

**RIVERS STATE UNIVERSITY
NKPOLU-OROWORUKWO
PORT HARCOURT**



**BSc GEOGRAPHY
STUDENT HANDBOOK**

2023-2028

RIVERS STATE UNIVERSITY
FACULTY OF ENVIRONMENTAL SCIENCE
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENT

Mission Statement of the University

To produce highly skilled manpower that will address the social, cultural, economic and health needs of the people in the Niger Delta region in particular, Nigeria and global environment in general.

Vision Statement of the University

The vision is to support and sustain human capacity development that will solve practical and peculiar challenging problems of the Niger Delta region in particular, Nigeria and global environment.

Motto: The motto of Rivers State University is "Excellence and Creativity".

Principal Officers of the University

1. Vice-Chancellor
Prof Nlerum Sunday Okogbule
LLB (Hons) Ife, BL (Lagos) LLM (Ife), PhD (Glasgow)
2. Deputy Vice-Chancellor Administration
Prof Nnamdi Sunny Okoroma
BSc, MSc (USA), PhD (UNIPORT)
3. Deputy Vice-Chancellor Academic
Prof Valentine Benjamin Omubo-Pepple
H.dip, M.Phil, PhD (RSUST)
4. Registrar
Dr Sydney Chukwuemeka Enyindah
BA (Hons) ABU, MA (RSU), PhD (IUO).
5. Librarian
Dr Jennifer Ngozi Blessing Igwela (CLN)
BLS (ABU), MLS (Newcastle), M.Ed (RSUST), PhD (UNN)
6. Ag. Bursar
Mr James Orji Ebere
BSc (RSU), PGD (RSU), CNA, FCCSA (USA)

Staff of the Department of Geography and Environment

S/N	Name	Qualification	Area of Specialization	Designation
1	Prof P.N. Ede (HOD)	BSc, UPH MSc, UPH PhD, UPH	Climatology	Professor
2	Prof O.B. Owei	BSc, UI MPhil., London PhD, UPH	Urban & Regional Planning	Professor
3	Dr. I.I. Weje	BSc UPH MSc, UI PhD., UPH	Urban & Regional Planning	Senior Lect.
4	Dr. S. Emejuru	BSc, BUK MSc, UPH PhD, AAU	Biogeography	Senior Lect.
5	Dr. M. Bakpo	BSc, UPH MSc, UPH PhD, Uyo	Biogeography/Environmental Ecology	Senior Lect.
6	Dr M.D. Mbee	BSc, Uyo MSc, UI PhD, UPH	Population Geography	Senior Lect.
7	Dr. T.P. Abali	BSc, UPH MSc, UPH PhD, UPH	Geomorphology	Lect. I
8	Dr. D.O. Edokpa	B.Tech., FUTA MPhil., RSU PhD, UPH	Meteorology/Climatology	Lect. I
9	Dr. N.A. Le-ol	BSc Ed, Unical MSc, UI PhD, UPH	Regional Geography	Lect. I
10	Dr S.W. Johnbull	B.Tech, RSU MSc, RSU MPhil., RSU PhD, RSU	Urban and Regional Planning	Lect. I
11	Dr. L. Akue	BSc, Calabar MSc, RSU PhD, RSU	Land-use and Environmental Management	Lect. I
12	Dr. L.M.O. Aminigbo	Dip., UNN BSc, UNN PGD., Lagos MSc, Lagos PhD, Honolulu, USA	GIS and Geomatics	Lect. II
13	Dr. M.U Didia	BSc, UPH PGD, UPH MSc, UPH PhD, RSU	Environmental Management	Lect. II
14	Dr E. Chike	B Ed., UI MSc, UPH PhD, UPH	Regional Development Planning	Lect. II
15	Mr. M.I. Inko- Tariah	BSc, UPH MSc, UI	Geomorphology	Lect. II

16	Mr. J. Brown	BSc, UPH MSc, Aberdeen,	Geospatial and Mapping Science	Lect. II
17	Mrs Akujuru	BSc, CU MSc, SA	Demography	Assist. Lect.
18	Mr Isaac Pukiche	B.Tech., Minna	Meteorology	Graduate Assist.

B. Sc. Geography

Overview

The study of geography develops the students' concept of the earth as an integrated whole and their understanding of different processes in nature and society, as well as the spatial distribution and interdependence of these processes. The focus is on learning the interaction between the environment and human activities for sustainable development. The environment is understood in its broadest sense, encompassing the physical, chemical, biological, and built environments. In studying geography, the students develop a sustainable way of life whilst promoting attitudes that value both natural and cultural diversity and active participation in solving global problems. Thus, students are trained in the various sub-fields of Geography in particular and environmental sciences in general to understand, exploit and manage their environment in a sustainable way. Core concepts in geography include place, space, landscape, systems thinking and sustainable development. The students also acquire different skills that are becoming more and more valuable in the global village.

Philosophy

The philosophy of the B.Sc. Geography programme is to equip the students with theoretical and practical knowledge to understand the interrelationships among the physical, chemical, biological and human realms of the environment so that they can make effective contributions to the development of Nigeria, Africa and the global community.

Objectives

The specific objectives are to help the student of geography:

1. describe the earth's physical, chemical, biological and human environments and their interrelationships;
2. interpret geographic concepts, theories, problems and methods so that they can apply such knowledge in solving human problems;
3. identify careers in areas like Geographic Information System, surveying, Urban and rural planning; environmental impact assessment; environmental management; climate change. Such skills will equip geography graduates to fit into many areas in both the public and private sectors of the economy;
4. apply geographical concepts to different socio-cultural contexts;
5. cultivate the ability to apply their geographical knowledge and skills to the understanding and solution of societal problems in Nigeria and elsewhere; and
6. develop a range of useful skills and competencies for public, private or self-employment.

Unique features of the programme

Demonstrable knowledge of Fieldwork in Geography

1. interpretation of data using Remote sensing and Geographic Information System;
2. classification, analyses and interpretation of Maps;
3. understanding the science of, and environment problems and how to sustainably manage them;
4. clear understanding of climate science, climate change and its global impacts; and
5. demonstration on how to deploy entrepreneurial skills in managing the environment.

Employability skills

A graduate of Geography at the bachelor's honour's level should have the following employability skill:

1. mathematical competence and basic competences in science and technology;
2. digital competence in computer and GIS;
3. analytical skills to interpret the complex environment we live in
4. social and civic competences;
5. effective communication;
6. sense of initiative and entrepreneurship; and
7. cultural awareness and expression

21st century skills emphasized

1. Critical thinking, problem solving, reasoning, analysis, interpretation, synthesizing information.
2. Research skills and practices, interrogative questioning.
3. Creativity, artistry, curiosity, imagination, innovation, personal expression.
4. Perseverance, self-direction, planning, self-discipline, adaptability, initiative.
5. Oral and written communication, public speaking and presenting, listening.
6. Leadership, teamwork, collaboration, cooperation, facility in using virtual workspaces.
7. Information and communication technology (ICT) literacy, media and internet literacy, data interpretation and analysis, computer programming.

Admission and Graduation requirements

Admission requirements:

Admission into the geography programme may be through any of the following modes:

Four (4) / Five (5) year degree admission:

In addition to acceptable scores in UTME, candidates must have obtained five Senior Secondary Certificate (SSC) credit passes which must include Mathematics, English Language and Geography and any two from Biology, Agricultural Science, Economics and Physics, in not more than two (2) sittings, to be admitted into the programme.

Direct Entry Admission:

Direct Entry applicants for admission into the B.Sc. Geography degree programme shall possess at least five credits in GCE, 'O' Level, SSCE, NECO. The credits at 'O' level must include Geography, English Language and Mathematics and any other two from Biology, Agricultural Science Economics and Physics. In addition, DE candidates shall possess a pass at 'A' level, GCE or IJMB or ND in Geography or its equivalent at least with upper credit and NCE in Geography or equivalent with at least Merit level.

HND applicants from relevant disciplines such as Surveying and Geo-informatics, Cartography, Estate Management, Town Planning, Architecture, and Environmental Sciences

will also be considered for admission provided they satisfied the requirements above. This is applicable to only five-year programme

Graduation requirements

Total minimum credit required for graduation is 120 and 90 for students admitted through UTME and Direct Entry admissions respectively. In order to graduate, a student should pass all compulsory courses. One semester will normally be devoted to Student's Industrial Training (SIWES).

Global Course Structure

100 Level

Course Code	Course Title	Units	Status	LH	PH
GST 111	Communication in English	2	C	15	45
GST 112	Nigerian Peoples and Culture	2	C	30	-
MTH 101	Elementary Mathematics I	3	C	45	-
MTH 102	Elementary Mathematics II	3	C	45	-
GEO 101	Introduction Physical Geography	2	C	30	-
GEO 102	Introduction to Human Geography	2	C	30	-
GEO 103	Introduction to Practical Geography	3	C	30	45
GEO 104	Local Field Studies	3	C	-	135
GEO 105	Introduction to Environmental Science	2	C	30	-
RSU-GEO 106	Introduction to Population Geography	2	C	30	-
RSU-GEO 107	Elementary Land Surveying	2	C	15	45
RSU-GEO 108	Elements of Photogrammetry	2	C	15	45
RSU-GEO 109	Fundamentals of Cartography	2	C	15	45
RSU-GEO 161	Environmental Resource Management	2	E	30	-
RSU-GEO 162	Soil, Water and Air Pollution	2	E	30	-
	Total	34			

200 Level

Course Code	Course Title	Units	Status	LH	PH
GST 212	Philosophy, Logic and Human existence	2	C	30	-
ENT 211	Entrepreneurship and Innovation	2	C	15	45
GEO 201	Introduction to Geomorphology and Soil Geography	2	C	30	-
GEO 202	Introduction to Climatology and Biogeography	2	C	30	-
GEO 203	Spatial Organization of Society	2	C	30	-
GEO 204	Introduction to Remote Sensing and Geographic Information System	2	C	15	45
GEO 205	Field Course	3	C	-	135
GEO 206	Statistics for Geographers	2	C	30	-
RSU-GEO 207	Introduction to Hydrology	2	C	30	-
RSU-GEO 212	Locational Analysis	2	C	30	-
RSU-GEO 213	Land Terrain Evaluation	2	C	30	-
RSU-GEO 235	Human Settlement and Development	2	C	30	-
RSU-GEO 238	Economic Geography	2	E	30	-
RSU-GEO 261	Computer Applications in Geography	2	C	15	45
	Total	29			

300 Level

Course Code	Course Title	Units	Status	LH	PH
GST 312	Peace and Conflict Resolution	2	C	30	-
ENT 312	Venture Creation	2	C	15	45
GEO 301	History of Geographical Thought	2	C	30	-
GEO 302	Geomorphology	2	C	15	45
GEO 303	Science of Climate Change	2	C	30	-
GEO 304	Biogeography	2	C	30	-
GEO 305	Research Method I	2	C	30	-
GEO 306	Field Course	2	C	-	90
GEO 307	Quantitative Techniques in Geography	2	C	30	-
GEO 308	Remote Sensing and Geographic Information System I	2	C	15	45
GEO 309	Students Industrial Work Experience Scheme (SIWES)	6	C	-	270
	Total	26			

400 Level

Course Code	Course Title	Units	Status	LH	PH
GEO 401	Systematic Geography of Nigeria	2	C	30	-
GEO 402	Contemporary Philosophy and Methodology in Geography	2	C	30	-
GEO 403	Research Methods II	2	C	30	-
GEO 404	Quantitative Techniques in Geography II	2	C	20	-
GEO 405	Project	6	C	-	270
GEO 406	Applied Climatology	2	C	30	-
GEO 407	Remote Sensing and Geographic Information System II	3	C	30	45
RSU-GEO 416	Coastal Zone Management	2	C	30	-
RSU-GEO 431	Medical and Health Geography	2	E	30	-
RSU-GEO 432	Demography	2	C	30	-
RSU-GEO 435	Transport Geography	2	C	30	-
RSU-GEO 438	Urban Geography	2	C	30	-
RSU-GEO 463	Environmental Impact Studies Process	2	C	30	-
	Total	31			

Course Contents and Learning Outcomes

GST 111: Communication in English (2 Units C: LH 15; PH 45)

Learning Outcomes

At the end of this course, students should be able to:

1. identify possible sound patterns in English Language;
2. list notable language skills;
3. classify word formation processes;
4. construct simple and fairly complex sentences in English;
5. apply logical and critical reasoning skills for meaningful presentations;

6. demonstrate an appreciable level of the art of public speaking and listening; and
7. write simple and technical reports.

Course Contents

Sound patterns in English Language (vowels and consonants, phonetics and phonology). English word classes (lexical and grammatical words, definitions, forms, functions, usages, collocations). Sentence in English (types: structural and functional, simple and complex). Grammar and Usage (tense, mood, modality and concord, aspects of language use in everyday life). Logical and Critical Thinking and Reasoning Methods (Logic and Syllogism, Inductive and Deductive Argument and Reasoning Methods, Analogy, Generalisation and Explanations). Ethical considerations, Copyright Rules and Infringements. Writing Activities: (Pre-writing, Writing, Post writing, Editing and Proofreading; Brainstorming, outlining, Paragraphing, Types of writing, Summary, Essays, Letter, Curriculum Vitae, Report writing, Note making and Mechanics of writing). Comprehension Strategies: (Reading and types of Reading, Comprehension Skills, 3RsQ). Information and Communication Technology in modern Language Learning. Language skills for effective communication. Major word formation processes. Writing and reading comprehension strategies. Logical and critical reasoning for meaningful presentations. Art of public speaking and listening. Report writing.

