLE	UNITS	STATUS
BIO 102	Basic Biology II	3	C
BIO 108	Experimental Biology II	1	C
CHM 102	General Chemistry II	3	C
CHM 108	Experimental Chemistry II	1	C
MTH 106	Calculus for Biological, Agricultural Sciences and Non-Science Major Students	3	C
PHY 102	General Physics II	3	C
PHY 108	Experimental Physics II	1	C
GNS 102	Use of English II	2	R
GNS 104	Nigerian Peoples and Culture	2	R
	TOTAL	**19**	

200 LEVEL HARMATTAN SEMESTER

COURSE CODE	COURSE TITLE	UNITS	STATUS
AGE 201	Principles of Agricultural Economics	2	C
ARD 203	Introduction of Agricultural Extension & Rural sociology	2	C
AGN 201	Introduction to General Agriculture	2	C
AGN 203	Principles of Crop Production	2	C
AGN 205	Crop Anatomy, Taxonomy & Physiology	2	C
ANS 201	Principles of Animal Production	2	C
ANS 203	Introduction to Anatomy & Physiology of Farm Animals	2	C
FRM 201	Principles of Forest Resources Management	2	C
WLM 201	Principles of Wildlife Resources Management	2	C
GNS 211	Basic French	2	C
GNS 203	Introduction to Entrepreneurial Skills	2	C
	TOTAL	**22**	

200 LEVEL RAIN SEMESTER

COURSE CODE	COURSE TITLE	UNITS	STATUS
AGN 202	Principle of Soil Science	2	C
AGN 204	Introduction to Organic Agriculture	2	C
AGN 206	Introduction to Climatology & Biogeography	2	C
AGN 208	Introduction to Biotechnology	2	C
ANS 204	Introduction to Agricultural Biochemistry	2	C
FAM 202	Introduction to Fisheries and Aquaculture	2	C
ANS 208	Introduction to Food Science and Technology	2	C
ARD 202	Introduction to Home Science & Management	2	C
AGE 204	Introduction to statistics	2	C
GNS 212	Introduction to Information & Communication Technology	2	C
GNS 204	Logic and Philosophy	2	C
	TOTAL	**22**	

300 LEVEL HARMATTAN SEMESTER

COURSE CODE	TITLE	UNIT	STATUS
FRM 301	Resources Inventory & Mensuration	3	C
FRM 303	Forest Taxonomy and Identification	2	C
FRM 305	Introduction to Land-Use Planning	2	C
FRM 307	Forest Pests and Diseases	3	C
FRM 309	Principles of Wood formation	2	C
FRM 311	Biometrics in Forest Resources Management I	2	C
ARD 305	Extension Teaching Programme, Planning and Organization	2	C
AGE 307	Computer Application in Agriculture	3	C
AGN 303	Plant Breeding and Genetics	2	C
	Total	**21**	

300 LEVEL RAIN SEMESTER

COURSE CODE	TITLE	UNIT	STATUS
FRM 302	Natural Ecosystems	3	C
FRM 304	Forest Operation I	2	C
FRM 306	Introduction to Urban Forestry	2	C
FRM 308	Introduction to Chemical Processing and Preservation of Forest Produce	2	C
FRM 310	Introduction to Basic Properties of Wood	2	C
FRM 312	Principles of silviculture	2	C
FRM 314	Forest Management and Economics I	2	C
FRM 316	Agroforestry and plantation technology	3	C
FRM 318	Principles of Crop Protection	2	C
	Total	**20**	

400 LEVEL HARMATTAN SEMESTER

COURSE CODE	TITLE	UNIT	STATUS
FRM 401	Elementary Ground Survey	2	C
FRM 403	Forest Inventory & Management Plan	3	C
FRM 405	Aerial Survey & Photogrammetry	2	C
FRM 407	Silviculture Techniques	2	C
FRM 409	Harvesting & Utilization of forest products	2	C
FRM 411	Communication Skills in Forest Resources	2	C
FRM 413	GIS Applications in Forest Resources Management	2	C
FRM 415	Forest Operations II	3	C
FRM 417	Tropical Tree Crop Production Practices	2	C
FRM 419	Research Methodology in Forest Resources Management	2	C
FRM 421	Entrepreneurial Skills in Forestry	2	C
	TOTAL	**24**	

400 LEVEL RAIN SEMESTER

COURSE CODE	TITLE	UNIT	STATUS
FRM 402	Practical Approaches to Forestry Practices (SIWES)	6	C
FRM 404	Ecological Survey Techniques	1	C
FRM 406	Saw Milling	2	C
FRM 408	Techniques in Agro-Forestry Systems	3	C
FRM 410	Forest Produce Processing and Preservation Techniques	2	C
FRM 412	Remote Sensing Techniques in Forest Resources	2	C
	Total	**15**	

