Name: _____

Overseas School of Colombo
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Mr. Ian Lockwood

OSC IBDP (SL) ENVIRONMENTAL SYSTEMS & SOCIETIES

Course Outline

PRIMARY TEXTS:

Miller, G. Tyler. *Living in the Environment: Principles, Connections and Solutions. Fourteenth Edition.* Belmont: Brooks/Cole. 2005. Print.

Rutherford, Jill. *IB Environmental Systems and Societies Course Companion*. Oxford: Oxford University Press, 2009. Print.

COURSE DESCRIPTION

This course has been designed to study the environment from a systems approach. The course is spread over a two-year period of time and culminates with the IB standard level exam in May 2013. Environmental Systems and societies is rooted firmly in the principles of science and makes use of empirical, quantitative and objective data collection to describe and analyze environmental systems. While being an academic course rooted in the sciences, part of its aim is to electrify and activate your awareness about the state of the world's environment. You are the next generation, who will inherit a legacy of earthly abuse. Our common future is such that we need to make major changes in the way we think about the world. This class is designed to help you start making these changes.

Environmental Systems & Societies replaced the older IB Environmental Systems course in the Fall of 2008. There are a few significant differences in the syllabus and in some schools students may now use the course to either fulfill a Group III or IV requirement. As it is offered with other science (Group IV) courses at OSC, this choice is not an option for OSC Diploma students.

The class will provide you with the scientific concepts and methodologies required to understand the many complex inter-relationships of the world. You will learn how to identify and analyze environmental problems, evaluate relative risks associated with these problems and to examine alternative solutions to solving or ending these problems. The focus of the new syllabus is on:

- A systems approach
- The concept of sustainability
- Holistic evaluation
- An emphasis on both local and global case studies
- Use of information and communication technology (GIS, GPS etc.)
- Practical application of core concepts through field studies
- Links to TOK through ideas of *ecocentrism* and other ecological world views.

Environmental problems are, by nature, interdisciplinary. That is, they involve the physical sciences, while also being intertwined with human behavior, culture, politics and a host of other factors. This class is rooted in physical science, but draws on social sciences in order to address the multi-faceted environmental problems that the world currently faces. We will address issues on a global scale in order to give you a broader understanding of environmental issues. At the same time the class also focuses on local problems and solutions here in Sri Lanka and South Asia.

ES&S COURSE COMPONENTS

CORE TOPICS	Hours	Year Introduced
Topic 1: Systems and models	**5**	**First**
Topic 2: The ecosystem	**31**	**First**
2.1 Structure		
2.2 Measuring abiotic components of the system		
2.3 Measuring biotic components of the system		
2.4 Biomes		
2.5 Function		
2.6 Changes		
2.7 Measuring changes in the system		
Topic 3: Human population, carrying capacity and resource use	**39**	**Second**
3.1 Population dynamics		
3.2 Resources—natural capital		
3.3 Energy resources		
3.4 The soil system		
3.5 Food resources		
3.6 Water resources		
3.7 Limits to growth		
3.8 Environmental demands of human populations		
Topic 4: Conservation and biodiversity	**15**	**First**
4.1 Biodiversity in ecosystems		
4.2 Evaluating biodiversity and vulnerability		
4.3 Conservation of biodiversity		
Topic 5: Pollution management	**18**	**Second**
5.1 Nature of pollution		
5.2 Detection and monitoring of pollution		
5.3 Approaches to pollution management		
5.4 Eutrophication		
5.5 Solid domestic waste		
5.6 Depletion of stratospheric ozone		
5.7 Urban air pollution		
5.8 Acid deposition		
Topic 6: The issue of global warming	**6**	**Second**
Topic 7: Environmental value systems	**6**	**First**

EXPECTATIONS

1. Attend class and be punctual.

2. Respect the OSC science lab rules (no food, use covered shoes etc.)

3. Keep up with the assigned reading. Aside from readings in the Rutherford and Miller textbooks, you will be given other news readings on the environment on regular intervals.

4. Complete assignments on time. Late work is discouraged and generally not accepted.

5. Take detailed notes in your notebook on any reading as well as classroom discussions and lectures. a neat and organized folder of handouts that you can use for exam review.

6. Be willing to work in groups, sometimes with friends and sometimes with students that you may not know so well.

7. Participate in all field trips and field work.

RADING

Paper 1	Short answer & data based questions)	25%
Paper 2	Case Study & structured essay questions	50%
Internal Assessment	Lab reports, field work etc.	25%

Internal quarter and semester grades for OSC are derived from a synthesis of written work, class participation and formal assessment (test, quizzes etc.)

