<table>
<thead>
<tr>
<th>TITLE:</th>
<th>EARTH ENVIRONMENTS I: GEOMORPHOLOGY AND SOILS</th>
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<tbody>
<tr>
<td>COURSE CODE:</td>
<td>GEOG1231</td>
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<tr>
<td>CREDITS:</td>
<td>3</td>
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<td>LEVEL:</td>
<td>1</td>
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<td>SEMESTER:</td>
<td>1</td>
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<tr>
<td>PRE-REQUISITES:</td>
<td>Two subjects at CAPE (or equivalent) and CSEC Geography</td>
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**RATIONALE**

Geomorphology and Soil Science provide a basic foundation to first year, university-level, Physical Geography. This course is designed to introduce students to geomorphology and soil science to help them critically understand how geomorphologic processes have shaped the world’s principal landform features at the global, regional and local scales including, where appropriate, Caribbean landform features. It introduces a basic set of geographical skills and mapping techniques that enable students be learn land surveying and field mapping techniques, and to interpret remote sensing data in the form of aerial photographs. These skills are an essential preparation for learning more advanced mapping techniques in physical geography.

A geography degree focuses on the development of the five basic personal communication skills; literacy, numeracy, graphicacy, articulacy and IT. In this course these skills are acquired and assessed mainly through problem-solving assignments in practical classes and small-group tutorial sessions, via maps and statistical diagrams (graphicacy), the analysis of statistical data (numeracy), tutorial essay-writing (literacy) and reasoned argument in tutorial discussion (articulacy). IT and computer skills are developed in a variety of learning environments, for example by internet research for tutorial assignments and essays, and in summarizing and analyzing numerical data in practical classes.

**COURSE DESCRIPTION**

The course introduces modern approaches to geomorphology and soil science. It examines the main geomorphic processes in the context of endogenic and exogenic systems from a global perspective. The first part of the course is an examination and description of endogenic systems and processes. It examines the internal structure of the Earth and explains the geographic patterns of global relief of the solid surface in the context of plate tectonics. The relationship between global tectonics and the patterns and styles of volcanic activity is discussed. The passive control of rock type and geological structure is described in relation to landscape form and process. The second part of the course examines and describes the main exogenic systems and processes. The geographical patterns and types of weathering are discussed and the products of the physical disintegration and chemical decomposition of rocks are examined. The course introduces aspects of soil science from a geographical perspective through an examination of the main soil forming factors, and analysis of soil physical; and chemical processes. Key soil types are described and the several approaches to the classification of soils are examined. Exogenic systems in relation to the main geomorphic agents of water, wind and ice are introduced in the context of fluvial, slope, aeolian, karst, coastal, glacial and periglacial systems. The course provides a solid framework for students to advance to Level II and III courses in geomorphology and landform change.

**LEARNING OUTCOMES**

On completion of this course, students should be able to:

- Describe the main sources of energy for geomorphic work and landscape change in the context of
endogenic and exogenic systems and processes.

- Describe and explain the patterns of global relief on the solid surface of the Earth in the context of plate tectonics.
- Describe and explain the internal structure of the Earth from seismic evidence.
- Discuss the geographic patterns and styles of volcanic activity in relation to global tectonics.
- Describe and explain geological controls on geomorphic processes and landforms.
- Account for the patterns and nature of weathering and describe the main processes responsible for the physical disintegration and chemical decomposition of rocks.
- Analyze and explain the main factors in soil formation and describe both the physical and chemical processes inherent in soils.
- Describe the key soil types and the several approaches to the classification of soils.
- Examine the main geomorphic agents of water, wind and ice in the context of landform change.
- Describe and explain the major exogenic processes associated with fluvial, slope, coastal, karst, aeolian, glacial and periglacial systems and examine the resulting landforms.
- To be able to analyze and interpret remote sensed imagery data relating to landform interpretation and other aspects of geomorphic enquiry.
- To be able to use introductory surveying techniques in an examination of physical features.
- To learn how to analyze and interpret graphical and statistical data relating to geomorphology and soil science, and to analyze and interpret this data through written reports.
- To be able to interpret spatial information in the form of maps and Global Positioning Systems.

