

2. DEPARTMENT OF GEOGRAPHY AND RESOURCE MANAGEMENT

Curriculum for B.Sc. Degree in Geography and Resource Management

100 LEVEL COURSES HARMATTAN SEMESTER

Course Code	Course Title	Units	Status
GRM 101	Introduction to Physical Geography I	3	C
GRM 103	Introduction to Human Geography I	3	C
GRM 105	Introduction to Practical Geography	3	C
MSS 101	Mathematics for Management and Social Sciences I	3	C
MSS 103	Statistics for Management and Social Sciences I	3	C
CIT 111	Introduction to Information and Communication Technology	2	R
GNS 101	Use of English	2	R
LIB 101	Use of Library	1	R
	Total	20	

100 LEVEL COURSES RAIN SEMESTER

Course Code	Course Title	Units	
GRM 102	Introduction to Physical Geography II	2	C
GRM 104	Introduction to Human Geography II	2	C
GRM 106	Introduction to Environmental Science	2	C
GRM 108	Introduction to Surveying	3	C
GRM 110	Local Field Studies	2	C
MSS 102	Mathematics for Management and Social Sciences II	3	C
MSS 104	Statistics for Management and Social Sciences II	3	C
CIT 112	Introduction to Computer Programming	2	R
GNS 102	The Use of English	2	R
	TOTAL	21	

200 LEVEL COURSES HARMATTAN SEMESTER

Course Code	Course Title	Units	
GRM 201	Introduction to Climatology	2	C
GRM 203	Human Spatial Organisation	2	C
GRM 205	Osun Region	2	C
GRM 207	Introduction to Geomorphology	2	C

GRM 209	Introduction to Cartography	2	C
GRM 211	Air Photo Interpretation	2	C
GRM 213	Elementary Statistics for Geographers	2	C
MSS 201	Statistical Methods and Application I	3	C
GNS 201	Nigerian Peoples and Culture	2	R
	Total	19	

At least one elective course of **2 credit units** should be taken from either within or outside the Faculty.

200 LEVEL COURSES RAIN SEMESTER

Course Code	Course Title	Units	
GRM 202	History of Geographical Thought	3	C
GRM 204	Introduction to Soil Geography	3	C
GRM 206	Introduction to Population Geography	3	C
GRM 208	Introduction to Biogeography	3	C
GRM 210	Introduction to Geographic Information System	3	C
MSS 202	Statistical Methods and Application II	3	C
GNS 202	Osun peoples and Culture	2	R
	Total	20	

ELECTIVE COURSES

At least one elective course of **2 credit units** should be taken from either within or outside the Faculty.

300 LEVEL COURSES HARMATTAN SEMESTER

Course Code	Course Title	Units	STATUS
GRM 301	Field and Laboratory Techniques in Geography	2	C
GRM 303	Quantitative Techniques in Geography	2	C
GRM 305	Regional Geography of Africa	2	C
GRM 307	Cartographic and Research Methods in Geography	2	C
GRM 309	Field Course	3	C
GRM 311	Urban Geography	2	C
GRM 313	Economic Geography	2	C
GNS 301	Entrepreneurship Skills Development and Practice	2	R
FRN 221	Basic French	2	R
	Total	19	

300 LEVEL COURSES RAIN SEMESTER

Course Code	Course Title	Units	STATUS
GRM 302	Applied Climatology	2	C

GRM 304	Vegetation Studies	2	C
GRM 306	Geographical Information System	2	C
GRM 308	Remote Sensing	2	C
GRM 310	Hydrology	2	C
GRM 312	Settlement Geography	2	C
GRM 314	Demography	2	C
GNS 302	Introduction to Logic and Philosophy	2	R
FRN 222	French for Specific Purposes	2	R
	Total	18	

