

Course Syllabus

SUSTAINABLE SCIENCE

Printed by: lualtam

Program: Oceanographic Engineering

1. Course number and name

ADSG1026 - SUSTAINABILITY SCIENCE

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

HECTOR IVAN APOLO LOAYZA

4. Text book, title, author, and year

- G. Tyler Miller, Scott Spoolman. Ciencia Ambiental (1era)
 - a. Other supplemental materials
- Theis Tom. Sustainability: A Comprehensive Foundation (12th)
- Jeffrey D. Sachs. La era del desarrollo sostenible (1era)

5. Specific course information

- a. Brief description of the content of the course (catalog description)

This transversal training course for all students of the institution has five chapters. It introduces the key principles of sustainability and the path to sustainable development. Addresses ecological principles by deepen into biodiversity, ecosystems, human population and ecosystem services. Study the fundamentals of renewable and non-renewable resources as well as the alternatives for sustainable use. Analyzes environmental quality specifically in the air, water and soil components, delving into issues such as climate change, eutrophication and deforestation. Finally, it emphasizes on the economic axis with topics such as circular economy and on the social axis on topics such as governance and urban planning.

- b. This course is: Required

6. Specific goals for the course

- a. Specific outcomes of instruction

- 1.- Relate environmental, economic and social variables as the central axis for understanding sustainability by applying basic sciences.

- 2.- Develop critical thinking through the reflection of ethical values, norms and practices; to take a stand in the sustainability discourse.

- 3.- Propose solutions to complex sustainability problems locally and globally.

- 4.- Analyze ethical and professional responsibilities in work situations, making informed judgments considering the impact of solutions in global, economic, environmental and social contexts

- b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

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7. Brief list of topics to be covered

- 1.- Final and partial exams
- 2.- Environment and sustainability
- 3.- Ecological principles of sustainability
- 4.- Sustainable use of natural resources
- 5.- Sustaining environmental quality
- 6.- Sustainable development