GST 112: Nigerian Peoples and Culture (2 Units C: LH 30)

Learning Outcomes

At the end of the course, students should be able to:

1. analyze the historical foundation of the Nigerian culture and arts in pre-colonial times;
2. list and identify the major linguistic groups in Nigeria;
3. explain the gradual evolution of Nigeria as a political unit;
4. analyze the concepts of trade, economic and Self-reliance status of the Nigerian peoples towards national development;
5. enumerate the challenges of the Nigerian State towards Nation building;
6. analyse the role of the Judiciary in upholding people's fundamental rights;
7. identify acceptable norms and values of the major ethnic groups in Nigeria; and
8. list and suggest possible solutions to identifiable Nigerian environmental, moral and value problems.

Course Contents

Nigerian history, culture and art up to 1800 (Yoruba, Hausa and Igbo peoples and culture; peoples and culture of the ethnic minority groups). Nigeria under colonial rule (advent of colonial rule in Nigeria; Colonial administration of Nigeria). Evolution of Nigeria as a political unit (amalgamation of Nigeria in 1914; formation of political parties in Nigeria; Nationalist movement and struggle for independence). Nigeria and challenges of nation building (military intervention in Nigerian politics; Nigerian Civil War). Concept of trade and economics of self-reliance (indigenous trade and market system; indigenous apprenticeship system among Nigerian people; trade, skill acquisition and self-reliance). Social justices and national development (law definition and classification. Judiciary and fundamental rights. Individual, norms and values (basic Nigerian norms and values, patterns of citizenship acquisition; citizenship and civic responsibilities; indigenous languages, usage and development; negative attitudes and conducts. Cultism, kidnapping and other related social vices). Re-orientation, moral and national values (The 3R's – Reconstruction, Rehabilitation and Re-orientation; Re-orientation Strategies: Operation Feed the Nation (OFN), Green Revolution, Austerity Measures, War Against Indiscipline (WAI), War Against Indiscipline and Corruption(WAIC), Mass Mobilization for Self-Reliance, Social Justice and Economic Recovery (MAMSER),

National Orientation Agency (NOA). Current socio-political and cultural developments in Nigeria.

MTH 101: Elementary Mathematics I (Algebra and Trigonometry) (2 Units C: LH 30)

Learning Outcomes

At the end of the course students should be able to:

1. explain basic definition of set, subset, union, intersection, complements and use of Venn diagrams;
2. solve quadratic equations;
3. solve trigonometric functions;
4. identify various types of numbers; and
5. solve some problems using binomial theorem.

Course Contents

Elementary set theory, subsets, union, intersection, complements, Venn diagrams. Real numbers; integers, rational and irrational numbers, mathematical induction, real sequences and series, theory of quadratic equations, binomial theorem. Complex numbers; algebra of complex numbers; the Argand diagram. De-Moivre's theorem, nth roots of unity. Circular measure, trigonometric functions of angles of any magnitude, addition and factor formulae.

MTH 102: Elementary Mathematics II (Calculus) (2 Units C: LH 30)

Learning Outcomes

At the end of the course students should be able to:

1. identify types of rules in Differentiation and Integration;
2. describe the meaning of Function of a real variable, graphs, limits and continuity; and
3. Solve some applications of definite integrals in areas and volumes.

Course Contents

Function of a real variable, graphs, limits and idea of continuity. The derivative, as limit of rate of change. Techniques of differentiation. Extreme curve sketching; Integration as an inverse of differentiation. Methods of integration, Definite integrals. Application to areas, volumes.

PHY 101: General Physics I (Mechanics, Thermal Physics and Waves) (3 Units C: LH 45)

Learning Outcomes

At the end of the course, students should be able to:

1. explain the difference between space and time, fundamental laws of mechanics;
2. list and explain sound types and properties of waves; and
3. explain basic principles in physics.

Course Contents

Space and Time, Units and Dimension, Kinematics; Fundamental Laws of Mechanics, statics and dynamics; work and energy; Conservation laws. Moments and energy of rotation; simple harmonic motion; motion of simple systems; Elasticity; Hooke's law, Young's shear and bulk moduli, Hydrostatics; Pressure; buoyance, Archimedes' Principles; Surface tension; adhesion,

cohesion, capillarity, drops and bubbles; Temperature; heat; gas laws; laws of thermodynamics; kinetic theory of gases; Sound. Types and properties of waves as applied to sound and light energies. Superposition of waves. Propagation of sound in gases, solids and liquids and their properties. The unified spectra analysis of waves. Applications.

PHY 107: General Practical Physics I (1 Unit C: PH 45)

Learning Outcomes

At the end of the course, students should be able to:

1. observe and explain basic principles in physics; and
2. conduct experiments on studies of meters, the oscilloscope, mechanical systems, electrical and mechanical resonant systems, light, heat and viscosity.

Course Contents

This introductory course emphasizes quantitative measurements, the treatment of measurement errors, and graphical analysis. A variety of experimental techniques will be employed. The experiments include studies of meters, the oscilloscope, mechanical systems, electrical and mechanical resonant systems, light, heat and viscosity. However, emphasis should be placed on the basic physical techniques for observation, measurements, data collection, analysis and deduction.

GEO 101: Introduction to Physical Geography (2 Units C: LH 30)

Learning Outcomes

This course helps the students to understand how the physical environment operates and functions. At the end of the course, the students should be able to:

1. describe the composition of the earth's crust, atmosphere and hydrosphere;
2. describe the origins of landforms; and
3. identify and explain the cycling of matter and energy.

Course Contents

Composition and structure of the lithosphere, atmosphere and hydrosphere; Nature, distribution, evolution and significance of the First Order Relief Forms of the earth. The earth's radiation, atmospheric and oceanic circulation systems. Introduction to the cycling of matter and energy in eco-systems.

GEO 102: Introduction to Human Geography (2 Units C: LH 30)

Learning Outcomes:

This course introduces the students to the links between the physical and human world. At the end of the course, the students should be able to:

1. compare world population;
2. identify effects of world populations on physical/environmental resources; and
3. analyze ways to sustainably manage the population and resources.

Course Contents

Scope of human geography and its relation to physical geography. World population: its distribution and patterns of growth/demographic characteristics of selected populations. Human settlements: evolution patterns and functions. Inter-relationships between urban and rural settlements. Environmental resources; 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 varying levels of technology and population densities; sustainable management of the resources; The roles of movement and flows of people, goods, energy and ideas.

GEO 103: Introduction to Practical Geography (3 Units C: LH 30; PH 45)

Learning Outcomes

Ability to read and interpret physical features in maps/aerial photography is critical for understanding geography. At the end of the course, the students should be able to:

1. interpret features, symbols and signs in maps; and
2. classify and interpret physical features in maps.

Course Contents

Map reading: location; map scale; conventional signs; representation of relief and recognition of relief forms; analysis and interpretation of relief forms on maps; analysis and interpretation of cultural features on maps. Graphical and map presentation of geographical data; isoline maps; choropleth maps; dot maps; flow maps and many others.

GEO 104: Local Field Studies (3 Units C: PH 135)

Learning Outcomes

Field work is an essential geographic activity. At the end of the course, students should be able to:

1. familiarize the students with knowledge of their local environment;
2. introduce students to the use of local knowledge and tools to tackle local problems; and
3. promote local solutions to environmental problems.

Course Contents

Local field studies on vegetation, soils, settlements, earth's resources, landforms, market surveys, population, rural or urban surveys and weather.

GEO 105: Introduction to Environmental Sciences (2 Units C: LH 30)

Learning Outcomes

This course introduces the students to basic definitions of environmental science and how the environment operates. At the end of the course, the students should be able to:

1. illustrate the multidisciplinary nature of environmental science;
2. define environmental science;
3. interpret how the environment works; and
4. demonstrate how to manage the environment sustainably.

Course Contents

Definitions of environmental science; multidisciplinary nature of environmental science; components of the environment; Environment concepts, Environment as a system; Energy systems in the atmosphere, biosphere, hydrosphere, and lithosphere. Current environmental issues, including climate change, air pollution and other natural hazards; erosion, drought, earthquakes, hurricanes, floods and the likes. Role of man in the environment.

RSU-GEO 106: Introduction to Population Geography (2 Units C: LH 30)

Senate Approved Relevance

Population geography is proposed because it draws from the mission and mandate of the university, to produce manpower that will address the social, cultural, economic and human capital development needs in the Niger Delta Region in particular, and Nigeria in general.

Overview

Life in general is always connected to a space, from the onset (birth) to the end point (death). The totality of human lifetime is lived across space. Population Geography is the study of such experiences and this course seeks to draw out some key features of the diverse lives lived across space. Nigeria is the most populous country in Africa, and among the countries with high population growth in the world, with a youthful population characterized by high fertility rates. Population geography will expose students to the dynamics of population growth, and how it can be controlled and annexed to improve life, standard of living and contribute to human capital development.

Therefore, this course is focused on the scientific study of people, their spatial distributions and density. Also, it examines the increase and decrease in population in terms of fertility and mortality, peoples' movements over time as regards to migration, general settlement patterns and other parameters such as occupation, education and how people form the geographic character of a place. Population geography is closely related to demography, the study of population statistics and trends.

Objectives

The objectives of this course are:

- 1) introduce students to population geography and the sources of population data;
- 2) acquaint students with the types of census, the difference between sample surveys and census and the uses of vital registration;
- 3) examine the procedure and problems faced in population data collection in Nigeria;
- 4) explore the key population concepts in population geography;
- 5) explain the determinants of fertility, mortality and migration;
- 6) examine the factors that influence population distribution across Nigeria: and
- 7) examine the population policy of Nigeria.

Learning Outcomes

At the end of the course students should be able to:

- 1) state and explain the three main sources of population data;
- 2) explain the two types of census, identify three difference between census and sample survey as well as highlight five uses of vital registration;
- 3) explain the three main concepts in population geography;

- 4) explain five challenges faced in data collection in Nigeria;
- 5) identify three determinants each of fertility, mortality and migration respectively;
- 6) list and discuss five factors that influence population distribution across Nigeria; and
- 7) outline five goals of the Population Policy of Nigeria.

Course Contents

Definition of population geography. Examination of population data sources. What is census and the types of census. History of census in Nigeria. Procedure and problems of population data collection including censuses. The Nigerian population structure, distribution patterns and their implications. Historical outline of world population growth. Patterns of population distribution and trends of change. Concept of fertility. Concept of mortality. Concept of migration. Determinants and spatial aspects of mortality, fertility and migration. Population distribution and composition across Nigeria. Global population growth. Population polices across the world. Population policy in Nigeria. Population concepts.

Minimum Academic Standards

Classroom size 42m²; Public address system; Multimedia projector; White board with marker; Laptop and pointer.

RSU-GEO 107: Elementary Land Surveying (2 Units C: LH 15; PH 45)

Senate Approved Relevance

This course intends to furnish students with requisite skills in land surveying, so they can map and delineate boundaries of land and other phenomena in geographical space. This significantly conforms with the University's mandate to proffer solutions to critical environmental and developmental challenges of coastal areas such as Rivers State.

Overview

Surveying has been important since the beginning of civilization. Its earliest applications were in measuring and making boundaries of property. Throughout the years, its relevance has steadily increased with the growing demand for a variety of maps and other spatially related information. Acquisition of ground-based geospatial data for geographical analysis of the coastal terrain of the Niger Delta region requires the skills of land surveying.

Today, the importance of measuring and monitoring our environment is becoming increasingly critical as our population expand, land value appreciate, natural resources dwindle and human activities continue to stress the quality of our land, water and air. Contemporary practice in land surveying employs ground, aerial and satellite technologies to measure and monitor the earth and its natural resources.

Objectives

The objectives of this course are to:

- 1) equip students with the knowledge of the specialized methods and techniques in land surveying;
- 2) introduce students to the methods and procedures for making land survey measurements;
- 3) identify the importance of land surveying in our socio-economic development;
- 4) expose students to the rudiments of carrying traversing in land surveying;

- 5) acquaint students with the methods and techniques in achieving closure of angles in a survey traverse;
- 6) expose students to the basic instruments used in determining differences in height between two points;
- 7) train students in the methods of determining differences in height between two points, and
- 8) introduce students to the concept of electronic land surveying.

Learning Outcomes

Students should have achieved the following skills at the end of the course;

- 1) distinguish five specialized methods of carrying out land surveying activities;
- 2) explore seven ways commonly used by land surveyors to obtain linear measurement on the earth surface;
- 3) appraise ten physical development activities or science-based disciplines where land surveying is applied;
- 4) apply five methods of computing areas of geometric entities from a survey traverse;
- 5) identify five ways of correcting misclosure of angles in a survey traverse;
- 6) operate six instruments used to determine differences in elevation between two points;
- 7) examine five methods of determining differences in elevation between two points on the earth surface; and
- 8) manipulate ten digital instruments used in modern land surveying activities.

