

# Advance information June 2022

## A level Geography (7037)

### Version 1.2

Because of the ongoing impacts of the Coronavirus (COVID-19) pandemic, we are providing advance information on the focus of June 2022 exams to help students revise.

This is the advance information for A-level Geography (7037).

### Information

- This advance information covers all examined components.
- This advance information mainly identifies the required AO1 content that will be assessed in this paper, as well as the required geographical skills.
- Due to the synoptic nature of the geographical content, the aims of the specification and its design, there are in places large proportions of content identified.
- It is **not** permitted to take this notice into the examination.

### Advice

Students and teachers should consider how to focus their revision of other non-listed parts of the specification, for example to review whether other topics may provide knowledge which helps understanding in relation to the areas being tested in 2022.

The information contained in this document does not identify *all* possible opportunities where students may apply their knowledge and understanding (AO2). This means that students' responses to individual questions may draw upon other areas of specification content where relevant and credit will be given for this, where appropriate.

There are a few points to be considered when using this information to help focus revision:

- The aims of the specification stipulate that students are encouraged to: "*apply geographical knowledge, understanding, skills and approaches in a rigorous way to a range of geographical questions and issues.*" In particular, this is important when it comes to accessing higher levels of the mark scheme.
- It is good practice in many areas of the specification for the content to be taught through the required case studies (eg local and distant place studies). It is therefore essential that students include case study knowledge as part of their revision in all units studied.
- It is important to remind students of the range of ways that data can be presented when looking at Geographical skills (eg different types of bar charts and line graphs), that are assessed in some questions – such as 6 mark AO3 questions.
- Opportunities to engage with qualitative and quantitative data as outlined in the specification should be considered in relation to the highlighted AO1 content (eg "qualitative

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approaches involved in representing place, and to analysing critically the impacts of different media on place meanings and perceptions”).

- Questions will be included in the assessment that draw from links made within units, and across units. It is important that students consider this still as part of their revision.

## Focus of the June 2022 exam

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### 7037/1: Physical Geography

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#### **3.1.1 Water and carbon cycles**

##### **3.1.1.1 Water and carbon cycles as natural systems**

Systems in physical geography: systems concepts and their application to the water and carbon cycles – inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium.

##### **3.1.1.3 The carbon cycle**

Global distribution, and size of major stores of carbon – lithosphere, hydrosphere, cryosphere, biosphere, atmosphere.

Factors driving change in the magnitude of these stores over time and space, including flows and transfers at plant, sere and continental scales. Photosynthesis, respiration, decomposition, combustion, carbon sequestration in oceans and sediments, weathering.

Changes in the carbon cycle over time, to include natural variation (including wild fires, volcanic activity) and human impact (including hydrocarbon fuel extraction and burning, farming practices, deforestation, land use changes).

The carbon budget and the impact of the carbon cycle upon land, ocean and atmosphere, including global climate\*

##### **3.1.1.4 Water, carbon, climate and life on Earth**

The key role of the carbon and water stores and cycles in supporting life on Earth with particular reference to climate. The relationship between the water cycle and carbon cycle in the atmosphere.

The role of feedbacks within and between cycles and their link to climate change and implications for life on Earth.

Human interventions in the carbon cycle designed to influence carbon transfers and mitigate the impacts of climate change.

#### **3.1.2 Hot desert systems and landscapes**

##### **3.1.2.1 Deserts as natural systems**

Systems in physical geography: systems concepts and their application to the development of desert landscapes – inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium. The concepts of landform and landscape and how related landforms combine to form characteristic landscapes.

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The global distribution of mid- and low-latitude deserts and their margins (arid and semi-arid). Characteristics of hot desert environments and their margins: climate, soils and vegetation (and their interaction). Water balance and aridity index.

The causes of aridity: atmospheric processes relating to pressure, winds, continentality, relief and cold ocean currents.

### **3.1.2.2 Systems and processes**

Sources of energy in hot desert environments: insolation, winds, runoff.

sediment sources, cells and budgets.

Geomorphological processes: weathering, mass movement, erosion, transportation and deposition.

The role of wind – erosion: deflation and abrasion; transportation; suspension, saltation, surface creep, deposition.

Sources of water: exogenous, endoreic and ephemeral; the episodic role of water; sheet flooding, channel flash flooding.

