

Dawood Public School
Course Outline 2020-21
Cambridge O Level Environmental Management 5014
Grade XI

Syllabus

The syllabus is divided into nine topics which have been designed to develop an understanding of both the natural and the human environment:

1. Rocks and minerals and their exploitation
2. Energy and the environment
3. Agriculture and the environment
4. Water and its management
5. Oceans and fisheries
6. Managing natural hazards
7. The atmosphere and human activities
8. Human population
9. Natural ecosystems and human activities

Assessment at a glance

Component	Weighting
Paper 1 Theory 1 hour 30 minutes The paper will consist of two sections: Section A Short-answer and structured questions. (15 marks) Section B Short-answer and extended response questions based on related source material (35 marks) Total for Paper 1 50 marks	50%

Component	Weighting
Paper 2 Management in Context 1 hour 30 minutes A written paper consisting of short-answer, data processing and analysis, and extended response questions based on source material. Candidates will be expected to make use of information from the source material to help illustrate issues of environmental management. Total for Paper 2 50 marks	50%

Syllabus aims

The aims below describe the educational purposes of a course in Environmental Management for the Cambridge O Level examination. They are not listed in order of priority.

The aims are to enable candidates to acquire:

- Knowledge of natural systems which make life possible on Earth.
- An understanding that humans are part of these systems and depend on them.
- An appreciation of the diverse influences of human activity on natural systems.
- An awareness of the need to manage natural systems.
- An understanding of sustainable development to meet the needs of the present, without compromising the ability of future generations to meet their own needs.
- A sense of responsibility and concern for the welfare of the environment and all organisms.
- An awareness of their own values concerning environmental issues.
- An awareness of the values of others.
- A willingness to review their own attitudes in the light of new knowledge and experiences.
- A sound basis for further study, personal development and participation in local and global environmental concerns.

Assessment objectives

AO1 Knowledge and understanding

AO2 Information handling and analysis

AO3 Investigation skills and making judgements

AO1 Knowledge and understanding

Candidates should be able to demonstrate knowledge and understanding, in familiar and unfamiliar contexts, of:

1. phenomena, facts, definitions, concepts and theories
2. vocabulary, terminology and conventions
3. technological applications with their social, economic and environmental implications.

AO2 Information handling and analysis

Candidates should be able, in words or using other forms of presentation (e.g. graphical or numerical), in familiar and unfamiliar contexts, to:

1. locate, select, organise and present information from a variety of sources
2. translate information and evidence from one form to another
3. manipulate numerical data
4. interpret and evaluate data, report trends and draw inferences.

AO3 Investigation skills and making judgements

Candidates should be able, in familiar and unfamiliar contexts, to:

1. plan investigations
2. identify limitations of methods and suggest possible improvements
3. present reasoned explanations for phenomena, patterns and relationships
4. make reasoned judgements and reach conclusions based on qualitative and quantitative information.

MONTHLY COURSE DISTRIBUTION

Month	Content
August	Chapter 8 Human population <ul style="list-style-type: none"> ➤ Unit 8.1 Changes in population size ➤ Unit 8.2 Population distribution and density
September	Chapter 9 Natural ecosystem and human activities <ul style="list-style-type: none"> ➤ Unit 9.1 The Ecosystem ➤ Unit 9.2 Estimating biodiversity in ecosystems ➤ Unit 9.3 The causes and impacts of habitat loss ➤ Unit 9.4 The causes and impacts of deforestation ➤ Unit 9.5 The need for sustainable management of forests ➤ Unit 9.6 Strategies for conserving biodiversity and genetic resource of natural ecosystem
October	Revision through Past Papers
November	Revision for Mid-Year Examination
December	Mid-Year Examination
January - March	Revision through Past Papers

