

# DP Environmental Systems and Societies (ESS)- Standard Level

12<sup>th</sup> Grade [3 periods *per week, year-round*]

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## Course Description

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The course is a deep dive into the impact humans have on the natural environment. Many topics in ecology and biology are considered with some development of the knowledge of chemistry in specific topics. From the ESS IB Guide page 12: "It is important that students develop a holistic appreciation of the complexities of environmental issues, in which the interaction between environmental systems and societies is central. The course requires that students consider the costs, and the benefits of human activities, both to the environment and to societies, over the short and long term. In doing so, students will arrive at informed personal viewpoints. They should be aware of and be able to justify their own position and to appreciate the views of others along the continuum of environmental philosophies."

Topics included in the course:

Topic 1: Systems and models

Topic 2: The ecosystem (structure, measuring biotic and abiotic components, biomes, functions, changes in the system)

Topic 3: Human population, carrying capacity and resource use (population dynamics, resources, energy, soil, food, water, limits to growth, demands of human populations)

Topic 4: Conservation and biodiversity (biodiversity in ecosystems, evaluating and conserving biodiversity)

Topic 5: Pollution Management (nature, detection, and monitoring of pollution, pollution management, eutrophication, solid domestic waste, depletion of ozone, urban air pollution, acid deposition)

Topic 6: The issue of global warming

Topic 7: Environmental value systems

In addition to the coursework, a student-directed internal assessment is required in order to complete the course.

Skills emphasized (from page 13 of the ESS IB Guide):

"The most important aspect of the environmental systems and societies course is hands-on work in the laboratory and/or out in the field. The syllabus not only directly requires the use of field techniques, but many components can only be covered effectively through this approach. Practical work in this subject is an opportunity to gain and develop skills and techniques beyond the requirements of the assessment model and should be fully integrated with the teaching of the course."

## Timeline

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Students will complete the first 5 topics during grade 11 in units lasting 5-8 weeks, and will begin work on their internal assessment. During the second year students will complete the remaining 3 topics, finish their IAs, and review for the exam.