### **3.1.2.3 Arid landscape and development in contrasting settings**

Origin and development of landforms of mid- and low-latitude deserts: ventifacts

### **3.1.2.4 Desertification**

The changing extent and distribution of hot deserts over the last 10,000 years. The causes of desertification – climate change and human impact; distribution of areas at risk; impact on ecosystems, landscapes and populations. Predicted climate change and its impacts; alternative possible futures for local populations.

### **3.1.2.6 Case studies**

Case study at a local scale of a landscape where desertification has occurred to illustrate and analyse key themes of desertification, causes and impacts, implications for sustainable development. Evaluation of human responses of resilience, mitigation and adaptation.

## **3.1.3 Coastal systems and landscapes**

### **3.1.3.1 Coasts as natural systems**

Systems in physical geography: systems concepts and their application to the development of coastal landscapes – inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium. The concepts of landform and landscape and how related landforms combine to form characteristic landscapes.

### **3.1.3.2 Systems and processes**

Sources of energy in coastal environments: winds, waves (constructive and destructive), currents and tides. Low energy coasts.

Sediment sources, cells and budgets.

Geomorphological processes: weathering, erosion, transportation and deposition.

### **3.1.3.3 Coastal landscape development**

Origin and development of landforms and landscapes of coastal deposition.

Estuarine mudflat/saltmarsh environments and associated landscapes; factors and processes in their development.

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Coastlines of emergence and submergence. Origin and development of associated landforms: fjords.

Recent and predicted climatic change and potential impact on coasts.

#### **3.1.3.4 Coastal management**

Human intervention in coastal landscapes. Traditional approaches to coastal flood and erosion risk: hard and soft engineering. Sustainable approaches to coastal flood risk and coastal erosion management: shoreline management/integrated coastal zone management.

#### **3.1.3.6 Case studies**

Case study of a contrasting coastal landscape beyond the UK to illustrate and analyse how it presents risks and opportunities for human occupation and development and evaluate human responses of resilience, mitigation and adaptation.

### **3.1.4 Glacial systems and landscapes**

#### **3.1.4.3 Systems and processes**

Geomorphological processes – weathering: frost action, nivation; ice movement: internal deformation, rotational, compressional, extensional and basal sliding; erosion: plucking, abrasion; transportation and deposition.

Fluvioglacial processes: meltwater, erosion transportation and deposition.

Periglacial features and processes: permafrost, active layer and mass movement.

#### **3.1.4.4 Glaciated landscape development**

Origin and development of glaciated landscapes.

Erosional and depositional landforms: corries, arêtes, glacial troughs.

Fluvioglacial landforms of erosion and deposition: meltwater channels, kames, eskers, outwash plains. Characteristic fluvioglacial landscapes.

Periglacial landforms: patterned ground, ice wedges, pingos, blockfields, solifluction, lobes, terracettes, thermokarst. Characteristic periglacial landscapes.

The relationship between process, time, landforms and landscapes in glaciated settings: characteristic glaciated and periglacial landscapes.

#### **3.1.4.5 Human impacts on cold environments**

Concept of environmental fragility. Human impacts on fragile cold environments over time and at a variety of scales. Recent and prospective impact of climate change. Management of cold environments at present and in alternative possible futures.

#### **3.1.4.7 Case studies**

Case study of a contrasting glaciated landscape from beyond the UK to illustrate and analyse how it presents challenges and opportunities for human occupation and development and evaluate human responses of resilience, mitigation and adaptation.

### **3.1.5 Hazards**

#### **3.1.5.2 Plate tectonics**

Destructive, constructive and conservative plate margins. Characteristic processes: seismicity and volcanicity.

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### **3.1.5.3 Volcanic hazards**

The nature of volcanicity and its relation to plate tectonics: forms of volcanic hazard: nuées ardentes, lava flows, mudflows, pyroclastic and ash fallout, gases/acid rain, tephra. Spatial distribution, magnitude, frequency, regularity and predictability of hazard events. Impacts: primary/secondary, environmental, social, economic, political. Short- and long-term responses: risk management designed to reduce the impacts of the hazard through preparedness, mitigation, prevention and adaptation.

Impacts and human responses as evidenced by a recent volcanic event.

### **3.1.5.4 Seismic hazards**

The nature of seismicity and its relation to plate tectonics: forms of seismic hazard: earthquakes, shockwaves, tsunamis, liquefaction, landslides. Spatial distribution, randomness, magnitude, frequency, regularity, predictability of hazard events. Impacts: primary/secondary; environmental, social, economic, political. Short and long-term responses; risk management designed to reduce the impacts of the hazard through preparedness, mitigation, prevention and adaptation.

