

**DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT,
AMBROSE ALLI UNIVERSITY, EKPOMA,
P. M. B. 14, EDO STATE.
AMBROSE ALLI UNIVERSITY, EKPOMA**

DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT

CURRICULUM FOR GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT

TITLE OF PROGRAMME: B.Sc. (Geography and Environmental Management)

PHILOSOPHY AND OBJECTIVE OF THE PROGRAMME

The Philosophy of the programme is to produce graduates who are equipped with various techniques and methods of analysis in Geography and Environmental Management so that, they can make meaningful contribution to local, National and International development and planning. Graduates of this programme can register as members of the Association of Nigerian Geographers (ANG) as well as the Nigerian Cartographic Association (NCA). They can also feature as environmentalists.

The objectives of the programme are to:

- (i) make the students have a good understanding of the human and natural phenomena that affect the earth's surface;
- (ii) enable the students acquire the techniques and skills of identifying and analyzing the various social and environmental problems of development planning in the society;
- (iii) make the students develop or have a critical judgement of issues (human and natural) to which they will be able to advance solutions;
- (iv) equip the students with the skills and the techniques required in the practice of urban, regional and environmental planning.
- (v) enable students after specializing in any sub-area of geography and regional planning serve as planning officers, teachers/lecturer, environmental managers cartographers, administrators, personnel officers, landscape designers etc.

STRUCTURE OF THE PROGRAMME

The programme is a FOUR-YEAR DEGREE programme.

Two categories of courses are offered in the programme, namely:

Compulsory and Elective Courses:

The Compulsory courses are those which are mandatory and required and must be taken and passed by all students at particular levels.

Elective courses are those from which students at particular levels must choose so as to make up the minimum credit (units) needed for that level.

Admission Requirements

(a) Four Year Degree Programme

Admission into the 4-year degree programme is through:

- (i) Unified Tertiary Matriculation Examination (UTME)

To be eligible for admission into the 4 year B.Sc. degree programme (Geography and Environmental Management) a candidate must have obtained five credits in the Senior School Certificate Examination (SSCE) or General Certificate of Education (GCE O/L) in not more than two sittings.

The credits must be in English Language, Mathematics, Geography and any other two subjects from Economics, Fine Arts, Commerce, Civic Education, Government, Biology, Physics, Chemistry, Agricultural Sciences and Social Studies.

(b) Three-Year Programme

Admission into the three-year B.Sc. degree programme is through direct entry. To be eligible for admission into the 3-year programme a candidate must, in addition to the JME requirements, have obtained any of the following certificates:

- (i) Two GCE (A/L) subjects including Geography.
- (ii) At least a merit pass in the following diploma programmes of this University. Diploma in Public Administration, Diploma in Town Planning or any other relevant discipline from any recognized institutions. The grade of pass must not be less than merit level.
- (iii) Holders of the Nigerian Certificate of Education (NCE) with geography combinations. A pass in NCE English or pass in general paper in GCE (A/L) level is acceptable as fulfilling the English Language requirement.

GRADUATION REQUIREMENTS

In order to obtain a Bachelor of Science Degree in Geography and Environment Management, a student is required to complete a minimum of 116 credits (units) load for the 4-year programme and 138 credits (units) load for the 3-year programme.

To graduate, all compulsory courses must be passed. This is in addition to University-wide completing courses such as General Studies, Computer and Entrepreneurial Studies.

Details of minimum and maximum units students can register for as well as regulations governing examination procedure with reference to malpractice, absence from examination, are in the Faculty Handbook. Students are compulsorily required to acquire it or be conversant with the content of the Handbook.

AMBROSE ALLI UNIVERSITY, EKPOMA
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT

DEPARTMENTAL OFFICERS FOR 2020/2021 SESSION

| | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|---|
| Prof. M O. Ojeifo | ... | ... | ... | ... | ... | ... | Head of Department |
| Prof. M. E. Ufuah | ... | ... | ... | ... | ... | ... | Post-Graduate Coordinator |
| Dr. J. O. Eseigbe | ... | ... | ... | ... | ... | ... | Examination Officer/Part-Time Coordinator |
| Dr. A.E Ilenre | ... | ... | ... | ... | ... | ... | Departmental Secretary |
| Dr. P.A.G Okhakhu | ... | ... | ... | ... | ... | ... | Industrial Training Coordinator |
| Dr. E.S Okhae | ... | ... | ... | ... | ... | ... | Foundation Programme |

LEVEL COORDINATORS

| | | |
|-----|---------------------|-----------|
| (1) | Dr. A. E. Ilenre | 100 Level |
| (2) | Dr. E. S. Okhae | 200 Level |
| (3) | Dr. W. W. Edobor | 300 Level |
| (4) | Dr. S. E. Ehisuoria | 400 Level |

COMMITTEES

(A) RESULTS COMPUTATION COMMITTEE

| | | |
|-----|---------------------|------------------|
| (1) | Prof. M O. Ojeifo | Chairman |
| (2) | Dr. A. I. Osawe | Member |
| (3) | Dr. F. O. Akhimien | “ |
| (4) | Dr. S. E. Ehisuoria | “ |
| (5) | Dr. P. A. Okhakhu | “ |
| (6) | Dr. W. W. Edobor | “ |
| (7) | Dr. E. S. Okhae | “ |
| (8) | Dr. A. E. Ilenre | “ |
| (9) | Dr. J. O. Eseigbe | Member/Secretary |

(B) PG ADMISSIONS COMMITTEE

| | | |
|-----|-------------------|------------------|
| (1) | Prof. M O. Ojeifo | Chairman |
| (2) | Prof. M. E. Ufuah | Member |
| (3) | Prof. M.L Rilwani | “ |
| (4) | Dr. A.I Osawe | “ |
| (5) | Dr. F.O Akhimien | “ |
| (6) | Dr. J. O. Eseigbe | Member/Secretary |

(C) STAFF WELFARE COMMITTEE

| | | |
|-----|--------------------|------------------|
| (1) | Dr. A.I Osawe | Chairman |
| (2) | Dr. F. O. Akhimien | Member |
| (3) | Dr. P.A Okhakhu | “ |
| (4) | Dr. A.E Ilenre | “ |
| (5) | Dr. E. S. Okhae | Member/Secretary |

(D) RESEARCH/PUBLICATIONS COMMITTEE

| | | |
|-----|--------------------|------------------|
| (1) | Prof. O. M. Ojeifo | Chairman |
| (2) | Prof. M. E. Ufuah | Member |
| (3) | Prof. M.L Rilwani | “ |
| (4) | Dr. W.W Edobor | Member/Secretary |

(E) CURRICULUM COMMITTEE

- | | | |
|-----|-------------------|------------------|
| (1) | Prof. M. E. Ufuah | Chairman |
| (2) | Prof. M.L Rilwani | Member |
| (3) | Prof. M.O Ojeifo | “ |
| (4) | Dr. J.O Eseigbe | “ |
| (5) | Dr. W.W Edobor | Member/Secretary |

(F) ENVIRONMENTAL MANAGEMENT AND PLANNING COMMITTEE

- | | | |
|-----|--------------------|------------------|
| (1) | Prof. M.L Rilwani | Chairman |
| (2) | Prof. M. E. Ufuah | Member |
| (3) | Prof. O. M. Ojeifo | “ |
| (4) | Dr. A. I. Osawe | “ |
| (5) | Dr. W. W. Edobor | Member/Secretary |

(G) FIELD-WORK COMMITTEE

- | | | |
|-----|-------------------|------------------|
| (1) | Prof. M.O Ojeifo | Chairman |
| (2) | Dr. S.E Ehisuoria | Member |
| (3) | Dr. F.O Akhimien | “ |
| (4) | Dr. J.O Eseigbe | “ |
| (5) | Dr. A. E. Ilenre | Member/Secretary |

(H) SPACE ALLOCATION COMMITTEE

- | | | |
|-----|------------------|------------------|
| (1) | Prof. M.O Ojeifo | Chairman |
| (2) | Dr. A.I Osawe | Member |
| (3) | Dr. J.O Eseigbe | “ |
| (4) | Dr. W. W. Edobor | Member/Secretary |

(I) EQUIPMENT AND PROCUREMENT COMMITTEE

- | | | |
|-----|--------------------|------------------|
| (1) | Prof. M. E. Ufuah | Chairman |
| (2) | Prof. O. M. Ojeifo | Member |
| (3) | Dr. J.O Eseigbe | “ |
| (4) | Dr. P. A. Okhakhu | “ |
| (5) | Dr. W. W. Edobor | Member/Secretary |

(J) ACCREDITATION COMMITTEE

- | | | |
|-----|---------------------|------------------|
| (1) | Prof. M. E. Ufuah | Chairman |
| (2) | Prof. M.L Rilwani | Member |
| (3) | Prof. O. M. Ojeifo | “ |
| (4) | Dr. F. O. Akhimien | “ |
| (5) | Dr. P. A. Okhakhu | “ |
| (6) | Dr. A. I. Osawe | “ |
| (7) | Dr. S. E. Ehisuoria | “ |
| (8) | Dr. W. W. Edobor | “ |
| (9) | Dr. J. O. Eseigbe | Member/Secretary |