**CONTENT**

1. Introduction to Geomorphology
2. Global Topography
3. Earth Structure
4. Global Tectonics
5. Plate Tectonics and Global Relief
6. Plate Tectonics and Volcanic Processes
7. Rock Type Control on Landforms
8. Rock Structure Control on Landforms
9. Weathering Systems and Agents
10. Physical Weathering Processes
11. Chemical and Biological Weathering Processes
12. Soil Forming Processes
13. Soil Physical Processes
14. Soil Chemical Processes
15. Soil Classification
16. Slope Systems
17. Fluvial Systems
18. Karst Systems
19. Coastal Systems
20. Aeolian Systems
21. Glacial Systems
22. Periglacial Systems
PRACTICAL CLASS TOPICS
1. Maps and Cartography: map projections, map scales, information content of maps, GPS.
3. Use of Earth Visualization Tools in physical geography: Google Earth.
4. Land Surveying techniques.

METHODS OF DELIVERY
Contact Hours  Credit Hours
Lectures 22 22
Tutorials 6 6
Practical classes (6X 4 hours) 24 12

METHODS OF ASSESSMENT
- 1 two-hour exam (60%)
- Coursework = 40%
  20% from practical assignment (3 assignments)
  10% from tutorial assignments (2 assessed tutorial essays)
  10% from a one-hour multiple choice review test

PRESCRIBED TEXTS

RECOMMENDED READING

USEFUL WEBSITES
www.volcanoes.com
www.bgrg.org
www.soils.usda.gov
TITLE: EARTH ENVIRONMENTS 2: CLIMATE AND THE BIOSPHERE

COURSE CODE: GEOG1232

CREDITS: 3
LEVEL: 1
SEMESTER: 2
PRE-REQUISITES Two subjects at CAPE (or equivalent) and CSEC Geography

RATIONALE
Climate Science and Biogeography are key components of first year university-level Physical Geography. The course is designed to provide students with a broad foundation in essential elements of climate science, climate change and biogeographical processes. It will help students critically understand the complex and dynamic functioning of the earth’s atmosphere and biosphere. It introduces a range of basic geographical skills and techniques that will enable students to learn to summarize, analyze and interpret data relating to the climate systems, vegetation analysis and biogeography. These skills are essential skills for students wishing to take more advanced courses in climate science and climate change.

A geography degree focuses on the development of the five basic personal communication skills; literacy, numeracy, graphicity, articulacy and IT. In this course these skills are acquired and assessed mainly through problem-solving assignments in practical classes and small-group tutorial sessions, via maps and statistical diagrams (graphicity), the analysis of statistical data (numeracy), tutorial essay-writing (literacy) and reasoned argument in tutorial discussion (articulacy). IT and computer skills are developed in a variety of learning environments, for example by internet research for tutorial assignments and essays, and in summarizing and analyzing numerical data in practical classes.

COURSE DESCRIPTION
This course adopts a modern holistic approach to the study of the earth system. It introduces climate science and examines the processes operating within the atmosphere and biosphere including general circulation of the atmosphere, ocean-atmosphere interactions and global climate systems. It places particular emphasis on the impacts and consequences of human-environment interactions. Students will gain an understanding of the spatial and temporal variability of these processes on local, regional and global scales. The course will examine the primary causes, both natural and human, and consequences of climate change and the impact of a changing climate for communities both within and outside the Caribbean Region. Particular emphasis is placed on the impacts of climate change on the biosphere as well as their implications for agricultural systems. The course also introduces the study of biogeography, focusing on the geographical features of biodiversity at different geographical scales and reviews ideas about ecosystem processes and vegetation disturbance and succession.

LEARNING OUTCOMES
On completion of this part of the course, students should be able to:

- Analyze the processes operating within the climate system.
- Describe and explain the spatial and temporal variability of these processes.
- Describe and explain the physical interactions between different earth system components (atmosphere, hydrosphere, geosphere and biosphere).
- Describe and analyze the primary causes, both natural and human, and consequences of climate change.
- Account for the geographical distribution of natural vegetation at global, regional and local scales.
- Discuss the natural and anthropogenic causes of vegetation disturbance, and describe theories of vegetation succession.
- Describe basic ecosystems energy flows and material cycles.
- To be able to summarize numerical data from climate and vegetation datasets and other aspects of as frequency distributions, histograms line graphs and pie charts and other simple graphical methods using appropriate statistical packages.
- To be able to summarize numerical data using simple statistical measures such mean, mode, median and standard deviation as they relate to Earth Systems science.
- To learn how to analyze and interpret graphical and statistical data relating to climate and vegetation data and to analyze and interpret this data through both oral and written reports.