500 LEVEL HARMATTAN SEMESTER

COURSE CODE	TITLE	UNIT	STATUS
FPP 501	Forest Protection and Conservation	3	C
FPP 503	Forest Genetics & Tree Improvement	2	C
FPP 505	Forest Production Ecology	2	C
FPP 507	Preservation of Forest Produce	2	C
FPP 509	Wood based Panel Product	2	C
SEF 501	Multiple Land-Use	2	C
SEF 503	Biometrics in Forest Resources Management II	2	C
SEF 505	Natural Resources Policy, Law and Administration	2	C
SEF 507	Forest Management and Economic II	2	C
ELECTIVES (CHOOSE ONE)			
FPP 511	Wood Energy Development and Utilization	2	E
SEF 509	Principles and Concepts in Forest Management	2	E
	Total	**21**	

500 LEVEL RAIN SEMESTER

COURSE CODE	TITLE	UNIT	STATUS
FPP 502	Silviculture	2	C
FPP 504	Biological Control of Wood Quality	2	C
FPP 506	Forest Soils	2	C
FPP 508	Remote Sensing in Forest Resources Management	2	C
FPP 512	Special Project in Forest Production and Products	4	C
FPP 514	Special Topics in Forest Production and Products	2	C
SEF 502	Forest Mensuration	2	C
SEF 504	Extension and Community Development in Renewable Resources	2	C
SEF 506	Forest Industry, Processing & Marketing	2	C
	ELECTIVE(Choose only one)		
FPP 510	Ethno forestry	2	E
WLM 502	The Concepts of Park and Zoo Management	2	E
	TOTAL	**22**	

Forest Resources Management
B. Forestry CCMAS SUMMARY

100 LEVEL HARMATTAN SEMESTER

Course Code	Course Title	Units	Status	LH	PH
GST 111	Communication in English	2	C	15	45
BIO 101	General Biology I	2	C	30	-
BIO 107	General Biology Practical I	1	C	-	45
CHM 101	General Chemistry I	2	C	30	0
CHM 107	General Chemistry Practical I	1	C	0	45
MTH 101	Elementary Mathematics I	2	C	30	0
PHY 101	General Physics I	2	C	30	0
PHY 107	General Physics Practical I	1	C	0	45
UNIOSUN – AGG 103	Introduction to Natural Resources	2	C	30	15
UNIOSUN – AGG 105	Introduction to Natural Resources Practical	1	C	0	45
	TOTAL	**16**			

100 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	Status	LH	PH
GST 112	Nigerian Peoples and Culture	2	C	30	0
AGG 102	Introduction to Agriculture I	2	C	30	-
AGG 112	Introduction to Agriculture II	1	C	15	-
BIO 102	General Biology II	2	C	30	-
BIO 108	General Biology Practical II	1	C		45
CHM 102	General Chemistry II	2	C	30	0
CHM 108	General Chemistry Practical II	1	C	0	45
MTH 102	Elementary Mathematics II	2	C	30	0

PHY 102	General Physics II	2	C	30	0
PHY 108	General Physics Practical II	1	C	0	45
		16			

COURSE DESCRIPTION

FRM 201: Introduction Principles of Forest Resources Management(C) L15, P45, Units 2.
Organisation of forest resources. Morphology, taxonomy and classification. Evolution and Life Status of species composition. Ecology of tropical trees. Forest production activities, forest protection and the regulation of harvest for sustained yield. Preparation of working plans.

FRM 301: Resources Inventory and Mensuration (C) ***L 30: P 45:*** **Units** ***3***
Quantitative and qualitative sampling of forest resources including timber, wildlife and fish, inventory instruments and their uses.

FRM 302: Natural Ecosystems (C) ***Semester 2; L 30; P 45; Unit 3***
Distribution, Structure and Dynamics of land and fresh water ecosystem with special reference to West Africa; major forest types of the tropics and tree identification.

FRM 303: Forest Taxonomy and Identification (C) ***L15; P 45;*** **Units 2**
Concepts of taxonomy, morphological features for plant identification. Study of keys for plants identification, practical plant identification.

FRM 304: Forest Operations (Engineering)1(C) ***L30; P 45;*** **Units 3**
Theory of road construction drainage and maintenance, Use of Harvesting codes, Best Management Practices BMPs in Forest roads, logging and transportation, low impact logging, bridge and dam construction planning analysis and supervision of operations.