Impacts and human responses as evidenced by a recent seismic event.

### **3.1.5.5 Storm hazards**

The nature of tropical storms and their underlying causes. Forms of storm hazard: high winds, storm surges, coastal flooding, river flooding and landslides. Spatial distribution, magnitude, frequency, regularity, predictability of hazard events.

Impacts: primary/secondary, environmental, social, economic, political.

Short- and long-term responses: risk management designed to reduce the impacts of the hazard through preparedness, mitigation, prevention and adaptation.

Impacts and human responses as evidenced by two recent tropical storms in contrasting areas of the world.

### **3.1.5.6 Fires in nature**

Characteristic human responses to wildfires – fatalism, prediction, adjustment/adaptation, mitigation, management, risk sharing – and their relationship to hazard incidence, intensity, magnitude, distribution and level of development.

Nature of wildfires. Conditions favouring intense wildfires: vegetation type, fuel characteristics, climate and recent weather and fire behaviour. Causes of fires: natural and human agency. Short- and long-term responses; risk management designed to reduce the impacts of the hazard through preparedness, mitigation, prevention and adaptation.

Impact and human responses as evidenced by a recent wildfire event.

## **3.1.6 Ecosystems under stress**

### **3.1.6.1 Ecosystems and sustainability**

Ecosystems and their importance for human populations in the light of continuing population growth and economic development. Human populations in ecosystem development and sustainability.

### **3.1.6.2 Ecosystems and processes**

Nature of ecosystems – their structure, energy flows, trophic levels, food chains and food webs. Application of systems concepts to ecosystems – inputs, outputs, stores and transfers of energy and materials. Concept of biomass and net primary production.

Concepts of succession: climatic climax

Mineral nutrient cycling.

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Nature of terrestrial ecosystems and the inter-connections between climate, vegetation, soil and topography which produce them. Ecosystem responses to changes in one or more of their components or environmental controls.

### **3.1.6.3 Biomes**

The concept of the biome. The global distribution of major terrestrial biomes.

The nature of the savanna grassland biome to include:

- the main characteristics of the biome
- ecological responses to the climate, soil and soil moisture budget – adaptations by flora and fauna
- human activity and its impact on the biome
- typical development issues in the biome to include changes in population, economic development, agricultural extension and intensification, implications for biodiversity and sustainability.

### **3.1.6.4 Ecosystems in the British Isles over time**

The characteristics of the climatic climax: temperate deciduous woodland biome.

### **3.1.6.6 Local ecosystems**

The main characteristics of a distinctive local ecosystem (such as an area of heathland, managed parkland, pond, dune system). Ecological responses to the climate, soil and soil moisture budget – adaptations by flora and fauna.

Local factors in ecological development and change (such as agriculture, urban change, the planned and unplanned introduction of new species).

The impacts of change and measures to manage these impacts. Conservation strategies and their implementation in specific settings.

### **3.1.6.7 Case studies**

Case study of a specified ecosystem at a local scale to illustrate and analyse key themes set out above, including the nature and properties of the ecosystem, human impact upon it and the challenges and opportunities presented in its sustainable development.

## **3.4.2 Specific skills**

### **3.4.2.1. Core Skills**

- Use and annotation of illustrative and visual material: base maps, sketch maps, OS maps (at a variety of scales), diagrams, graphs, field sketches, photographs, geospatial, geo-located and digital imagery.
- Literacy – use of factual text and discursive/creative material and coding techniques when analysing text.
- Numeracy – use of number, measure and measurement.

### **3.4.2.2 Cartographic skills**

- Maps with located proportional symbols.
- Maps showing spatial patterns – choropleth, isoline and dot maps.

### **3.4.2.3 Graphical skills**

- Line graphs – simple, comparative, compound and divergent.
- Bar graphs – simple, comparative, compound and divergent.
- Pie charts and proportional divided circles.

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## 7037/2: Human Geography

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### 3.2.1 Global systems and global governance

#### 3.2.1.1 Globalisation

Factors in globalisation: the development of technologies, systems and relationships, including financial, transport, security, communications, management and information systems and trade agreements.

#### 3.2.1.2 Global systems

Issues associated with interdependence including how:

- unequal flows of people, money, ideas and technology within global systems can sometimes act to promote stability, growth and development but can also cause inequalities, conflicts and injustices for people and places.