LABORATORIES/STUDIO

(K) REMOTE SENSING/GIS LABORATORY

- | | |
|-----|-------------------|
| (1) | Dr. W. W. Edobor |
| (2) | Mr. M. S. Rilwani |

(L) CARTOGRAPHY LABORATORY

- | | |
|-----|-------------------|
| (1) | Prof. M. E. Ufuah |
| (2) | Mr. G. O. Aigbe |

(M) PLANNING STUDIO

- (1) Prof. O. M. Ojeifo
- (2) Dr. W.W Edobor

(N) CLIMATOLOGY LABORATORY

- (1) Dr. P.A Okhakhu
- (2) Dr. A.E Ilenre
- (3) Mr. D. Abumere

(O) GEOMORPHOLOGY/PHYSICAL LABORATORY

- (1) Dr. J. O. Eseigbe
- (2) Dr. E. S. Okhae
- (3) Mr. A. E. Ilenre

AMBROSE ALLI UNIVERSITY, EKPOMA
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT

LIST OF STAFF OF THE DEPARTMENT AND THEIR STATUS

| S/N | ACADEMIC STAFF | STATUS | QUALIFICATIONS, DATES OBTAINED |
|------------|--------------------------------|--------------------------------------|--|
| 1 | Prof. OJEIFO, Magnus Oisasoje | Professor/HOD | B.Sc.,EDSU (1992); M.Sc., UNIBEN (1998); Ph.D; AAU; Ekpoma (2005); PGDE. NOUN (2016) |
| 2 | Prof. UFUAH, Matthew Eigbe | Professor | B.Sc.,UNN (1986); M.Sc., UNN (1991); Ph.D; AAU; Ekpoma (2000) |
| 3 | Prof. RILWANI, Momoh Lawal | Professor | B.Sc.,UNIJOS (1988); M.Sc., UNILAG (1996); PGDCS,AAU, Ekpoma,(2001); Ph.D; UNIBEN; 2007; PGDE,AAU, Ekpoma (2013) |
| 4 | Dr. OSAWE, Anthony Ikhide | Ass. Professor | B.A;MDU Rohtak (1983); MRS, SGU Surat (1985); Ph.D. AAU, Ekpoma (2004) |
| 5 | Dr. AKHIMIEN, Francis Okojie | Senior Lecturer | NCE, BENIN, (1983); B.Sc, (Ed) BENSU (1991) M.Sc,AAU,Ekpoma(1998); Ph.D, AAU Ekpoma (2005) |
| 6 | Dr. ESEIGBE, Joseph Omon | Senior Lecturer | B.Sc.,EDSU (1995); M.Sc.,AAU, Ekpoma (2006); Ph.D; AAU; Ekpoma (2011); PGDE. UNIBEN (2016) |
| 7 | Dr. OKHAKHU, Polycarp Alens | Senior Lecturer | B.Sc.,EDSU (1994); M.Sc.,AAU, Ekpoma (2005); Ph.D; AAU; Ekpoma (2011); PGDE. UNIBEN (2010) |
| 8 | Dr. EHISUORIA, Solomon Ehilen | Senior Lecturer | B.Sc.,BENSU (1991); M.Sc.; EDSU, (1997); Ph.D; AAU; Ekpoma (2012); |
| 9 | Dr. EDOBOR, Williams Willosa | Senior Lecturer | B.Sc.,(Ed); AAU Ekpoma (2001); M.Sc; GIS IBADAN (2005); M.Sc. IBADAN (2007); Ph.D; AAU; Ekpoma (2018); |
| 10 | Dr. OHKAE, Ehiabhi Sunday | Lecturer II | B.Sc.,EDSU (1998); M.Sc.,AAU, Ekpoma (2005); Ph.D; AAU; Ekpoma (2017); |
| 11 | Dr. ILENRE, Abraham Ehizojie | Lecturer II | B.Sc.,(Ed) DELSU (1995); M.Sc.,AAU, Ekpoma (2012); Ph.D; AAU; Ekpoma (2019); |
| | NON-TEACHING STAFF | | |
| 1 | Mr. AIGBE, Okhueleigbe Gilbert | Cartographer (Senior Technologist I) | B.Sc., EDSU (1997). |
| 2. | Mr. ABUMERE, Daniel | Technologist II | B.Sc., AAU, Ekpoma (2010). |

| | | | |
|----|-------------------------|--------------------------|--|
| 3. | Mr. RILWANI, Momoh Sani | Technologist II | B.Sc., AAU, Ekpoma (2006); M.Sc., AAU., Ekpoma (2016) |
| 4. | Mrs. IYERE O. Marcelina | Confidential Secretary I | WASC (1991), RSA Stage II (NABTEB 1995), Advance Level 120 W.P.M |
| 5. | Egbedion I. Roseline | Senior Executive Officer | FSLC (1986), WASC (2001)), Dip. Accounting (1998) |
| 6 | Mrs. OGBEIFUN Josephine | Senior Mesgr/Cleaner | FSLC, 1980, NCE (NOUN) 2019 |

OLD PROGRAMME

REVISED CURRICULUM FOR B.Sc. DEGREE PROGRAMME

COURSE OUTLINE

100 LEVEL FIRST SEMESTER

| COURSE CODE | COURSE TITLE | UNIT |
|-----------------------|--|----------|
| GST 101 | Use of English and library | 4 |
| GST 102 | Introduction to Philosophy and Logic | 2 |
| CFS 101 | Computer for Social sciences | 3 |
| GRP 101 | Element of Physical Geography I | 2 |
| GRP 102 | Elements of Human Geography I | 2 |
| GRP 103 | Introduction to practical geography | 3 |
| GRP 104 | Introduction to land surveying | 3 |
| GRP 105 | History and Basic Elements of Planning | 3 |
| ELECTION (ONE) | | |
| FAA 101 | Free hand sketching | 2 |
| ARC 101 | Graphics/lettering | 2 |
| ECO 101 | Economic Principles I | 3 |
| SOC 101 | Introduction to sociology I | <u>3</u> |
| | | 24 |

100 LEVEL SECOND SEMESTER

| | | |
|---------|--|---|
| GST 111 | Nigerian People and Culture | 2 |
| GST 112 | History and Philosophy of Logic | 2 |
| GRP 111 | Elements of Physical Geography II | 2 |
| GRP 112 | Elements of Human Geography II | 2 |
| GRP 113 | Local Field Studies | 3 |
| GRP 114 | Introduction to Environmental Science | 2 |
| GRP 115 | Introduction to Planning Design | 2 |
| GRP 116 | Introduction to Mathematics for Geography and Planning | 2 |
| GRP 117 | Map Analysis | 2 |

| | | |
|---------|-------------------------------|----------|
| | ELECTIVES (ONE) | |
| FAA 111 | Free Hand Sketching II | 2 |
| ARC 112 | Descriptive Geometry/Graphics | 2 |
| ECO 111 | Economics Principles I | 2 |
| SOC 111 | Introduction to Psychology | <u>2</u> |
| | | 22 |

200 LEVEL FIRST SEMESTER

| | | |
|---------|---|---|
| GRP 201 | Spatial Organization of society | 2 |
| GRP 202 | Introduction to Geomorphology | 2 |
| GRP 203 | Statistics for Geography/Planning | 2 |
| GRP 204 | Introduction to Cartography | 2 |
| GRP 205 | Studio II site (Planning and Landscape Design) | 3 |
| GRP 206 | Introduction to the history of Geographic thought | 2 |
| GRP 207 | Soil Geography | 2 |
| GRP 208 | Land Economics | 2 |
| GRP 209 | Introduction to Population Geography | 2 |

| | | |
|---------|----------------------------|----------|
| | ELECTIVES (ANY TWO) | |
| ARC 204 | Environmental Science I | 2 |
| GRP 220 | Vegetation Studies | 2 |
| GRP 221 | Behavioral Geography | <u>2</u> |
| | | 23 |

200 LEVEL SECOND SEMESTER

| | | |
|---------|---|---|
| GST 222 | Peace and Conflict Resolution | 2 |
| GRP 211 | Quantitative Techniques I | 3 |
| GRP 212 | Regional Geography of Africa | 2 |
| GRP 213 | Introduction to Climatology | 2 |
| GRP 214 | Cartographic Methods in Research | 2 |
| GRP 215 | GIS and Computer Application in Geography | 2 |
| GRP 216 | Introduction to Geographic Methods | 2 |
| GRP 217 | Air Photo Interpretation | 2 |
| GRP 218 | National Resources and Environmental Planning | 3 |

| | | |
|---------|----------------------------|----------|
| | ELECTIVES (ANY TWO) | |
| ARC 214 | Environmental Science II | 2 |
| GRP 219 | Land Evaluation | 2 |
| GRP 230 | Advanced land surveying | <u>2</u> |
| | | 22 |

