

GROUP 4 – ENVIRONMENTAL SYSTEMS AND SOCIETIES

NATURE OF THE SUBJECT

ES&S is an interdisciplinary course only available at standard level.

Students will be provided with a coherent perspective of the interrelationships between environmental systems and societies. They will learn to evaluate the scientific, ethical and socio-political aspects of issues, thus being able to adopt an informed personal response to the wide range of pressing environmental issues that they will inevitably come to face.

The course aims to foster an international perspective, awareness of local and global environmental concerns and an understanding of the scientific methods, while emphasising complexity of environmental issues. During the course, students will study eight different topics. An important aspect of the ES&S course is hands-on work in the laboratory and/or out in the field.

Source : IBO, OCC – Environmental Systems and Societies guide

AIMS

The aims of the ESS course are to enable students to:

1. acquire the knowledge and understandings of environmental systems at a variety of scales
2. apply the knowledge, methodologies and skills to analyse environmental systems and issues at a variety of scales
3. appreciate the dynamic interconnectedness between environmental systems and societies
4. value the combination of personal, local and global perspectives in making informed decisions and taking responsible actions on environmental issues
5. be critically aware that resources are finite, and that these could be inequitably distributed and exploited, and that management of these inequities is the key to sustainability
6. develop awareness of the diversity of environmental value systems
7. develop critical awareness that environmental problems are caused and solved by decisions made by individuals and societies that are based on different areas of knowledge
8. engage with the controversies that surround a variety of environmental issues
9. create innovative solutions to environmental issues by engaging actively in local and global contexts.

Source : IBO, OCC – Environmental Systems and Societies guide

SYLLABUS – OUTLINE

(The syllabus is subject to changes according to the needs and preferences of the class)

Year 1

Topic 1— Foundations of environmental systems and societies

Topic 2—Ecosystems and ecology

Topic 3—Biodiversity and conservation

Topic 4—Water and aquatic food production systems and societies

Topic 5—Soil systems and terrestrial food production systems and societies

Skills:

International mindedness and ability to discuss, justify and understand different viewpoints and scientific evidence

Use and construct models, understanding their strengths and limitations

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| <p>Understand ecosystem functioning, equilibria, resilience and evaluate ecosystem services, as well as bioindicators</p> <p>Analyse the effects of thermodynamics upon ecosystems and construct models of flows of energy and matter</p> <p>Elaborate and evaluate research and sampling strategies</p> <p>Evaluate and elaborate strategies for sustainable development, environmental protections and biodiversity conservation</p> <p>Understand the effects of pollution, evaluate and elaborate strategies for mitigation and reduction of pollution of water and soil systems</p> <p>Evaluate globally water demand issues and their implications</p> |
| Year 2 |
| <p>Topic 6—Atmospheric systems and societies</p> <p>Topic 7—Climate change and energy production</p> <p>Topic 8—Human systems and resource use</p> <p>Skills:</p> <p>Evaluate and elaborate strategies for reducing air pollution, discuss the global consequences of pollution</p> <p>Analyse climate change causes and viewpoints, as well as evaluate mitigation policies and approaches worldwide</p> <p>Analyse population data and its possible trends and impacts, evaluate different management strategies and related religious and cultural values</p> |

ASSESSMENT – OUTLINE

| Assessment component | Weighing |
|---|-----------------------|
| <p>External assessment</p> <p>Paper 1 (case study), duration 1 hour</p> <ul style="list-style-type: none"> • Students will be provided with a range of data in a variety of forms relating to a specific, previously unseen case study. • Questions will be based on the analysis and evaluation of the data in the case study. • All of the questions are compulsory. • The questions test assessment objectives 1, 2 and 3. <p>Paper 2 (short answers and structured essays), duration 2hours</p> <ul style="list-style-type: none"> • Paper 2 consists of two sections, A and B. • Section A (25 marks) is made up of short-answer and data-based questions. • Section B (40 marks) requires students to answer two structured essay questions from a choice of four. Each question is worth 20 marks. | <p>25%</p> <p>50%</p> |
| <p>Internal assessment</p> <p>Internal assessment (individual investigation) , duration 10 hours</p> <p>The internal assessment task involves the completion of an individual investigation of an ESS research question that has been designed and implemented by the student. The investigation is submitted as a written report. Any investigation that is to be used for internal assessment should be specifically designed by the student to address the assessment criteria.</p> <p>NOTE: If a student undertakes an extended essay, it must not be based on the research question of the ESS internal assessment</p> | 25% |