#### 3.2.1.3 International trade and access to markets

Global features and trends in the volume and pattern of international trade and investment associated with globalisation.

The nature and role of transnational corporations (TNCs), including their spatial organisation, production, linkages, trading and marketing patterns.

World trade in at least one food commodity or one manufacturing product.

Analysis and assessment of the geographical consequences of global systems to specifically consider how international trade and variable access to markets underly and impacts on students' and other people's lives across the globe.

#### 3.2.1.4 Global governance

Issues associated with attempts at global governance, including how:

- agencies, including the UN in the post-1945 era, can work to promote growth and stability but may also exacerbate inequalities and injustices
- interactions between the local, regional, national, international and global scales are fundamental to understanding global governance.

#### 3.2.1.5.1 Antarctica as a global common

Threats to Antarctica arising from: fishing and whaling.

#### 3.2.1.6 Globalisation critique

The impacts of globalisation to consider the benefits of growth, development, integration, stability against the costs in terms of inequalities, injustice, conflict and environmental impact.

### 3.2.2 Changing Places

#### 3.2.2.1 The nature and importance of places

The concept of place and the importance of place in human life and experience

Categories of place: experienced places and media places.

Factors contributing to the character of places:

- Endogenous: location, topography, physical geography, land use, built environment and infrastructure, demographic and economic characteristics.

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### **3.2.2.2.1 Relationships and connections**

How the demographic, socio-economic and cultural characteristics of places are shaped by shifting flows of people, resources, money and investment, and ideas at all scales from local to global.

How past and present connections, within and beyond localities, shape places and embed them in the regional, national, international and global scales.

### **3.2.2.2.2 Meaning and representation**

The importance of the meanings and representations attached to places by people with a particular focus on people's lived experience of place in the past and at present.

- How humans perceive, engage with and form attachments to places and how they present and represent the world to others, including the way in which everyday place meanings are bound up with different identities, perspectives and experiences.
- How external agencies, including governments, corporate bodies and community or local groups make attempts to influence or create specific place-meanings and thereby shape the actions and behaviours of individuals, groups, businesses and institutions.
- How places may be represented in a variety of different forms such as advertising copy, tourist agency material, local art exhibitions in diverse media (eg film, photography, art, story, song etc) that often give contrasting images to that presented formally or statistically such as cartography and census data.
- How both past and present processes of development can be seen to influence the social and economic characteristics of places and so be implicit in present meanings.

### **3.2.2.3 Quantitative and qualitative skills**

Students must engage with a range of quantitative and qualitative approaches across the theme as a whole. Quantitative data, including the use of geospatial data, must be used to investigate and present place characteristics, particular weight must be given to qualitative approaches involved in representing place, and to analysing critically the impacts of different media on place meanings and perceptions. The use of different types of data should allow the development of critical perspectives on the data categories and approaches.

### **3.2.2.4 Place studies**

Local place study exploring the developing character of a place local to the home or study centre.

Contrasting place study exploring the developing character of a contrasting and distant place.

Place studies must apply the knowledge acquired through engagement with prescribed specification content and thereby further enhance understanding of the way students' own lives and those of others are affected by continuity and change in the nature of places. Sources must include qualitative and quantitative data to represent places in the past and present.

## **3.2.3 Contemporary urban environments**

### **3.2.3.1 Urbanisation**

Urban resurgence.

Urban policy and regeneration in Britain since 1979.

### **3.2.3.2 Urban forms**

Spatial patterns of land use, economic inequality, social segregation and cultural diversity in contrasting urban areas, and the factors that influence them.

New urban landscapes: town centre mixed developments, cultural and heritage quarters, fortress developments, gentrified areas, edge cities. The concept of the post-modern western city.

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### **3.2.3.3 Social and economic issues associated with urbanisation**

Issues associated with economic inequality, social segregation and cultural diversity in contrasting urban areas.

Strategies to manage these issues.

### **3.2.3.4 Urban climate**

Thunderstorms in urban environments.

### **3.2.3.6 Urban waste and its disposal**

Urban physical waste generation: sources of waste – industrial and commercial activity, personal consumption. The environmental impacts of alternative approaches to waste disposal: unregulated, recycling, recovery, incineration, burial, submergence and trade.

Comparison of incineration and landfill approaches to waste disposal in relation to a specified urban area.