CONTENT:

1. An introduction to climate science
2. Warming the earth and atmosphere
3. Greenhouse gases and global warming
4. General circulation of the atmosphere
5. The oceans
6. Ocean-atmosphere interactions
7. Global climate systems
8. Evidence for past climatic change
9. Causes of environmental change
10. Human-environment interactions (impacts of climate change on society)
11. Making sense of diversity. Organisms and levels of organization
12. Environmental variables affecting growth
13. Tolerance ranges and species interaction
14. Floral and faunal zones and Biomes
15. Vegetation Disturbance and Succession
16. Ecosystems and energy flow
17. Ecosystems and material cycles

PRACTICAL CLASS TOPICS
- Analysis of Atlantic Hurricanes
- Interpretation of Ice Core Records of Climate Ocean Core Records
- Ecological amplitude and species interaction
- Biogeographic Zones and Vegetation Succession

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METHODS OF ASSESSMENT
- 1 two-hour exam (60%)
- Coursework =40%
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METHODS OF ASSESSMENT

- 1 two-hour exam (60%)
- Coursework = 40%
  - 20% from practical assignment (3 assignments)
  - 10% from tutorials (2 assessed tutorial essays)
  - 10% from a one-hour multiple choice review test

PRESCRIBED TEXTS


RECOMMENDED READING


USEFUL WEBSITES

- [www.wfp.org](http://www.wfp.org) (the UN World Food Program)
- [www.globalissues.org](http://www.globalissues.org)
- [www.foodfirst.org](http://www.foodfirst.org)
- [www.bbc.co.uk](http://www.bbc.co.uk)
- [www.newscientist.co.u](http://www.newscientist.co.u)
- [www.fao.org](http://www.fao.org)
- [www.agbioworld.org](http://www.agbioworld.org)
- [www.cgiar.org](http://www.cgiar.org)
TITLE: HUMAN GEOGRAPHY 1: POPULATION, MIGRATION AND HUMAN SETTLEMENT

COURSE CODE: GEOG1131

CREDITS: 3
LEVEL: 1
SEMESTER: 1
PRE-REQUISITES Two subjects at CAPE (or equivalent) and CSEC Geography

RATIONALE
Population Geography provides a basic foundation to Human Geography at first year university-level. It is designed to help students critically understand the spatial dynamics of world population growth and associated social, economic cultural and political problems, especially those relating to urbanization and the growth of cities in a globalized world. The course provides students with wide-ranging knowledge and selected Caribbean case studies to enable them to connect global issues with those relevant to the Caribbean region. It introduces a range of basic geographical skills and cartographic techniques to enable students to depict population data in maps and diagrams, and to interpret population data. It introduces computer-based mapping techniques and software which are essential building blocks for more advanced courses in modern geographical skill training.

A geography degree focuses on the development of the five basic personal communication skills; literacy, numeracy, graphicacy, articulacy and information technology (IT). In this course these skills are developed mainly through problem-solving assignments in practical classes and small-group tutorial sessions, via maps and statistical diagrams (graphicacy), the analysis of statistical data (numeracy), tutorial essay-writing (literacy) and reasoned argument in tutorial discussion (articulacy). IT and computer skills are developed in a variety of learning environments, for example by internet research for tutorial assignments and essays, and in summarizing and analyzing numerical data in practical classes.

COURSE DESCRIPTION
This course introduces modern approaches to the study of Population Geography. It examines the human and physical factors determining population distribution and dynamics, theories of population change including Malthus’ and neo-Malthusian thoughts and the demographic transition theory. It explains the sources of, and problems associated with population statistics, how to measure fertility, mortality and migration and population projection techniques. It also discusses family planning and population control efforts around the world, the status of women and its crucial role in population dynamics, major causes of death around the world including AIDS, the role of migration in population dynamics, culture, population and the environment. The course also introduces historical and contemporary perspectives on urbanization both in the industrialized world and the developing world and reviews theories on the geographical distribution of human settlement.

