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Geography Grade 12

The following table provides a summary of the learning content for the NCCS syllabus for Geography AS Level, and indicates how this series covers all topics, sub-topics and objectives of the syllabus.

	LB pages	TG pages
Theme 1: Physical geography	2–93	20–51
Topic 1.1 Plate tectonics	4–24	21–26
General objectives Show an understanding of regional and global relief patterns as related to plate tectonics **Specific objectives** • Describe the characteristics of tectonic plates and explain their global patterns • Describe and explain the general distribution of young fold mountains, earthquakes and volcanoes in relation to plate margins: Divergent (constructive), conservative and convergent (destructive, collision) • Describe the causes and effects of earthquakes and volcanic eruptions • Describe the main types of intrusions (batholiths, sills and dykes) • Describe the nature and explain the formation of the East African Rift Valley and its influence on relief and drainage • Describe and explain the distribution of major relief elements of the world such as mountain ranges, shields, sedimentary basins, ocean basins, ocean ridges, ocean trenches and volcanic island arcs **Case study** *Candidates must study the advantages and disadvantages of The East African Rift valley to the local inhabitants.*		
Topic 1.2 Processes on slopes	25–34	27–29

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General objectives Understand slope processes and their effects **Specific objectives** • Distinguish between weathering and mass movement • Explain how slopes are modified by weathering and mass movement with reference to slow movement (soil creep and solifluction), flow movements (earthflows and mudflows), rapid movements (landslides) and very rapid movements (rockfalls) • Examine the effect of mass movement on people and the natural environment • Examine strategies to reduce mass movement, with reference to pinning, netting, grading and afforestation **Case study** *Candidates must study the impacts of human activity on slopes showing the effect on the stability of slope, and evaluate attempts to reduce.*		
Topic 1.3 River channel processes and landforms	35–56	30–35
General objectives • Understand river erosion, transportation, deposition and sedimentation • Understand river velocity, discharge and patterns of flow • Know landforms associated with river processes • Understand how human activities influence catchment flows, stores and channel flows • Understand the causes and effects of floods		

Specific objectives • Explain the difference between laminar, turbulent and helicoidal flows in a river channel • Explain the processes by which a river erodes its channel with reference to hydraulic action, corrosion, corrasion and attrition • Explain the processes by which a river transports its load with reference to traction, saltation, suspension and solution • Explain where and why deposition and sedimentation take place in a river channel • Explain the difference between meandering and braided river channels • Describe and explain the formation of gorges, rapids, waterfalls, bluffs, river cliffs, point bars/slip-off slopes, floodplains, levees, alluvial fans, deltas • Describe and explain the human impact to catchment flows, stores and channel flows by land-use changes (deforestation, afforestation, urbanisation), abstraction and water storage • Describe the causes and effects of river flooding • Discuss flood management techniques with reference to forecasts and warnings, soft engineering (floodplain and drainage basin management, wetland and riverbank conservation, and river restoration) and hard engineering (dams, river straightening, levees and diversion spillways) **Case study** *Candidates must study a recent river flood event showing the causes of the flood, impact on both people and the environment, and evaluate attempts to reduce the impact of the flood, for example, flood in Zambezi region.*		
Topic 1.4 The drainage basin system	57–64	36–40
General objectives Understand the components of the drainage basin hydrological system **Specific objectives** • Identify and describe the drainage basin as a system with reference to inputs, outputs, store and flows • Describe and explain how the components of the hydrological system vary by climatic region • Describe and explain the origin of groundwater • Describe the concept of water balance and explain the modification of the cycle by people		
Topic 1.5 Rainfall-discharge relationships within drainage basins	65–71	41–43

General objectives • Understand the component of hydrographs • Understand how climate influences hydrographs • Understand how soil textures, rocks, slopes, vegetation and land use influence hydrographs **Specific objectives** • Define a hydrograph • Identify and name the components of hydrograph • Describe how climate influences the shape of hydrographs with reference to types of precipitation and intensity, temperature, evaporation, transpiration, evapotranspiration, antecedent moisture • Explain how porosity and permeability of soil and rock, slopes, vegetation and land use affect the shape of hydrograph		
Topic 1.6 Atmospheric processes	72–89	44–49
General objectives • Understand the vertical structure of the atmosphere • Understand how the atmosphere is heated • Understand human impact on climate **Specific objectives** • Name and describe the vertical structure of the atmosphere with reference to the troposphere, stratosphere, mesosphere and thermosphere • Explain how the atmosphere is heated by insolation, including the effect of cloud cover on the Earth's heat energy budget • Describe and explain the Earth (global) energy budget • Explain local energy budgets in terms of input and output analysis with reference to the daytime and nighttime energy model • Draw a fully labelled diagram to show the daytime/nighttime model of radiation balance • Distinguish between latent and sensible heat transfers • Evaluate climate change and its effects in global and local context • Discuss the impact and effects of human activities in an urban area on climate: Temperature (heat island), humidity, precipitation and winds **Case study** *Candidates must study a named urban area showing the effects of human activity on climate: Temperature (heat island), humidity, precipitation and winds.*		

Theme 2: economic activities and the use of resources	94–161	52–82
Topic 2.1 Manufacturing industries	96–111	53–58
General objectives Understand the dynamic nature of manufacturing industries **Specific objectives** • Describe the factors that influence the location of the following manufacturing industries: » Motor vehicle assembly (with reference to assembly plant(s) in South Africa) » High-technology industries » Craft industries • Describe and explain the spatial and structural characteristics of manufacturing industries including the scale of operation: Small-scale (cottage), factory and multinational • Discuss the importance of manufacturing industries to the economy of Namibia • Describe the nature of industrial landscapes and environmental consequences of industrial developments • Describe and explain the social and economic implications of industrial change **Case study** *Candidates must study a manufacturing industry, for example, the craft industry in Okahandja, Namibia.*		
Topic 2.2 Agriculture	112–128	59–67
General objectives Understand different agricultural systems and their social, economic and environmental implications **Specific objectives** • Describe opportunities and constraints to be considered when developing the land for agriculture		

