GGY 201:Geomorphology

Course No	GGY 201
Course Title	Geomorphology
Credits	3
Prerequisites	GGY 102
Core/Optional	Core for SpecialDegreeand Optional for General Degree

Objectives:

The students will be able to understand the basic principles, concepts, theories and processes of geomorphology. They will also acquire skills in preparation of geomorphological maps, cross-sections and acquaint with different field techniques.

Time Allocation	Lectures |30|, Practical | 30 |

Course Description

This is an introductory course in Geomorphology covering the major processes of landform development of evolution. The topics cover under this course include: major geomorphological processes and methods, theories and thoughts of landform development, erosion cycle, relationship between different lithological characteristics and geomorphological features, endogenic processes (plate tectonics, diastrophism, etc.), exogenic processes (rock weathering, formation of hill slopes, climatic geomorphology, fluvial, aeolian, coastal, glacial processes and landforms, etc.), quantitative and qualitative methods of geomorphological studies, geomorphological features of Sri Lanka.

Assessment Scheme	**Percentage Marks**
Continuous Assessment	
Assignments	10
Field work based report	20
Laboratory tests	20
End Semester Examination	50

GGY 202: Cartography

Course Code	GGY 202
Course Title	Cartography
Credits	3
Prerequisite	None
Core/ Optional	Core for SpecialDegreeand Optional for General Degree

Objectives:

The students will acquire the basic knowledge and skills on different cartographic techniques and learn principles of cartography as an effective way of communicating spatial information, and be able to produce good quality cartographic products.

Time Allocation	Lectures [30] Practical [30]

Course Description

This course covers both theoretical and practical aspects of cartography; The main topics are: introduction to cartography (the history and the nature of cartography, types of maps etc.); map scale, map projections and coordinate systems, principles of cartographic design (map elements, visual variables and map symbolization, color theory, typography and lettering, map compilation etc.) analysis of map features (physical and cultural features using both quantitative and qualitative methods), statistical cartography, construction and interpretation of weather maps, interpretation of aerial photographs, introduction to Geographic Information Systems.

Assessment Scheme	**Percentage Marks**
Practical	60
End Semester Examination	40

GGY 204: Population Geography

Course No	GGY 204
Course Title	Population Geography
Credits	3
Prerequisites	None
Core/Optional	Core for SpecialDegreeand Optional for General Degree

Objectives

The students will acquire both theoretical and analytical knowledge on temporal and spatial aspects of population, with the skills of representing, analysing and interpreting population data from a spatial point of view.

Time Allocation	Lectures |30| Discussions (15)

Course Description

The main topics of the course include, the difference between population geography and demography; population theories and debates: Malthusian and Marxian perspective, Bucharest and recent debates, demographic transition theory; world population distribution and related issues, main factors and processes affecting population size and distribution; demographic techniques of data collection and analysis; and visualization; population movements: migration theories, historical and modern trends of migration; population in Sri Lanka (distribution and new trends); introduction to research frontiers in population geography.

Assessment Scheme	**Percentage Marks**
Assignments Term paper	20
Demographic data analysis /population mapping exercise	20
End Semester Examination	60

GGY 206: Basic Geology

Course Code	GGY 206
Course title	Geology
Credits	3
Prerequisites	None
Core / Optional	Core for SpecialDegreeand Optional for General Degree

Objectives:
The students will be able to identify the types of materials in the earth and the internal, subsurface and surface processes that form them. Students will also acquire the skill of identifying minerals, different types of rocks and structural features.

Time Allocation	Lectures [30], Practical [18], Field work [12]

Course Description

Introduction to Geology, definition of a mineral, classification of minerals, physical properties of minerals , identification of minerals, rock cycle, igneous rocks (formation, structures, classification), sedimentary rocks formation, structures, classification), metamorphic rocks formation, structures, classifications), rock identification, rock deformation and geological structures in rocks, different types of rocks in Sri Lanka, stratigraphical units, unconformities, introduction to paleontology, identification of fossils, introduction to photogeology.