300 LEVEL FIRST SEMESTER

| | | |
|----------|--------------------------------------|----------|
| GRP 301 | Quantitative Techniques II | 2 |
| GRP 302 | Research Methods in Geography | 2 |
| GRP 303 | Economic Geography | 2 |
| GRP 304 | Population Studies | 2 |
| GRP 305 | Biogeography | 2 |
| GRP 306 | Studio III (Urban Design) | 3 |
| GRP 307 | Rural Settlement System and Planning | 2 |
| GRP 308 | Traffic and Transportation Planning | 2 |
| GRP 309 | Project Planning and Evaluation | 2 |
| GRP 310 | Fluvial Geomorphology and Hydrology | 2 |
| GRP 311 | Field Course I | 3 |
| | ELECTIVES (ANY TWO) | |
| GRP 320 | Agricultural Geography | 2 |
| GRP 321 | Physical and Dynamic Climatology | 2 |
| GRP 322 | Geography of water Resources | 2 |
| *GRP 323 | Planning Principles | <u>2</u> |
| | | 28 |

300 LEVEL SECOND SEMESTER

| | | |
|---------|--|----------|
| GRP 399 | SIWES (Students Industrial Work Experience Scheme) | 15 |
| GRP 312 | Field Course II | <u>3</u> |
| | | 18 |

400 LEVEL FIRST SEMESTER

| | | |
|---------|--|---|
| GRP 401 | Systematic Geography of Nigeria I | 2 |
| GRP 402 | History of Geographic Thought | 2 |
| GRP 403 | Advanced Cartographic Techniques I | 2 |
| GRP 404 | The Developing World | 2 |
| GRP 405 | Spatial Distribution of Utilities and Services in Urban Area | 2 |
| GRP 406 | Land use Studies | 2 |

ELECTIVES (ANY THREE)

| | | |
|---------|---|----------|
| GRP 407 | Political Geography of Resources Distribution | 2 |
| GRP 408 | Ecology of Natural Resources | 2 |
| GRP 409 | Agricultural Development Planning | 2 |
| GRP 420 | Regional Growth Analysis | <u>2</u> |
| | | 14 |

400 LEVEL SECOND SEMESTER

| | | |
|---------|--------------------------------------|----------|
| GRP 410 | Systematic Geography of Nigeria II | 2 |
| GRP 411 | Contemporary Philosophy of Geography | 2 |
| GRP 412 | Advanced Cartographic Technique II | 2 |
| GRP 413 | The Developed World | 2 |
| GRP 414 | Environmental Resource Management | 2 |
| GRP 499 | Original Essay | <u>6</u> |

ELECTIVES (ANY THREE)

| | | |
|---------|---------------------------------|----------|
| GRP 415 | Industrial Development Planning | 2 |
| GRP 416 | Environmental Geomorphology | 2 |
| GRP 417 | Rural Development planning | 2 |
| GRP 418 | Applied Climatology | 2 |
| GRP 419 | Remote Sensing | <u>2</u> |
| | | 22 |

* Compulsory Elective

COURSE DESCRIPTION

100 LEVEL FIRST SEMESTER

GRP 101: ELEMENTS OF PHYSICAL GEOGRAPHY I

The meaning and scope 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 tectonics 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.

GRP 102: ELEMENTS OF HUMAN GEOGRAPHY

Theories of inter-dependence between man and nature world human groups races language units, religious groups. World population and elementary theories of demographic transition.

GRP 103: INTRODUCTORY PRACTICAL GEOGRAPHY

Map reading and interpretation defined. Types of map and conventional symbols, the language of maps. Scales-types and importance as tools of map reading and interpretation. Relief representation in map. Map reduction, and enlargement. Analysis of the features of human occupancies population settlement and communication network. Land use analysis on maps.

GRP 104: INTRODUCTION TO LAND SURVEYING

What is surveying? Surveying instruments, chain compass Abney level plane tables alidade the Dumpy level, leveling staff, theodolite simple gradients, basic principles of surveying. Chain surveying traversing and triangulation, booking chain survey measurements: Plotting chain survey measurement; obstructions to chaining, compass traversing, elimination of error of closure. Compass resection.

GRP 105: HISTORY AND BASIC ELEMENTS OF PLANNING

History and meaning of planning, objectives needs and types of planning physical, social economic and environmental. Types of plans master plans district plans action area plans, subject plans etc. level of planning in Nigeria National scale urban Regional and local planning. Elements of planning in the urban and rural environments.

100 LEVEL SECOND SEMESTER

GRP 111: ELEMENTS OF PHYSICAL GEOGRAPHY II

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

GRP 112: ELEMENTS OF HUMAN GEOGRAPHY II

Patterns and interrelationship in nature and man-made (cultural) environments from man's ecologic response through agriculture to industrialization, transportation, tourism and circulation of people, commodities, series and information.

GRP 113: LOCAL FIELD STUDIES

Classified studies, identification, measurement and analysis of land. Form types vegetation types and types of agriculture and industries in the local environment. Investigation of problems and suggested remedies.

GRP 114: INTRODUCTION TO ENVIRONMENTAL SCIENCE

The environment Basic elements of matters components, mode of interaction, the earth as a system concept of energy system, the role of man in the environment. Energy systems in the atmosphere lithosphere and Biosphere. Air pollution and other hazards like erosion, drought, earthquakes, hurricanes sand floods, principles and practice of environmental conservation.

GRP 115: INTRODUCTION TO PLANNING DESIGN (STUDIO I)

The basic concepts of planning design planning scales-interpretations and use of scales for measurements. The use of maps their characteristics and interpretation design tools and their use-scale ruler, pens, curves, tracing paper set squares, T-squares, drawing board etc. dimension and standards for circulation housing, industrial recreational space requirements etc. one major design project.

GRP 116: INTRODUCTION TO MATHEMATICS FOR GEOGRAPHY AND PLANNING

Relationship between the disciplines of geography planning and mathematics basic concepts in mathematics set and unsets, rational and real numbers. Elementary algebra, basic operations as of algebra. Indices and equation (simple, simultaneous and quadratic) calculus-variables and constants dependent and independent variables, functions (inverse functions limits differentiation, integral calculus) Elementary matrix algebra. Applications to geography and planning.

GRP 117: MAP ANALYSIS

Old and new approaches, role of practical work in Geography, physiographic techniques of analysis of relief profiles (serial, superimposed project and composite profiles). Isopleths maps for relative relief, isosine and isotangent techniques. Generalized contour. Average scope Hypsometric analysis. Basin morphometry. Analysis of human features. Settlement analysis (Quodral and nearest neighbour analysis) and analysis of land use.

200 LEVEL FIRST SEMESTER

GRP 201: SPATIAL ORGANISATION OF SOCIETY

Principles and factors underlying the location and spatial arrangement of human activities. Nature of space in Geography, location of human activities. Economic modes and influence

on decision making and environmental perception of spatial activities. Gravity models and population migration and the development of agricultural transformational and industrial activities and their role in the evolution of rural urban settlements. Spatial diffusion processes.

GRP 202: INTRODUCTION TO GEOMORPHOLOGY

Definition, development, nature and scope of geomorphology. Methods of landform study deduction and inductive the dynamic process and the non-cycle concepts. Rock type their origin and characteristics. Weathering, mass movement, humid tropical processes and land form. Land forms of semi-and regions, Glacial and periglacial land form.

GRP 203: STATISTICS (DESCRIPTIVE AND INFERENTIAL) FOR GEOGRAPHY AND PLANNING

Role of statistics in research, algebraic operations. Subscriptions and summation, data distribution and graphic presentation. Probability theory the normal, binomial and poison distributions. Methods of sampling simple classification, (chi-square, simple correlation and regression)

GRP 204: 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 and changing map scales, the coordinate system and map projection. The Cartographic process, symbolizing and processing of data. The relevance of Cartographic process, symbolizing and processing of data. The relevance of Cartography in planning.

GRP 205: STUDIO II (SITE PLANNING AND LANDSCAPE DESIGN)

The philosophy theory and practice of environmental space perception, research and landscape planning. Environmental hazards assessment, environmental perception and planning, quality assessment, land evaluation of landscapes. Landscapes development and planning recreation parks and gardens planning Nigeria landscapes and landscape conservations (landscape project).

GRP 206 INTRODUCTION TO THE HISTORY OF GEOGRAPHIC THOUGHT

Geographical though, historical perspectives and relations to history of science, role of the theory and science in geography.

GRP 207 SOIL GEOGRAPHY

The meaning and scope of soil geography. Soil constituents and soil properties. Factors are processes of soil formation. Soil profile world patterns of soil distribution.

GRP 208: LAND ECONOMICS (MEANING AND SCOPE OF LAND ECONOMICS LAND IN URBAN ECONOMICS)

Definition of land as space, and natural, factor of production, consumption good, situation and as capital. Concept of land use capacity. Economics of urbanization industrialization, economy of urban size optimum size of cities. Economic base theory, Gravity model input-output model, growth pole model

GRP 209: INTRODUCTION TO POPULATION GEOGRAPHY

Nature and scope of population geography, population data sources. Population growth and components migration process and consequences. Population and planning. Urbanization processes factors, problems and planning strategies.

ELECTIVES (ANY TWO)

GRP 220: VEGETATION STUDIES

Plant evolution and distribution vegetation succession and change, methods of vegetation analysis and mapping. Ecology of various communities, the Nigeria vegetation.

