MT. DIABLO UNIFIED SCHOOL DISTRICT
COURSE OF STUDY

COURSE TITLE:	IB Environmental Systems & Societies Standard Level Year 2
COURSE NUMBER:	**350250**
CBEDS NUMBER:	**2664**
DEPARTMENT:	Science
LENGTH OF COURSE:	1 year
CREDITS PER SEMESTER:	5
GRADE LEVEL(S):	12th
REQUIRED OR ELECTIVE:	Meets a-g "d" requirement as interdisciplinary science

PREREQUISITES:

Required -	Passing grade in CP Biology, AP Environmental Science (IB ESS Year 1)
Recommended -	Environmental Science or Chemistry

BOARD OF EDUCATION ADOPTION: May 22, 2017

NOTE: This course is previously approved by the UC/CSU, under the International Baccalaureate Organization (IBO). The official IB Subject Guide was used to create the Course of Study submitted to the IBO on April 1, 2016, along with the Application for Authorization. The Course of Study submitted was approved by the IBO as meeting the requirements of the course. **Please see the attached Environmental Systems & Societies Guide published by the IBO, February 2015**

COURSE DESCRIPTION:
Environmental systems and societies (ESS) is an interdisciplinary course offered only at standard level (SL). ESS is firmly grounded in both a scientific exploration of environmental systems in their structure and function, and in the exploration of cultural, economic, ethical, political and social interactions of societies with the environment. As a result of studying this course, students will become equipped with the ability to recognize and evaluate the impact of our complex system of societies on the natural world.

The interdisciplinary nature of the DP course requires a broad skill set from students, including the ability to perform research and investigations, participation in philosophical discussion and problem-solving. The course requires a systems approach to environmental understanding and promotes holistic thinking about environmental issues. Teachers explicitly teach thinking and research skills such as comprehension, text analysis, knowledge transfer and use of primary sources. They encourage students to develop solutions at the personal, community and global levels.[1]

COURSE PURPOSE:
The aims of the DP environmental systems and societies course are to enable students to:

- Acquire the knowledge and understandings of environmental systems and issues at a variety of scales

[1] International Baccalaureate Subject Brief: Environmental Systems & Societies, IBO, 2015

- Apply the knowledge, methodologies and skills to analyze environmental systems and issues at a variety of scales
- Appreciate the dynamic interconnectedness between environmental systems and societies
- Value the combination of personal, local and global perspectives in making informed decisions and taking responsible actions on environmental issues
- Be critically aware that resources are finite, that these could be inequitably distributed and exploited, and that management of these inequities is the key to sustainability
- Develop awareness of the diversity of environmental value systems
- 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
- Engage with the controversies that surround a variety of environmental issues
- Create innovative solutions to environmental issues by engaging actively in local and global contexts[2]

COURSE OUTLINE:
(Please see Environmental Systems and Societies Guide, pages 16 to 70 for more details.)

The IB ESS SL course has a minimum of 120 recommended teaching hours. Topics included in this portion are:
- Foundations of environmental systems and societies
- Ecosystems and ecology
- Biodiversity and conservation
- Water and aquatic food production systems and societies
- Soil systems and terrestrial food production systems and societies
- Atmospheric systems and societies
- Climate change and energy production
- Human systems and resource use

In addition, there are an additional minimum of 40 hours of laboratory work which include:
- Practical activities
- Individual investigation
- Group 4 project (in conjunction with IB Biology HL Year 1)

LABORATORY ACTIVITIES:
(Please see Environmental Systems and Societies Guide, pages 16 to 70 for more details.)

KEY ASSIGNMENTS:
Group 4 Project--students identify a problem, research it, conduct an experiment, then analyze results. This project is completed in cooperation with other IB science courses and is completed over a three week period.

A guided Independent Investigation that students carry out on a topic of their interest.

Additional assignments as decided by the teacher.

[2] IBO, 2015

INSTRUCTIONS METHODS and/or STRATEGIES:
(Please see Environmental Systems and Societies Guide, pages 16 to 70 for more details.)

General IB approaches to teaching are:

- Based on inquiry
- Focused on conceptual understanding
- Developed in local and global contexts
- Focused on effective teamwork and collaboration
- Differentiated to meet the needs of all learners
- Informed by formative and summative assessment

Strategies to meet these approaches with students include deliberate lesson planning that encourages students to develop these approaches to learning skills:

- Thinking
- Communication
- Social
- Self-management
- Research

ASSESSMENTS INCLUDING METHODS and/or TOOLS
(Please see Environmental Systems and Societies Guide, pages 16 to 70 for more details.)

There are four assessment objectives for the DP environmental systems and societies course. Having followed the course at SL, students will be expected to do the following.

Assessment objective 1
Demonstrate knowledge and understanding of relevant

- acts and concepts
- methodologies and techniques
- values and attitudes

Assessment objective 2
Apply this knowledge and understanding in the analysis of

- explanations, concepts and theories
- data and models
- case studies in unfamiliar contexts
- arguments and value systems

Assessment objective 3
Evaluate, justify and synthesize, as appropriate

- explanations, theories and models
- arguments and proposed solutions
- methods of fieldwork and investigation
- cultural viewpoints and value systems

Assessment objective 4
Engage with investigations of environmental and societal issues at the local and global level through

- evaluating the political, economic and social contexts of issues
- selecting and applying the appropriate research and practical skills necessary to carry out investigations
- suggesting collaborative and innovative solutions that demonstrate awareness and respect for the cultural differences and value systems of others

There are ongoing formative and summative assessments throughout the course as prepared by the instructor. In addition, there are specific IB assessments called Internal Assessment (IA) and External Assessment (EA). Preparation for both the IAs and EAs are ongoing throughout the course.

IA: Written report of a research question designed and implemented by the student.

EA: Paper 1 Case study
Paper 2 Short answers and structured essays

INSTRUCTIONAL MATERIALS:
District approved textbooks.

Committee Members:

1.	**Debra Arthur**	**4.**	**David Ramirez**
2.	**Maria Fletcher**	**5.**	**Efa Hucakby**
3.	**Carissa Weintraub**	**6.**	**Sasha Robinson**