IM SYLLABUS (2025)

GEOGRAPHY **IM 13**

SYLLABUS

Geography IM 13	(Available in September)
Syllabus	Written (3 hrs)

Introduction

This syllabus is based on a number of core areas, each of which is expanded into key ideas, or concepts, in order to indicate the extent and depth to which they should be studied. Emphasis on the inter-relationships and inter-actions between human activities and the environment should form an important aspect of the teaching and learning of Geography. The inclusion of application in the syllabus is meant to highlight the links between the key ideas and a particular part of the real world. Techniques indicate the type of skills, including some simple quantitative components relevant to the subject matter.

The Intermediate Geography Course should enable:
(a) a considerable, spatially referenced knowledge of issues regarding the human race and the environment;
(b) a different structure of geographical knowledge which should act as a stimulus and a challenge to the investigation of principles;
(c) a strong emphasis on the learning and practice of skills through an interaction with the field and;
(d) an opportunity to accommodate a range of teaching methods.

Aims

A course based on the given syllabus helps candidates to:
(a) gain a substantial body of knowledge of the human race and the environment while developing a sense of place;
(b) appreciate the inter-relationships and interactions between the human race and the environment;
(c) understand that the real world is constantly changing in physical and human terms;
(d) acquire a range of skills to be able to gather evidence for policy making and environmental management.

Scheme of Assessment

The examination will consist of one, three-hour, paper. The paper will be divided into two sections of four questions each. A total of four questions need to be answered. Candidates must attempt two questions from each of the sections. All questions carry equal marks (25% of the total mark).

Throughout the Intermediate Geography Course, candidates are expected to acquire and develop a range of geographical skills. These skills, which are presented in Appendix 1, will be integrated within the course subjects. Questions related to such skills can be asked in both Section A and Section B of the exam paper.

Assessment Objectives

The examination sets out to test the candidates' ability to:

(a) demonstrate knowledge of key ideas and locational knowledge at different scales with special reference to Malta, the Mediterranean Region and Europe, and the World;
(b) apply the geographical knowledge and skills acquired in a variety of contexts at the nexus of physical and human environments;
(c) appreciate the wide variety of processes within places, spaces and contexts;
(d) describe, explain and critique the points set out in (a), (b) and (c) above;
(e) select and use a range of source materials, including different types of data and maps;
(f) select and use basic qualitative and quantitative techniques in order to communicate better geographical ideas and information;
(g) analyse decisions, suggest solutions to problems and assess their likely consequences; and
(h) employ the knowledge of key geographic concepts and skills in order to understand and discuss current human-environment problems at a global and/or local scale as indicated in the topic.

SYLLABUS CONTENT

SECTION A

Atmospheric Processes

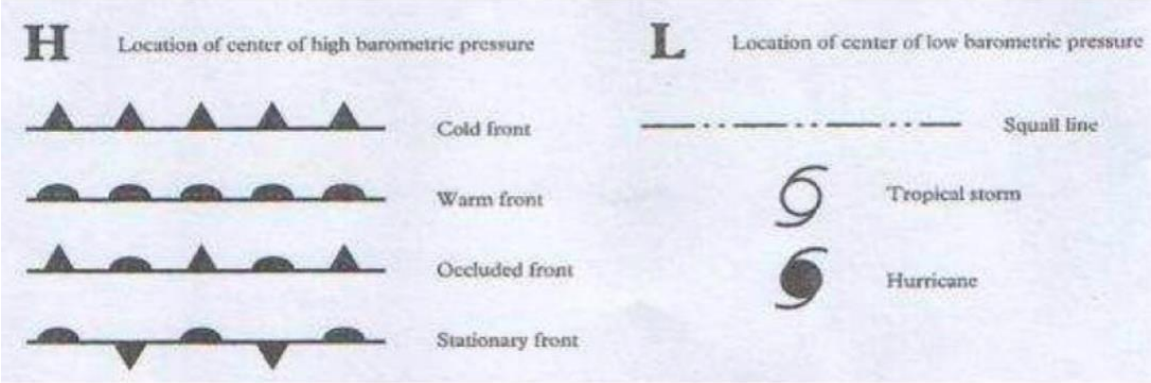
Key Concepts: Air masses and fronts; humidity; the origins and development of mid-latitude depressions over Europe and the Mediterranean as a result of global atmospheric circulation to include the Tri-cellular model, ITCZ, global wind systems, solar radiation budget

Global warming and climate change; the problems associated with sea level rise, ozone depletion and extreme climatic instability (e.g. droughts, flooding, tropical cyclones)

Aims & Application: An understanding of the processes affecting weather and climate over Malta, the Mediterranean, aimed at affording students some elementary prediction

Skills: Simple weather prediction. The interpretation of synoptic charts and weather reports as presented by the symbols provided in Figure 1.

Figure 1: Basic symbols used in the interpretation of surface weather charts



Geomorphic Processes

Key concepts: Structure of the Earth (core, mantle and crust); the nature and components of the continents and ocean basins such as trenches, ocean ridges, rift valleys and mountain ranges.

Elementary plate tectonics, i.e., theory and evidence of continental drift, sea-floor spreading of continental and oceanic crust; divergent, constructive and destructive plate boundaries; volcanoes, earthquakes, orogenesis.