Assessment Scheme	**Percentage Marks**
Quizzes Laboratory Assessment (practical) Field Assessment Oral presentation	10 10 10 10
End Semester Examination	60

GGY 210: Introduction to GIS

Course No	GGY 210
Course Title	Introduction to GIS
Credits	3
Prerequisites	GGY 202
Core/Optional	Core for Special Degree

Objectives

The students will acquire the knowledge on basic concepts and uses of GIS technology and will learn to computerize spatial data, perform simple analysis and produce outputs.

Time Allocation	Lectures |21| Practical|48|

Course Description

The course covers the basic concepts of GIS, introduction to GIS; the components of GIS; spatial data base management systems; coordinate systems and map projections; basic GIS functions (digitizing, geo-referencing, editing, manipulating and spatial query etc.); visual preparation of spatial data (classification, simplification and symbolization); GIS applications; brief introduction to advanced analysis techniques in GIS.

Assessment Scheme	**Percentage Marks**
Continuous Assessment	60
End Semester Examination	40

GGY 211: Political Geography

Course No	GGY 211
Course Title	Political Geography
Credits	3
Prerequisites	None
Core/Optional	Core for Special Degree

Objectives

The students will be introduced to the field of Political Geography, develop analytical skills needed to review the main issues in Political Geography. They will also be able to explain the changing political map of the world and key political geographic issues in Sri Lanka.

Time Allocation	Lectures |30| Discussions |15|

Course Description

Introduction to Political Geography: definitions, subdivisions and the evolution; state as central concept of Political Geography: defining characteristics and roles; state in crisis: territorial, political, economic and social; colonialism: spread and impacts, specially the creation of new states; Geopolitics: traditional and modern Geopolitics; new actors in global Geopolitics; politics of resources; geography of federalism; electoral politics and the state: electoral demarcation and gerrymandering; politics of environment: integration of environment with politics; green politics; ethno nationalist politics: theories, global picture; ethno nationalist politics in Sri Lanka; devolution of power in Sri Lanka: past attempts and the viability of units; Sri Lanka in global and regional Geopolitics.

Assessment Scheme	**Percentage Marks**
Continuous Assessment	
Assignments	20
Mid semester examination	30
End Semester Examination	50

GGY 212: Climatology

Course No	GGY 212
Course Title	Climatology
Credits	03
Prerequisites	GGY 101
Core/optional	Core for Special Degree

Objectives

The students will acquire the basic knowledge of the physical processes of climate system and learn the techniques of climate data collection and weather instrumentation.

Time Allocation	Lectures |30| Practical based on guided weather observations |30|

Course Description

The course will cover the following topics: The scope and the science of Climatology, the earth and its atmosphere, energy transfers; temperature, and heat balance, seasonal and daily temperature, circulation of water in the geosystem, evapotranspiration, humidity, condensation; dew, fog, and cloud formation; precipitation; air pressure and winds, general circulation model (GCM); global and small-scale and local wind systems, ocean-atmosphere interactions and El Niño/La Niña–Southern Oscillation(ENSO), air masses and fronts, mid latitude cyclones, thunderstorms, tornadoes, and hurricanes and their tracking, weather forecasting; weather observations, satellite climatology, climatic classification, air pollution, climate change-natural and manmade, methods of climate data analysis.

Assessment Scheme	**Percentage Marks**
Continuous Assessment	
Weather observation reports	20
Mid semester examination	20
End Semester Examination	60

GGY 213: Economic Geography

Course No	GGY 213
Course Title	Economic Geography
Credits	3
Prerequisites	None
Core/Optional	Core for Special Degree and General Degree
Objectives The students will acquire a broad-based knowledge on economic geography and be able to recognize the spatial implications of economic decision making at local, regional and global scales.	
Time Allocation	Lectures |30| Discussions [15]
Course Description The course will pay attention to five major areas; 1) The changing nature of Economic Geography: growth and significance as a sub field, changing trends and modern Focus, 2) Spatial organization of economic activities: agriculture, industry, services 3) Geography of the world economy: economic patterns and trends: industry and finance, agriculture, economic inequality, international trade 4) Spatial transformations in the world economy: rise of core and periphery: European world system, industrial core, globalization of production, spatial transformation of the periphery: colonial economies and spatial change, industrialization in the periphery, changing nature of agriculture 5) Regions and localities within the world economy: South Asia and Sri Lanka.	