400 LEVEL COURSES HARMATTAN SEMESTER

Course Code	Course Title	Units	STATUS
GRM 401	Contemporary Philosophy and Methodology of Geography	2	C
GRM 403	Systematic Geography of Nigeria	2	C
GRM 405	Advanced Cartographic Methods	2	C
GRM 407	Geography of Developing World	2	C
	Total	8	

Electives: Any four from the following

Course Code	Course Title	Units	STATUS
GRM 409	Water Resources Management	2	E
GRM 411	Medical Geography	2	E
GRM 413	Environmental Economics	2	E
GRM 415	Political Geography	2	E

GRM 417	Biodiversity Conservation and Management	2	E
GRM 419	Regional Development Planning	2	E
	Total	16	

400 LEVEL RAIN SEMESTER

Course Code	Course Title	Units	STATUS
GRM 402	Environmental Impact Assessment and Auditing	2	C
GRM 404	Geography of Developed World	2	C
GRM 406	Ecology of Natural Resources	2	C
GRM 408	Original Essay	6	C
	Total	12	

Electives

GRM 410	Rural Geography	2	E
GRM 412	Agricultural Geography	2	E
GRM 414	Land Evaluation	2	E
GRM 418	Urban Climatology	2	E

COURSE DESCRIPTION

100 LEVEL

GRM 101: INTRODUCTION TO PHYSICAL GEOGRAPHY I

The meaning, position and role of physical geography. The earth and the Universe. The distribution of land and sea. The origin of the earth and the surface features. Continental drift theory, plate tectonic and sea floor spreading. The main constituents of the earth. Internal structure of the earth. The relief of the earth surface. Endogenic forces. Faults and folding. The hydrosphere and oceanography: Scope of oceanography. The ocean water; the composition and physical properties of ocean water. The ocean circulation.

GRM 102: INTRODUCTION TO PHYSICAL GEOGRAPHY II

The elements and control of weather and climate as well as the dynamics of the earth's atmosphere. Composition and structure of the atmosphere. Radiation and heating of the earth-atmosphere system. World pressure belt winds. Evaporation and condensation, clouds. World climates. Man's impact and response to climate and weather conditions.

GRM 103: INTRODUCTION TO HUMAN GEOGRAPHY I

The nature of scope of human geography, population, its distribution and patterns of growth. Human settlements, evolution, pattern and functions. Inter-relationship between urban and rural settlements.

GRM 104: INTRODUCTION TO HUMAN GEOGRAPHY II

The concept of resources, types of resources and their global distribution, relationship between resources and tertiary activities, impact of human activities on the environment at the varying levels of technology and population densities. Movement of people, goods, energy and ideas.

GRM 105: INTRODUCTION TO PRACTICAL GEOGRAPHY

Map reading and interpretation defined. Type of maps and conventional symbols, the language of maps. Scales-types and importance as tools of map reading and interpretation, relief representation on maps. Map reduction and enlargement. Division of topographical maps into relief regions. Analysis of the features of human occupancy population, settlements, communication networks. Land use. Old and New approaches. Role of practical

work in Geography. Physiographic techniques of analysis of relief: profiles (serial, superimposed and projected profiles), isopleths map for relative relief. Generalised contour and average slope hypsometric analysis. Basin morphometry; analysis of human features. Settlement analysis (quadrat and nearest neighbour analysis and analysis of land use).

GRM 106: INTRODUCTION TO ENVIRONMENTAL SCIENCE

The Environment – Basic elements of matters; composition mode of interaction, the earth as a system, concept of energy and energy system; the role of man in the environment. Energy system in the atmosphere, lithosphere and biosphere. Air pollution and other hazards like erosion, drought, earthquakes, hurricanes and floods. Principle and practice of environmental conservation.

GRM 108: INTRODUCTION TO SURVEYING

What is surveying. Surveying instruments: chain, compass, abney level, plane table, Alidade, Dumpy level, leveling staff, Theodolite. Simple measurement of distances, directions and slope gradients. Basic principles of surveying. Chain surveying --- traversing and triangulation, booking chain survey measurements; plotting chain survey measurements; obstructions to chaining. Compass traversing – booking and plotting of a compass traverse; elimination of error of closure.

