UNIVERSIDAD SAN IGNACIO DE LOYOLA

SYLLABUS

Course Information						
Code: **CMA41001**		Course: **ENVIRONMENTAL SCIENCES**				
Coordination Area / Program:		**DIRECCION DE DOBLE GRADO SIC**			Mode: **Presencial**	
Credits: **03**		Tipo de hora	Presencial	Virtual	H. Totales	Autonomous Learning Hours: **96**
		H.Teoria	48	0	48	
		H.Práctica	0	0	0	
		H.Laboratorio	0	0	0	
Period: **2024-01**		Start date and end of period: **del 20/03/2024 al 09/07/2024**				
Career: **ADMINISTRACIÓN - ADMINISTRACIÓN EN TURISMO - ADMINISTRACIÓN HOTELERA - ADMINISTRACIÓN Y EMPRENDIMIENTO - ADMINISTRACIÓN Y FINANZAS CORPORATIVAS - ARQUITECTURA, URBANISMO Y TERRITORIO - ARTE CULINARIO - ARTE Y DISEÑO EMPRESARIAL - CIENCIA DE DATOS - COMUNICACIONES - DERECHO - ECONOMÍA - ECONOMÍA Y FINANZAS - ECONOMÍA Y NEGOCIOS INTERNACIONALES - GASTRONOMÍA Y GESTIÓN DE RESTAURANTES - GESTIÓN AMBIENTAL EMPRESARIAL - GESTIÓN E INNOVACIÓN EN GASTRONOMÍA - INGENIERÍA AGROINDUSTRIAL - INGENIERÍA AGROINDUSTRIAL Y AGRONEGOCIOS - INGENIERÍA AMBIENTAL - INGENIERÍA CIVIL - INGENIERÍA DE SISTEMAS DE INFORMACIÓN - INGENIERÍA DE SOFTWARE - INGENIERÍA EMPRESARIAL - INGENIERÍA EN INDUSTRIAS ALIMENTARIAS - INGENIERÍA INDUSTRIAL Y COMERCIAL - INGENIERÍA INFORMÁTICA Y DE SISTEMAS - INGENIERÍA LOGÍSTICA Y DE TRANSPORTE - INGENIERÍA MECATRÓNICA - INTERNATIONAL BUSINESS - MARKETING - MÚSICA - PSICOLOGÍA - RELACIONES INTERNACIONALES**						

Course Pre-requisites		
Code	**Course - Credits**	**Career**
FC-ADM ADMNEG	ADMINISTRACIÓN PARA LOS NEGOCIOS	GEST. AMBIENTAL EMP. - ECO. NEG. INT.
FC-SP-AGR BIOLOGIA	BIOLOGÍA	ING AGROIND - ING. INDUSTRIAS ALIM.
DGA-GENERBIOLOG	GENERAL BIOLOGY	MUSICA - ING SIST INFORM - GEST-INNOV-GASTRON - ADMINISTRACION - COMUNICACIONES - ECO. NEG. INT. - ARTE CULINARIO - ADM&FINCORP - ING-SOFT - ECONOMIA - ING. INDUSTRIAL Y C. - ARQUITECTURA - ARTE Y DIS. EMP. - DERECHO - RELAC. INTERNACIONALES - ING. INFORMATICA - MARKETING - ECO. Y FINANZAS - ADM. HOTELERA - GASTR. GEST. REST. - INTERN. BUSINESS - CIENCIA DE DATOS - ADM. TURISMO - PSICOLOGIA - ING. CIVIL - ADM. Y EMPRENDIMIENTO - ING. EMPRESARIAL - ING-MECAT

Course Coordinators			
Surname and First Name	**Email**	**Contact Hour**	**Contact Site**
MAURICIO CUETO, YULIANA JIMENA	ymauricio@usil.edu.pe	L-V 9:00 - 18:40	Campus 1, Pabellón D, Piso 2

Instructors
You can check the timetables for each teacher in their INFOSIL in the ***Classes Development Teachers*** option ***Teachers.***

Course Overview
The purpose of this course is to provide students with the scientific principles, concepts, and methodologies to understand the interrelationships that take place in the natural world, to identify and

analyze both natural and human-made environmental problems, and to evaluate. the risks associated with these problems and propose alternative solutions to resolve and/or prevent them.