TESTS & QUIZZES

Tests or quizzes will be given approximately every three to four weeks. Tests are cumulative, and cover all information covered to date. Many of the questions will be drawn from past IB tests.

PRACTICALS (LABS REPORTS)

This component is one of the most important parts of your course and accounts for the Internal Assessment part of your grade (25%). Labs and reports should be typed whenever possible. A separate sheet of guidelines gives more information on this important component of the class. Examples of our lab studies are the following

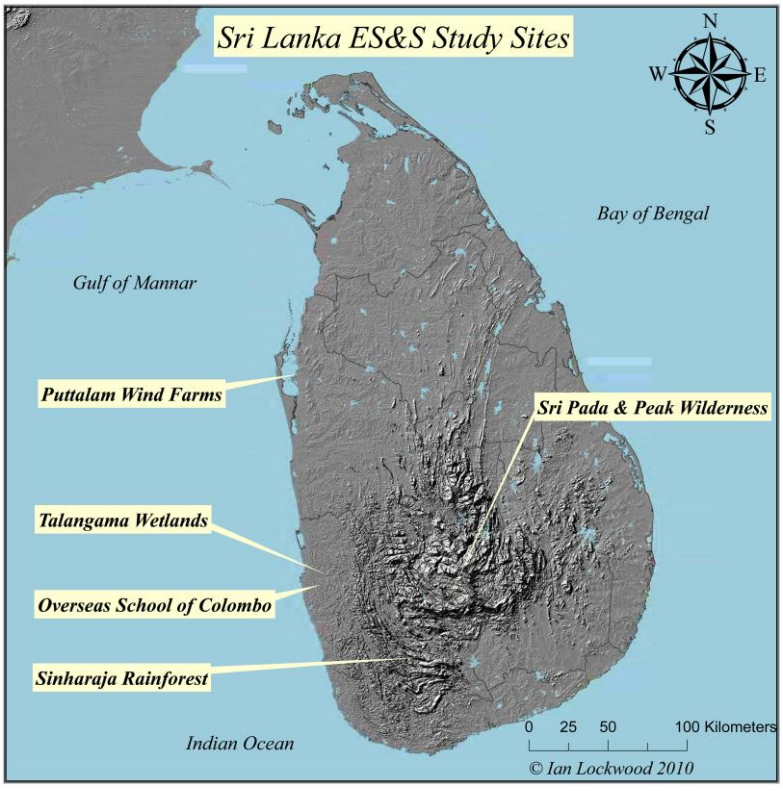
TOPIC/TITLE	IB TOPIC	HOURS
Dichotomous Key W/Native Tree Leaves	2.1-2.2	4
Water Quality Study at Talangama Wetlands	2.2	4
GPP & NPP of a Tropical Lawn	2.3, 2.5.6	4
Plant Identification & Diversity in a Rubber Estate	2.3.5	5
Sinharaja Rainforest Bird Study	2.1, 2.3, 2.4	7
Spatial Analysis of Acid Precipitation	2.2, 5.8	6
Biotic Index Planning Lab	2.3	6
Group IV Project	multiple	10

FIELD STUDIES

Field studies to collect samples or study a part of the local ecology are an important component of the class. We focus on three broad areas:

- Talangama wetlands and adjoining rice fields and rubber estates.
- Peak Wilderness montane and cloud forest ecosystems.
- Sinharaja lowland (rainforest) World Heritage Site
- Wind farms of Puttalam area.

Places like Talangama Wetlands can be reached during double blocks while the rich forests of Peak Wilderness and Sinharaja are taken in December and then May of the Grade 11 Year. The wind farm field excursion is being designed to be taken as part of the study of energy resources (3.3) in the senior year. The Group IV project is conducted on the OSC campus in the 2nd part of your grade 11 year. More information will be given on this important project later.



GENERAL ASSIGNMENT FORMATTING
Whenever you hand in an assignment, be sure to include your name, the class and the date in the upper right corner of an A4 page (use the other side of this page as a model). The assignment should have a title indicating what it is on the top center of the first page. Typed work is preferred and sometimes insisted upon. Be sure to check your paper for spelling and grammatical mistakes.

FURTHER INFORMATION
You can find more information about OSC's Environmental Systems and Societies course in the *Course Guide of the International Baccalaureate Diploma Programe Grades 11 and 12 2011-12.* The IB document *Environmental Systems and Societies guide, First Examinations 2010* is available on OSC's U: Drive. It is strongly recommend that you make an electronic copy of it for your reference.

CONTACT
If you have questions you can e-mail me at ilockwood@osc.lk

I maintain a **Wiki** that is a repository of resources and links for all of my classes at:
http://mangotree.wikispaces.com/

My blog, which covers educational adventures, can be found at: http://ianlockwood.wordpress.com/