GRP 221 BEHAVIOURAL GEOGRAPHY

This course examines the philosophy, theory and practice of environmental space perception research and landscape planning. The behavioural and cognitive aspects of man-space interaction are explored in relation to environmental planning and management. Topics taught include: theory of geographic space preference, environmental hazard assessment, environmental perception and planning, environmental quality assessment, theory and concept of landscape, landscape quality evaluation, and the role of surrogate stimuli in landscape development and planning of recreational parks and garden, Nigerian landscape and landscape conservation.

200 LEVEL SECOND SEMESTER

GST 222: PEACE AND CONFLICT RESOLUTION

GRP 211: QUANTITATIVE TECHNIQUES I

Importance of advanced mathematics and statistical techniques as applied to spatial correlations and area data. Multiple and partial correlation, multiple regression, analysis of variance (ANOVA) parametric and non-parametric. tests of significance

GRP 212 QUANTITATIVE TECHNIQUE I

General geography of Africa with reference to the African peoples, culture history environment, systems of agriculture, population distribution and movements, Regional discussion of development problems, effect of the physical environment on the economy especially with reference to labour, resources, transport industries and farming, the political geography of Africa, Regional co-operation and integration in Africa.

GRP 213: INTRODUCTION TO CLIMATOLOGY

The general circulation of the atmosphere scales and laws of motion forces that govern the atmosphere. Major features and models of the circulation, weather producing system air masses and fronts, frontal depression, tropical systems. Man's influence on the atmosphere.

GRP 214; CARTOGRAPHIC METHOD'S IN RESEARCH

Cartography as a communication science. Basic draughtmanship conception. Design and execution of map projections. Air photo and elementary land survey inputs in cartographic data presentation. Review of research methods in geography. Understanding maps, conducting research methods in geography. Understanding maps, conducting research with maps, cartographic illustration of research data and research methods in cartography.

GRP 215: GIS & COMPUTER APPLICATION IN GEOGRAPHY

The development of geographic information system (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 censuses, regional planning survey and remote sensing devices for gathering information at national international levels. Nature of output soft and hard copies. Goe-coding and computerization.

The role of computers in geographical and planning analysis functional component of computer. Characteristics of computers flow charts. Algorithms, computer languages BASIC FORTRAN? SPASS Input and output instructions Transfer of control. Data transformation Examples of computer applications in solving spatial problems.

GRP 216: INTRODUCTION TO GEOGRAPHIC METHODS

Methods in natural and social sciences, historical perspectives. Definition and meaning of Geographic problems objectives and hypotheses. Identification of geographic data sources their limitations. Examples includes field surveys and associates simple sampling techniques and procedures. Methods of analysis and organization of data in report writing.

GRP 217: AIR PHOTO INTERPRETATION

Aerial photographs defined types the development of aerial photographic. The importance and quality of aerial photographs. Marginal information and aerial photography, energy source, image forming process the aerial camera and scale in aerial photography. The light plan, elements of aerial photo interpretation. Interpretation with respect to land use vegetation settlements and soils. The geometry of aerial photography. Radial displacement, tilt, relief displacement, radial line triangulation and plotting parallax.

GRP 218: NATIONAL RESOURCES AND ENVIRONMENTAL PLANNING

Meaning and scope of national resources and environmental planning growth and distribution of population. Natural resources and revenue allocation, agricultural production and marketing systems, industrialization. Transport development the mass mobilization. Appropriate models and strategies for resources development and planning will be sought.

ELECTIVES

GRP 219: LAND EVALUATION

Principles of land resources evaluation, concepts, purpose and procedure of land evaluation. Rural and resources appraisal approaches to land evaluation integrated and parametric factors affecting land utilization. Remote sensing for land resources surveys. Compatibility, and suitability classification. Conservation and management of rural land resources concepts method and purpose of conservation. Assessing impact assessment.

GRP 230: ADVANCED LAND SURVEYING

Principles and methods of plane tabling and its applications. Execution of group projects on plane tabling, principles of leveling contouring, slope profiling and analysis, and topographic mapping. Execution of group projects on use of Abney level, Dumpy level and Theodolite in contouring slope profile analysis and topographic mapping. Application of leveling in site analysis and planning.

300 LEVEL FIRST SEMESTER

GRP 301: QUANTITATIVE TECHNIQUE II

Principal component analysis, factor analysis, multiple classification, model building processes and types, Gravity models, entropy maximizing models, introduction to linear programming.

- GRP 302: RESEARCH METHODS IN GEOGRAPHY**
Meaning of research choosing a research topic. Formulation of research problem. Theories and conception frameworks for research instrument questionnaire design processing of question are coding and tabulation sampling, spatial sampling frame and sampling procedures. Procedure of testing hypothesis. Association in geography, documentation, referencing bibliography, footnotes, acknowledging authors. Format of research proposal and format of thesis.
- GRP 303: ECONOMIC GEOGRAPHY**
Supply and demand of goods and services Geographical bases. Factors of production, comparative advantage regional dimensions economics of scale, economic rent. Analysis of transportation networks, location allocation models. Industrial complex analysis.
- GRP 304: POPULATION STUDIES**
Population data as vital statistics. Procedure and problems of population data collection including census. Historical outline of world population growth. Patterns of population distribution and trends of change. Theories concepts of population dominants and spatial aspects of mortality. Fertility and migration.
- GRP 305: BIOGEOGRAPHY**
Meaning and scope of biogeography. Approaches and frontiers of Biogeography Ecology, Ecosystem, components of Ecosystem, ecological efficiency, tropic structure, pyramid and biological production vegetation types. Factors affecting floral and fauna distribution at various scales. The concept of the ecosystems. The structure and functioning of terrestrial, and aquatic ecosystems. Vegetation changes through time adoption, succession and climax. Biogeochemical cycles, population and community ecology the forest ecosystem, the grassland ecosystem and conservation, principles and practices of conservation.
- GRP 306: STUDIO III (URBAN DESIGN)**
The basic concepts and practice of urban planning design. The neighbourhood concept the radius concept, the environmental area concept the cluster concept etc. the formulation minimum space standards site planning and design neighbourhood, housing layouts, industrial and commercial estates, new towns etc. it involves one practical project.
- GRP 307: RURAL SETTLEMENT SYSTEMS AND PLANNING**
The nature of rural settlement system. Rural economic base, rural resources, primary production/agriculture in the rural areas. Rural human resources base, rural population size and growth patterns. Determinants of rural population size and 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-transport, housing, marketing system Health and educational facilities. Rural industrialization. Rural settlement systems and relationships. Rural center pages, framework for rural development strategies, prospects and constraints.
- GRP 308: TRAFFIC AND TRANSPORTATION PLANNING**
Approaches and methodology of transportation planning. Theories of transportation and models of transportation flow analysis. Gravity model, intervening opportunity, models and interaction hypothesis. Law of retail gravitation and migration basis of spatial interaction, complementarily, intervening opportunity transferability, political stability and historical antecedents, models studies such as sea ports, airports, railway, roads pipe lines and inland water ways, transportation and land use planning. Trip generation and assignment.

Traffic flows and the control of traffic flows and management. Government policies on transportation. Modernization of transport system problems and prospects.

GRP 309: PROJECT PLANNING AND EVALUATION

Definitional issues articulation of public programmes and projects, evaluation of projects (cost constraint analysis, cost benefit analysis, planning programme, budgeting system, industrial analysis, cost goal analysis, cost effectiveness or utility analysis, feasibility studies and report. Sensitivity analysis

GRP 310: FLUVIAL GEOMORPHOLOGY AND HYDROLOGY

Relation between fluvial geomorphology and Hydrology. Historical development of fluvial geomorphology. Stream flow generation process water and sediment in channels. Geomorphology of the river thawing and transverse. Processes of erosion, deposition and transportation. Channel pattern. Definition and development of hydrology. Hydro meteorological studies. Soil moisture and infiltration measurement, Runoff and hydrograph analysis catchments studies: representative and experimental watershed. Models in Geomorphology and hydrology river basin development

ELECTIVES (ANY TWO)

GRP 320 AGRICULTURAL GEOGRAPHY

Nature and methodology of agricultural geography theoretical basic of agriculture demand and supply factors of agricultural production, agricultural location models such as Von Thurmen and market system models. Theory and classification of agricultural regions. Agriculture and economic development role of government policy; and reforms and agricultural reforms problems and prospects for agriculture modification.

GRP 322 GEOGRAPHY OF WATER RESOURCES

Water as a resources Hydro-climatology, underground water, river regime, water supply system, water uses and quantity water characteristics and quality. Irrigation water power and fisheries river valid development planning for water resources development water bow.

***GRP 323: PLANNING PRINCIPLES**

The nature of planning. Techniques, attitudinal, moral and ethical, economic, social, political and related aspects of planning. Spatial patterns of development, planning and related problems. Polarization and corridor development, growth poles growth centers, etc concept of the region and planning units. Approaches to planning for economic, urban and regional developments. Theories and methods of planning, plan formulation, plan evaluation, models, jurisdictional levels and framework, essentials of planning practice, including communications, graphics, interviews sand community surveys, questionnaire design and non-parametric statistics, role of citizen participation.

*Compulsory Elective

300 LEVEL SECOND SEMESTER

GRP 311: SIWES-STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME

There is a six months period of industrial attachment. The period of industrial attachment is for the acquisition of the job experience and skills in the areas of administration, town planning draughtmanship.