Course Contents

History of land Surveying. Types of land Surveying. Importance of land surveying. Uses of land surveying. Field Codes and Ethics in surveying. Erecting and dropping of perpendicular lines. Circumnavigation of obstacles. Basic principles of land surveying. Accuracy in surveying. Linear or horizontal measurements. Sources of error in surveying. Coordinate systems. Open and Closed Traverse. Chain surveying; instruments and method. Compass surveying; instruments and method. Electronic surveying; Instruments and method. Measurement of angles. Booking and Plotting. Levelling etc.

Minimum Academic Standards

Classroom size 42m²; public address system; multimedia projector; white board with marker; Laptop and pointer. Internet modems with data, internet enabled all in one desktop computer of 16G RAM, 1TB Hard disk (1-3 students), ArcGIS 10.8 educational license. Total station. Theodolite. Prismatic compass. Abney level. Differential GPS, Hand held GPS. Cross staff. Measuring tapes. Electronic distance measurement (EDM) Ranging poles.

RSU-GEO 108: Elements of Photogrammetry (2 Units C: LH 15; PH 45)

Senate Approved Relevance

The course is intended to arm students with the state-of-the-art techniques in geospatial data acquisition, processing and analyses through photographic images for the development of the parts of the Niger Delta region. This is compliant with the University's vision to play pivotal role in physical and socio-economic development of the coastal region where it is situated.

Overview

Photogrammetry produces image datasets used to derive critical information such as distances, elevation, area, volume and cross sections for compiling topographic maps from measurements made on photographs. Critical factors considered in identifying spatial features are shapes, sizes, pattern, shadows, tones and texture of the image.

Photogrammetry instruments have been improved continually, so that spatial data collected meets very high accuracy standards. Its relevance is in the speed of collecting geospatial datasets, relatively low cost, ease of obtaining topographic details especially in inaccessible areas and reduced likelihood of omitting details in spatial data collection.

Objectives

The objectives of this course are to:

- 1) introduce students to the historical concepts in the development of photogrammetry;
- 2) gain an understanding of traditional and digital photogrammetry;
- 3) recognise how the advancement in technology has revolutionized photogrammetry;
- 4) describe the procedures of acquisition of photographic image;
- 5) characterise space based, aerial based and ground based photogrammetric sensors;
- 6) relate the geometric properties of an image acquisition sensor;
- 7) explain the components and functionalities of a Digital Photogrammetric Workstation;
and
- 8) utilise modern techniques in production of ortho-rectified imagery for geospatial analyses.

Learning Outcomes

Students should have achieved the following skills at the end of the course:

- 1) illustrate using at least six scholars on their contributions to the development of photogrammetry;
- 2) express ten advantages and five disadvantages of digital photogrammetry over the traditional photogrammetry;
- 3) consider ten milestones in the history and development of photogrammetry;
- 4) highlight five processes of acquiring a photographic image;
- 5) list ten space-based sensors for photogrammetric applications;
- 6) identify ten geometric parameters of an image acquisition sensor;
- 7) analyse five metric contents of a digital image from a photogrammetric workstation;
and
- 8) describe ten key steps using a named software to acquire and process an ortho-rectified imagery.

Course Contents

Definition and History of photogrammetry. Photogrammetric systems. Stereoscopy and Restitution. Geometric bases of photogrammetry. Distortion and Calibration of photogrammetric instruments. Modalities of image acquisition. Flight planning. Types of aerial cameras. Vertical photographs and scale. Relief displacement and flying height. Digital photogrammetry using appropriate software. Traditional vs digital photogrammetric systems. Image orientation and stereo-plotting. Digital image processing. Formats of digital images. Image matching, DTM generation, digital orthophoto creation. Digital line map production, digital monopleting. Principles and methods of photogrammetric mapping using Drone technology. Computer applications in photogrammetry.

Minimum Academic Standards

Classroom size 42m²; public address system; multimedia projector; white board with marker; laptop and pointer. internet modems with data, internet enabled all in one desktop computer of 16G RAM, 1TB Hard disk (1-3 students), ArcGIS 10.8 educational license. Erdars Imaging, Idrisi.

RSU-GEO 109: Fundamentals of Cartography (2 Units C: LH 15; PH 45)

Senate Approved Relevance

The course will introduce students to the rudiments of map making. This is to reinforce the University's mandate and vision in providing training in critical areas to foster an understanding of the immediate region.

Overview

Cartography is concerned with reducing the spatial characteristics of large area of the earth or other celestial body and putting it in map form to make it observable. In other words, it involves all the steps needed to produce a map. Mapmakers, however, tend to limit use of the term to the map-finishing operations, in which the master manuscript is edited and color separation plates are prepared for lithographic printing.

People have used maps for centuries to represent their environment. Maps are used to show locations, distances, directions and the size of areas. Maps also display geographic relationships, differences, clusters and patterns. Maps are used for navigation, exploration, illustration and communication in the public and private sectors. Nearly every area of scientific enquiry uses maps in some form or another. Maps, in short, are an indispensable tool for many aspects of professional and academic work.

Objectives

The objectives of this course are to:

- 1) appraise the historical concepts in the development of cartography;
- 2) give examples of how advancements in technology revolutionized cartography;
- 3) define the concept of scale reference and coordinate systems;
- 4) analyse concepts of the shape of the earth in relation to Ellipsoidal and Geoidal surfaces;
- 5) acquaint students with the understanding of the various cartographic projection techniques and methods;
- 6) derive digital terrain models (DTM), Digital Elevation Models (DEM), Topographic and Thematic Maps of various interests from imageries; and
- 7) review the basics and rudiments of both analogue and digital mapping.

Learning Outcomes

Students should have achieved the following skills at the end of the course:

- 1) critically evaluate six scholars and their contributions to the development of cartography;
- 2) examine ten milestones in the development of cartography;
- 3) discuss seven relevance of scale in a map and describe two types of coordinate systems;
- 4) explain three key factors why surfaces are not equidistant and gravity attraction is different at every point;
- 5) illustrate five types of map projections and three most suitable types in mapping our locality;
- 6) highlight ten steps to produce a digital terrain model (DTM), digital elevation model (DEM), topographic and thematic map and the uses; and
- 7) describe ten equipment/tools needed for the production of both analogue and digital maps.

Course Contents

Introduction to Cartography. Nature of Cartography. History of Cartography. Cartographic Visualization. Graticules and Cartometry. Map Characteristics. Modern Trends in Mapping. Earth-map relationship and basic geodesy. Map Projections. Scale, Reference and Coordinate system. Basic map transformation. Sources of map data. Map classification. Census and sampling data. Digital cartography. Models for digital cartographic information. Map digitizing. Perception and cartographic design. Color theory and models. Color, pattern creation and specification. Typography and lettering in mapping. Map compilation. Demography and statistical mapping. Cartographic abstraction. Symbolization, selection and generalization principles. Topographic and thematic maps. Map production and reproduction.

Minimum Academic Standards

Classroom size 18m²; public address system; multimedia projector; white board with marker; laptop and pointer. Internet modems with data, internet enabled all in one desktop computer of 16G RAM, 1TB Hard disk (1-3 students), ArcGIS 10.8 educational license. Topographic maps, prismatic compass, handheld GPS. Lighting tables, measuring tapes and plane table equipment.

RSU-GEO 161: Environmental Resource Management (2 Units E: LH 30)

Senate Approved Relevance

This course will provide students with a comprehensive understanding of how environmental principles can be applied to the management and conservation of natural resources and ecosystems. This is in line with the University's vision to produce graduates who can contribute to the sustainable development of the region's abundant natural resources, as well as their conservation.

Overview

Geography focuses on improving the environments that we live in so that we can plan change, monitor development, and improve the well-being of people, as well as the overall health of the environment. Environmental resource management is a practice in Geography that aims to ensure that ecosystem services are protected and maintained for future human generations,

Furthermore, it ensures that there is sustainable utilization of major natural resources, such as land, water, air, minerals, forests, fisheries, and wild flora and fauna. Together, these resources provide the ecosystem services that provide better quality to human life.

Objectives

The objectives of this course are to:

- 1) outline the various types of environmental resources;
- 2) review the options for environmental resource management and policy issues;
- 3) name the benefits gained from the environment through ecosystem services;
- 4) introduce students to the environmental problems, such as deforestation, poaching of wildlife;
- 5) determine the instruments and best practices guiding the sustainable; development and management of environmental resources;
- 6) appraise the ways to avoid overexploitation of natural resources;
- 7) educate students on how to conserve natural resources.

Learning Outcomes

Students should have achieved the following at the end of the course.

- 1) identify ten types of environmental resources;
- 2) explain five environmental resources management strategies and policy issues surrounding them;
- 3) explain seven benefits gained from the environmental through ecosystem services;
- 4) identify five types of environmental problems and pollution;
- 5) understand and demonstrate the various practices involved in guiding environmental resources;
- 6) explain five ways to reduce the overexploitation of natural resources; and
- 7) identify five natural resources and explain how to conserve them.

Course Contents

The concept of conservation, nature and resource. Resources classification. Challenges of resource over use. Resource planning and conservation. Issues to resource conservation. Natural resource. Reasons for overexploitation of natural resource. Consequences of overexploitation of our natural resource. Characteristics of renewable natural resource. Benefits of resource conservation. Resource evaluation. Ecological principle of resources utilization and management. Sustainable development. Rational use of resource and the concept of sustainable development. The impact of human activities on environmental resource. Non-renewable and renewable resources. resource curse theory.

Minimum Academic Standards

Classroom size 42m²; public address system; multimedia projector; white board with marker; laptop and pointer.

RSU-GEO 162: Soil, Water and Air Pollution (2 Units E: LH 30)

Senate Approved Relevance

This course is proposed to imbibe in students an overview of how human activities impact all spheres of the environment, whether, soil, water or air. This is in line with the University's vision to proffer solutions to the environmental challenges of the Niger Delta region.

Overview

Water, air and soil are three critical domains that man cannot live without. For instance, water is one of the most important natural resources for domestic and industrial operations. Understanding the integrity of soil to support an ecosystem plays an important role in land management decisions. Air quality is a third critical resource for humans, plants, animals and all other organisms within a natural area.

Overtime, these natural resources are impacted by human activities, resulting in environmental pollution that can be harmful to the health of living organisms. Air, water and soil pollution are the three main kinds of pollution causing health hazards today. The knowledge of this course will proffer solutions to environmental problems of Niger Delta in particular and Nigeria in general.

Objectives

The objectives of this course are:

- 1) introduce students to the concept of environmental pollution;
- 2) identify the types of environmental pollution;
- 3) determine the compositions of water, air and soil pollution;
- 4) know the benefits of water, air and soil;

- 5) understand the sources of water, air and soil pollution;
- 6) ascertain the effects of water, air and soil pollution on the environment; and
- 7) determine the preventive measures for water, air and soil pollution.

Learning Outcomes

Students should have achieved the following at the end of the course:

- 1) explain two basic concepts of environmental pollution;
- 2) discuss three types of environmental pollution;
- 3) determine three compositions of water, air and soil;
- 4) highlight five importance of water, air and soil;
- 5) explain five sources of water, air and soil pollution;
- 6) discuss four effects of water, air and soil pollution; and
- 7) identify five preventive measures for water, air and soil pollution.

Course Contents

Introduction to fundamentals of environmental pollution. Soil, water and air pollution as a system. Compositions of soil, water and air. The difference between environmental contamination and pollution. Benefits of soil, water and air. Types of pollution (soil, water and air). Benefits of soil, water and air pollution. Causes of soil, water and air pollution. Sources air pollution. Sources of water pollution. Sources of soil pollution. Agricultural activities and pollution. Waste management and environmental pollution. Industrial activities and pollution. Mining activities and pollution. Construction and demolition as sources of waste. Natural sources of pollution, such as volcanic eruption. Microbial contamination of soil, water and air. Effects of soil, water and air pollution. Preventive measures of soil, water and air pollution. The problem of black soot in Port Harcourt and the environs.

Minimum Academic Standards

Classroom size 18m²; public address system; multimedia projector; white board with marker; laptop and pointer.

GST 212. Philosophy, Logic and Human Existence (2 Units C: LH 30)

Learning Outcomes

A student who has successfully gone through this course should be able to:

1. know the basic features of philosophy as an academic discipline;
2. identify the main branches of philosophy & the centrality of logic in philosophical discourse;
3. know the elementary rules of reasoning;
4. distinguish between valid and invalid arguments;
5. think critically and assess arguments in texts, conversations and day-to-day discussions;
6. critically assess the rationality or otherwise of human conduct under different existential conditions;
7. develop the capacity to extrapolate and deploy expertise in logic to other areas of knowledge, and
8. guide his or her actions, using the knowledge and expertise acquired in philosophy and logic.

Course Contents

Scope of philosophy; notions, meanings, branches and problems of philosophy. Logic as an indispensable tool of philosophy. Elements of syllogism, symbolic logic—the first nine rules of inference. Informal fallacies, laws of thought, nature of arguments. Valid and invalid arguments, logic of form and logic of content — deduction, induction and inferences. Creative and critical thinking. Impact of philosophy on human existence. Philosophy and politics, philosophy and human conduct, philosophy and religion, philosophy and human values, philosophy and character moulding.