LEARNING OUTCOMES
On completion of this course, students should be able to:

- Explain the significance of population geography.
- Describe key methods of population measurement and analyze their limitations
• Identify the key geographical characteristics of the world’s population distribution.
• Define the concepts and practices of colonialism and imperialism.
• Summarize key motives and legacies of colonialism and how they relate to population change.
• Explain the causes of population change including the role of diseases and epidemics (with special reference to HIV/AIDS).
• Outline key components of the Demographic Transition Model and critically assess its limitations.
• Define and describe different forms of internal and international migration, the factors influencing population movements and their effects on host and sending societies.
• Discuss the usefulness and limitations of specific population policies and programmes.
• Account for the growth of mega cities in the developing world and explain the socio-economic and environmental challenges associated with their emergence.
• Discuss the impacts of economic globalization on cities in the developed and developing world.
• To be able to summarize population data and interpret demographic tools such as population pyramids and censuses.
• To be able to summarize and assess demographic statistics such as birth rates and death rates.
• To learn how to analyze and interpret graphical and statistical data relating to population growth patterns and population movements, and to analyze and interpret this data through written reports.

CONTENT

2. Measures of Population Growth and Change
4. Colonialism and its impact on population distribution and structure
5. Global Patterns and Trends in Mortality
6. Gender and Population Change
7. The ‘Population Bomb’ revisited
8. The Demographic Transition Model Revisited
9. Moving Populations: Key Concepts in Migration
10. Migration Case Studies
11. Migration, Transnationalism and Diasporic Communities
12. Population Geographies of Labour
14. Global Urbanization Trends and Patterns: Historical Perspective
15. Urbanization in the Third World and its Challenges
17. Population, Development and the Environment
18. Globalization, Cities and Culture

PRACTICAL CLASSES TOPICS: Theme: maps and cartography

• Introduction to maps and cartography (Google Earth)
• Calculation and interpretation of demographic statistics
• Constructing and interpreting Population Pyramids
• Choropleth maps and ARCGIS computer mapping
• Urban land use field mapping with GPS

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- Coursework = 40%
  - 20% from practical assignment (3 assignments)
  - 10% from tutorial assignments (2 assessed tutorial essays)
  - 10% from a one-hour multiple choice review test

PRESCRIBED TEXTS


RECOMMENDED READING

• Daniels, P., Bradshaw, M, Shaw, D & J. Sidaway (2005) An Introduction to Human Geography, 2nd Edn.,

USEFUL WEBSITES:

http://www.census.gov/ipc/www/idb/informationGateway.php
http://www.geography.ccsu.edu/kendra/population.html
http://www.youtube.com/watch?v=JPiDrUrIZZU
http://www.prb.org (the Population References Bureau, Washington DC)
TITLE: HUMAN GEOGRAPHY 2: WORLD ECONOMY, AGRICULTURE AND FOOD

COURSE CODE: GEOG1132

CREDITS: 3
LEVEL 1
SEMESTER 2
PRE-REQUISITES Two subjects at CAPE (or equivalent) and CSEC Geography

RATIONALE
The course is designed to introduce modern approaches to the study Economic Geography and is a basic foundation for first year university-level Human Geography. Its focus on the structure and dynamics of the world economy, and the ways in which globalization has impacted on industry and agriculture provides students with wide-ranging knowledge relevant to economic development. It will help students situate Caribbean economic and social development in a broader global context. It introduces a range of basic geographical skills and techniques that enable students to analyze and interpret data relating to the world economy and other aspects of economic geography, in preparation for more advanced geographical skill training.

A geography degree focuses on the development of the five basic personal communication skills; literacy, numeracy, graphicacy, articulacy and information technology (IT). In this course these skills are developed mainly through problem-solving assignments in practical classes and small-group tutorial sessions, via maps and statistical diagrams (graphicacy), the analysis of statistical data (numeracy), tutorial essay-writing (literacy) and reasoned argument in tutorial discussion (articulacy). IT and computer skills are developed in a variety of learning environments, for example by internet research for tutorial assignments and essays, and in summarizing and analyzing numerical data in practical classes.