General Course Result	Unit Result
At the end of the course, students will be able to: Measure environmental variables and interpret the results. Evaluate local, regional and global environmental issues related to the use and management of resources. Describes threats to global biodiversity, reviews their implications and possible solutions. Interpret the results of scientific studies of environmental problems. Propose solutions to environmental problems related to the use and management of resources.	1. At the end of the unit, the student will be able to analyze local, regional and global environmental issues related to the use and management of resources with truthfulness, integrity and collaboration.
	2. At the end of the unit, the student analyzes the effect of humans on biodiversity.
	3. At the end of the unit, the student analyzes the impact of humans on natural resources with truthfulness, integrity and collaboration.

Development of activities		
Unit Result 1: *At the end of the unit, the student will be able to analyze local, regional and global environmental issues related to the use and management of resources with truthfulness, integrity and collaboration.*		
Session 1: *At the end of the session, the student analyzes what an environmentally sustainable society is, through Gamification, presentation and debate of Current Event in a group, Academic task reviewing information reliably and collaboratively substantiating ideas with truthfulness, integrity and collaboration.*		Semana 1 a 4
Learning Activities	**Contents**	**Evidence**
Analyze the concepts of Sustainability Ecological footprint renewable resources Environmental problems Distinguish between environmental science, ecology and environmentalism and environmentalism. Define an ecosystem Environmental ethics Analyzes the scientific theory of evolution and how life on earth can change over time weather. Natural selection and evolution. Biomes and ecological niches. Specialist and generalist species Analyzes scientific laws and theories. Basic components of matter: Protons, neutrons and electrons Compounds and the chemical bases of life Explain the main components of a ecosystem Describe what happens to energy in an ecosystem. Analyzes interspecific interactions: Parasitism, mutualism and commensalism. Defines the different reproductive patterns of species. Transition from exponential growth to logistical growth. Inertia and resistance	Sustainability Ecological footprint renewable resources Environmental problems Distinguish between environmental science, ecology and environmentalism and environmentalism. Define an ecosystem Environmental ethics Discussion in small groups. Exhibition of conclusions. Discuss the selection of the topic for the final project of the course, research in the tentative bibliography. Discussion on the scientific theory of evolution and how it explains how life on earth can change over time Natural selection and evolution. Biomes and ecological niches. Specialist and generalist species. Debate on the Final Project of the course. List of topics. Scientific laws and theories Basic components of matter: Protons, neutrons and electrons Compounds and the chemical bases of life Explain the main components of a ecosystem Describe what happens to the energy in a Ecosystem. Task: Project topic Task: Tentative bibliography. Parasitism, mutualism and commensalism. Defines the different reproductive patterns of the species. Transition from exponential growth to	Gamification Presentation and discussion of Current Event in a group. academic task