ENT 211 – Entrepreneurship and Innovation (2 Units C: LH 15; PH 45)

Learning Outcomes

At the end of this course, students should be able to:

1. explain the concepts and theories of entrepreneurship, intrapreneurship, opportunity seeking, new value creation, and risk taking;
2. state the characteristics of an entrepreneur;
3. analyze the importance of micro and small businesses in wealth creation, employment, and financial independence;
4. engage in entrepreneurial thinking;
5. identify key elements in innovation;
6. describe stages in enterprise formation, partnership and networking including business planning;
7. describe contemporary entrepreneurial issues in Nigeria, Africa and the rest of the world; and
8. state the basic principles of e-commerce.

Course Contents

Concept of Entrepreneurship (Entrepreneurship, Intrapreneurship/Corporate Entrepreneurship,). Theories, Rationale and relevance of Entrepreneurship (Schumpeterian and other perspectives, Risk-Taking, Necessity and opportunity-based entrepreneurship and Creative destruction). Characteristics of Entrepreneurs (Opportunity seeker, Risk taker, Natural and Nurtured, Problem solver and change agent, Innovator and creative thinker). Entrepreneurial thinking (Critical thinking, Reflective thinking, and Creative thinking). Innovation (Concept of innovation, Dimensions of innovation, Change and innovation, Knowledge and innovation). Enterprise formation, partnership and networking (Basics of Business Plan, Forms of business ownership, Business registration and Forming alliances and joint ventures). Contemporary Entrepreneurship Issues (Knowledge, Skills and Technology, Intellectual property, Virtual office, Networking). Entrepreneurship in Nigeria (Biography of inspirational Entrepreneurs, Youth and women entrepreneurship, Entrepreneurship support institutions, Youth enterprise networks and Environmental and cultural barriers to entrepreneurship). Basic principles of e-commerce.

GEO 201: Introductory Geomorphology and Soil Geography (2 Units C: LH 30)

Learning Outcomes

This course introduces the students to key concepts and elements in geomorphology and soil geography: At the end of the course, the students should be able to:

1. define the meaning, scope, and why different landforms exist;
2. identify and characterize various landforms in his community; and

3. explain their importance.

Course Contents

The meaning and scope of geomorphology, rock types, their origins and characteristics. Nature and origin of second order relief forms of the continents. Structural landforms. The meaning and scope of soil geography. Factors of soil formation. Zonal soils; azonal soils and intrazonal soils, Importance of landforms to human development.

GEO 202: Introductory Climatology and Biogeography (2 Units C: LH 30)

Learning Outcomes

The world is facing serious challenge of climate change and other environmental problems. There is urgent need to find sustainable solutions. At the end of the course the students should be able to:

1. define and differentiate between weather and climate;
2. describe the science of weather and climate;
3. identify and classify the drivers of climate and ecological systems; and
4. explain man's impacts on the environment.

Course Contents

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 and non-frontal depressions; tropical systems. Climatic classifications and global systems of climate. Man's influence on the atmosphere. Basic structure and dynamics of plant communities, factors influencing plant growth. Survey of characteristics, distribution and controlling factors of principal or zoned vegetation types. Man's influence on vegetation.

GEO 203: Spatial Organisation of Society (2 Units C: LH 30)

Learning Outcomes

Human societies and geographic features are not evenly distributed or organized. This course helps the students to find order out of the chaos. At the end of the course the students should be able to:

1. define basic concepts of spatial organization.
2. classify different phenomena (population, production, and geographic features) that are spatially dispersed; and
3. interpret land use and patterns and interactions.

Course Contents

Basic concepts of spatial organization: principles of classification of geographical phenomena; growth and spatial distribution of population. Production systems; typology and distribution; location, spacing and growth of settlements; movements over space and transport networks. Land-use; typology, patterns and interaction.

GEO 204: Introduction to Remote Sensing and GIS (2 Units C: LH 15; PH 45)

Learning Outcomes

This course helps the students to understand key concepts in remote sensing and Geographic information system. It is expected that at the end of the course, the students should be able to:

1. explain the history of remote sensing;
2. explain the fundamental principles of remote sensing;
3. apply remote sensing to problem solving;
4. explain the history of geographic information system;
5. illustrate the linkage between remote sensing and GIS;
6. interpret satellite images; and
7. apply GIS to problem solving.

Course Contents

Fundamentals of remote sensing (Definition, history of remote sensing, components of remote sensing, electromagnetic radiation), RS process. Relationship between Remote sensing and Geographic Information System; and the applications of remote sensing remote sensing systems, Imageries across the spectrum, Image acquisition, Image restoration and enhancement, Image processing and interpretations, Image storage and retrieval formats; applications in agriculture, environmental resources management, monitoring and change detection, Urban planning.

GEO 205: Field Course (3 Units C: PH 135)

Learning Outcomes

Field study is an important geographic activity. At the end of the course, students should be able to:

1. familiarize the students with their local and surrounding environment;
2. students should have been taken on study tour beyond their local environment; and
3. familiarize themselves with geographic features, social and economic patterns of human activities.

Course Contents

Detailed study of the geographical and geological forms and processes, the man and environment interactions, and the social and economic patterns as well the urban geography. Their knowledge of cartography, remote sensing, GIS are all brought to bear in interpreting their environment.

GEO 206: Statistics for Geographers (2 Units C: LH 30)

Learning Outcomes

Quantification has become an important aspect of research in geography. This course introduces the students to various methods and techniques of geographic research. At the end of the course, the students should be able to:

1. use statistics in geographic research;
2. sample from a given population; and
3. apply descriptive and inferential statistics in geographic research.

Course Contents

The place of statistics in geography; Data description and characteristics; Discrete and continuous variables, Data Scales, Frequency distributions and graphical presentation; Measures of central tendency and variability. Methods of sampling; spatial sampling, description of point patterns; nearest neighbour analysis.

RSU-GEO 207: Introduction to Hydrology (2 Units C: LH 30)

Senate Approved Relevance

The goal of this course is to provide students with geographic skills, information and expertise needed to solve the water-related issues that the inhabitants of the Niger Delta region face. This is in line with the University's vision to respond to the environmental challenges of its region, especially the Niger Delta.

Overview

Water is one of our most important natural resources and without it, there will be no life on earth. Hydrology is the study of water and hydrologists examine the physical processes involved in the global water cycle, which spans most disciplines in Earth and environmental sciences. The lifestyle we have become accustomed depends heavily upon having plenty of cheap, clean water available, as well as an inexpensive, safe way to dispose of it after use. The supply of water is limited by nature, although there is plenty of water on earth, it is not always in the right places, at the right time and in the right quality. Adding to the problem is the increasing evidence that chemical wastes improperly discarded yesterday is showing up in our water supplies today.

Poor quality water supply is one of the major problems plaguing the inhabitants of the Niger Delta. Its adverse effects have been noticed in various manifestations in the region in terms of water borne diseases, sanitary implications, children's educational attainment, etc. Despite the fact that the region is well endowed with water resources, it has continued to grapple with poor quality water supply and this problem continued to exacerbate with the passage of time. A course in hydrology has evolved as a science in response to the need to understand the complex water systems of the earth and help solve water problems. Hydrologists play a vital role in finding solutions to water problems.

Objectives

The objectives of this course are to:

- 1) explain the evolution of hydrology as a science;
- 2) examine the meaning and importance of hydrology;
- 3) identify the branches of hydrology and their inter-relationships;
- 4) examine the basic concepts in hydrology;
- 5) ascertain the measurement tools commonly used in hydrology;
- 6) examine basic hydrological tools for data collection and analysis;
- 7) undertake the development of models in hydrology; and
- 8) examine the applications of hydrology to practical environmental challenges.

Learning Outcomes

Students should have achieved the following at the end of the course:

- 1) identify at least two epochs in the evolution of hydrological sciences;
- 2) explain five importance of hydrology as a science;

- 3) describe four branches of hydrology and their inter-relationship;
- 4) identify five basic concepts central to the study of hydrology;
- 5) determine three measurement tools commonly used in hydrology;
- 6) explain four data collection and analytical tools in hydrology;
- 7) develop at least one model applicable to hydrology; and
- 8) apply two solutions to practical hydrological problems in the environment.

Course Contents

Meaning of, and importance of hydrology. Branches of hydrology. Basic concepts of hydrology. History of hydrology. The hydrologic cycle. Water budget. The global water cycle, lakes, rivers, wetlands, groundwater. The cryosphere, water resources, aquatic biology, and water chemistry. Measurement tools in hydrology. Watershed: concepts and laws. Tools of hydrologic data analysis. Models in hydrology. Applications in hydrology. Hydrology related authorities and organizations. Person's influential in the field of hydrology. Planning and organization of hydrological networks. Methods of drainage basin instrumentation and observation. Data processing techniques. Techniques of analysis and use of hydrological data. Estimation of unit hydrograph.

Minimum Academic Requirement

Classroom size 42m²; public address system; multimedia projector; white board with marker; laptop and pointer.

RSU-GEO 212: Locational Analysis (2 Units C; LH 30)

Senate Approved Relevance

The course is designed to provide students with adequate training in the theory and practice of optimal location of economic activities in space. This is in line with the University's vision to address the Niger Delta's socio-economic problems Nigeria for the benefit of the people..

Overview

Locational analysis is a modern approach to human geography. Its concept and components are perfect tools in national, regional, or local facilities' land use planning. In the Niger Delta area where the Rivers State University is situated, the primary purpose of this course is to ensure that important economic resources are rationed to achieve desirable spatial interaction.

The main aim of the locational analysis is to ensure, that the undesirable spatial conflict of human interaction is kept to its practicable minimum. A primary function of locational analysis in the decision-making process is to ensure that decisions on proposed project location and allotments are embedded with spatial data for economic viability.

Objectives

This course will introduce students to:

- 1) the concepts and principles of locational analysis and the theories;
- 2) define the approaches to location theory;
- 3) propose and interpret location/allocation models;
- 4) state the impact of scale and representation on model outcomes;
- 5) use computerized optimization techniques relevant to locational analysis;
- 6) evaluate the impacts of locational choices and conflicts; and
- 7) apply GIS tools to locational analysis.

Learning Outcomes

Upon successful completion of this study, students will be able to:

- 1) explain two location theories, history and evolution;
- 2) discuss three different approaches to location theories;
- 3) develop two real-world location/allocation models like market area analysis;
- 4) examine two impacts of scale and representation model outcomes;
- 5) solve a real-world location/allocation problems using at least two computerized optimization techniques;
- 6) discuss three impacts of locational choices and conflicts; and
- 7) use two GIS operations to estimate model parameters, and display and evaluate model results.

Course Contents

Introduction to location theory and optimization methods; History of location theory. Concepts of geography location; absolute and relative location. Location analysis models (Gravity model-Albert Newton; optimal spatial pattern model-William Alonso; Central place model-Walter Christaller; Isolated state model-Johann Heinrich Von Thunen; Location triagle model-Alfred Weber; Growth pole strategic model-Francois Perroux). Solving location-allocation problems; optimization methods. Spatial interaction and spatial allocation models; market area analysis. The gravity and maximum entropy modelling. The transportation problem & its dual problem. Central place and threshold constraints. Urban land use and suitability. Linear programming approaches to land use suitability. Plant location, market potential, and the least cost Weber model. Public facility location theory. Measures of central tendency & locational equity versus efficiency. The location set-covering problem. Heuristics and interrelationships between facility location models. Laboratory Exercises; New route analysis. Service area analysis. Closest facility analysis. Cost matrix analysis. Vehicle routing problem analysis. Location-Allocation analysis.

Minimum Academic Standards

Classroom size 42m², public address system, multimedia projector, whiteboard with a marker, RSU-GEO 213: **Land Terrain Evaluation** (2 units; C; LH=30; PH=0)

Senate Approved Relevance

The aim of this course is to acquaint students with the principles of landuse planning which promotes right decisions on the uses which a location serve and its value. This is in line with the University's vision to produce graduates who can contribute to the development of the region, as well as, the optimal use of terrestrial spaces to the benefit of humankind.

Overview

Land evaluation is linked with the assessment of land performance when utilised for an identified purpose. It encompasses the implementation and clarification of basic assessments of climate, soils, vegetation and other features of land with respect to the necessities for alternate use of the land. The essence of evaluation and planning is to consider the various alternatives that fits the physical, economic and social setting of the domain considered. The appraisals must integrate economic considerations for the area.

The appraisal process, however, does not determine the landuse alterations that are to be effected, but offers data on the foundation of which such decisions can be taken. To be operative in this role, the outcome from an assessment usually provides information on other likely forms of land usefulness, together with the penalties and adverse impacts of landuse alternatives.

Objectives

The objectives of this course are to:

- 1) consider the principles of land evaluation;
- 2) elucidate on the factors affecting land valuation;
- 3) examine the factors that determine land value;
- 4) determine the principles and laws guiding lands use;
- 5) educate students on the implications of land improvements, such as reclamation;
- 6) identify various landforms and the alternatives such landforms can be used for; and
- 7) differentiate and delineate the different types of land available in the Niger Delta area.