GRM 110: LOCAL FIELD STUDIES

Field Studies: To familiarize students with their local government (physical and human activities) and to radicalize classroom discussion/lectures in both physical and human geography. This is limited to Osun State.

200 LEVEL

GRM 201: INTRODUCTION TO CLIMATOLOGY

The general circulation of the atmosphere-scales and laws of motion. Forces that drive the atmosphere. Major features and models of the circulation, weather producing systems-air masses and fronts, frontal depressions; tropical systems. Climatic classification and global systems of climate. Man's influence on the atmosphere.

GRM 202: HISTORY OF GEOGRAPHIC THOUGHT

Geographical thought – historical, perspectives and relations to history of science. Role of theory and science in Geography.

GRM 203: HUMAN SPATIAL ORGANISATION

Some basic concepts of spatial organization, principles of classification of Geographical phenomena, growth and spatial distribution of population, production systems, typology, location and spacing of human settlements, movements over space and transport networks, land use patterns and interaction in space.

GRM 204: INTRODUCTION TO SOIL GEOGRAPHY

The meaning and scope of soil geography, soil constituents and soil properties. Factors and processes of soil formation. Soil profile. Classification of soil types, zonal, intra zonal and azonal. Soil erosion in humid regions and conservation.

GRM 205: OSUN REGION

The Physical Environment, Agriculture, Forestry, Water, Energy, Mining, Industry, Transport and Communication, Tourism, Population Distribution and Composition, Settlement, Migration, and its implication, Education and Health.

GRM 206: INTRODUCTION TO POPULATION GEOGRAPHY

Nature and scope of Population Geography. Population data sources. Population growth and components: Migration-processes and consequences. The Nigerian population structure, distribution pattern and their implications. The population census of Osun State.

GRM 207: INTRODUCTION TO GEOMORPHOLOGY

Definition, development, nature and scope of geomorphology. Methods of landform study: deductive and inductive methods. Models of landform evolution, cycle of erosion and the alternative – the dynamic process and the non-cycle concepts. Rock types-their origin and characteristics. Weathering, mass movement, humid tropical processes and land forms, land forms of semi-arid and arid regions, glacial and pre-glacial landform.

GRM 208: INTRODUCTION TO BIOGEOGRAPHY

The meaning and scope of biogeography. Approaches and frontiers of biogeography ecology, ecosystem, components of ecosystems, ecological efficiency, trophic structure, pyramid and biological production. Vegetation types. Factors affecting floral and fauna distribution at various scale. The concept of the ecosystem. The structure and functioning of terrestrial and aquatic ecosystems. Vegetation changes through time; adaptive succession and climax. Biogeochemical cycles, population and community ecology, the forest ecosystem and conservation, principles and practice of conservation.

GRM 209: INTRODUCTION TO CARTOGRAPHY

What is cartography, its historical development. Types of maps, functions of maps. Drafting techniques and instruments, map compilation, design and construction of statistical maps and diagrams; techniques of changing map scales, the co-ordinate system and map projection. The cartographic process, symbolizing and processing of data.

GRM 210: INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEM

History of Geographic Information System, Introduction to Computer applications and storing geographic data, relevant types of hardwares and softwares. The use of scanning technology and digitization of maps. Digital Image processing, case studies of application in landcover changes, and urban and disaster management studies.

GRM 211: AIR PHOTO INTERPRETATION

Aerial photographs defined, types, the development of aerial photographs. The importance and qualities of aerial photographs. Marginal information and aerial photographs, energy source, image forming process, the aerial camera and scale in aerial photography. The flight plan. Element of aerial photo interpretation, interpretation with respect to land use, vegetation, settlements and soils. The geometry of aerial photograph: Radial displacement, tilt, relief displacement, radial line to-triangulation and plotting. Parallax.