## **3.2.4 Population and the environment**

### **3.2.4.1 Introduction**

The environmental context for human population characteristics and change. Key elements in the physical environment: climate, soils, resource distributions including water supply. Key population parameters: distribution, density, numbers, change. Key role of development processes. Global patterns of population numbers, densities and change rates.

### **3.2.4.2 Environment and population**

Global and regional patterns of food production and consumption. Agricultural systems and agricultural productivity. Relationship with key physical environmental variables – climate. Characteristics and distribution of two major climatic types to exemplify relationships between climate and human activities and numbers. Climate change as it affects agriculture. Strategies to ensure food security.

### **3.2.4.3 Environment, health and well-being**

Global patterns of health, mortality and morbidity. Economic and social development and the epidemiological transition.

The relationship between environment variables eg climate, topography (drainage) and incidence of disease. Air quality and health. Water quality and health.

The global prevalence, distribution, seasonal incidence of one specified biologically transmitted disease, eg malaria; its links to physical and socio-economic environments including impacts of environmental variables on transmission vectors. Impact on health and well-being. Management and mitigation strategies.

The global prevalence and distribution of one specified non-communicable disease, eg a specific type of cancer, coronary heart disease, asthma; its links to physical and socio-economic environment including impacts of lifestyles. Impact on health and well-being. Management and mitigation strategies.

Role of international agencies and NGOs in promoting health and combating disease at the global scale.

### **3.2.4.4 Population change**

International migration: health and political implications of migration.

### **3.2.4.5 Principles of population ecology and their application to human populations**

Perspectives on population growth and its implications: Malthus.

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### **3.2.4.6 Global population futures**

Health impacts of global environmental change: ozone depletion – skin cancer, cataracts; climate change – thermal stress, emergent and changing distribution of vector borne diseases, agricultural productivity and nutritional standards.

Prospects for the global population. Projected distributions. Critical appraisal of future population-environment relationships.

### **3.2.4.7 Case studies**

Case-study knowledge and understanding of patterns of health and morbidity related to physical and socio-economic characteristics at a local-scale.

## **3.2.5 Resource Security**

### **3.2.5.1 Resource development**

Concept of a resource.

Stock resource evaluation: indicated reserves, inferred resources.

### **3.2.5.2 Natural resource issues**

Global patterns of production, consumption and trade/movements of energy. Global patterns of water availability and demand.

The geopolitics of energy.

### **3.2.5.3 Water security**

Sources of water; components of demand, water stress.

Relationship of water supply (volume and quality) to key aspects of physical geography – climate, geology and drainage.

Sustainability issues associated with water management.

### **3.2.5.4 Energy security**

Sources of energy, both primary and secondary. Components of demand and energy mixes in contrasting settings.

Energy supplies in a globalising world: competing national interests and the role of transnational corporations in energy production, processing and distribution.

Environmental impacts of a major energy resource development such as an oil, coal or gas field and associated distribution networks.

Sustainability issues associated with energy production, trade and consumption: acid rain, the enhanced greenhouse effect, nuclear waste and energy conservation.

### **3.2.5.5 Mineral security**

Reference to iron ore or a specified globally traded non-ferrous metal ore eg copper, tin, manganese.

Sources of the specified ore. Distribution of reserves/resources. End uses of the ore. Components of demand for ore. Role of specified ore in global commerce and industry.

Environmental impacts of a major mineral resource extraction scheme and associated distribution networks.

Sustainability issues associated with ore extraction, trade and processing.

### **3.2.5.6 Resource futures**

Alternative energy, water and mineral ore futures and their relationship with a range of technological, economic, environmental and political developments.

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## **3.4.2 Geographical skills**

### **3.4.2.1. Core Skills**

- Use and annotation of illustrative and visual material: base maps, sketch maps, OS maps (at a variety of scales), diagrams, graphs, field sketches, photographs, geospatial, geo-located and digital imagery.
- Literacy – use of factual text and discursive/creative material and coding techniques when analysing text.
- Numeracy – use of number, measure and measurement.

### **3.4.2.2 Cartographic skills**

- Maps with located proportional symbols.

### **3.4.2.3 Graphical skills**

- Line graphs – simple, comparative, compound and divergent.
- Bar graphs – simple, comparative, compound and divergent.
- Scatter graphs and the use of best fit line.
- Pie charts and proportional divided circles.

END OF ADVANCE INFORMATION

\*Please note that this statement was duplicated in a previous version. This document has been updated to correct this.