Learning Outcomes

Students should have achieved the following at the end of the course:

- 1) explain three principles of land evaluation;
- 2) discuss three factors affecting land evaluation;
- 3) explain two factors that determine land value;
- 4) highlight five different regulations guiding lands use;
- 5) explain three implications of land improvements, such as reclamation;
- 6) distinguish four types of landforms and their alternative uses; and
- 7) categorise two types of land terrain present in the Niger Delta area.

Course Contents

Nature and principles of land evaluation. Land evaluation. Land evaluation procedures. Terrain evaluation systems. Land suitability classifications. Land use law. The evolution of human settlement. Land reclamation for agriculture. Characteristics of land. Land use and qualities. Land requirements and limitations. Land improvements. The study of landforms. Composition of the crust. Types of rocks. Land degradation. Natural desert formation and desertification. Land management. Importance of land evaluation in agriculture. Alternative forms of land use. The impact of earthquake, erosion weathering and flooding on land. Basin and range terrain. Origin, terminology, principles of land evaluation. Land suitability. Dealing with uncertainty in land evaluation. Soil quality. Urban soil functions/ecosystem services. Land evaluation, soil degradation and climate change.

Minimum Academic Standards

Classroom size 42m²; Public address system; multimedia projector; white board with marker; laptop and pointer.

RSU-GEO 235: Human Settlement and Development (2 Units E: LH 30)

Senate Approved Relevance

The purpose of this course is to train students with adequate knowledge on landuse and development planning that will enable them with the required capability fit into competent roles in the public and private sectors. This is in line with the University's vision to improve the appreciation and development of the region's abundant physical, natural and social resources.

Overview

Human settlement and development are key components in national, regional, and land use planning. In the Niger Delta area where the Rivers State University is situated, the primary purpose of this course is to ensure that important rural and urban economic settlement is developed to achieve desirable sustainability.

The main aim of human settlement and development is to ensure that the undesirable squalors are kept to their practicable minimum. It should be evident, however, that any newly

established, preserved and or demolished building or industry, has the potential to alter some attributes of the existing landuse. A primary function of human settlement and development in the decision-making process is to ensure that decisions on proposed landuse are well planned and sustainable.

Objectives

The objective of this course is to:

- 1) describe the concept of settlement and human development;
- 2) acquaints learners with the evolution of settlement over time and space;
- 3) expose them to the various types of settlements;
- 4) identify the factors responsible for the growth and decline of the human settlement;
- 5) assess and establish environmental quality of any given settlement;
- 6) identify the relationship between culture and the environment;
- 7) Identify the impact of man on the environmental quality of settlements;
- 8) understand principles in environmental ethics and safety of settlement; and
- 9) identify the principles in the planning of a sustainable settlement for human habitation.

Learning Outcomes

On successful completion of the course, students should be able to:

- 1) define human settlement and explain two essential features for human development;
- 2) explain two evolutionary trends of settlement over time and space;
- 3) identify four types of human settlement;
- 4) identify three factors responsible for the growth and decline of human settlement;
- 5) explain two environmental qualities peculiar to the Niger Delta pattern;
- 6) explain two relationships between culture and the environment;
- 7) identify three impacts of human activities on any settlement;
- 8) identify any two applicable environmental ethics, relevant to the safety of settlements; and
- 9) explain two principles in planning a sustainable settlement for human development.

Course Contents

Introduction to human settlement, size and density. Concept of human settlements. History of human settlements. Types of human settlements. Development and growth of the human settlement. Human development index HDI. Factors influencing human settlements. location and landscape designs. Parks and reserves. Rural, urban land use pattern. Environmental quality and functions of settlements. Impact of human settlement development on the environment. Culture and environment. Patterns, health and safety of settlement. Environmental education, ethics and sustainable development. Case studies; significant human settlements. Community development projects and their impacts.

Minimum Academic Standards

Classroom size 42m², public address system, multimedia projector, whiteboard with a marker, laptop and pointer.

RSU-GEO 238: Economic Geography (2 Units E: LH 30)

Senate Approved Relevance

The viewpoint of this course is to train students with adequate knowledge in the economic activities that are directly tied to the environmental resources available in the Niger Delta. This

is in line with the University vision to improve the appreciation and development of the region's abundant resources through excellent approach and strategy.

Overview

Economic geography examines human's economic happenings and features affecting them. It encompasses how human earn their living, the variations of living across spatial domain as well as the economic spatial relation, connection and integration. The economic activity or making of any goods is occasionally depended on the traditional and environmental considerations of any particular location. For instance, cultural based food and types as well as environmental limitations may influence the adaptation of some agricultural practice. So, the quest for any particular goods attracts investments that arouses production for the goods in any particular locations of economies that are related to the extraction of the necessary resources.

Furthermore, the economies of regions commence with the production progression of any specific goods or services where dwellers are nearer the available environmental resources. This engenders the establishment of industries that foster the connectivity to other regional economies.

Objectives

The objectives of this course are:

- 1) acquaint students with the various categories of resources domiciled in the Niger Delta region;
- 2) acquaint students with economic activities related to the cultural heritage of the region;
- 3) identify how technology impacts on the ability of people to develop regional economy;
- 4) identify the stakeholders that forms the decision makers for a viable regional economy;
- 5) identify the factors that influences the economies of regions;
- 6) examine the categories of regional economy; and
- 7) examine the relationship between economy and the environment.

Learning Outcomes

Students should have achieved the following at the end of the course:

- 1) be able to name five categories of environmental resources domiciled in the Niger Delta;
- 2) explain three economic activities related to the cultural heritage of the Niger Delta;
- 3) identify two technological innovations that could impact the region's economy;
- 4) list five major stakeholders that are vital to the decision making body for viable regional economy;
- 5) explain three factors that influences the economy of the Niger Delta;
- 6) describe four categories of the Niger Delta economy; and
- 7) explain two significant relationships between economy and the environment of the Niger Delta.

Course Contents

Introduction to the scope and fundamentals of economic geography. The location of economic activities, theories and land use pattern. The principles of industrial location; principles and theories. Industrial complex analysis. Global trade and movements. Characteristics and effects of transportation network on economic activities and development. Regional policy and planning. Nigeria economic activities region and commodities. Economic landscape of the

Niger Delta. 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. Classifications of Market Structure. Factors that control the distribution of economic activities. Categories of economic activity. Types of economic systems. Forestry economics & Wildlife policy. tourism and recreational management.

Minimum Academic Standards

Classroom size 42m²; public address system; multimedia projector; white board with marker; laptop and pointer.

RSU-GEO 261: Computer Applications in Geography (2 Units C: LH 15; PH 45)

Senate Approved Relevance

The essence of this course is to train students in the application of computer skills that are relevant to the analysis of geographical data and model building in order to enable them participate competently in the modern world. This fundamental task is in line with the University's vision to graduate students with the required resource that will sustain and support the expansion of the frontiers in human knowledge in the discipline, thus, responding to the challenges of the society.

Overview

The modern world is vastly depended on computer know-how for improved and faster information processing and analysis. This application range from economic, social, engineering, environmental etc. Computer applications has engendered a paradigm shift in how geographical concepts are being analysed and applied in solving societal problems. The Geographer's awareness of the nature of the subject have undertaken drastic transformation due to updated subject dimensions being released by advancements in computer technology. Presently, geography has become a provider of information and measureable data as it relates to the fundamental components of the environment. This is very vital in understanding the relationships that subsists between the environmental components.

The multi-dimensional and variable pattern of geographical data across spatial domains and scales has been made possible by the availability of real time data. This real time data in large capacity undergo repossession, storage and statistical analysis with computer application techniques for final interpretation. Consequently, preceding knowledge of computer is vital for scholars of the discipline to professionally process spatial data. One very important benefit of computer application in practical geography is that; computer-generated field trips can offer partial preparations before the physical field visits.

Objectives

The objectives of this course are:

- 1) introduce the students to the roles of computer applications in geography;
- 2) acquaints students on the pattern and formation of geographic data and how to enter it into the computer system;
- 3) acquaints students in the steps in the usage of Microsoft Excel spreadsheets, SPSS etc. for basic data inputs and statistical analysis of geographic data;
- 4) acquaints students on how to retrieve and store applicable real time data from accessible geographic web based platforms;
- 5) acquaints students with the application of computer to geographic data simulations and techniques e.g. using computer spreadsheets (bar charts, pie charts, line graphs, scatter diagram, etc.);

- 6) identify and understand the use of computer based applications of appropriate geographic software packages used by Geographers for research projects;
- 7) identify and understand the fundamentals of programming and scripting for geographic solutions, and
- 8) introduce students to simple geographic data modelling pattern, analysis and interpretation.

Learning Outcomes

Students should have achieved the following skills at the end of the course

- 1) explain five computer applications in geography as a discipline;
- 2) demonstrate practical knowledge in the formation of geographic data in the computer;
- 3) identify four basic steps in the usage of Microsoft excel spreadsheets for data inputs and explain steps for analysing one simple excel statistical tool (e.g. mean, median, mode, standard deviation, correlation etc.) analysis;
- 4) demonstrate how to retrieve and store accessible real time data from geographic web based platforms;
- 5) demonstrate one key knowledge of data simulation techniques in computer spreadsheets, e.g. bar charts; pie charts, line graphs, scatter diagram and others;
- 6) explain the importance of two geographic software package for analysing geographic data;
- 7) explain three fundamentals of programming and scripting for geographic solutions; and
- 8) explain two examples of computer aided geographic data modelling.

Course Contents

The role of computer technology in contemporary society. Trends in computer development. Fundamental concepts on computer hardware and software. Personal computer in geography. Geographic data: nature, types and structures. Accessing and collection of geographic database. Computer database formation, filing and storage techniques. Computation and analysis of geographic data. Geographic data conversions systems and applications. The global positioning system (GPS), navigation and conversions. Coordinate systems and map projections. Applications of computerized geographic data for information, mapping and simulation. Introduction to Computer applications; spreadsheets, databases formation, image editing and presentations. Introduction to geographic software packages and application. Fundamentals of programming and scripting for solving geographic problems. Graphical representation of geographic data. Computer application to spatial data modelling and analysis. Computer 2D graphics and image processing. Cloud computing and data loading technique.

Minimum Academic Standards

Internet enabled all in one Desktop Computer of 4G RAM 1TB Hard disk (1-3 students); Endars Imaging; ArcGIS 10.5; internet modems with data; classroom size 42m²; public address system; multimedia projector; white board with marker; laptop and pointer.

GST 312- Peace and Conflict Resolution (2 Units C: LH 30)

Learning Outcomes

At the end of the course, students should be able to:

1. analyse the concepts of peace, conflict and security;
2. list major forms, types and root causes of conflict and violence;
3. differentiate between conflict and terrorism;
4. enumerate security and peace building strategies; and

5. describe roles of international organisations, media and traditional institutions in peace building.

Course Contents

Concepts of Peace, Conflict and Security in a multi-ethnic nation. Types and Theories of Conflicts: Ethnic, Religious, Economic, Geo-political Conflicts; Structural Conflict Theory, Realist Theory of Conflict, Frustration-Aggression Conflict Theory. Root causes of Conflict and Violence in Africa: Indigene and settlers Phenomenon; Boundaries/boarder disputes; Political disputes; Ethnic disputes and rivalries; Economic Inequalities; Social disputes; Nationalist Movements and Agitations; Selected Conflict Case Studies – Tiv-Jukun; Zango Kartaf, Chieftaincy and Land disputes. Peace Building, Management of Conflicts and Security: Peace & Human Development. Approaches to Peace & Conflict Management --- (Religious, Government and Community Leaders). Elements of Peace Studies and Conflict Resolution: Conflict dynamics assessment Scales: Constructive & Destructive. Justice and Legal framework: Concepts of Social Justice; The Nigeria Legal System. Insurgency and Terrorism. Peace Mediation and Peace Keeping. Peace & Security Council (International, National and Local levels) Agents of Conflict resolution – Conventions, Treaties Community Policing: Evolution and Imperatives. Alternative Dispute Resolution, ADR. Dialogue b). Arbitration, c). Negotiation d). Collaboration. Roles of International Organizations in Conflict Resolution. (a). The United Nations, UN and its Conflict Resolution Organs. (b). The African Union & Peace Security Council (c). ECOWAS in Peace Keeping. Media and Traditional Institutions in Peace Building. Managing Post-Conflict Situations/Crisis: Refugees. Internally Displaced Persons, IDPs. The role of NGOs in Post-Conflict Situations/Crisis

ENT 312 – Venture Creation (2 Units C: LH 15; PH 45)

Learning Outcomes

At the end of this course, students, through case study and practical approaches, should be able to:

describe the key steps in venture creation;

1. spot opportunities in problems and in high potential sectors regardless of geographical location;
2. state how original products, ideas, and concepts are developed;
3. develop business concept for further incubation or pitching for funding;
4. identify key sources of entrepreneurial finance;
5. implement the requirements for establishing and managing micro and small enterprises; and
6. conduct entrepreneurial marketing and e-commerce;
7. apply a wide variety of emerging technological solutions to entrepreneurship; and
8. appreciate why ventures fail due to lack of planning and poor implementation.