Cartography, Estate management, marketing, Architecture, among others. During this period students are to be attached to relevant establishment or workshops where they are to work under the supervision of the industrial supervisors from the establishment/workshop.

Lecturers are to compulsory visit the students at least twice within the period. At the end of the period, students will submit a project logbook and a project report for grading

400 LEVEL FIRST SEMESTER

- GRP 401: **SYSTEMATIC GEOGRAPHY OF NIGERIA**
A thematic approach to the physical geography of Nigeria general introduction. Ecological zones, natural resources base River Basins Geology, rocks and land forms.
- GRP 402: **HISTORY OF GEOGRAPHIC THOUGHT**
Classical Geography Greek and Roman Philosophy of Geography, Renaissance and age of discovery influence on geographic thought Muslim and Christian scholars and Geographic thought.
- GRP 403: **ADVANCED CARTOGRAPHIC TECHNIQUES I**
Scope and limitation of visual presentation of statistics. Sources and treatment of statistics for visual presentation. Criteria of significance and choice of technique. Perception and visual process of map compilation source materials base maps. Generalization watching and typography, colour, separation procedure and requirements serving methods.
- GRP 404: **THE 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 and natural resources human resources and technology, Development strategies, agriculture, industrialization education and man power development. The population problem, international trade and transfer of resources.
- GRP 405: **SPATIAL DISTRIBUTION OF UTILITIES AND SERVICE IN URBAN AREAS**
Urban areas and provisions of socio-economic facilities, location of services-centre in urban areas. Characteristics and spatial needs of different urban service, facilities. Demographic, accessibility, economic, physical and political factors in urban facilities, location of government offices business centers, medical centers or institutions, educational centers and religious institution in urban area, patronage patters of facilities, the planning of urban services location, problems and trends in studies of urban service location.
- GRP 406: **LAND USE STUDIES**
Meaning and scope of land use studies, typology of land use-residential, commercial institutional water, industrial etc. urban and rural land use studies, remote sensing in land use. Factors affecting land use and land use studies in Nigeria maps for land use studies. Classification of land use forecasting, land use controls, problems of land use studies in Nigeria.

ELECTIVES (ANY THREE)

- GRP 407: **POLITICAL GEOGRAPHY AND RESOURCE DISTRIBUTION**
The policies involved in distribution and sharing world, regional, national and local resources, the course discusses such topics as the concepts of resources, the scarce nature of resources, resources and political power, and specific examples of the influence and practice of politics in resource distribution.

GRP 408: ECOLOGY OF NATURAL RESOURCES

Man nature, culture and resources the resource process. Principles of conservation and resources use, protected ecosystem and land scrapes. Grassland and grazing, man's use of water, forestry agricultural systems and from production recreation, the sea and the arts minerals, land and biological resources, mineral energy resources, pollution and environment, limits of man's economic growth.

GRP 409: AGRICULTURAL DEVELOPMENT PLANNING

Nature and methodology of agriculture geography models of agricultural development, concepts of agricultural development classical agricultural location models, distance functions and land use, spatial equilibrium model, market mechanism, behavioural, concepts, land reforms measures, spatial diffusion process and perception.

GRP 420: REGIONAL GROWTH ANALYSIS

Current models for analyzing regional growth and development and for guiding planning policies. Use of models to find out conformities or deviation from conceptual framework, urbanization and settlement systems and regional development, location theory and regional growth, spatial interaction models in regional development shift analysis regional development Nigeria, causes and problems.

400 LEVEL SECOND SEMESTER

GRP 410: SYSTEMATIC GEOGRAPHY OF NIGERIA II

Introduction to spatial pattern of human phenomena, growth and distribution of population, industrial, transportation, agricultural production, marketing systems, city and community regions, migration flow, urban systems, modernization and development strategies.

GRP 411: CONTEMPORARY PHILOSOPHY OF GEOGRAPHY

Current methodology of geographical research, including recent paradigm shifts within geography, scientific approach to geographical research, qualification in geography, classification in geography theories and models in geography.

GRP 412: ADVANCED CARTOGRAPHIC TECHNIQUES II

Review of cartographic acquisition optical and photographic aids in cartography. The logic of automation (Computer in Cartography). Merits and demerits of computers and personal computers (PLS) the impact of computer on cartographic processes. Cartographic and geographic information system. Practical work and assignment.

GRP 413 THE DEVELOPED WORLD

Differentiation of the developed world and the developing world. Distribution of income and standards of living social, economic and political framework of the capitalist and centrally planned states. The historical evolution of the developed economics. Geographical bases of the economics of Western Europe, U.S.A. and Russia, Growth and performance of agriculture, manufacturing and service, international trade and implication of the world economy.

GRP 414: ENVIRONMENTAL RESOURCE MANAGEMENT

The concept of Environmental management Environmental perception and human response to natural and man-made hazards, urban environmental problems human response and management. The causative factors and management of the following environmental

hazards, pollution, soil erosion, flood coastal erosion, drought, and desertification, appraisal of environmental policies in Nigeria.
Environmental Impact Assessments (E.I.A.)

GRP 499 ORIGINAL ESSAY

NEW PROGRAMME

CURRICULUM FOR THE B.Sc. GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT DEGREE PROGRAMME

100 LEVEL FIRST SEMESTER

| COURSE CODE UNIT | COURSE TITLE | |
|-----------------------------|---|----|
| GST 101 | Use of English and Library | 4 |
| GST 102 | Introduction to Philosophy and Logic | 2 |
| CSC 101 | Introduction to Computer Sciences | 2 |
| GEM 101 | Elements of Physical Geography I | 2 |
| GEM 102 | Elements of Human Geography I | 2 |
| GEM 103 | Introduction to Practical Geography | 3 |
| GEM 104 | Introduction to land Surveying | 3 |
| GEM 105 | The Nigerian Environment | 2 |
| ELECTIVES | | |
| GEM 106 | Elements of Environmental Planning (Required) | 2 |
| FAA 101 | Basic Drawing I | 2 |
| TOTAL UNITS | | 24 |

100 LEVEL SECOND SEMESTER

| | | |
|---------|-----------------------------------|---|
| GST 111 | Nigeria People and Culture | 2 |
| GST 112 | History and Philosophy of Science | 2 |
| GEM 111 | Elements of Physical Geography II | 2 |
| GEM 112 | Elements of Human Geography II | 2 |
| GEM 113 | Local Field Studies | 2 |

| | | |
|---------|--|---|
| GEM 114 | Introduction to Environmental Science | 2 |
| GEM 115 | Introduction to Ecology | 2 |
| GEM 116 | Introduction to Mathematics for Geography and Planning | 2 |
| GEM 117 | Map Analysis | 2 |

ELECTIVES

| | | |
|---------|--|---|
| GEM 118 | Environmental Planning Design (Required) | 2 |
| FAA 111 | Basic Drawing II | 2 |

| | |
|--------------------|----|
| TOTAL UNITS | 22 |
|--------------------|----|

200 LEVEL FIRST SEMESTER

| | | |
|--------------------|---------------------|--|
| COURSE CODE | COURSE TITLE | |
| UNIT | | |

| | | |
|---------|---|---|
| GEM 201 | Spatial Organization of Society | 2 |
| GEM 202 | Introduction to Geomorphology | 2 |
| GEM 203 | Statistics for Geography/Planning | 2 |
| GEM 204 | Introduction to Cartography | 2 |
| GEM 205 | Global Environment Issues | 2 |
| GEM 206 | Introduction to the History of Geographic Thought | 2 |
| GEM 207 | Soil Resources | 2 |
| GEM 208 | Environmental Economics | 2 |
| GEM 209 | Population Studies | 2 |
| ENT 201 | Entrepreneurship Studies I | 2 |

ELECTIVES

| | | |
|---------|---|---|
| GEM 220 | Site Planning and Landscape Design (Required) | 2 |
| GEM 221 | Water Resources Evaluation and Management | 2 |

| | |
|--------------------|----|
| TOTAL UNITS | 24 |
|--------------------|----|

200 LEVEL SECOND SEMESTER

| | | |
|---------|---|---|
| GEM 211 | Quantitative Techniques I | 2 |
| GEM 212 | Regional Geography of Africa | 2 |
| GEM 213 | Tropical Climatology | 2 |
| GEM 214 | Cartographic Methods in Research | 2 |
| GEM 215 | GIS and Computer Application | 2 |
| GEM 216 | Environmental Hazards and Disaster Management | 2 |

| | | |
|---------|---|---|
| GEM 217 | Air Photo Interpretation | 2 |
| GEM 218 | Community Participation in Environmental Management | 2 |
| GEM 219 | Urban System and Planning | 2 |
| ENT 211 | Entrepreneurship Studies II | 2 |