GRM 213: ELEMENTARY STATISTICS FOR GEOGRAPHERS

Role of statistics in research, algebraic operations. Subscriptions and summation, Data description and characteristics. Frequency distribution and graphic presentation. Measure of central tendency and dispersion. Probability theory. The normal distribution: Binomial and poisson distributions. Methods of sampling, simple classification (Chi-square; simple correlation and regression). Introduction to computer programming and its application to Geography.

GRM 301: FIELD AND LABORATORY TECHNIQUES IN GEOGRAPHY

Techniques in physical geography. Soil profile, analysis of soil physical and chemical characteristics, water analysis. Measurement of water discharge. Measurement of vegetation characteristics.

GRM 302: APPLIED CLIMATOLOGY

Solar radiation, energy budget and balance. Evaporation and evapo-transpiration; potential evapo-transpiration, climatic classification and theories of climatic change. The climatology of West Africa and Nigeria.

GRM 303: QUANTITATIVE TECHNIQUES IN GEOGRAPHY

Importance of advanced mathematical and statistical techniques as applied to spatial distribution and area data: Multiple and partial correlation, multiple regression. Analysis of variance (ANOVA) – parametric and non-parametric. Test of significance. Principle component analysis. Factor analysis. Multiple classification. Model building processes and types. Gravity models. Entropy maximizing model. Introduction to linear programming.

GRM 304: VEGETATION STUDIES

Plant evolution and distribution. Vegetation succession and change. Methods of vegetation analysis and mapping. Ecology of various communities. The Nigerian vegetation.

GRM 305: REGIONAL GEOGRAPHY OF AFRICA

General Geography of Africa with reference to the African peoples, culture, history, environment, system of agriculture, population distribution and movements. Regional discussion of development problems: Effects of the physical environment on the economy

especially with reference to labour, resources, transport, industries and farming. The political Geography of Africa. Regional cooperation and integration in Africa.

GRM 306: GEOGRAPHICAL INFORMATION SYSTEMS

The development of Geographical Information Systems (GIS). Data collection, storage and display, algorithms for sorting, searching and spatial manipulation. The development of sources and methods of geographic data collection and explanation. Geographic information system design and implementation. Case studies of Canadian and foreign GIS. Sources of data for GIS-the use of census, regional planning surveys and remote sensing devices for gathering information at national and international levels. Nature of output-soft and hand copies. Geo-coding and computerization.

GRM 307: CARTOGRAPHY AND RESEARCH METHODS IN GEOGRAPHY

Cartography as a communication science. The model; map projections; classes, properties, choice and the Nigerian projection system; basic draughtmanship, conception, design and execution of map projections; (Practical) sources of data, for topographic projection; aerial photographic survey; flight planning; field (control) survey; aerial photography; conducting research with maps; cartographic illustrations of research data. Research method in cartography. Meaning of research. Choosing a research topic. Formulation of research problem. Theories and conceptual frameworks for research topics. Formulation of hypothesis. Research instrument: Questionnaire design, coding and tabulation, sampling frame and sampling procedures. Hypothesis testing. Association in geography. Documentation: Referencing/bibliography; footnotes; acknowledgement, research proposal.

GRM 308: REMOTE SENSING

An overview of remote sensing principles – components, classification of remote sensing, image processing, image forming process, the electromagnetic spectrum (EMS) image characteristics, elements of image interpretation; image interpretation – manual computer. Remote sensing systems: camera or photographic system, thermal or scanning system and radar or micro-wave system. An over view of the Nigeria Sat-1. The schematic diagrammed of Nigeria Sat – 1, its general characteristics, its image characteristics. An over view of areas of application of the Nigeria Sat -1 in Nigeria; disaster management, agriculture, water resource development and management, solid mineral exploration exploitation, ecosystems

management, demographic and cadastral, transportation and utilities, environmental management, defense and security, health and public health delivery and education and capacity building.