Course Contents

Opportunity Identification (Sources of business opportunities in Nigeria, Environmental scanning, Demand and supply gap/unmet needs/market gaps/Market Research, Unutilised resources, Social and climate conditions and Technology adoption gap). New business development (business planning, market research). Entrepreneurial Finance (Venture capital, Equity finance, Micro finance, Personal savings, small business investment organizations and Business plan competition). Entrepreneurial marketing and e-commerce (Principles of marketing, Customer Acquisition & Retention, B2B, C2C and B2C models of e-commerce, First Mover Advantage, E-commerce business models and Successful E-Commerce Companies,). Small Business Management/Family Business: Leadership & Management,

Basic book keeping, Nature of family business and Family Business Growth Model. Negotiation and Business communication (Strategy and tactics of negotiation/bargaining, Traditional and modern business communication methods). Opportunity Discovery Demonstrations (Business idea generation presentations, Business idea Contest, Brainstorming sessions, Idea pitching). Technological Solutions (The Concept of Market/Customer Solution, Customer Solution and Emerging Technologies, Business Applications of New Technologies - Artificial Intelligence (AI), Virtual/Mixed Reality (VR), Internet of Things (IoTs), Blockchain, Cloud Computing, Renewable Energy and the likes. Digital Business and E-Commerce Strategies).

GEO 301: History of Geographical Thoughts (2 Units C: LH 30)

Learning Outcomes

This course helps students to advance their understanding of the theory and historical development in geography in various parts of the world. At the end of the course, the students should be able to:

1. explain historical development in geography;
2. classify the nature and challenges of geographic research;
3. use spatial and critical thinking skills for solving problems in society; and
4. extend the frontiers in geographic thought.

Course Contents

History of geographical thoughts in relation to science. The role of theory on science and geography. Methods in natural and social sciences. The nature and problems in geographical research. Course studies from Greek time up to the present. Frontier in contemporary geographical thought.

GEO 302: Geomorphology (2 Units C: LH 30)

Learning Outcomes

There are various geomorphic features in the world. A careful study of the landforms will reveal the factors responsible for their development. At the end of the course, students should be able to:

1. explain origin of landforms;
2. describe forces responsible for landforms development;
3. identify and classify landforms;
4. describe landforms development; and
5. foster sustainable human development.

Course Contents

Key content includes Nature and scope of geomorphology: aims and objectives of geomorphology. Developments in geomorphic thought; Approaches to geomorphological studies, Conceptual developments in geomorphology. Landforms, their formative agents and processes; classification of landforms; volcanic and tectonic landforms, landforms of weathering and mass wasting, fluvial landforms, coastal landforms, Aeolian landforms, glacial landforms. Introduction to applied geomorphology.

GEO 303: Science of Climate Change (2 Units C: LH 30)

Learning Outcomes

Climate change is already disrupting ecological, atmospheric and hydrologic systems. Yet there is poor understanding of the science of climate. At the end of the course, students should be able to:

1. explain the science of weather and climate;
2. classify different world's climate;
3. identify causes and effects of climate change; and
4. characterize global response to climate change.

Course Contents

Subject-matter and scope of climatology. Historical developments of meteorology and climatology. Physical climatology: Solar radiation, atmospheric temperature, atmospheric moisture, air masses, fronts and storms; winds and the global air circulation system. Regional climatology: classification of climates; examples of climate classificatory systems; climatic regions of the world, the science and politics of climate change; adaptation and mitigation of climate change, climate-preneurship to leverage the opportunities presented by climate change; global strategies and the role(s) of institutions and organizations: UNFCCC, WMO, UNEP, IPCC. Manifestations of climate change; vulnerability to climate change. Adaptation to climate change. Communicating climate change. Climate change versus environmental change. Nigeria's response to climate change, The Nationally Determined Contributions (NDC).

GEO 304: Biogeography (2 Units C: LH 30)

Learning Outcomes

The relationship and interactions between the biotic and abiotic factors are critical to finding sustainable solutions to loss or extinction of living things. The study of Biogeography is useful for resource conservation and planning. At the end of the course, students should be able to:

1. identify different life forms;
2. explain the factors responsible for their distribution;
3. describe how ecosystems interact and function;
4. describe vegetation change; and
5. examine the role of man in ecosystem modification.

Course Contents

Principles and concept of biogeography. Vegetation types; factors affecting flora and fauna distribution at various scales. The concept of the ecosystem. The structure and functioning of terrestrial and aquatic ecosystems. Vegetation changes through time: adoption, cyclical, fluctuations, succession and climax. Nutrient cycling, the role of man in ecosystem modification, soil studies and many others.

GEO 305: Research Method I (2 Units C: LH 30)

Learning Outcomes

At the end of the course, students should be able to:

1. define basic research concepts;
2. select appropriate research topics;

3. formulate research questions and hypotheses; and
4. analyze data.

Course Contents

Understanding basic elements of research methods in geography: Selection of a research topic; definition of study problems and objectives; Formulation of research hypotheses; Experimental design for collection and analysis of data; writing a research proposal.

GEO 306: Field Course (2 Units C: PH 90)

Learning Outcomes

At the end of the course, students should be able to:

1. appreciate fieldwork is an important geographic activity;
2. identify geographical features;
3. conduct hands-on field exercises; and
4. examine the relationships between and among features.

Course Contents

Eight to ten days' intensive field studies designed to illustrate the application of theories, concepts and techniques of geographical analysis. Examples of field study activities include rural land use studies, urban studies, vegetation and soil studies, landform studies and market surveys. It is expected that the students should travel outside the State where the University is located so they can be exposed to different geographic features.

GEO 307: Quantitative Techniques in Geography (2 Units C: LH 30)

Learning Outcomes

In conducting geographic research, the students will require understanding of descriptive and inferential statistics. At the end of the course, students should be able to:

1. appreciate the value of statistics in geographic research; and
2. simplify the complex world problems.

Course Contents

Introduction to descriptive and inferential statistics, parametric and non-parametric tests; Survey design and sampling techniques, Elementary statistical analysis of spatial patterns.

GEO 308: Remote Sensing and Geographical Information System I (2 Units C: LH 15; PH 45)

Learning Outcomes

We are in the digital age and students of geography must appreciate the significance of geographic information system in addressing complex spatial problems. At the end of the course, the students should be able to:

1. input data;
2. analyze data;
3. interpret data; and
4. undertake modelling of various scenarios.

Course Contents

Introduction to Remote sensing, Key contents include: Elements of remote sensing system, Techniques of remote sensing. Interpretation and analysis of visual and digital imageries. remote sensing application, Integration of remote sensing and GIS in geographical research, case studies GIS and the information age, Capabilities of GIS, Spatial data and their sources for GIS analysis, Raster and Vector data, Data Entry, GIS analysis and modelling data issues and problems.

GEO 309: Students Industrial Work Experience Scheme (6 Units C: PH 270)

Learning Outcomes:

The Students Industrial Work Experience Scheme is crucial to practical understanding and application of geography in life situation. At the end of SIWES attachment, students are expected to:

1. match theory with hands-on experience in the work place;
2. familiarize themselves with the major activities taking place in their places of attachment; and
3. Report on the entire SIWES experience.

Course Contents

Geographers are sent to institutions such as armed forces, Ministries, Departments and Agencies of Government, Schools, Boundary Commission, National Population Commission as well as the Private organizations. Depending on the nature of their places of attachment, they are to participate in activities like map making, planning practices land, soil and water resources evaluation; human and socio-economic surveys, basic operation of field and laboratory equipment and facilities, practical and operational climatology, instrumentation in geography; and any other assignment given to them by their industrial based Head of Department. At the end of the exercise, they are to report on the entire experience.

GEO 401: Systematic Geography of Nigeria (2 Units C: LH 30)

Learning Outcomes

This course focuses attention on a thematic approach to understanding the geography of Nigeria covering a range of physical, socio-economic and human phenomena. At the end of the course, students should be able to:

1. define concepts such as population, industrialization, urban systems;
2. explain the geography of Nigeria; and
3. characterize different ecological systems and development trajectories in Nigeria.

Course Contents

Spatial patterns: ecological zones; growth and distribution of population; natural resources base; agricultural production and marketing systems; industrialization: transport development; internal and external exchange. Concepts and models; river basins; city and community regions; migration flows, urban systems; modernization; development strategies.

GEO 402: Contemporary Philosophy and Methodology in Geography (2 Units C: LH 30)

Learning Outcomes

At the end of the course, students should be able to:

1. compare and describe current philosophies and methodologies of geographical research; and
2. expand the frontiers of research.

Course Contents

Paradigm shifts within scientific approach to geographical research, quantification and classification in geography; theories and models in geography; systems analysis in geography and spatial thinking skills

GEO 403: Research Method II (2 Units C: LH 30)

Learning Outcomes

At the end of the course, students should be able to:

1. undertake a review of methodologies of Geographical Research;
2. identify and describe problems; and
3. select analytical tools in the interpretation of results.

Course Contents

Area delineation of source of data, creation of research instruments, formal acquisition of data, appropriate statistical analyses, writing up of research finding and conclusion.; application of research findings in the real world.

GEO 404: Quantitative Techniques in Geography II (2 Units C: LH 30)

Learning Outcomes

This course goes a step further by training the students in quantitative techniques in geography. At the end of the course, students should be able to:

1. compute inferential statistics such as correlations, regression, principal components analysis, detrended correspondence analysis; and
2. use statistical software in analyzing geographic data.

Course Contents

Introduction to models and their testing, Advanced statistical techniques, Inferential Statistics; qualitative data analysis, spatial data analysis. Introduction to statistical behavioural models. Use of statistical software (SPSS, EPI INFO, MINITAB, STRATA, eVIEW) in analyzing Geographic data.

GEO 405: Final Year Project (6 Units C: PH 270)

Learning Outcomes

At the end of studying quantitative techniques and other research methods, students should be able to:

1. conduct independent field research;

2. undertake sampling;
3. analyze the data; and
4. interpret the observed phenomena.

Course Contents

The Final year Project should cover but not limited to the following topics: soil, vegetation, map interpretation, remote sensing, GIS, regional, medical geography, disease ecology, climate change, hydrology, population studies, market studies among others. An individual study chosen by the student(s) with the approval of the Department should be carried out under the supervision of a senior member of staff. This will normally be started in the second semester of the third year. The final report of not more than 10,000 words in length should be submitted by the last week of second semester lectures in the fourth year.

GEO 406: Applied Climatology (2 Units C: LH 30)

Learning Outcomes

At the end of the course, students should be able to:

1. define climatology;
2. classify agro climatic zones;
3. explain tropical weather patterns; and
4. explain climate change impacts in the tropics.

Course Contents

Bioclimatology, agro climatology, climatology and the built environment, climate change and its impact on rural and urban environments, climate change and sustainable development goals, , and climate change and its implications on humans and various human and economic activities. Definition and delimitation of the “Tropics” Rationale for studying the climatology of the tropics. Radiation conditions in the tropics. Temperatures in the tropics. Tropical precipitation. Tropical disturbances: Tropical weather systems. Applied tropical climatology: Tropical agro climatology; tropical bioclimatology, global circulation system and its influence in the tropics., links between the tropical climates and the temperate climates, climate change and climate-premiership.

GEO 407: Remote Sensing and GIS II (3 Units C: LH 30; PH 45)

Learning Outcomes

This course prepares the students to move beyond understanding of key concepts in remote sensing to real processing and analyses of digital images. He /She is taught to understand Spatial Database Management Systems and how to utilize them for planning purposes. It is expected that at the end of the course, the students should be able to:

1. process and analyze digital images;
2. store and retrieve digital data;
3. apply techniques of remote sensing to problem solving in real life;
4. characterize various types of information/data models and systems;
5. manage hardware and software; and
6. interpret information using GIS tools.

Course Contents

Remote Sensing analytic digital image processing system. Fundamentals (Computers imaging systems, image representation- colour space, image sampling quantization, quality measurement, data products, storage and retrieval- Photowite systems, dip systems and software. Preprocessing (Encoding and decoding, sources of image degradation, atmospheric, radiometric and geometric errors, systematic and non-systematic correction, image geometry operations. Image Enhancement (Image characters, histogram, scatter plots, statistics and spatial statistics for processing, image models, spatial transforms, enhancements: radiometric and geometric operators, Fourier transforms, scale space transforms, image fusion, texture analysis. Image Classification (Spectral discrimination pattern matching Baye's theorem-signature and feature extraction- training and classification, supervised and unsupervised methods error matrix and accuracy estimates. Image Analysis (Concept of uncertainty, fuzzy partitioning, neural nets, sub-pixel classification concept, pattern recognition, feature descriptors). Remote sensing application, Integration of Remote Sensing and GIS in geographical research, case studies.

(Basic concepts of Data, Information, File system vs DBMS, Data models, Hardware and software requirements, Database Management Systems, Database languages, Database Architecture, users and administrators, Classification of Database Management Systems. Relational Data Model (Relational model, Data Structure, Constraints, Key, Codd's Rule, Relational Algebra, Fundamental operations, Additional operations, Extended operations Null values. SQL (SQL, Data Definition, Basic structure of SQL queries, set operations, Aggregate, Functions, Null values, Nested sub queries, Complex queries, Views, Embedded SQL, Dynamic SQL, Triggers. Database Design and Management (Design process, Entity Relationship Model, Constraints, EER, Diagrams, Atomic domain and First Normal Form, Functional Dependency, Decomposition using Functional dependencies, Normalization using Multi-Valued Dependencies and Join Dependencies, Basic concepts of file organizations, indexing and hashing, Database recovery techniques, Database Security, Handling Spatial Database. Accessing Data Using Ado.Net and Vb.Net (ADO.Net Object Model using OLE DB managed provider, other data providers, Accessing XML data, Building Windows).