ELECTIVES

| | | |
|---------|---------------------------|---|
| GEM 230 | Advanced Land Surveying | 2 |
| GEM 231 | Biodiversity Conservation | 2 |
| GEM 232 | Transportation Geography | 2 |

| | |
|--------------------|----|
| TOTAL UNITS | 26 |
|--------------------|----|

300 LEVEL FIRST SEMESTER

| | |
|--------------------|---------------------|
| COURSE CODE | COURSE TITLE |
| UNIT | |

| | | |
|---------|--|---|
| GEM 301 | Quantitative Techniques II | 2 |
| GEM 302 | Research Methods in Geography | 2 |
| GEM 303 | Economic Geography | 2 |
| GEM 304 | Population Environment and Development | 2 |
| GEM 305 | Biogeography | 2 |
| GEM 306 | Urban Environment Design | 2 |
| GEM 307 | Rural Development Strategies | 2 |
| GEM 308 | Environmental Law and Policy | 2 |
| GEM 309 | Climate Dynamics and the Environment | 2 |
| GEM 320 | Hydrology and Water Resources Management | 2 |
| GEM 321 | Field Course I | 2 |

ELECTIVES

| | | |
|---------|--------------------------|---|
| GEM 322 | Agricultural Geography | 2 |
| GEM 323 | Environmental Perception | 2 |

| | |
|--------------------|----|
| TOTAL UNITS | 26 |
|--------------------|----|

300 LEVEL SECOND SEMESTER

| | | |
|---------|-----------------|---|
| GEM 312 | Field Course II | 3 |
| GEM 399 | SIWES | 9 |

| | |
|--------------------|----|
| TOTAL UNITS | 12 |
|--------------------|----|

400 LEVEL FIRST SEMESTER

| COURSE CODE UNIT | COURSE TITLE | |
|-----------------------------|---|---|
| GEM 401 | Systematic Geography of Nigeria I | 2 |
| GEM 402 | History of Geographic thought | 2 |
| GEM 403 | Advanced Cartographic Techniques I | 2 |
| GEM 404 | The Developing World | 2 |
| GEM 405 | Spatial Distribution of Urban Utilities | 2 |
| GEM 406 | Environmental Impact Assessment | 2 |
| GEM 407 | Environmental Pollution | 2 |
| GEM 408 | Geographic Information System (GIS) | 2 |

ELECTIVES

| | | |
|---------|---------------------------------|---|
| GEM 409 | Political Geography | 2 |
| GEM 420 | Applied Climatology | 2 |
| GEM 421 | Environmental Health and Safety | 2 |

| | |
|--------------------|-----------------------|
| TOTAL UNITS | <hr/> 22 <hr/> |
|--------------------|-----------------------|

400 LEVEL SECOND SEMESTER

| | | |
|---------|--------------------------------------|---|
| GEM 410 | Systematic Geography of Nigeria II | 2 |
| GEM 411 | Contemporary Philosophy of Geography | 2 |
| GEM 412 | Advanced Cartographic Techniques II | 2 |
| GEM 413 | The Developed World | 2 |
| GEM 414 | Remote Sensing | 2 |
| GEM 415 | Environmental Geomorphology | 2 |
| GEM 416 | Regional Development Planning | 2 |

| | | |
|---------|----------------|---|
| GEM 499 | Original Essay | 6 |
|---------|----------------|---|

ELECTIVE

| | | |
|---------|---------------------------------|---|
| GEM 417 | Industrial Development Planning | 2 |
| GEM 418 | Rural Development Planning | 2 |
| GEM 419 | Ecology of Natural Resources | 2 |

| | | |
|--------------------|-------|-----------------------|
| TOTAL UNITS | <hr/> | <hr/> 26 <hr/> |
|--------------------|-------|-----------------------|

COURSE DESCRIPTION

100 LEVEL COURSES

GEM 101: ELEMENTS OF PHYSICAL GEOGRAPHY I

The meaning and scope 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 tectonics and sea floor spreading. The main constituents of the earth. Internal structure of the earth. The relief of the surface. Endogenic forces, faults and folding. The hydrosphere. The ocean water, composition and physical properties of ocean water. The ocean circulations.

GEM 102: ELEMENTS OF HUMAN GEOGRAPHY I

Theories of inter-dependence between man and nature. World human groups, races, languages, units, religious groups. World population and elementary theories of demographic transition.

GEM 103 INTRODUCTION TO PRACTICAL GEOGRAPHY

Map reading and interpretation defined. Types of map and conventional symbols, the languages of map scales types and importance as tools of reduction and interpretation. Relief representation in map. Map reduction and enlargement. Analysis of the features of human occupancies, population, settlement and communication network. Land use analysis on maps.

GEM 104: INTRODUCTION TO LAND SURVEYING

What is surveying? Surveying instruments, chain, compass, Abney level, plane tables, Alidade, the dumpy level, leveling staff, simple gradients, and basic principles of surveying. Chain surveying, traversing and triangulation, booking chain survey measurements. Plotting chain survey measurement. Obstructions to chaining compass traversing, elimination of error of closure. Compass resection.

GEM 105: THE NIGERIAN ENVIRONMENT

General description of the natural and physical features of Nigeria: vegetation, climate and climatic changes within the geographical expression; geographical distribution of people and natural resources, brief description of economic importance of these features. Exploration and exploitation of natural resources. Brief impact of these on the environment.

ELECTIVES

GEM 106: ELEMENTS OF ENVIRONMENTAL PLANNING (REQUIRED)

History, meaning and objectives of planning, types of planning, physical, social economic and environmental planning. Types of plans, master plans, district plans, action area plans, subject plans etc. level of planning in Nigeria, national, State, urban, regional and local planning. Elements of planning in the urban and rural environment.

100 LEVEL SECOND SEMESTER

GEM 111: ELEMENTS OF PHYSICAL GEOGRAPHY II

The elements and control of weather and climate as well as the dynamics of the earth atmosphere. Composition and structure of the atmosphere, radiation and heating of the earth atmospheric system. World pressure belts, winds, evaporation and condensation, clouds, world climate, man's impact and response of climate and weather conditions.

GEM 112: ELEMENTS OF HUMAN GEOGRAPHY II

Patterns and interrelationship in nature and man made (cultural) environments from man's ecologic response through agricultural to industrialization, transportation, tourism and circulation of people, commodities and information.

GEM 113: LOCAL FIELD STUDIES

Classified studies, identification, measurements and analysis of landform, infrastructure, hydrographic, communication, settlements, vegetation types and types of agriculture and industries in the local environment. Investigation of problems and suggested remedies.

GEM 114: INTRODUCTION TO ENVIRONMENTAL SCIENCE

The environment. Basic elements of matter, component, mode of interaction, the earth as a system, concept of energy, 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, principles and practice of environmental conversation.

GEM 115: INTRODUCTION TO ECOLOGY

General consideration of ecosystems including influence and interaction of human beings with their environments. Similarities, differences of ecosystems. Characteristics and ecological adaptation of various forms of life.

GEM 116: INTRODUCTION TO MATHEMATICS FOR GEOGRAPHY & PLANNING

Relationship between the disciplines of geography, planning and mathematics. Basic concepts in mathematics, set and subsets, rational and real numbers. Elementary algebra, basic operations as of algebra. Indices and equations (simple, simultaneous and quadratic) calculus-variables and constants, dependent and independent variables, functions (inverse functions limits differentiation, integral calculus). Elementary matrix algebra. Applications to geography and planning.

GEM 117: MAP ANALYSIS

Old and new approaches, role of practical work in geography, physiographic techniques of analysis of relief profiles (serial, superimposed project and composite profiles). Isopleths maps for relative relief and techniques. Generalized contour. Average slope, hypsometric analysis. Basin morphometry. Analysis of human features. Settlement analysis (Quadratic and nearest neighbour analysis) and analysis of land use

ELECTIVES

GEM 118: ENVIRONMENTAL PLANNING DESIGN (Required)

The basic concept of planning design, planning scales – interpretations and use of scales for measurement. The use of maps, their characteristics and interpretation, design tools ruler, pens, curves, tracing paper, squares, t-squares, drawing board etc. dimension and standards for circulation, housing, industrial, recreational space requirements etc one major design project.

200 LEVEL FIRST SEMESTER

GEM 201: SPATIAL ORGANISATION OF SOCIETY

Principles and factors underlying the location and spatial arrangement of human activities. Nature of space in geography, location of human activities. Economic and influence on decision making and environmental perception of spatial activities. Gravity model and population migration and the development of agricultural transformational and industrial activities and their role in the evolution of rural urban settlements. Spatial diffusion processes.

GEM 202: 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 alternative, the dynamic process and the non-cycle concepts. Rock type their origin and characteristics and landform. Landforms of semi-arid regions, glacial and periglacial landforms.

GEM 203: STATISTICS FOR GEOGRAPHY AND PLANNING

Role of statistics in research, algebra, algebraic operations. Subscriptions and summation, data distribution and graphic presentation. Probability theory, the normal binomial and poisson distributions. Methods of sampling, simple classification, simple statistical techniques (chi-square, simple correlation and regression)

GEM 204: INTRODUCTION TO CARTOGRAPHY

What is cartography? Its historical development, types of maps, functions of maps. Drafting, techniques and instrument, map compilation, design and construction of statistical maps and diagrams, techniques and changing maps scales, the coordinate system and map projection. The cartographic process, symbolizing and processing of data. The relevance of cartography in planning.

GEM 205: GLOBAL ENVIRONMENT ISSUES

System theory; the ecosystem concepts, the Gaia hypothesis; environment and society; sustainable development concepts, marine pollution; population and environment; world energy picture; biotechnology and genetic engineering (cloning); environment green movements; transportation; tourism sustainable urban development.