• Identify the physical and human factors that influence decision-making in creating different systems (intensive/extensive) of agriculture • Discuss how different types of agriculture (arable, pastoral and mixed) vary in terms of inputs and outputs • Explain how the following influence different agricultural systems: » Population density » Technology » Transport » Politics and culture » Physical environment • Examine the socio-economic and environmental implications of change in agricultural land use • Assess the methods of increasing agricultural production with reference to low-income countries • Discuss examples of agricultural conservation and land management strategies		
Topic 2.3 energy and mining	129–144	68–71
General objectives Understand various sources of energy and minerals and their impact on the environment **Specific objectives** • Analyse the data for the world pattern of production and consumption of energy • Describe how the following factors affect the demand and supply of different sources of energy including: » Resource availability » Sustainability » Level of development » Technology » Climate » Income » Pollution • Examine why energy supplies such as hydroelectricity, fuelwood, wind power, solar power, biofuels and geothermal power are increasing in importance • Discuss the environmental impacts of energy production and transport • Assess how the extraction of minerals and production of energy have consequences for both people and the environment **Case study** *Candidates must study solar energy in China, for example, Tengger Desert Park.*		
Topic 2.4 Water	145–157	72–77

General objectives Understand the demand and supply of water, and the socio-economic and environmental impacts of water surpluses and deficits **Specific objectives** • Define what is meant by surplus and deficiency of water • Suggest reasons why there are areas of surplus and deficiency of water • Explain why areas of water supply and areas of water demand are often different • Discuss the problems associated with scarcity of water supply • Describe and explain the social, economic, political and environmental issues associated with water control and sharing projects • Describe the problems related to water sharing and control (health and diseases, salination, pollution, erosion and deposition) **Case study** *Candidates must study the Lesotho Highland Water Project (LHWP).*		

Theme 3: Human geography	162–231	83–107
Topic 3.1 Population studies	164–188	84–91

General objectives • Understand population dynamics and their social, economic and environmental impact • Understand the influence of population growth in relation to food supply **Specific objectives** • Distinguish between population distribution and density • Describe factors that influence population density and distribution • Define the main components that influence population growth with reference to birth rate, death rate, fertility rate, mortality rate, natural increase, replacement level and migration • Evaluate and appreciate the link between population and development changes in demographic indices over time (for example, life expectancy) • Distinguish between optimum population, underpopulation and overpopulation • Describe and explain the recent rapid increase in the world's population • Discuss the problems associated with the recent rapid increase in the world's population • Demonstrate an understanding of the causes and consequences of overpopulation and underpopulation • Evaluate and appreciate the concepts of overpopulation, optimum population and underpopulation • Identify the unequal distribution of food supplies in relation to population and the problems caused such as quantity of food, famine, malnutrition and adequacy of diet, and suggest possible solutions to these problems **Case study** *Candidates must study one country's population policy regarding natural increase, showing the difficulties faced, and evaluate the attempted solutions.*		
Topic 3.2 Population movements (migration)	189–201	92–96

General objectives Understand the dynamics of population movements **Specific objectives** • Describe population migration (voluntary/involuntary, internal/international) • Discuss the role of constraints, obstacles and barriers associated with migration • Discuss the causes of migration (push and pull factors) • Discuss the processes (for example, step and chain migration) and patterns of migration (for example, age, gender, family structure, economic status) • Describe and explain the geographical implications of population change in areas of population loss and gain **Case study** *Candidates must study one international migration stream: Causes, character, scale, pattern and impacts on source areas and receiving/destination areas.*		
Topic 3.3 Settlement studies	202–227	97–104

General objectives Understand the dynamics of rural and urban settlement and the process of urbanisation **Specific objectives** • Describe and explain the factors that influence the size, development and functions of rural and urban settlements and their sphere of influence • Examine the factors that lead to rural depopulation and suggest possible solutions • Discuss the causes and effects of the contrasts in the process of urbanisation in developing countries like Namibia (low-income countries) and high-income countries • Identify and give reasons for the changing size and distribution of world cities • Describe and explain problems related to urbanisation, including urban sprawl, urban decay, pollution and transport • Suggest solutions to urban problems such as urban planning, satellite settlements, site-and-service schemes, transport and new forms of communication • Give reasons for and explain the implications of change within urban areas • Describe and explain the inequalities in living standards that may arise in cities • Identify and describe features of urban change in high-income countries such as counter urbanisation and gentrification Case study Candidates must study urban settlements showing the challenges of, and evaluating the attempted solutions, for each of the following: • A shanty town (squatter settlement) • Providing infrastructure (either power or transport) for the city		

Theme 4: Interpretation of topographic maps	232–269	108–119
Topic 4.1 Interpretation of topographic maps	234–265	109–118

General objectives Know how to read and interpret various topographic maps **Specific objectives** • Identify the characteristics of a map such as the title, key, scale and direction • Demonstrate the ability to use scale to measure distance, and to calculate area and gradient • Demonstrate the ability to find direction and calculate bearings • Identify landforms on maps using contours and symbols • Describe human activities in relation to the features on a map • Recognise and interpret horizontal and oblique photographs (landforms, natural vegetation, land use and settlement) • Locate features on a map using the latitude and longitude coordinate system • Demonstrate skills of analysis and interpretation as well as basic map reading skills • Analyse and interpret the physical and human landscape by referring to map evidence such as patterns of relief, drainage, settlement, communications and land use		