FRM 304: Ethno Forestry (C) (E) ***L15; P 45; 2U***
Concept of ethno forestry; Identification of ethno forestry material; ecological distribution of medicinal plants; types of ethno-medicinal; indigenous diagnostic approach to common ailments/diseases.

FRM 305 Introduction to Land-use Planning (C)L15; P 45; Units 2
Land-use diagnosis; Land capability classification; Study of landscape utilization; Land-use possibilities; and Impact of forest land-se on stream flow and water quality management – irrigation, upstream and downstream management.

FRM 306: Introduction to Urban Forestry (C) ***L15; P 45;*** **Units 2**
Concept and definitions of urban forestry: species selection for urban forestry; roles of trees in urban forestry; types of urban forestry problems associated with urban forestry; and management of trees in urban landscape.

FRM 307: Forest Pests and Diseases (C) ***L30; P 45;*** **Units** ***3***
Classification and biology of major pests and diseases of forest trees. Principles underlying diseases and pest control; genetic and environmental control;fire use and control; protection against encroachment ; diseases and illegai felling.

FRM 308: Introduction to Chemical Processing and Preservation of Forest Produce (C) *L30; P 45;* Units 2
Properties of fibrous raw materials; principles and techniques of pulping; pulp cleaning and bleaching methods; paper making processes, liquor analyses and uses.

FRM 309: Principles of Wood Formation (C) *L15; P 45;* Units 2
Types and classification of trees, Growth and development in woody plants including cell formation and development, influence of silvicultural practices on cell formation and development, cell types, growth stress and causes, abnormal wood formation and control measures, timber identification and chemotaxonomy of wood.

FRM 310: Introduction to Basic Properties Wood (C) *L30; P 45;* Units 3
Types of wood and fibre products, non-timber forest products, including bamboo, rattan and woody Climber and their properties, intra and inter specific variations in properties. Biological control of Wood and fibre properties, utilization potentials of non-wood and non-timber forest fibres.

FRM 311: Biometrics in Renewable Resources 1 (C) L15, T 45, Units 2
Application of basic biometrics techniques to problems in renewable resources management, distribution, sampling and tests of hypothesis. Use of computers

FRM 312: Principles of Silviculture (C) *L 15; P 45;* Units 2
Analyses and study of problems of raising tree crops, application of ecological principles for establishment and maintenance of forest for forest for various purposes.

FRM 314: Forest Management and Economics (C)L 15; P 45; Units 2
Sustainable forest management as affected by factors such as pests, pathogens, human interference (e.g. fire) and other natural causes: Introduction to the application of mathematical models in solving forest management problems; Elements of personnel psychology; Systems approach to resource management; and Computer application in resource management. Classification of forest goods, services; and forest service functions; review of economics principles in relation to forest resources; Theory of forestry investment analysis; and economic development in relation to natural resources.

FRM 316: Agro-Forestry Systems (C) *L30; P 45;* Units *3*
The concept of Agroforestry, Biological integration of Agro/Silvo/Pastoral practices. Role of component crops/animals in land utilization and site conservation. Socio-economic feasibilities and limitations of agro forestry systems.

FRM 318: Principles of Crop Protection (C) *L15; P 45;* Units 2
The major pests, insects, fungi, bacteria, viruses and nematodes, weeds and other diseases of tropical crops and stored products. Definition of pests. Study of insects.

AEE 303: Computer Application in Agriculture (R) L30, T45, Units 3
Information technology in information production, storage and retrieval. Information technology in communication, output generation and delivery. IT and automation in agriculture, IT applications in agricultural production and marketing, consumption and product utilization.

AEE 305: Extension Teaching Programme Planning and Organisation(R) L15, T45 Units 2
Definition of teaching and learning solution, creating teaching and learning situation, psychology of learning; how and why adults learn; difference between formal and informal

learning; teaching methods: visual, physical, dummy (models) and audio visuals; educational contact with clientele; types of leaders and implications for extension teaching and learning; the use of traning resources in agricultural extension learning; micro and macro planning. Design and use of program objectives in program building; costing of extension programmes, case study planning rural/agricultural development and training improvement program. The old versus the new extension organization in Nigeria a critical of the training and visit system of extension.

AGN 303: Plant Breeding and Genetics (R) L15, P45, Units 2
Plant improvement before Mendel. Mendelian genetics, the cell, mitosis and cell division. Gametogenesis and meiosis. Principles of segregation and independent assortment. Sex determination and sex linkage characters. Elements of hereditary, mutation and genes in population. Genetics in crop improvement.