GRM 309: FIELD COURSE

8 – 10 days of field studies designed to illustrate the application of techniques of geographical analysis (problem will vary from year to year).

GRM 310: HYDROLOGY

Definitions, historical development and scope of hydrology. Hydrological cycle and hydrological equation. Precipitation, water losses – evaporation and evapo-transpiration, infiltration, soil moisture interception. Stream flow measurement, runoff and hydrograph analysis. Floods: estimation and control, ground water, water management and river basin development.

GRM 311: URBAN GEOGRAPHY

Methodology of Urban Geography, Urban systems and urban development processes in Nigeria. Urban demographic and land use patterns. Central place and growth pole studies; urban planning, including land classification for parks, recreation and amenity. Urban problems-housing, slums, transportation and unemployment among others.

GRM 312: SETTLEMENT GEOGRAPHY

The nature of rural settlement system. Rural economic base: rural resources, primary productions/agriculture in the rural areas, rural human resources base – rural population size and growth patterns. Determinants of rural population growth and change – fertility, mortality and migration. Rural labour force and population distribution. Rural society and organization. Rural communities, stratification and social institutions. Rural socio-economic facilities. Rural settlement systems-models of rural settlement, typology, changing pattern of rural settlement. Rural-urban fringe and relationships. Rural central places; frame work for rural development, rural development strategies – prospects and constraints.

GRM 313: ECONOMIC GEOGRAPHY

Supply and demand of goods and services on geographical basis. Factors of production, comparative advantage-regional dimensions. Economics of scale, economic rent. Analysis of transportation networks and flows: location and allocation models, industrial complex analysis. Regional policy and planning.

GRM 314: DEMOGRAPHY

Aims and scope of demography, sources and methods of data collection, analysis of demographic data, theories and concepts of demographic measures process and characteristics, demographic indices, projections and estimations, demographic models and statistics.

GRM 401: CONTEMPORARY PHILOSOPHY AND METHODOLOGY OF GEOGRAPHY

Current methodology of geographical research including recent paradigm shifts within geography, scientific approach to geography research, quantification in geography, classification in geography; theories and models in geography; systems analysis in geography, modes of explanation in geography. The future of geography. The role of theories in geography.

GRM 402: ENVIRONMENTAL IMPACT ASSESSMENT AND AUDITING

The concepts of determinism and possibilism. Human activities in the urban and rural regions. Environmental impact laws in Nigeria. Social and economic implications of industrial pollution, oil exploration hazards. Methods of impact assessment. Classification impact. Definition of environmental variables. Methods of Auditing.

GRM 403: SYSTEMATIC GEOGRAPHY OF NIGERIA

Introduction to the pattern of human phenomena. Growth and distribution of population, natural resources base, agricultural production, industrialization. Transport development, city and community regions. Migration flows. Urban systems modernization and development strategies. A thematic approach to the physical geography of Nigeria-general introduction. Ecological zones. Natural resource base, river basins, geology, rocks and land forms.

GRM 404: GEOGRAPHY OF DEVELOPED WORLD

Differentiation of the developed world from the developing world. Distribution of incomes and standards of living. Social, economic and political frame-work of the capitalist and centrally planned states. The historical evolution of the developed economies. Geographical bases of the economics of Western Europe, U.S.A. and U.S.S.R growth and performance of agriculture, manufacturing and services. International trade and implications on the world economy.

GRM 405: ADVANCED CARTOGRAPHIC METHODS

Review of cartographic equipment and materials. Instruments and material acquisition and maintenance. Map design, map production, planning and procedures. The use of mechanical, optical and photographic aids in Cartography. The logic of automation (computer in cartography). Merits and demerits of computer application configuration of main frame computers (PLS). the impact of computer on cartographic processes. Cartography and geographic information system.

