Center for International Programs & Sustainability Studies
Course Name: Renewable Energy and Resource Management
Course Code: MGMT-3020
Total Contact 60
Prerequisites: none

COURSE DESCRIPTION

This course introduces renewable energy resources and resource management, with an emphasis on understanding the global context in which it operates. This course will consider society's present needs and future energy demands, examine conventional energy sources and systems, including fossil fuels and then focus on alternate, renewable energy sources and how to manage them. We will cover the economic and social impact that both conventional and renewable energy resources have on the environment and society. The students will have the opportunity to visit a project related to hydrogen production's plants, windmills and/or solar panels, all national and multinational projects dedicated to the supply of energy.

AUDIENCE

This course is structured for international students attending the Study Abroad Program at an LCI Education university campus. However, courses are not exclusive to foreigners so local degree-seeking students may enroll in this course. The courses are also taught in Spanish as part of our Bachelor's in Sustainability Management or Business Administration programs.

This is a theoretical-practical course and explores/responds to the following inquiry according to the professional/disciplinary profile:

How to manage the use of renewable energy resources as a substitute of fossil fuels in a cost-effective and sustainable way?

In order to respond this question, we will study the following **generative topics:**

- Current ESG (environmental, social and governance) risks and problems.
- What is sustainability and environmental management.
- Applied environmental economics concepts and definitions.
- Renewable energy types, costs, transition, environmental and socio-economic impacts, trends, governance, politics, and challenges.

Along the course, the following **skills** will be fostered:

- Analytical thinking.
- Clear and effective communication.
- Efficient use of information and tools in the decision-making analysis.
- Ability to integrate practical, social, economic, and environmental aspects in the analysis and resolution of problems related to different productive sectors, considering the objectives of Renewable energy and resource management.
- Ability to build personal criteria considering socioeconomic and environmental perspectives on the information available regarding controversial sustainability issues.

Among the **values** and **attitudes** that will be promoted among students are the following:

- Empathy with the environment and social topics.
- Teamwork and leadership.
- Systemic thinking.
- Logical and communicative intelligence.

- Problem solving.
- Learn and relearn.

COMPETENCIES, CRITERIA AND EVIDENCE

The competencies for the Veritas University are reflexive and integral actions that respond to the professional profile and to the problems of the context, with suitability and ethical commitment, integrating the knowledge, the know-how, and the knowledge to know in a perspective of improvement.

Below are both the disciplinary and general competencies, linked to their criteria and evidence of performance for this course.

Competencies	Subcompetencies	Learning Assessments
Disciplinary Integrates the fundamentals of ESG risks, environmental management, and economics to promote awareness of the economic, social and ethical repercussions of the use of renewable resources.	○ Analyses the global perspectives for 2023 and how it affects sustainable development. ○ Understands how the decision making based on science (environmental management and economics) should drive the discussion around development. ○ Identifies the economic and social repercussions in the decision-making of renewable energy transition.	○ Round table ○ Individual and group ○ Presentations ○ Final project

Core/Generic Builds the necessary knowledge, skills, and attitudes to learn how to communicate orally and in written form in the different disciplines that make up the curriculum. Integrates the necessary knowledge, skills, and attitudes to learn teamwork and leadership techniques	○ Communicate thoughts of the discipline orally, visually, and in written form. ○ Execute teamwork and leadership.	○ Round table ○ Individual and group ○ Presentations ○ Final project
Integrates the necessary knowledge, skills, and attitudes to learn interpersonal communication techniques	○ Relate well to others. ○ Manage responsibly. ○ Listen attentively	○ Round table ○ Individual and group ○ Presentations ○ Final project

CONTENT

Unit 1: Sustainable development

- Sustainability, definition, and short overview of the history of this term
- ESG risks: Energy supply crisis, Cost-of-living crisis, rising inflation, food supply crisis, cyberattacks on critical infrastructure.
- Global concerns: The biodiversity loss, climate change, migrations.

Unit 2: Environmental economics

- Introduction to environmental economics
- Cost-effective allocation, contamination cost, supply chain
- Externalities, market failures, appropriate intervention

Unit 3: Environmental management

- Environmental Systems
- Social Systems
- Social Systems

Unit 4: Renewable energies

- Renewable energy types, energy cost, sources and energy transitions
- Renewable energy governance and politics
- Renewable energy impacts
- Current trends in renewable energy

METHODOLOGY

The student will be subject to a process of "learn to learn". By doing so they will be exposed to environmental management, economics and decision-making tools presented in class relevant to the course, real live experiences coming from guest speakers and field trips to organizations and businesses related to this course topic.