GEM 206: INTRODUCTION TO THE HISTORY OF GEOGRAPHIC THOUGHT

Geographical thought, historical perspective and relations to history of science, role of the theory and science in geography.

GEM 207: SOIL RESOURCES

Scope and nature of soil resources, physical and chemical properties of soils; soil formation, soil profile; soil classification, progress in soil mapping in Nigeria; soil determination; methods of soil survey; laboratory determination of soil properties-particle size distribution; bulk density, total porosity, PH, organic matter concept, available phosphorous.

GEM 208: ENVIRONMENTAL ECONOMICS

Key concepts in microeconomics, applications to management of renewable and non-renewable natural resources. Cost and benefit weighed for major environmental problems including global warning, toxic wastes, water and air pollution and conservation of wilderness and biodiversity, issues of social externalities.

GEM 209: POPULATION STUDIES

Nature and scope of population geography. Population data sources. Population growth and components, migration process and consequences. Population and planning, urbanization process, factors, problems and planning strategies.

ELECTIVES

GEM 220: SITE PLANNING AND LANDSCAPE DESIGN (Required)

The philosophy theory and practice of environmental space perception, research and landscape planning. Environmental hazards assessment, environmental perception and planning, quality assessment, land evaluation of landscapes. Landscapes development and planning, recreation parks and gardens planning Nigeria landscapes and landscape conservations (landscape project).

GEM 221: WATER RESOURCES EVALUATION AND MANAGEMENT

Water resources, sources and distribution, approaches to water resources evaluation; qualitative and quantitative approaches; water balance approach; need for evaluation; methods of measuring rainfall; analysis and interpretation of rainfall data; evapotranspiration measurements; stream flow measurements; stage, discharge velocity,

hydrographs analysis, flow variability and recession, hydrology of reservoirs. Water quality measurement and analysis – solute, suspended, bed load and yield

200 LEVEL SECOND SEMESTER

GEM 211: QUANTITATIVE TECHNIQUES I

Importance of Advanced mathematics and statistical techniques as applied to spatial correlations and area data. Multiple and partial correlation, multiple regression, analysis of variance (ANOVA). Parametric and non-parametric tests of significance.

GEM 212: REGIONAL GEOGRAPHY OF AFRICA

General geography of Africa with reference to the African peoples, culture, history and environment. Systems of agriculture, population distribution and movements. Regional discussion of development problems, effect 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.

GEM 213: TROPICAL CLIMATOLOGY

Meaning and scope of climatology and tropical climatology; the nature of the atmosphere; elements of weather and climate; radiation, temperature; precipitation, tropical climate, weather and climatic hazards in the tropics; physiological comfort; climate and urban planning in the tropics; tropical disturbances; tropical agro-climatology.

GEM 214: CARTOGRAPHIC METHODS IN RESEARCH

Cartography as a communication science. Basic draughtmanship conception. Design and execution of map projections. Air photo and elementary land survey inputs in cartographic data presentation. Review of research methods in geography. Conducting research methods in geography. Understanding maps, conducting research with maps cartographic illustration of research data and research methods in cartography.

GEM 215: GIS AND COMPUTER APPLICATION

The development of Geographic Information Systems (GIS). Data collection, storage and display, algorithms for sorting, searching and spatial manipulation. Case studies of Canadian and foreign GIS sources of data for GIS, the use of censuses, regional planning survey and remote sensing devices for gathering information at national and international levels. Nature of output, soft and hard copies. Geo-coding and computerization. The role of computers in geographic and planning analysis, functional component of computer, characteristics of computer flow charts. Algorithms, computer languages, input and output instructions. Transfer of control. Data transformation. Examples of computer applications in solving spatial problem

GEM 216: ENVIRONMENTAL HAZARDS AND DISASTER MANAGEMENT

Hazard and risk management, Risk assessment of environmental hazards. Types of hazards, occurrence, impacts, prevention. Disaster management strategies for both short term and long term

GEM 217: AIR PHOTO INTERPRETATION

Aerial photography. The importance and quality of aerial photographs. Marginal information and aerial photography, energy source, image forming process, the aerial camera and scale in aerial photography. The flight plan, elements of aerial photo interpretation. Interpretation with respect to land use, vegetation, settlement and soils. The geometry of aerial photography. Radial displacement, tilt relief displacement, radial line triangulation and plotting parallax.

GEM 218: COMMUNITY PARTICIPATIONS IN ENVIRONMENTAL MANAGEMENT

Concepts of participation; rationale for public and private participation; objectives of public and private participation; identification of various community's mode and techniques of participation; constraints to participation in environmental management; role of non-governmental organizations (NGOS) in environmental management.

GEM 219: URBAN SYSTEM AND PLANNING

Definition of urban areas. The evolution of urban centers. Elements of the urban environment, concepts and theories of urban growth, the growth pole, growth centers, core-periphery. Urbanization process and factors responsible. Evolution of urban centers in Nigeria. Problems of urban development in Nigeria

ELECTIVES

GEM 230: ADVANCED LAND SURVEYING

Principles and methods of plane tabling and its applications. Execution of group projects on plane tabling, principles of leveling contouring, slope profiling and analysis, and topographic mapping. Execution of group projects on use of Abney level, Dumpy level and Theodolite in contouring slope profile analysis and topographic mapping. Application of leveling in site analysis and planning.

GEM 231: BIODIVERSITY CONSERVATION

Loss of biological diversity and environmental pollution. Basic ecological and evolutionary principles underpinning efforts to conserve the earth's biodiversity. These principles will be examined in the context of efforts to halt the rapid increase in disappearance of both plants and animals. Some sociological and economic issues will be treated with emphasis on biological aspects of the crucial problems and case studies.

GEM 232: TRANSPORTATION GEOGRAPHY

Evolution of transportation. The various types of transport system. Evolution of transport system in Nigeria Basis and factors of spatial interaction. Transport system in pre-colonial Nigeria. Theory of transport and development. Port development in Nigeria. Air transportation in Nigeria. Rail way transportation system in Nigeria. In land water ways and development in Nigeria.

300 LEVEL FIRST SEMESTER

GEM 301: QUANTITATIVE TECHNIQUES

Principal component analysis, factor analysis, multiple regression, model building processes and types, gravity models, entropy maximizing models, introduction to linear programming

GEM 302: RESEARCH METHODS IN GEOGRAPHY

Meaning of research, choosing a research topic, formulation of research problem. Theories and frameworks for research instrument questionnaire design processing of questionnaire, coding and tabulation sampling, spatial sampling frame and sampling procedures. Proceeding for testing hypothesis, association in geography, documentation, referencing/bibliography, footnotes, acknowledging authors, format of research proposal and format of thesis.

GEM 303: ECONOMIC GEOGRAPHY

Supply and demand of goods and services. Factors of production, comparative advantages, regional dimensions, economics of scale, economic rent. Analysis of transportation networks, location allocation models. Industrial complex analysis.

GEM 304: POPULATION ENVIRONMENT AND DEVELOPMENT

Global view of general trends in population growth and development with emphasis on Nigeria. The course will explore the dynamic relationships between environmental and social forces from the Pleistocene to the present. Topics will include the transition of societies from hunting and gathering to agriculture, responses of early urban civilizations to environmental constraints, deforestation, land degradation and desertification in ancient and modern societies. The destruction and reconstruction of new world by the old. Consideration of means to distinguish natural from anthropogenic environmental changes.

GEM 305: BIOGEOGRAPHY

Meaning and scope of biogeography. Approaches and frontiers of biogeography, ecology, ecosystem, components of ecosystem, ecological efficiency, tropic structure, pyramid of biological production, vegetation types. Factors affecting floral and fauna distribution at various scales. The concept of ecosystems, the structure and functioning of terrestrial and aquatic ecosystems. Vegetation changes through time, adoption, succession and climax. Biogeochemical cycles, population and community ecology, the forest ecosystem, the grassland ecosystem and conservation, principles and practices of conservation.

GEM 306: URBAN ENVIRONMENT DESIGN (STUDIO III)

The basic concepts and practices of urban planning. The neighbourhood concept, the radbum concept, the environmental area concept, the cluster concept etc. the formulation of minimum space standards site planning and design neighbourhood, housing layouts, industrial and commercial estates, new towns etc it involves one practical project.

GEM 307: RURAL DEVELOPMENT STRATEGIES

Policy and policy thrusts for rural development in Nigeria 1900 to present day. Development needs of rural societies. Community development and roles of NGOS. Rural/urban migration. Urbanization of rural societies.

GEM 308: ENVIRONMENTAL LAW AND POLICIES

Analysis of legal, political, social and environmental dimensions of environmental problems; environmental control legislations; constitutional rights to environmental quality; the development and problems of citizen initiated environmental litigations, Federal and State response to environmental quality and standards; legal status of the former Federal Environmental Protection Agency and the powers of the Ministry of Environment; case

studies of oil pollution, noise pollution components of planning laws in Nigeria; environmental laws convention and protocols.