Factors influencing drainage basins: basin morphology, drainage basin processes and management. The drainage basin hydrological cycle: precipitation inputs, interception, stemflow, overland flow, throughflow, infiltration, percolation and groundwater flow. Processes leading to the formation of karst landforms with specific reference to caves and solution subsidence structures. Reading and interpreting the storm hydrograph.

Coastal morphological processes and resulting coastal landforms. Transition zone between land and sea, offshore, foreshore, backshore, constructive and destructive waves, longshore drift. Erosional landforms: shore platforms, bays and headlands. Depositional landforms: beaches, sand dunes, salt marshes.

Global soil erosion, deforestation, and desertification.

Natural hazards and human responses with special reference to mass movement, volcanoes, earthquakes, tsunamis and flooding.

Aims & Application: An understanding of the geological and geomorphic processes governing landscape formation to include landscape features found across the Maltese Islands. Understanding concepts of key geomorphological elements of the Maltese Islands.

Processes leading to the formation of groundwater reserves in Malta; threats to groundwater

Skills: Reading and interpretation of geomorphological elements in maps and charts.

SECTION B

Population

Key concepts: Population growth and changes over time; distribution; densities; structure; migration.

Problems of development and under-development with reference to the relationship between population growth and natural resources.

Aims & Applications: The distribution of population and factors affecting it within the Mediterranean region with special reference to Malta. Migration theories (Ravenstein and Zelinsky) involving an understanding of push and pull factors affecting migration with special reference to the Mediterranean region. A global and critical understanding of the demographic transition model.

Skills: Interpretation of population pyramids and other graphic presentations of human population structures and dynamics.

Settlement

Key Concepts: Location and site of settlements, influencing factors; growth; patterns; a critical understanding of the models of urban structure and growth (e.g. Burgess' Concentric Zone Model and Hoyt's Sector Model). Urban functional zones. Concept of settlement hierarchy depending on population and function.

Aims & Applications: An understanding of urban land use in terms of functions (e.g. land use patterns in Malta and other cities). Problems associated with large cities distinguishing between developed and developing countries.

Skills: Interpretation and use of settlement and land use maps.

Industrial Activity

Key Concepts: The classification of economic sectors by function: 1) primary industry with special reference to agricultural economies, farming as a system, aquaculture, and fishing; quarrying 2) secondary industry with special reference to manufacturing industry; 3) tertiary industry with special reference to tourism; quaternary industry with special reference to financial services, gaming

The environmental impact of the economic sectors in Malta. Air and noise pollution. Pollution of marine areas in the Mediterranean. The problem of waste management and its impact on the environment, with special reference to Malta.

Anthropogenic impacts on Malta's natural capital (e.g. landscape), vegetation communities (sclerophyll forest, maquis (sclerophyllous scrub), garigue, steppic grassland), and marine coastal areas.

Aims & Applications: The primary industry in Malta: agriculture, quarrying, aquaculture and fishing. The location of industrial estates in Malta. Agglomeration; economies of scale. Tourism in Malta and the Mediterranean

Skills: a critical understanding of the established locational models: Weber's model of industrial location and Von Thunen's model of rural land uses. Factors affecting location of industry.

Appendix 1 – Fieldwork and Mapwork skills

1. Resource Interpretation Skills

- Interpretation of thematic maps as exemplified by: choropleth maps, dot maps, proportional symbols maps, isoline maps and maps showing movement - flow lines and desire lines.
- Interpretation of pictograms and photographs.
- Interpretation of models (as listed in other parts of the syllabus).
- Interpretation of graphs and diagrams, including: bar graphs, line graphs, scatter graphs, pie charts and rose diagrams.

2. Resource Construction Skills

Candidates are expected to be able to present data in the form of:

- bar graphs
- line graphs
- scatter graphs
- pie charts
- histograms
- frequency curves (including cumulative frequency curves)

3. Statistical Skills

The use of statistical analysis is considered to be an indispensable skill for the geographer.

(i) Measures of central tendency and dispersion:

- mean
- median
- mode
- range
- quartiles and interquartile-range
- standard deviation

(ii) Relationship between data:

- concept of simple correlation and correlation coefficient
- scatter diagrams (correlation graphs to show the relationship between dependent and independent variables)
- Chi-square test (X^2)
- Spearman rank correlation coefficient (rs)
- Student's t-distribution (to establish statistical significance of rs)

(iii) Description of spatial distributions:

- Nearest neighbour analysis

4. Fieldwork (or Geography investigation) skills

- Concept of the ‘scientific method’ in fieldwork investigation; hypothesis testing
- Data collection: primary research and secondary sources
- Sampling (random, stratified, and systematic sampling methods);
- Bias in sampling (distortion or error in the sampled data);
- The use of quadrats, transects (belt and line) e.g. as in vegetation studies and land-use transects; random numbers
- Questionnaires: the design of a ‘good questionnaire’; closed-and open-questions; questionnaire administration
- Surveys (data collection without questionnaires): different types of surveys, e.g. land-use surveys; land-use transects; environmental surveys
- Interviews (going beyond the formal nature of questionnaires): the conduction of interviews in order to see how people stand on an issue or how they act in certain circumstances.