**Curriculum**

**IB Environmental Systems and Societies Y1**

**Course Overview**

The systems approach provides the core methodology of the ESS course. It is complemented by other influences, such as economic, historical, cultural, socio-political and scientific factors, to provide a holistic perspective on environmental issues. During the course, students will look at examples on a variety of scales, from local to global, and in an international context.

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.

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**Department Standards**

**STANDARD 1: THE NATURE OF SCIENCE**

**STANDARD 2: SCIENCE AND TECHNOLOGY**

**STANDARD 3: THE PHYSICAL SETTING**

**STANDARD 4: THE LIVING ENVIRONMENT**

**STANDARD 5: SCIENCE AND SOCIETY**

**Benchmarks**:

Students will develop the ability to critically evaluate the scientific content that they study in the course and in the media;

Students will demonstrate an understanding of the major biological facts and concepts by means of oral presentations and written works;

Students will gain an understanding of the redundancy, repeated application of concepts, and structures and their functions, that are common threads throughout all living things;

Students will learn to skilfully design and perform laboratory experiments;

Students will be able to construct, analyze and evaluate hypotheses based on safely demonstrated, investigative laboratory techniques and data keeping, and create coherent written abstracts, procedures, and conclusions for others to repeat their work;

Students will be introduced to the recent techniques and methods used in investigative science and technology;

Students will see the advantages of cooperation and collaboration with their colleagues during scientific investigation;

Students will learn that all disciplines of science are interrelated and no science discipline stands alone;

Students will communicate and cooperate with other international IB students and faculty on scientific research projects, in order to foster the sharing of ideas as they work cross-culturally together for a common goal;

Students will be encouraged to develop a personal connection to all things that are alive in order to foster a proactive approach to preserving all facets of life that are integral to the future of everyone and everything on a planet with limits.

**Performance Indicators**

**Assessments**

**First Quarter**

Case Studies

Homework

Quizzes

Tests

Laboratory Reports for IB Internal Assessments

**Second Quarter**

Case Studies

Homework

Quizzes

Tests

Laboratory Reports for IB Internal Assessments

**Third Quarter**

Case Studies

Homework

Quizzes

Tests

Laboratory Reports for IB Internal Assessments

**Fourth Quarter**

Case Studies

Homework

Quizzes

Tests

Laboratory Reports for IB Internal Assessments

**Core Topics**

**First Quarter**

**Topic 1: Foundations of environmental systems and societies**

* 1. Environmental value systems
  2. Systems and models
  3. Energy and equilibria
  4. Sustainability

Humans and pollution

**Second Quarter**

**Topic 2: Ecosystems and ecology**

* 1. Species and populations
  2. Communities and ecosystems
  3. Flows of energy and matter
  4. Biomes, zonation and succession
  5. Investigating ecosystems

**Third Quarter**

**Topic 3: Biodiversity and conservation**

* 1. An introduction to biodiversity
  2. Origins of biodiversity
  3. Threats to biodiversity
  4. Conservation of biodiversity

**Fourth Quarter**

**Topic 4: Water and aquatic food production systems and societies**

* 1. Introduction to water systems
  2. Access to fresh water
  3. Aquatic food production systems
  4. Water pollution

**Specific Content**

**Resources**

**[Environmental Systems and Societies for the IB Diploma Revision Guide (International Baccalaureate Diploma)](http://www.amazon.co.uk/Environmental-Societies-Revision-International-Baccalaureate/dp/144419268X/ref=sr_1_1?ie=UTF8&qid=1455706690&sr=8-1&keywords=environmental+systems+and+societies+revision+guide" \o "Environmental Systems and Societies for the IB Diploma Revision Guide (International Baccalaureate Diploma))** [30 Aug 2013](http://www.amazon.co.uk/Environmental-Societies-Revision-International-Baccalaureate/dp/144419268X/ref=sr_1_1?ie=UTF8&qid=1455706690&sr=8-1&keywords=environmental+systems+and+societies+revision+guide" \o "Environmental Systems and Societies for the IB Diploma Revision Guide (International Baccalaureate Diploma))

[by Andrew Davis and Garrett Nagle](http://www.amazon.co.uk/Environmental-Societies-Revision-International-Baccalaureate/dp/144419268X/ref=sr_1_1?ie=UTF8&qid=1455706690&sr=8-1&keywords=environmental+systems+and+societies+revision+guide" \o "Environmental Systems and Societies for the IB Diploma Revision Guide (International Baccalaureate Diploma))

***Systems and Societies Skills and Practice: Oxford IB Diploma Programme May 201*6 by** [**Jill Rutherford**](http://www.amazon.co.uk/s/ref=dp_byline_sr_book_1?ie=UTF8&text=Jill+Rutherford&search-alias=books-uk&field-author=Jill+Rutherford&sort=relevancerank) **(Author),** [**Gillian Williams**](http://www.amazon.co.uk/s/ref=dp_byline_sr_book_2?ie=UTF8&text=Gillian+Williams&search-alias=books-uk&field-author=Gillian+Williams&sort=relevancerank) **(Author)**

IB Environmental Systems and Societies (OSC IB Revision Guides for the International Baccalaureate Diploma) by Adrian Palmer 2011

[**http://www.enn.com/**](http://www.enn.com/) Environmental News Network

[**http://www.theguardian.com/uk/environment**](http://www.theguardian.com/uk/environment) Environmental News from the Guardian