	logistical growth. Inertia and resistance.	
Session 2: *Gamification Presentation and discussion of Current Event in a group. academic task*		Semana 5 a 6
Learning Activities	**Contents**	**Evidence**
Analyzes family planning, control policies population. Sustainability of urban growth. Analyze the types of deserts, prairies and forests; the Interaction between climates and biomes Human impact on ecosystems and types of aquatic systems	Family planning, control policies population. Sustainability of urban growth. Types of deserts, prairies and forests. Interaction between climates and biomes Human impact on ecosystems Types of aquatic systems	Gamification Presentation and discussion of Current Event in a group. academic task
Unit Result 2: *At the end of the unit, the student analyzes the effect of humans on biodiversity.*		
Session 3: *At the end of the session, the student analyzes how humans play a leading role in the premature extinction of species, threats to forest ecosystems through Gamification, Presentation and debate of Current Event in a group, academic task reviewing reliable information and collaboratively.*		Semana 7 a 8
Learning Activities	**Contents**	**Evidence**
Analyze the primary and secondary causes of tropical deforestation. Shows how forests can be managed more sustainably. Sustainable management of forests and forest fires. How reducing wood waste can positively impact pressure on forest ecosystems. Identify the three principles that can be used to protect ecosystems. Ecological restoration.	Native and introduced species. Species protection policies. Endangered Species Act. Degradation of natural capital. Bioaccumulation and biomagnification. Primary and secondary causes of tropical deforestation. Shows how forests can be managed more sustainably. Sustainable forest and fire management Foresters. How to reduce Wood waste can positively impact pressure on ecosystems forestry. Identify the three principles that can be used to protect ecosystems. Ecological restoration.	Gamification Presentation and discussion of Current Event in a group. academic task
Unit Result 3: *At the end of the unit, the student analyzes the impact of humans on natural resources with truthfulness, integrity and collaboration.*		
Session 4: *At the end of the session, the student analyzes food security and the problems with unsustainable freshwater management through Gamification, Presentation and debate of Current Event in a group, academic task reviewing information reliable and collaborative.*		Semana 9 a 16
Learning Activities	**Contents**	**Evidence**
Analyzes food security and sustainable food production. Traditional and organic agriculture. Green revolution and living modified organisms. Analyzes the desalination of salt water from oceans into fresh water. Decrease of underground aquifers. Point and non-point sources of pollution. Analyzes the main geological processes of the Earth. Defines the ways in which Earth's rocks are recycled. Describes mineral resources and what environmental impacts result from their use. Recognizes the longevity of non-renewable mineral resources. Analyzes the main sources of the most used energies. Name the advantages and disadvantages of	Food security and sustainable food production. Traditional and organic agriculture. Green revolution and living modified organisms. Desalination of salt water from oceans into fresh water. Decrease of underground aquifers. Point and non-point sources of pollution. Geological processes. The rock cycle. Heterogeneous distribution of minerals and extraction strategies. Recycling and other use strategies sustainable. Fossil fuels, conventional and heavy oil. Net energy, nuclear and energy efficiency. Risks and threats. Communicable diseases, epidemics, pandemics. Carcinogens, mutations and defects congenital. Analyzes	Gamification Presentation and discussion of Current Event in a group. academic task Final Project Final Presentation

energies. Analyzes the main health risks that we must deal with. Analyze the nature of the atmosphere and the parts that constitute it. Recognize the main problems of air pollution. Analyze why solid waste and hazardous waste are a problem. Learn how to deal with solid waste. Debate about the importance of reusing and recycling materials. Differentiate the correlation of systems economic with the biosphere.	Bisphenol A and plastic polymers. Air pollution management, reduction of ozone. acid deposition. Kyoto Protocol. Anthropogenic climate change. E-waste. Reduce, reuse, recycle. Minimum waste culture. Sustainability and justice in policies environmental.	

Methodology

The course will be developed based on the following methodologies: The course will be developed based on the following methodologies:
Active methodologies:
Gamification, Project-based learning involves collaborative work

Assessment System

Each of the items of the evaluation scheme and the final grade of the course are rounded to whole numbers. The final grade of the course is the weighted average of the corresponding items: permanent evaluation, partial exam and final exam.

The averages calculated components of the item 'Permanent Evaluation' will keep your calculation with 2 decimals.

Type Evaluation	%Weighing	Observation	Week Assessment	Rezag.
Evaluación Permanente	**60**%			
Promedio de Avances	**40**%			
Avance 1	50%		Semana 7	No
Avance 2	50%		Semana 15	No
Promedio de Tareas	**60**%			
Tarea 1	50%		Semana 7	No
Tarea 2	50%		Semana 13	No
Examen Final	**40**%	Creditable product.	Semana 16	No

Attendance Policy

Total Percentage Absences Permitted	30%

Class attendance is mandatory. The student who reaches or exceeds the limit of thirty percent (30%) of absences in the course, defined by the total of effective hours, will be disqualified from taking the final evaluation, corresponding to said evaluation with a grade of zero (0).

In hybrid classrooms, only synchronous virtual participation (via zoom) is allowed, up to a maximum of 50% of the total course.

Basic Required Reading

[1] Miller, G. Tyler (George Tyler), (2019). *Environmental science.* (16th ed.). Cengage.

References Supplementary

[1] Berg, Linda R. (2011). *Visualizing environmental science.* (4th ed.). Wiley.
[2] Smith, T. M. (Thomas Michael), (2015). *Elements of ecology.* (9th ed.). Pearson.

Prepared by:	**Approved by:**	**Validated by:**
MAURICIO CUETO, YULIANA JIMENA / CHOU LUY, JOSE LEONARDO /	JAVIER VIDALON, JORGE LUIS	Office of Curriculum Development
Date: 21/03/2024	Date: 21/03/2024	Date: 21/03/2024