EDUCATIONAL RESOURCES

The students will have access to VERITAS' libraries and free access to wireless internet to get needed information. The professor will also provide readings and other sources of information that will be posted in VERITAS-CANVAS. Classrooms are fully equipped to assist students in their learning process.

LEARNING ASSESSMENT

Evaluation compiles and evaluates evidence by considering feedback providing pre-established criteria. The course evaluation must be aligned with the competencies and the teaching methodology. There is a rubric for each evaluation resource, and the details will be provided in **CANVAS LMS**. Even though the rubric grants a grade, it is also a quantitative and qualitative description of the students´ performance. The rubrics include the core discipline key competences.

Indicator	Grade
Class participation and two round tables (Week 2 and 4)	60%
Final Research Project and Presentation.	40%

Final grade:	100%

LEARNING STRATEGIES

1. Topic presentations:

The topic presentation is a group activity that aims to demonstrate a specific idea assigned by the lecturer. The group will have 20 minutes and expose the topic to the class.

2. The round table

The round table is a space dedicated to promoting oral expression techniques and research on different topics. For both activities, a group of students that can be made up of 4 to 6 people (depending on group size) who should investigate as much as possible about the assigned topic, sit face to face with the other groupmates to create a Roundtable panel. The idea is that a group of students prepares a topic relevant to the course that preferably generates ideas or points of contradiction to generate new learning.

The maximum recommended duration is 60 minutes (45 minutes of discussion between the presentation of the topic, sub-themes and questions launched by the moderator, and 15 minutes of closure - which is also done by the moderator). To make the round table, each group must be clear about the assigned topic, prepare and investigate it, prepare written information, and brief presentations to fully understand the topic and the respective subtopics; generate a closure with the synthesis and conclusions that emerge from the activity.

3. Final project

Each student chooses a final project in accordance with the course learning experience. The professor will have to approve it.

The final project is developed along the course, the professor guides the process and assesses the results. Presenting time plus questions and discussion will be 30 minutes' maximum, depending on the number of students enrolled. The final project represents 40% of the total grade. Several class sessions will be dedicated to check and guide the project advances. Presentations must be uploaded to Canvas on deadline (before presenting.

Field trips promote students' assimilation, reflection, and the internalization of knowledge, sensitizing through observation and interaction. The date will be defined according to students based on two date proposals and disposition from the place. In addition, the theory addressed in class will be extensively exemplified and analyzed in the sites visited. This process promotes critical thinking and puts into practice the capacity to make decisions during the process of learning to learn.

Students will do research using class material, guest speakers' visits and field trip to elaborate their final presentation. It will relate to a specific country and a specific non exhaustible resource of energy to be utilized by the chosen country. This will allow students to exercise their capacities to communicate in a clear and well-articulated manner. Students will exercise the capacity for critical thinking and oral and written expression through the presentation of reports and class's discussions. There will also be two guest speakers who will discuss issues related to the course.

With the elaboration of an Entrepreneurship and Small Business Management final project the student will have the opportunity to apply knowledge and ideas from class discussions and readings as well guest speakers and field tours.

ATTENDANCE

Regarding classes:

1. Students are only allowed a two (2) non-consecutive (back-to-back) class absences. A student shall fail the course if the professor registers more than two absences. Administration does not control attendance.

2. Three late arrivals to class (arrival after the first 15 minutes) are treated as one absence. Attending class 30 minutes late without an official justification will also count as an absence.
3. In the case of an absence from any assignment evaluated in class (presentations, evaluations, field trips, etc.) a student will be given a grade of zero unless an official document is presented within one week of the absence.
4. If a student presents an official document to excuse the absence, the missed assignment is to be presented on that same day.

Regarding field trip:

5. An unjustified absence on a field trip will immediately result in the loss of all points assigned to that specific trip. However, if an official document justifying the absence is presented, 50% of the assignment points may be obtained upon presentation of a complementary research assignment, to be agreed upon with the professor, within one week of the field trip.
6. An absence on a field trip may be justified should two course field trips coincide. In such a case, and to avoid losing points, students shall be able to opt for carrying out research assignment.

CODE OF CONDUCT

Professors have the right to expel a student from the classroom should he/she/they:

1. Be disruptive in the classroom.
2. Behave in a disrespectful way.
3. Be under the influence of alcohol.
4. Be under the influence of any illegal drug.
5. Shows hygiene or odor problems that may disturb other students.