GEM 309: CLIMATE DYNAMICS AND THE ENVIRONMENT

Description of the physical and chemical properties and processes that shape earth's surface, land, atmosphere, ocean, and climate. Physical control on biological productivity will be evaluated. Specific topics will include global warming, air pollution and transport. Stratospheric ozone, ocean upwelling of nutrients and productivity.

GEM 310: HYDROLOGY AND WATER RESOURCES MANAGEMENT

Definition and scope of hydrology; trends in hydrology; the hydrological cycle and the approaches to its study; the drainage basin as a hydrologic unit; precipitation; interception, infiltration and soil moisture evaporation and evapotranspiration; runoff and floods; the hydraulic and mechanic of flood; runoff generation, contributing areas. Morphometry and runoff frequency; erosion by water on hill slope, sediments transport processes.

GEM 320: FIELD COURSE I

The problems of the field will vary from time to time. Geography and field work. Historical development of field studies. Types of field work. Base map for field studies. Measurement, instrumentation and statistical methods for field work in geography. Field study of physical phenomena relief, weathering, mass weighing/mass movement, rivers, coastal processes, hydrology and soil

GEM 321: AGRICULTURAL GEOGRAPHY

Nature and methodology of agricultural geography, theoretical basis of agricultural demand and supply, factors of agricultural production, agricultural location models such as Von Thunen and market system models. Agriculture and economic development role of government policy, agricultural reforms, problems and prospects for agricultural modernization.

GEM 322: ENVIRONMENTAL PERCEPTION

The principles of man-environment relations. The objective environment. The environment as perceived. The concept of perception and formation of environmental images. Environmental perception and decision making.

GEM 323: WATER RESOURCES EVALUATION AND MANAGEMENT

Water resources; sources and distribution; approaches to water resources evaluation; qualitative and quantitative approaches; water balance approach, need for evaluation; methods of measuring rainfall; analysis and interpretation of rainfall data; evapotranspiration measurements; stream flow measurements stage, discharge velocity hydrographs analysis, flow variability and recession; hydrology of reservoirs. Water quality measurement and analysis solute, suspended bed load and yield.

300 LEVEL SECOND SEMESTER

GEM 399: SIWES – STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME

This is a six months period of industrial attachment. The period of industrial attachment is for acquisition of on the job experience and skills in the areas of administration. Town planning, draughtmanship, cartography, Estate management, marketing, Architecture

among others. During this period students are to be attached to relevant establishment or workshops where they are to work under the supervision of the industrial supervisors from the establishment/workshops lecturers are to visit the students at least twice within the period. At the end of the period, students will submit a project logbook and a project report for grading.

GEM 312: FIELD COURSE II

Two weeks of fieldwork outside the State the first three to four days of the two weeks will be used for orientation. The problems of the field study will vary from time to time but will revolve round physical and human geography. At the end of the fieldwork, students will write a report, which will be graded.

400 LEVEL FIRST SEMESTER

GEM 401: SYSTEMATIC GEOGRAPHY OF NIGERIA I

A thematic approach to physical geography of Nigeria, general introduction. Ecological zones, natural resources base, river basins geology, rocks and landforms.

GEM 402: HISTORY OF GEOGRAPHIC THOUGHT

Classical geography, Greek and Roman philosophy of geography, renaissance and age of discovery influence on geographic thought. Muslims and Christian scholars and geographic thought

GEM 403: ADVANCED CARTOGRAPHIC TECHNIQUES I

Scope and limitation of visual presentation of statistics. Sources and treatment of statistics for visual presentation. Criteria of significance and choice of technique. Perception and visual process of map compilation source materials, base maps generalization procedure and requirements.

GEM 404: THE DEVELOPING WORLD

The nature of under development in the world, poverty and income distribution, production systems and links with the international economy. Geographical distribution and natural resources, human resources and technology. Development strategies, agriculture, industrialization, education and man power development. The population problem, international trade and transfer of resources.

GEM 405: SPATIAL DISTRIBUTION OF URBAN UTILITIES

Urban areas provisions of socio-economic facilities, location of service centers in urban areas. Characteristics and spatial needs of different urban service facilities. Demographic accessibility, economic, physical and political factors in urban facilities, location of government office, business centers, medical centers or institutions educational centers and religions institution in urban area, patronage patterns of facilities, the planning of urban services location, problem and trends in studies of urban service location.

GEM 406: ENVIRONMENTAL IMPACT ASSESSMENT

Theory and practice of Environmental Impact Assessment, (EIA) Environmental Audit Report (EAR) as management tools. Environmental Policy and compliance. Institutional framework for environmental management. Preparation of (EIA) report, methods of executing EIA

GEM 407: ENVIRONMENTAL POLLUTION

Composition of air, Requirements for air quality, source of pollutants and noise. Threshold levels of pollutants, physical and chemical changes in air resulting from domestic and industrial wastes. Mitigation and remediation of environmental pollution.

General description of land and water resources – with emphasis on economic aspects. Sources of pollutants. Impact of specific pollutants on ecosystems. Mitigation and remediation methods.

GEM 408: GEOGRAPHIC INFORMATION SYSTEM (GIS)

Principles of GIS; GIS applications in Environmental Management, ARC info, ARC view and other GIS packages

GEM 409: POLITICAL GEOGRAPHY

The policies involved in distribution and sharing world, regional, national and local resources, the course discusses such topics as the concepts of resources, the scarce nature of resources, resources and political power, and specific examples of the influence and practice of politics in resource distribution.

GEM 420: APPLIED CLIMATOLOGY

Application of climate to industry, agriculture, aviation, building and human settlements weather modification and their implication, Acid rain, econoclimate, drought, flood, climate change and human affairs.

GEM 421: ENVIRONMENTAL HEALTH AND SAFETY

Health and safety policies in industries and work environments, strategies and objectives. First Aid and Techniques; burns, poison, stings and bites, artificial respiration etc. accidents; classification, causes and costs, fire and fire fighting. Health and safety audits as management tools. Health and safety plans. Accidents; case studies.

400 LEVEL SECOND SEMESTER

GEM 410: SYSTEMATIC GEOGRAPHY OF NIGERIA II

Introduction to spatial pattern of human phenomena, growth and distribution of population, industrial transportation, agricultural production, marketing systems, modernization and development strategies.

GEM 411: CONTEMPORARY PHILOSOPHY OF GEOGRAPHY

Current methodology of geographical research, including recent paradigm shifts within geography scientific approach to geographical research qualification in geography, classification in geography, theories and models in geography.

GEM 412: ADVANCED CARTOGRAPHIC TECHNIQUES II

Review of cartographic acquisition optical and photographic aids in cartography. The logic of automation (computer in cartography). Merits and demerits of computers and personal computers (PCS) the impact of computer on cartographic processes. Cartographic and geographic information systems. Practical work and assignment.

GEM 413: THE DEVELOPED WORLD

Differentiation of the developed world and the developing world. Distribution of income and standards of living, social, economic and political framework of the capitalist centrally planned states. The historical evolution of the developed economics. Geographical bases of the economics of Western Europe, U.S.A. and Russia, Growth and performance of agricultural manufacturing and services, international trade and implication of the world economy.

GEM 414: REMOTE SENSING

Remote sensing defined, development of remote sensing, components, classification of remote sensing to geographical studies. Image forming process, the electromagnetic spectrum (EMS) image interpretation manual/computer, remote sensing system camera or photographic system, thermals or scanning system and Radar or micro wave system. Applications of remote sensing techniques to land use and environmental monitoring.

GEM 415: ENVIRONMENTAL GEOMORPHOLOGY

Definition, development and scope of environmental geomorphology, man-nature, geologic and geomorphic hazards and their management strategies, landslide, subsidence, earthquake, floods, soil erosion by water and wind and coastal process, groundwater use, resource extraction and associated geomorphic impact, perception of hazards, information system for environmental management a geomorphic appraisal of environmental policies in Nigeria, geographic framework for a national policy on environmental management.

GEM 416: REGIONAL DEVELOPMENT PLANNING

Current models for analyzing regional growth and development and for guiding planning policies. Use of models to find out conformities or deviation from conceptual framework, urbanization and settlement system and regional development, location in regional development, shift analysis, regional development in Nigeria, causes and problems.

GEM 499: ORIGINAL ESSAY

ELECTIVES

GEM 417: INDUSTRIAL DEVELOPMENT PLANNING

Spatial dimension in industrial location analysis, classical theories of industrial location. Some new concepts of industrial location, sources of data for industrial location analysis, methods of industrial data analysis. Problems of promotion of industrial location and development in the developing nations. Patterns of manufacturing in Nigeria and other tropical developing countries of the world.

GEM 418: RURAL DEVELOPMENT PLANNING

Objectives, scope and theoretical framework for rural development planning, rural human resources land, mineral energy, forest and water resources, process of rural development, rural social and recreational services. Rural development strategies and constraints. Rural Urban interactions. Prospects for rural development planning.

GEM 419: ECOLOGY OF NATURAL RESOURCES

Culture and resources, the resources process. Principles of conservation and resources use, protected ecosystem and landscapes. Grassland and grazing. Man's use of water, forestry, agricultural systems and food production. Recreation. The sea and its minerals, land and

biological resources. Mineral energy resources. Pollution and environment. Limits of man's economic growth.