FRM 401 Elementary Ground Survey (C) *L-15; P 90;* Units 2
Ground survey instruments; boundary and topograPic survey of selected project areas; scribbling types preparation and mapping, Use of GPS for Forest survey and Tree mapping,

FRM 402: Practical Approaches to Forestry Practices (SIWES)(C) *P 270+270;* Units 6
Internship in wood-based Industries, Non-timber Forest Products Industries and Forest-related Organizations to acquire practical knowledge

FRM 403: Forest Inventory and Management Plan *(C) L15 P 90;* Units *3*
Evaluation of the wood resources of selected project areas. Preparation of management plans for such areas

FRM 405: Aerial Survey And Photogrammetry (C) *L30; P 45;* Units 3
Image interpretation and processing, Preparation of maps from aerial PotograPs and Satellite images, Types of Spatial Analysis in GIS with applications in Forest Management, Application of GIS in forest fire, forest functions, vegetation index.

FRM 407: Silviculture Techniques (C) *L30; P 45; 3U*
Plantation and nursery practices; seed technology w ith special reference to trees for plantations and urban forestry. In-vitro propagation techniques.

FRM 409: Harvesting, Processing and Utilization of Forest Produce(C) *L30; P45;* Units *3*
Evaluation of quality of standing trees; felling and processing of wood, charcoal production and Non Timber Forest Products.

FRM 411: Communication Skills in Renewable Natural Resources (C) *L15; P 45;* Units *2*
Preparation of communication materials; Production and use of teaching aids in forestry extension; community mobilization; and practice of extension teaching for renewable natural resources management.

FRM 413: GIS Applications in Forest Resources Management (C) *L 15: P 45:* Units *2*
Introduction to GIS as applied to Forestry, Components of GIS, Types and Sources forestry data in GIS, Use of GPS in forest resources mapping, GIS and Remote sensing for Forest Resource inventory.

FRM 415: Forest Operations II(C) *L-15; P 45; 2U*
Projects in forest operations; planning, analysis; costing and execution of projects.

FRM 417: Tropical Tree Crop Production Practices (C) *L 15; P 45;* Units *2*

Principles underlying choice of species; species and provenance trials, silvicultural systems; nursery technology, manipulation of natural forests.

FRM 419: Methodology of Forest-Based Research (C) ***L 15; P 45;*** **Units**
Types of forest based research, Writing of Forest-based research proposals, Methods and Techniques of data collection and presentation of results in forest-based research, Analytical tools in Forestry Research, Report writing.

FRM 421: Entrepreneurial Skills in Renewable Natural Resources (C) ***L15; P45;*** **Units** ***2***
Forestry enterprises; (types & classification); Classification of forestry enterprises into wood and non-wood based; how to identify client needs. Product promotion: skills and strategies. Overcoming competition and threats in forest-based entrepreneurships; problems and prospects of entrepreneurship in a developing economy.

FPP 501: Forest Protection and Conservation (C) ***L 15; P 45;*** **Units** ***2***
Types and Nature of Forest diseases and pests, Importance of Forest pests and diseases, Chemical, Physical and Biological principles and methods underlying disease and pest control, climatic factors in forest protection; Forest fire use and control, Use of ICT in fire prevention and control. Legal and administrative dimensions in forest protection. Type and Analyses of Environmental problems, Climate change, Conventions, protocols and Treaties relating to Environmental problems including causes and effects, Erosion, flood, Desertification, deforestation and effects, Conservation strategies and mitigation measures: shelter belts, wind breaks and sand dune fixation, watershed Management, Tree species for control of Environmental problems. Community-based conservation, Issues on biodiversity conservation. Approaches to conservation of Forest Resources.

FPP 502: Silviculture (C) ***L 15; P 45;*** **Units** ***2***
Major forest types of the tropics and silvicultural systems employed in their management, plantation and nursery practices, seed technology with special references to trees.

FPP 503 Forest Genetics and Tree Improvement(C) ***L 15; P 45; 2U:***
Inventory, selection and conservation of basic genetic material; mass production of improved strains for silviculture; tree breeding programmes, principles, establishment and management of seed orchards.

FPP 504 Biological Control of Wood Quality (C) ***L 15; P 45; 2U:***
Examination and assessment of the relationship between timber quality and tree species, provenance, sites, ages and cultural practices.

FPP 506: Forest Soils (C) ***L 15; P 45; 2U***
Physical properties of Forest Soils, Forest soil fertility determination, maintenance and improvement with special reference to tropical conditions, water relations in soil not influenced by ground water, Interactions among components of habitat.