RSU-GEO 416: Coastal Zone Management (2 Units C: LH 30)

Senate Approved Relevance

This course is proposed, because it conforms with the University mandate which is to produce graduates, that have a deep understanding of the Niger Delta region and what can be harnessed to ensure the protection of the coastal ecosystem and management it.

Overview

Population growth in the coastal zone is increasing, stressing the natural resources and those that depend on them due to over-development, pollution and over-exploitation of resources. At the same time, global climate change, linked to anthropogenic activities, are increasingly affecting the coastal zone due to an increased prevalence of high-energy storms, ocean acidification and sea level rise. The Niger-Delta is no exception to these challenges

The aim of this course is to provide students in this region with a holistic perspective and the essential skills necessary to navigate the complexities of managing human interactions within a highly dynamic coastal environment, and to analyze the natural, social, legal, economic and institutional processes for coastal zone management and sustainable development.

Objectives

The objectives of this course are:

- 1) introduce the concept of coastal zone management;

- 2) state the importance of coastal zone management;
- 3) introduce the nature and types of coasts;
- 4) enumerate waves and wave action and coastal features;
- 5) enumerate the coastal hydrodynamic and transport processes;
- 6) discuss sea level rise and the factors responsible;
- 7) discuss coastal hazard hazards in the Niger Delta;
- 8) discuss the impact of development on coastal processes; and
- 9) describe coastal stabilization schemes and their impacts.

Learning Outcomes

Students should have achieved the following at the end of the course

- 1) describe two principles of coastal zone management and state at least three purposes; and challenges of coastal zone management;
- 2) state seven importance of coastal zone management;
- 3) describe and mention four types of coasts;
- 4) describe at least four coastal features that occur as a result of wave action;
- 5) enumerate three coastal hydrodynamic and transport processes;
- 6) be able to discuss sea level rise and state four factors responsible;
- 7) discuss any five coastal hazards and their causes;
- 8) discuss any five impacts of development on coastal processes; and
- 9) describe four coastal stabilizations techniques.

Course Contents

Introduction to coastal zone management. Coastal nomenclature. Nature and types of coast. Introduction to coastal hydrodynamic and transport processes. Marine pollution. Wave action and classification of coastal features. Impacts of meteomarine and natural processes to coastal morphology. Sea level rise and factors responsible. Coastal hazards. Impacts of development to coastal processes. Implementation of sustainable development in coastal zone management. Integrated coastal zone management. Shoreline management plan. Guidelines for development in coastal areas. Overview of types of coastal stabilization scheme. Applications and impacts of coastal stabilization. Dredging and land reclamation. Marine pollution control. Impact assessment and monitoring of the coastal zone. Coastal zones of Nigeria. Coastal zone laws of Nigeria. Coastal zone and coastal regulation zone act.

Minimum Academic Standards

Class room 42m², multi-media projector, white board and marker, laptop, public address system

RSU-GEO 431: Medical and Health Geography (2 Units E: LH 30).

Senate Approved Relevance

This course is proposed because it is in line with the mission and mandate of the university to produce manpower that will address the social, cultural, economic and health needs of the people in the Niger Delta region. Medical geography seeks to achieve this by producing graduates that have access to appropriate knowledge about the health needs and diseases patterns of their environment.

Course Overview

Medical geography is used in mapping and studying the spatial distribution of diseases. Maps are created to show historic outbreak of diseases and the source areas of diseases, the importance of population growth in relation to disease spread. Medical geography uses the

techniques and concept of the discipline of geography to investigate health related topics. One of the predominant concepts of geography is that it examines relationships between people and their environment in holistic terms. Another concept of geography is cooperation with other fields to bring about developments. The medical personnel bring the skills for prevention, diagnosis and treatment, but an understanding of why and how a disease spreads rests at the core of modern medical geography with its concern for spatial structure.

Medical geography is an integrative and multidisciplinary subject incorporating contributions from a wide range of specialties such as epidemiology, public health, Statistics (to make efficient use of data and draw appropriate conclusions), biology (to understand disease process), engineering (exposure assessment), geographical information systems (to map disease spread) and climatology etc.

Objectives

The objectives of this course are:

- 1) introduce students to medical geography and explain the fundamentals of medical geography;
- 2) acquaint students with the models and approaches to medical geography;
- 3) expose students to the various pollutants and major health hazards in Nigeria;
- 4) explore the problems of the health care delivery system in Nigeria;
- 5) expose students to the various epidemics and its spread in Nigeria;
- 6) assess the health policies in Nigeria and measurement of health status;
- 7) acquaint students with the millennium development goals (MDGs) of subject concern; and
- 8) assess the different sources and pattern of medical records.

Learning Outcome:

At the end of this course, students will be able to:

- 1) define medical geography and explain the three basic fundamentals of medical geography;
- 2) list and explain three models and approaches to medical geography;
- 3) identify five pollutants and three health hazards across the Niger Delta environment;
- 4) mention and explain five problems of health care delivery in the Niger Delta region;
- 5) explain five epidemics ever experienced in the region;
- 6) discuss five health policies in Nigeria and list three parameters used in measuring population health status;
- 7) highlight the eight millennium development goals with respect to the subject and the time-bound targets of the first three goals; and
- 8) describe three sources of medical records.

Course Contents

Definition of medical geography. Fundamentals of medical geography. Disease ecology. Models and approaches to medical geography. Environment, pollution and health hazards. Health care delivery in Niger Delta/Nigeria. Medical records and its Sources. Trends in technology and medical geography. Spatial techniques useful in the study of health. Epidemics and spread of diseases. Prevalence and incidence of diseases. Life expectancy trends. Mortality situation in Niger Delta/Nigeria. Historical development of reproductive health. Components of reproductive health in Nigeria. WHO's global reproductive health strategy. Reproductive health rights. Health policy statement. Measurement of health status. Millennium development growth.

Minimum Academic Standards

Classroom size 42m²; public address system; multimedia projector; white board with marker; laptop and pointer.

RSU-GEO 432: Demography (2 Units C: LH 30)

Senate Approved Relevance

This essence of this course is to produce graduates with appropriate knowledge about demographic indicators of the population, and the ability to contribute competently and effectively on the control of population growth. It also seeks to be innovative in providing recommendations on ways to take advantage of the youthful nature of our Nigerian population to achieve high levels of living standard and human capital development in the country. This is in line with the University's vision to solve the practical and peculiar challenging problems of the region.

Course Overview

The social, cultural and economic fabric of a nation is derived largely from its population dynamics. The Nigerian population is a youthful population with high levels of fertility, unemployment, low living standard, high dependency ratio with more urban dwellers. All these have resulted in increased poverty, rise in criminal activities and low standard of living of the populace. Demography as a discipline plays a vital role in collecting, processing and dissemination of demographic data by providing analyses of population trends as well as determining the consequences of rapid population growth.

Furthermore, demography propagates information on population size, distribution and composition to government, private organisations and individuals. Demographers compile and analyse data that are useful for understanding various social systems, and help in establishing policies in areas such as housing, education, health, food, employment, environment, etc. Therefore, Demography is a desirable and indispensable discipline in all spheres of life. This makes it important to acquire at least basic knowledge of it. Demography uses both empirical and statistical methods and employs census, survey and vital registration as its common tools in the study of human population.

Objectives

The objectives of this course are to:

- 1) introduce students to the basic concepts of demographic measurements used to study changes in population size and composition;
- 2) acquaint students with the types of demographic data and their levels of measurements;
- 3) explain some demographic methods in population process;
- 4) expose students to the measurement of fertility, mortality and migration;
- 5) explore the uses and functions of life table;
- 6) introduce students to the concept of migration and types of migration;
- 7) acquaint students to the determinants of migration;
- 8) expose students to the different stages of growth in the demographic transition theory;
and
- 9) introduce students to the theories of population.

Learning Outcomes

At the end of this course, students should be able to:

- 1) mention and explain the three main concepts used in demographic measurements of population growth;
- 2) explain the two main types of demographic data and list the three levels of measurements;
- 3) name five demographic methods in population process;
- 4) list three uses of life table and highlight five functions;
- 5) discuss five determinants of fertility and mortality;
- 6) explain the two major types of migration;
- 7) enumerate five factors that leads to migration;
- 8) explain the three stages of growth in the demographic transition theory; and
- 9) list five theories of population and explain three of them.

Course Contents

Definition of terms. History of demography. Types and nature of demographic data. Levels of measurements of demographic data. Demographic indices and data measurements. Some demographic method in population process. Computation of fertility, mortality and migration. Fertility concepts and measurements. Mortality concepts and measurements. Life table, uses and functions of life table. Models of stable and stationary population. Population projections. Definition and types of migration. Migration processes and consequences. Measurements of migration. Determinants of migration. Demographic transition theory. Theories of population. Population trends and policies.

Minimum Academic Standards

Classroom size 42m²; public address system; multimedia projector; white board with marker; laptop and pointer.

RSU-GEO 435: Transport Geography (2 Units C: LH 30)

Senate Approved Relevance

The perspective of this course is to train students with excellent knowledge of transportation techniques that will enable them to fit into tasks that require competence in this direction. in the public and private sectors. This is in line with the University's vision to support and sustain human capacity development in the transportation sector of the region.

Overview

Transport geography is a sub-discipline of geography that deals with the movement of people, goods and services, information and its spatial organisation. It comprises features and restraints associated to the source, destination, scope, nature, and purpose of movement. In the Niger Delta area where the Rivers State University is situated, transportation is a key to access to all forms of private and public activities.

It should be evident, however, that any mode of transportation infrastructure, has the potential to alter some attributes of the existing morphology. A primary function of transportation geography in the decision-making process is to ensure that decisions on a proposed network system are well-planned in terms of efficiency, availability, affordability, safety and sustainability.

Objectives

The course will introduce students to:

- 1) meaning and purpose of transport geography;

- 2) identify elements of network analysis;
- 3) appraise different regional transportation modes;
- 4) evaluate the characteristics of transportation systems;
- 5) describe various transport network and design;
- 6) acquaint themselves with traffic management systems;
- 7) espouse knowledge of transport health and safety; and
- 8) assess prospects of transport in developed and developing countries.

Learning Outcomes

At the end of the course, students will be able to:

- 1) explain two purposes of transport geography;
- 2) discuss three elements of transportation networks;
- 3) discuss three different regional transportation modes;
- 4) explain four characteristics of transportation systems;
- 5) discuss one model of transport networks/design. e.g. public, private and smart transportation systems;
- 6) explain three factors in traffic management services;
- 7) describe five measures of health and safety requirements for transport; and
- 8) discuss three prospects each of transport in developed and developing countries.

Course Contents

Introduction to transport geography. History of transportation and transportation geography. Types of transportation. Characteristics of transportation. Components of the transportation system. Analysis of transport networks and flows. Transportation planning process: goals and objectives of transportation planning. Transportation policy (types, trends). Transportation network and design. Public transportation. Intelligent transportation systems. Transportation and the environment. Social objectives of transportation. Issues, problems, and strategies in urban transportation. Traffic Management. Transportation safety. Air transportation: deregulation, spatial aspects. Travel and Tourism. Rural transportation. Intercity, freight, and intermodal transportation. Transportation futures.

Minimum Academic Standards

Classroom size 42m², public address system, multimedia projector, whiteboard with a marker, laptop and pointer.

RSU-GEO 438: Urban Geography (2 Units C: LH 30)

Senate Approved Relevance

The perspective of this course is to train students to a professional standard, in spatial processes, capable of fitting into career roles requiring competencies in the urban planning sector. This is in line with the University's vision to support and sustain human capacity development in the environmental planning sector of the region.

Overview

Urban geography is a wide-ranging outline to a diversity of concerns connecting to current urban characteristics, including configurations and progressions of urbanization, development, planning, and life experiences in contemporary municipalities. Urbanization is an inevitable stage in the growth of the Niger Delta area. A vital impediment to urban development is that the metropolitan areas as a spatial arrangement can be regarded as both the cause and the consequence of social relations.

A primary function of urban characteristics in the decision-making process is to ensure that decisions on a proposed city system are well-connected in terms of resource distribution and interaction of people and businesses within cities.

Objectives

The course will introduce students to:

- 1) distinguish the concepts of urbanisation and urbanism;
- 2) outline the historical origin of urban life in Niger Delta;
- 3) differentiate between rural and urban functions;
- 4) determine the evolution of urban structures and morphological theories;
- 5) appraise spatio-temporal changes in urban functions;
- 6) examine the development of squatter settlements in urban areas;
- 7) define urban sprawl and urban fringe concepts;
- 8) explain urbanisation and housing types;
- 9) describe smart city concept; and
- 10) outline urbanization problems in Nigeria.