Assessment Scheme	**Percentage Marks**
Continuous Assessment In-class assignments	40
End Semester Examination	60

GGY 214: Advanced Physical Geography

Course No	GGY 214
Course Title	Advanced Physical Geography
Credits	3
Prerequisites	None
Core/Optional	Core for General Degree(Not available for Special Degree)
Objectives Students will acquire an overall understanding of the bio-physical components of the environment.	
Time Allocation	Lectures |30| Discussions |15|

Course Description

The course will cover geological/geomorphological, hydrological and biological components and processes of the environment and their interdependence; geological/geomorphological processes: geological evolution, endogenic and exogenic processes, landforms; climate and hydrology: general circulation model, surface hydrology, ground water hydrology; biological: evolution, extinction and changes, vegetation development, succession and climax communities, ecosystems (diversity & stability) , major biomes, biodiversity; natural hazards: geological hazards, climatic hazards/extreme climates, biological issues, human impacts on ecosystems.

Assessment Scheme	**Percentage Marks**
Continuous Assessment Assignments	40
End Semester Examination	60

GGY 215: Basic Science for Geography

Course Code	GGY 215
Course title	Basic Science for Geography
Credits	3
Prerequisites	None
Core / Optional	NC (for Geography Special Degree)
Objectives: Students will acquire knowledge of the basic concepts and the fundamental theories and laws in Biology, Chemistry and Physics and be able to apply them to understand the courses in Physical Geography.	
Time Allocation	Lectures [30] Practical (30)

Course Description

Biology:

Biomolecules, cell structure and function, prokaryotes &eukaryotes, introduction to kingdoms, introduction to genetics, Basic Microbiology, Basic Ecology, biotic &abiotic interactions, geographical pattern of species & diversity, plant anatomy & morphology, plant classification & identification, conservation biology, basic concepts of biogeography.

Chemistry:

Matter, chemical formula and bonds, introduction to periodic table, periodic table and properties of elements, chemical reactions, different types of chemical reactions, industrial applications, transition elements and properties, environmental applications, behavioral pattern of gasses, solvents, solutions and mixtures, compounds, acids and bases, domestic chemicals and their effects.

Physics:

Units of measurements, displacement, velocity, acceleration, vectors, forces, friction, Newton's laws, gravity, waves, magnetism, light, heat and pressure, relativity, practical physics.

Assessment Scheme	**Percentage Marks**
Practical and Field Assignments in all the three areas	60
End of Semester Examination	40

GGY216: Mathematics for Geography

Course Code	GGY 216
Course title	Mathematics for Geography
Credits	3
Prerequisites	None
Core / Optional	NC (for Geography Special Degree)
Objectives: Main objective of the course is to introduce basic mathematics knowledge to Geography students. Students will learn concepts, formulas and theories in mathematics and will use them in other relevant course units in the Geographical Information Science degree program. This course will help students to familiarize with basic mathematics concepts and also they will understand the way that they can apply these concepts in Geography. Students will develop skills to use appropriate mental, written and calculator techniques to solve a variety of problems.	
Time Allocation	Lectures (30), Discussions (15)
Course Description Sets and inequalities, Linear equations, Quadratic equations, Functions and graphs, Trigonometry, Limits including limits at infinity and infinite limits, Continuity, Derivatives, Curve sketching, Maximum-minimum problems, Exponential and logarithmic functions, Techniques of integration, Areas and volumes, partial derivatives, Introduction to vectors, Scalar product, Vector product, Triple scalar product, Triple vector product, Spherical trigonometry, Introduction to probability theory.	
Assessment Scheme	**Percentage Marks**
Continuous Assessments	40
Semester End Examination	60