FPP 508: Remote Sensing in Forest Resources Management(C) ***L 15; P 45;*** **Units** ***2***
Introduction to Remote Sensing and Image Processing, Remote Sensing Devices and Platforms, Advantages of Remote Sensing, Displaying of Spatial Data in ArcGIS, Visualizing Data in ArcGIS, Presentation of Data, Querying of Data, Mapping existing Data,

FPP 507 Preservation of Forest Produce (E) ***L 15; P 45;*** **Units** ***2***
Development of methods of drying the wood of different species, Drying defects in wood, causes and role of wood anatomy; Bio-deterioration of wood and agents of bio-deterioration,

influence of moisture on wood decay, prevention and control of wood decay. Application of chemicals in wood preservation; Impregnation of wood: methods and technology and their environmental impacts.

FPP 509: Wood Based Panel Products (C) ***L 15; P 45;*** **Units** ***2***
Principles of panel production

FPP 510: Ethno Forestry II (E) ***L 15; P 45;*** **Units** ***2:***
Techniques & Methods of harvesting Phytomedicinal materials. Techniques methods of processing Phytomedicines. Prescription of Phytomedicines, Marketing and Utilization of selected ethno-forest materials.

FPP 511: Wood Energy Development and Utilization (E) ***L 15; P 45; 2U:***
Forms of Biomass energy and energy resources. Fuel wood species and their characteristics, charcoal production, environmental impact of fuelwood utilization, wood energy utilization and efficiency, economics of wood energy utilization.

FPP 512: Special Project in Forestry (C) ***P 90:*** **Units** ***4***
A project of not more than 7000 words on original research, including seminars based on the project.

FPP 514: Special Topic in Forestry (C) ***P 90:*** **Units** ***2***
Each student will present an oral report based on library research on current problems and development in forest resources management.

SEF 501: Multiple Land use (C) ***L 15; P 45;*** **Units** ***2***
Characterization of land-used; Land use diagnosis exercise; design of land-use intervention technologies; land-use planning; and biological and sociological constraints of land-use in the tropics, Land-use/ Land Cover mapping using GIS techniques.

SEF 502: Forest Mensuration ***(C) L 15; P 45; 2U:***
Advanced sampling methods in inventory; volume estimation and volume table construction, growth and increment determination with special reference to the tropics; construction of management tables.

FEF 503: Biometrics in Forest Resources Management (R) ***L 15; P 45;*** **Units** ***2***
Practical concepts in the design and analysis of experiments wildlife. Survey techniques as they relate to wildlife problems. Processing of resources inventory and mensuration data for management purposes. Application of multivariate analysis in wildlife management. Guidelines for establishment and management of database.

SEF 504: Extension and Community Development in Renewable Natural Resources(C) ***L 15; P 45;*** **Units** ***2***
Introduction to extension concept and practice; teaching and learning in extension; planning and organizing forestry programmes; community mobilization and development; research-extension-farmer linkages; forestry extension under private ownership; the future of forestry extension in Nigeria.

SEF 505: Natural Resources Policy, Law and Administration(C) ***L 15; P 45;*** **Units** ***2***
Concept of forest policy; the process of formulation and implementation, contemporary laws, compliance and enforcement. Forest offences contracts, certification and ecolabelling; concept and types of administration. Records and decentralization in administration.

SEF 506: Forest Industry, Processing & Marketing. ***(C)L 15; P 45;*** **Units** ***2:***
Timber selection in natural and plantation forest stands, wood requirement for specific processing unit. Processing technologies, processing efficiency, wood conversion techniques, waste management, and concepts of sustainability in wood utilization.
Wood-based industries and wood technology in the world over; trends in number and size distribution of firms in the developing countries; marketing of forest produce.

SEF 507 Forest Management and Economics II (C) ***L 15; P 45;*** **Units** ***2***
Meaning and scope of Forest Management, Normal forest, Yield regulation methods, Forest subdivisions, Forest records, preparation of Management plans, preparation of working plans, international process and forest management, Harvesting. Characterization of natural resources into renewable and non-renewable; importance of NR in development process – issues in NR and poverty reduction; application of economic principles in relation to forest resources production and utilization decision; natural resources utilization and environment; conservation themes and the Philosophy of conservation of NR; and the use of analytical procedures in NR production and utilization decisions.

SEF 508: Introduction to Environmental Impact Assessment (EIA)(E) ***L15; P45;*** **Units** ***2***
Introduction to EIA including, Definition of (EIA), Classifications of E1A, Elements of E1A,basic guidelines in E1A. EIA in Forestry and related projects. Case studies in EIA.

SEF 509: Principles and Concepts of Forest Management (E) ***L 15; P 45; Units 2***
Concepts of sustainability in NR management; criteria and indicators in sustainable NR management; concept of community participation in Forest Resources Mgt., Multiple use Forest Mgt. Application of planning tools in Forest Management.