GRM 406: ECOLOGY OF NATURAL RESOURCES

Man, nature and resources, principles of conservation and resources use, protected ecosystems and landscapes, grasslands and grazing man's use of water forestry. Agriculture systems and production, the sea and its minerals and biological resources, pollution, environmental limits of man's economic growth. Biodiversity and conservative.

GRM 407: GEOGRAPHY OF DEVELOPING WORLD

The nature of under development in the third world. Poverty and income distribution, production systems and links with the international economy. Geographical distribution of natural resources, human resources and technology. Development strategies; agriculture; industrialization; education and manpower development. The population problems, international trade and transfer of resources.

GRM 408: ORIGINAL ESSAY (RESEARCH PROJECT)

Approximately 10,000 word research essay/dissertation based on field and/or research work on an aspect of geography and carried out under the supervision of a member of staff.

GRM 409: WATER RESOURCES MANAGEMENT

Water as a resource: Hydro-climatology; underground water, river regime. Water supply system, water uses and quantity, water quality and characteristics. Irrigation, water power and fisheries, river valley development. Planning for water resources development. Water law.

GRM 410: RURAL GEOGRAPHY

Principles of Human Settlement: the settlement frontier. The structure of space distance functions and land use. Characteristics of rural population, migration form, agriculture. Rural central places and peasant marketing. Rural transformation, land reforms and effects of improved transport. Rural development strategies.

GRM 411: MEDICAL GEOGRAPHY

Environment and diseases, flow of patterns of diseases, diets and nutrition, and the ecology of malnutrition, utilization of health facilities, environmental sanitation, implication of population growth on health, food etc, WHO, multinational and national health institutions and programmes, cases of studies of selected diseases like AIDS/HIV, SARS, their socio-economic impacts and group projects.

GRM 412: AGRICULTURAL GEOGRAPHY

Nature and methodology of Agricultural Geography. Theoretical basis of agriculture-demand and supply factors for agricultural production; agricultural location models such as Von Thunen and market system models. Theory and classification of agricultural regions. Agriculture and economic development – role of government policy; reforms and agricultural reforms; problems and prospects for agricultural modernization.

GRM 413: ENVIRONMENTAL ECONOMICS

Basic concepts of production, consumption and price system. Urban and rural economics production, distribution and transportation development. Economics of agglomeration. Riverine economics particularly Delta region of Nigeria. Oil production and local economics of Delta region. Economic growth and development problems of Delta region of Nigeria.

Prospects of economic development of Delta region. The concept of sustainable development.

GRM 414: LAND EVALUATION

Principles of land resources evaluation – concept, purpose and procedure of land evaluation. Rural land resource appraisal. Approaches of land evaluation – integrated and parametric factors affecting land utilization. Remote sensing for land resources survey. Compatibility and suitability classification. Conservation and management of rural land resources – concepts, method and purpose of conservation. Assessing impact on rural land – concepts, objective and methods of impact assessment.

GRM 415: POLITICAL GEOGRAPHY

Definition and scope of political geography: approaches to the study of political geography, past development of political geographic thought and practice. Spatial variation of states as political regions and significance of geographical background to political situations.

GRM 417: BIODIVERSITY, CONSERVATION AND MANAGEMENT

Inventory of biological resources and their spatial distribution. Concepts of bio-diversity and bio-degradation. Forest biomes and their structure. Utilization and management of forest resources.

GRM 418: URBAN CLIMATOLOGY

Detailed treatment of the climatic effects of urbanization of cities located in tropical and temperate latitudes. Air pollution in cities, methods of pollution control in cities.

GRM 419: REGIONAL DEVELOPMENT PLANNING

Practical and theoretical guidelines for the maximization of national and regional space economy. Regional development – nature, process, internal and external inducements. The core-hinterland, centre periphery systems in regional development. Polarizations and corridor development. Approaches to planning for regional development – infrastructure and integrated urban-rural approaches. Regional development policies and administrative structures. Regional development plans.