SYLLABUS CONTENT

Chapter 8: Human population	
8.1 Human population distribution and density	<ul style="list-style-type: none"> Identify where people live in the world <ul style="list-style-type: none"> ➤ population density ➤ population distribution
8.2 Changes in population size	<ul style="list-style-type: none"> Describe and explain the growth curve of populations: <ul style="list-style-type: none"> ➤ lag ➤ exponential (log) ➤ carrying capacity Describe and explain the changes in human populations: <ul style="list-style-type: none"> ➤ birth and death rates ➤ factors affecting birth and death rates ➤ factors affecting migration
8.3 Population structure	<ul style="list-style-type: none"> Describe population structure in MEDCs and LEDCs <ul style="list-style-type: none"> ➤ population pyramids
8.4 Managing human population size	<ul style="list-style-type: none"> Evaluate strategies for managing: <ul style="list-style-type: none"> ➤ human population size ➤ family planning ➤ improved health and education ➤ national population policies—pronatalist or antinatalist
Case study Study the strategies a named country or region has used to manage population size.	
Chapter 9: Natural ecosystems and human activities	
9.1 Ecosystems Biotic Components: <ul style="list-style-type: none"> producers primary, secondary and tertiary consumers decomposers Abiotic Components: <ul style="list-style-type: none"> temperature humidity water oxygen salinity 	<ul style="list-style-type: none"> Define the following terms: <ul style="list-style-type: none"> ➤ ecosystem ➤ population ➤ community ➤ habitat ➤ niche Describe the biotic (living) and abiotic (non-living) components of an ecosystem. Describe biotic interactions. Describe the process of photosynthesis. Describe energy flow using food chains, food webs and trophic levels. Describe and explain ecological pyramids based on numbers and energy.

<ul style="list-style-type: none"> • light • pH • competition • predation • pollination 	<ul style="list-style-type: none"> • Describe the process of respiration. • Describe the carbon cycle. • State the word equation and the importance of chlorophyll.
9.2 Ecosystems under threat	<ul style="list-style-type: none"> • Describe and explain the following causes of habitat loss: <ul style="list-style-type: none"> ➤ the drainage of wetlands ➤ intensive agricultural practices ➤ deforestation ➤ and impacts of habitat loss • Describe and explain the following impacts of habitat loss: <ul style="list-style-type: none"> ➤ loss of biodiversity ➤ genetic depletion ➤ extinction
9.3 Deforestation	<ul style="list-style-type: none"> • Describe and explain the following causes of deforestation: <ul style="list-style-type: none"> ➤ timber extraction and logging ➤ subsistence and commercial farming ➤ roads and settlements ➤ rock and mineral extraction • Describe and explain the following impacts of deforestation: <ul style="list-style-type: none"> ➤ habitat loss ➤ soil erosion and desertification ➤ climate change ➤ loss of biodiversity ➤ genetic depletion
9.4 Managing forests Growing forests act as carbon sinks and mature forests act as carbon stores	<ul style="list-style-type: none"> • Describe and explain the need for the sustainable management of forests. • Describe the role of forests with regard to: <ul style="list-style-type: none"> ➤ role in water cycle ➤ prevention of soil erosion ➤ biodiversity as a genetic resource ➤ food, medicine and industrial raw materials ➤ ecotourism
9.5 Measuring and managing biodiversity	<ul style="list-style-type: none"> • Describe and evaluate the following methods for estimating biodiversity: <ul style="list-style-type: none"> ➤ pitfall traps ➤ pooters ➤ quadrats ➤ transects • Apply sampling techniques to unfamiliar situations <ul style="list-style-type: none"> ➤ random sampling ➤ systematic sampling

	<ul style="list-style-type: none"> • Evaluate national and international strategies for conserving the biodiversity and genetic resources of natural ecosystems. <ul style="list-style-type: none"> ➤ sustainable harvesting of wild plant and animal species ➤ sustainable forestry / agroforestry ➤ national parks, wildlife / ecological reserves and corridors ➤ extractive reserves ➤ world biosphere reserves ➤ seed banks ➤ role of zoos and captive breeding ➤ sustainable tourism and ecotourism
<p>Case studies</p> <p>Study the causes and impacts of deforestation in a named area.</p> <p>Study the conservation of a named species.</p> <p>Study a named biosphere reserve.</p>	