COURSE DESCRIPTION
The course examines the processes of economic development and globalization, and the economic interdependence of countries in the modern world. It introduces basic theories, concepts, and methods for describing, measuring and analyzing patterns of economic and social development. It examines the main factors that have contributed to uneven patterns of economic development, such as the distribution and exploitation of natural resources, and the processes of industrialization, technological change and globalization. The section on the economic geography of agriculture and the food industry illustrates in depth many issues related economic development and globalization. These include the role of agribusiness in food production and food consumption and the impacts of traditional and modern agricultural production systems on the environment. The course explores the geographical dimensions of world hunger and malnutrition in relation to the structure of the world economy and world agriculture, and considers prospects for future agricultural development.

LEARNING OUTCOMES
On completion of this course, students should be able to:

- Describe geographical patterns of world economic development and classify countries on the basis of their development characteristics.
- Describe and explain how the world economy evolved into a core and periphery structure through successive waves of industrial and technological changes and colonial trade.
- Explain the basic principles of industrial location and assess their relevance to the location of contemporary industrial activities in the global economy.
- Describe and explain the transformation of agriculture into a globally integrated agrifood system.
20% from practical assignment (3 assignments)  
10% from tutorials (2 assessed tutorial essays)  
10% from a one-hour multiple choice review test

**PREScribed TEXTS**

**RECOMMENDED READING**

**SELECTED INTERNET RESOURCES:**
- Course web pages: [www.caribbeanenvironments.com](http://www.caribbeanenvironments.com)  
- Intergovernmental Panel on Climate Change (IPCC) webpages: [www.ipcc.ch](http://www.ipcc.ch)  
- National Hurricane Center: [www.nhc.noaa.gov](http://www.nhc.noaa.gov)  
- Climate change pages of the Royal Society: [http://royalsociety.org/landing.asp?id=1278](http://royalsociety.org/landing.asp?id=1278)  
- Account for the basic geographical patterns and trends of world food production and food consumption, and explain the causes and possible solutions to the world food problem.
- Discuss the impacts of economic globalization on farming systems in both the developed and developing world.
- Discuss the impact of traditional and modern agriculture on the environment
- To be able to summarize numerical data relating to economic development and other aspects of economic geography as frequency distributions, histograms, and pie charts and other simple graphical methods
- To be able to summarize numerical data relating to economic development using simple statistical measures such as mean, mode, median and standard deviation
- To construct and interpret the Human Development Index.
- To learn how to analyze and interpret graphical and statistical data relating to economic development and economic geography, and to analyze and interpret this data through written reports.

**KEY TRANSFERABLE PERSONAL SKILLS**

A geography degree focuses on the development of the five basic personal communication skills; literacy, numeracy, graphicacy, articulacy and IT. In this course these skills are developed mainly through problem-solving assignments in practical classes and small-group tutorial sessions, via maps and statistical diagrams (graphicacy), the analysis of statistical data (numeracy), tutorial essay-writing (literacy) and reasoned argument in tutorial discussion (articulacy). IT and computer skills are developed in a variety of learning environments, for example by internet research for tutorial assignments and essays, and in summarizing and analyzing numerical data in practical classes.

**CONTENT**

1. Introduction to the World Economy
2. Measuring Economic Development
3. Sustainable Development: Development and Environment
4. Economic Development and Globalization
5. Technological Change and Industrialization
6. Understanding Industrial Location
7. Transportation and Economic Geography
8. Economic Geography of Natural Resources
9. Energy resources
10. Geography of Food Production
11. Hunger, Poverty and the World Food Problem
12. Traditional Agriculture: Shifting Cultivation in transition
13. Three Agricultural Revolutions and technological change
14. From Green Revolution to Gene Revolution
15. The Globalization of Agriculture and the Agro-food system
16. Food Consumption, Globalization and Culture
17. Case study of Caribbean Bananas
18. Agriculture and the Environment

**PRACTICAL CLASS TOPICS**

- Using graphical and statistical methods to summarize and interpret economic data
- Calculation of Human Development Index, and use of interactive maps of HDI and other Development Indices
- Calculating moving means to interpret time series (banana and sugar production)