ELECTRONIC DEVICES

The use of cell phones, smartphones, or other mobile communication devices is disruptive and is therefore prohibited during class. Please turn all devices OFF and put them away when class begins. Devices may be used only when the professor assigns a specific activity and allows the use of devices for internet search or recording. Those who fail to comply with the rule must leave the classroom for the remainder of the class period. Using devices while the professor or other peers are lecturing, or presenting is perceived as a lack of interest and disrespectful.

STUDY ABROAD PROGRAM POLICIES

The student must comply with the provisions of the Study Abroad Program Policies available on the Canvas/Omnivox platform.

BIBLIOGRAPHY

- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES]. Methodological Assessment of the Impact and Dependence of Business on Biodiversity and Nature's Contributions to People
- Intergovernmental Panel on Climate Change's [IPCC]. Sixth Assessment Report (AR6)
- Hackett, Steven C, Sahan T.M. Dissanayake. 2006. Environmental and Natural Resources Economics: Theory, Policy and the Sustainable Society. 3rd edition. NY. Editorial Routledge.
- Sharlissa Moore. Routledge. 2020. Sustainable Energy Transformations, Power and Politics. First edition. New York. USA. Editorial Routledge.
- Filippos Proedrou. 2018. Energy Policy and Security under Climate Change. First edition Switzerland. Palgrave Macmillan.

CHRONOGRAM

Week	Topic	Content	Learning assesments

1	Why to study renewable energies	Open question for students: why sustainable development is important and how does it relate to renewable Energy	Discussion
	Class introduction and overview of course		
	Introduction and Overview of Environmental, Social and Economic Risks	Sustainability, definition, and short overview of the history of this term	Lecture
	Introduction and Overview of Environmental, Social and Economic Risks	Sustainability, definition, and short overview of the history of this term	Lecture
	Introduction and Overview of Environmental, Social and Economic Risks	Global issues	Lecture
	2023 Current situation	Energy supply crisis, Cost-of-living crisis, rising inflation	Lecture
	2023 Current situation	Energy supply crisis, Cost-of-living crisis, rising inflation	
	2023 Current situation	Biodiversity loss, climate change	Topic presentation
	2023 Current situation	Biodiversity loss, climate change	Round table
2	2023 Current situation	Food supply crisis, Cyberattacks on critical infrastructure	Lecture
	2023 Current situation	Food supply crisis, Cyberattacks on Critical infrastructure	Lecture
	Review of applied economics	Introduction to environmental economics	Lecture
	Review of applied economics	Introduction to environmental economics	Topic presentation
	Review of applied economics	Cost-effective allocation, contamination cost, supply chain	Lecture
	Review of applied economics	Externalities, market failures, appropriate intervention	Lecture
	Entrepreneurship and Small Business Management final project	Discussion and brainstorm of possible topics	Lecture
	Review of applied economics	Green taxes	Round table

3	Environmental Management	Open question for students: do we manage human behavior or do we manage resources to overcome current crisis	Lecture
	Environmental Management	Environmental Systems	Lecture
	Environmental Management	Social Systems	Lecture
	Environmental Management	Social Systems	Topic presentation
	Renewable Energy basics	Types of renewable energy	
	Entrepreneurship and Small Business Management final project	Discussion and brainstorm of possible topics	Discussion and brainstorm of possible topics
	Renewable Energy basics	Energy cost, energy sources and energy transitions	Lecture
	Renewable Energy basics	Energy cost, energy sources and energy transitions	Round table
4	Renewable Energy basics	Trends shaping the renewable energy sector	Lecture
	Renewable Energy basics	Trends shaping the renewable energy sector	Lecture
	Renewable Energy Governance and Politics	Regulatory issues, incentives and internal law	Lecture
	Renewable Energy Governance and Politics	Civic engagement and empowerment	Topic presentation
	Renewable Energy Governance and Politics	Sustainable development goals, Kyoto Protocol, International Renewable Energy Agency, OCDE	Lecture
	Entrepreneurship and Small Business Management final project	Discussion and forum about topics and checkpoint for students	Lecture
	Renewable Energy impacts	Environmental impacts	
	Renewable Energy impacts	Reconciling Preservation and Development	Round table
5	Renewable Energy impacts	Social Impacts	Lecture
	Entrepreneurship and Small Business Management final project	Discussion and forum about topics and checkpoint for students	Lecture
	Current trends renewable Energy	Renewable energy industry, zero targets, decarbonization	Lecture

	Renewable Energy impacts	Ethical Concerns	
	Final Research Project Presentation	Defined by students	Final project
	Final Research Project Presentation	Defined by students	Final project
	Final Research Project Presentation	Defined by students	Final project
	Final Research Project Presentation	Defined by students	Final project