Learning Outcomes

On completion of the course, students will have the ability to:

- 1) distinguish two concepts in urbanisation and urbanism;
- 2) appraise two influences in the historical origins of urbanisation;
- 3) discuss two distinct features of rural and urban functions;
- 4) explain at least three morphological urban structures and theories;
- 5) describe two spatio-temporal changes in urban functions;
- 6) discuss two pattern of squatter settlements in a specific urban area;
- 7) identify two drivers in urban sprawl and three characteristics of urban fringe;
- 8) explain two key housing development strategies in the Niger Delta;
- 9) design a smart city concept in the Niger Delta with at least two alternatives; and
- 10) outline four vital urbanization problems in the Niger Delta.

Course Contents

The origin and growth of cities. Urban systems. Internal structures of cities. Urban ecology. Movement in the urban environment. Urban problems in Nigeria. Urban planning in Nigeria. Rural-urban synergies. Urban fringe and urban sprawl. Modernisation and urbanization in the developed world. Modernisation and urbanization in the developing world. Urban growth and morphological theories. The rational use of urban space. Urban housing development. The growth and development of urban slums. Urban renewal. Smart city concept. Urbanisation and environmental issues. Waste generation and disposal systems in urban centres. Management policies and strategies for urban liveability. Urban waste management; policy issues towards urban renewal.

Minimum Academic Standards

Classroom size 42m², public address system, multimedia projector, whiteboard with a marker, laptop and pointer.

RSU-GEO 463: Environmental Impact Studies Process (2 Units C: LH 30)

Senate Approved Relevance

The perspective of this course is to equip students with relevant and adequate knowledge in geographical techniques that will enable them to fit into job roles requiring skills and

competencies both in the public and private sectors. This is in line with the University vision to investigate the environmental effects of the exploitation of the region's abundant natural resources.

Overview

The environmental impact studies process is a key component in national, regional, or local facilities planning and land use planning, most especially to the Niger Delta area where the Rivers State University is situated. The purpose is to ensure that important environmental resources are recognised early in the planning process and protected through proper decision-making processes. The main aim of the impact studies process is to ensure, to the greatest degree possible, that the undesirable environmental effects of an action are kept to their practicable minimum. It should be evident, however, that virtually any new development, redevelopment, remedial action or resource use will alter some attributes of the existing environment. A primary function of environmental impact process studies in the decision making process is to ensure that decisions on proposed actions are balanced, that is, the environmental effect (both positive and negative) of an action are weighed against the results of the action.

Furthermore, the environmental impact studies process considers in comparative fashion several reasonable alternatives that could meet the purpose and need of the proposed action. These alternatives include the option of not carrying out an action in any way and describe objectively the reasoning for the preference of one alternative over others.

Objectives

The objectives of this course are:

- 1) acquaint students with the various categories of environmental impact studies process/systems (EIA, PIA, SIA, EER, Audit etc.),
- 2) acquaint students with the fundamental principles of environmental impact assessment studies process,
- 3) identify the various aspects/components of the environment that are critical to the assessment process and studies approach,
- 4) evaluate the significant effects of a project or development planning on the environment,
- 5) identify the stakeholders that are part of the environment impact assessment process,
- 6) examine the roles of regulatory agencies in impact assessment processes,
- 7) examine the role of alternatives, mitigation measures as well as environmental management plan in reducing developmental effects,
- 8) examine the role of monitoring and environmental audits arising from decision making plan.

Learning Outcomes

Students should have achieved the following at the end of the course:

- 1) name five categories of environmental impact studies,
- 2) explain three fundamental principles of the environment to sustainable development,
- 3) identify three components of the environment that are crucial to environmental impact assessment studies,
- 4) explain ten effects (either positive or negative) of developmental project as it impacts on the environment,
- 5) list three major stakeholders that are vital to the general outcome and implementation of environmental impact studies process,

- 6) list/explain the roles of two identifiable regulatory agencies in environmental assessment process,
- 7) state three alternatives and mitigation measures in reducing or eliminating negative impacts of developmental projects on the environment,
- 8) mention/explain two steps to ensuring adequate environmental monitoring and audits.

Course Content

The categories of environmental impact studies process. The scope and importance of the environmental impact assessment process. The environmental impact assessment process. The environment assessment laws and requirements in Nigeria. Scoping and terms of reference development. The basic components and impact indicators of environmental assessment. Timing and limits of environmental assessment process. Alternative analysis in environmental study process. Principles in managing an environmental assessment procedure. Issues of environmental assessment reporting process. Categorization of environmental assessment impacts. The role of stakeholders of the environmental assessment. Regulatory requirements and role of various agencies such the Federal Ministry of Environment, National Environmental Regulatory Agency, etc. Developmental project purpose and needs assessment. Environmental risk assessment checklist and impact matrix. Determination of significant impacts and environment management plan. Evaluation of end results studies, review processes and decision making. Post impact assessment audit and monitoring plan.

Minimum Academic Standards

Classroom size 18m²; public address system; multimedia projector; white board with marker; laptop and pointer.

Minimum Academic Standards for Department

Equipment

Laboratories required for geography

Cartography laboratory

List of Equipment required:

1. Topographic maps
2. Theodolite
3. Prismatic compass
4. Abney level
5. Hand held Global Positioning System
6. Cross staff
7. Lighting Tables
8. Measuring tapes
9. Plane table equipment
10. Ranging poles
11. Graduated handheld soil auger

Soil and earth science laboratory

List of Equipment required:

1. Portable multi-parameter meter for water quality analyzer
2. Agilent 240AA Atomic Absorption Spectrometer

3. Soil auger
4. Digital heating mantle spots
5. Volumetric flask
6. Conical/flat bottom flask
7. Beakers
8. Funnel plastic/glass
9. Glass dish
10. Test-tubes with holder and rag

GIS laboratory

List of Equipment required:

1. Workstation with Computers
2. GIS Software (Arc GIS 10.9 and ENV 5,7 saver or standalone)
3. Projector
4. Interactive Screen
5. GNSS Rover System

Weather station

1. Manual Weather Station with Raingauge, Stevenson's screen, Anemometer, Wind vane, Sundial, evaporimeter, soil thermometers, temperature thermometers, Barometer, for demonstration teaching and learning.

OR

2. Automated Weather Station with Computer and recordings.

Staffing

The personnel requirements for the programme should reflect students' population and the variety of activities to be performed in the classrooms, studios, laboratories and workshops. The ratios should conform to the NUC minimum guidelines on staff/student ratio of 1:15.

Academic Staff

The point of entry for each of the recognized academic positions should reflect appropriate academic qualifications, and experience in both teaching and professional practice. Details of the requirements for the various positions are indicated below:

1. Academic Support Personnel

Teaching Assistant/Demonstrators are recommended to assist lecturers in the conduct of tutorials, practicals and fieldwork.

2. Administrative Support Personnel

The services of the administrative support staff are indispensable in the proper administration of the departments. These will normally include confidential secretaries, clerical officers, typists, messengers and cleaners. It is important to recruit very competent senior personnel who are technology savvy.

3. Technical Support Personnel

The technical support personnel shall consist of technical officers and technologists. It is important to recruit very competent senior technical staff to maintain teaching and research equipment.

Library

A Departmental and or Faculty Library with local, national and international journals, current books.

Apart from the Faculty and Main University Library, a Department of Geography should be provided with fully equipped library and GIS Laboratory with computers and Internet connectivity and current reference books, periodicals, journals and audio-visual materials. The Department should ensure that updated literatures (soft and hard copies) in all fields of Geography and related disciplines are in the libraries (University and Faculty or Departmental Libraries).

Classroom, Laboratories, Clinics, Workshops and Office Space

	Space	Use	Minimum (m ²)
1	Professors Office	Academic	24
2	Head of Department	Administration	24
3	Senior Lecturer	Academic	20
4	Lecturer	Academic	16
5	Assistant Lecturer	Academic	12
6	Senior Technical Staff	Technical	12
7	Senior Administrative Staff	Administration	12
8	Junior Technical Staff	Technical	10
9	Junior Administrative Staff	Administration	10
10	Studio Space	Students	30
11	Lecture Space	Students	75
12	Seminar Space	Students	30
13	Laboratory Space	Students	30
14	Library	Students	35
15	Social Space	Students	40
16	Storage Space	Students	30

List of Reviewers (Geography, RSU)

S/N	Name	Qualification	Area of Specialization	Designation
1	Prof P.N. Ede (HOD)	BSc, UPH MSc, UPH PhD, UPH	Climatology	Professor
2	Prof O.B. Owei	BSc, UI MPhil., London PhD, UPH	Urban & Regional Planning	Professor
3	Dr. I.I. Weje	BSc UPH MSc, UI PhD., UPH	Urban & Regional Planning	Senior Lect.
4	Dr. S. Emejuru	BSc, BUK MSc, UPH PhD, AAU	Biogeography	Senior Lect.

5	Dr. M. Bakpo	BSc, UPH MSc, UPH PhD, Uyo	Biogeography/Environmental Ecology	Senior Lect.
6	Dr M.D. Mbee	BSc, Uyo MSc, UI PhD, UPH	Population Geography	Senior Lect.
7	Dr. T.P. Abali	BSc, UPH MSc, UPH PhD, UPH	Geomorphology	Lect. I
8	Dr. D.O. Edokpa	B.Tech., FUTA MPhil., RSU PhD, UPH	Meteorology/Climatology	Lect. I
9	Dr. N.A. Le-ol	BSc Ed, Unical MSc, UI PhD, UPH	Regional Geography	Lect. I
10	Dr S.W. Johnbull	B.Tech, RSU MSc, RSU MPhil., RSU PhD, RSU	Urban and Regional Planning	Lect. I
11	Dr. L. Akue	BSc, Calabar MSc, RSU PhD, RSU	Land-use and Environmental Management	Lect. I
12	Dr. L.M.O. Aminigbo	Dip., UNN BSc, UNN PGD., Lagos MSc, Lagos PhD, Honolulu, USA	GIS and Geomatics	Lect. II
13	Dr. M.U Didia	BSc, UPH PGD, UPH MSc, UPH PhD, RSU	Environmental Management	Lect. II
14	Dr E. Chike	B Ed., UI MSc, UPH PhD, UPH	Regional Development Planning	Lect. II
15	Mr. M.I. Inko-Tariah	BSc, UPH MSc, UI	Geomorphology	Lect. II
16	Mr. J. Brown	BSc, UPH MSc, Aberdeen,	Geospatial and Mapping Science	Lect. II
17	Mrs Akujuru	BSc, CU MSc, SA	Demography	Assist. Lect.
18	Mr Isaac Pukiche	B.Tech., Minna	Meteorology	Graduate Assist.

List of NUC Reviewers for Faculty of Environmental Science CCMAS

Title	Surname	First Name	Institution	Programme
Professor	EZIASHI	Augustine C.	University of Jos, Jos	Chairman
Professor	AKINBOGUN	Tolulope Lawrence	Federal University of Technology Akure	Co-Chairman/ Industrial Design
Professor	OKOLIE	Kevin	Nnamdi Azikwe University, Awka	Building
Professor	ACHUENU	Emmanuel	Council of Registered Builders of Nigeria	Building
Professor	AMUBODE	Adetoun A.	Federal University of Agriculture, Abeokuta	Clothing and Textile Design
Professor	AHMED	Maigari Ibrahim	Bayero University, Kano	Environmental Management
Professor	MADUEME	Stella	University of Nigeria, Nsukka	Environmental Standards
Professor	IYENEMI	Ibimina	Rivers State University, Port Harcourt	Estate Management
Professor	GWARI	William	Ahmadu Bello University, Zaria	Fashion Design
Professor	OKPE	Tonie	Ahmadu Bello University, Zaria	Fine and Applied Arts
Professor	ONUZULIKE	Ozioma	University of Nigeria, Nsukka	Fine and Applied Arts
Professor	UGIOMOH	Frank	University of Port Harcourt	Fine and Applied Arts
Professor	KUJE	Haruna Ayuba	Nassarawa State University, Keffi.	Geography
Professor	WURITKA	Enoch G.	Abubakar Tafawa Balewa University, Bauchi	Industrial Design
Professor	OGUNLADE	Benjamin A.	Ladoke Akintola University of Technology, Ogbomosho	Industrial Design
Assoc. Professor	UDEANI	Angela N.	Modibbo Adama University, Yola	Industrial Design
Professor	IDOWU	Timothy Oluwadare	Federal University of Technology, Akure	Survey and Geo-Informatics
Professor	AJE	Isaac	Federal University of Technology, Akure	Quantity Surveying
Malam	SULEIMAN	Idris Dauda	Town Planners Registration Council of Nigeria	Urban and Regional Planning

List of NUC Representatives

Title	Surname	First Name	Programme
Mrs.	GARBA	Sarah	Discipline Representative, Environmental Standards, Fine & Applied Arts and Industrial Design
Mr.	AGABA	Benjamin	Building
Mr.	NYEMA	Chinda	Clothing & Textiles Design and Quantity Survey
Mrs.	OLORUNFEMI	Oluwatoyin	Environmental Management
Mr.	PARLONG	Kevin	Estate Management
Ms.	OKOKO	Chinasa Nkechi	Fashion Design
Ms.	EJIOFOR	Pamela	Geography
Mr.	MAITURARE	Yahaya	Survey and Geo-informatics
Mrs.	AGAGWUNCHA	Nkiruka	Urban & Regional Planning