Modules GAT en anglais

Semester 1

Course Unit: UEF11

Subject Title F111: Analysis of Geographic Space and Land Use Planning

Physical and Rural Space

3h C 3h TP

Credits: 8 /Coefficient: 4

Learning Objectives:

This subject covers the elements related to physical and rural space and the methods used for their analysis.

Recommended Prior Knowledge:

General Geography

Introduction

- Definitions

- Purposes of Land Use Planning

- Concepts of Geographic Space, Environment, and the Environment

Chapter 1: Physical Space

Definition

Components of the Physical Environment

- Edaphic Components

- Climatic Components

Localized Space, Multiple Transformed Space

Socialization of Physical Space

Chapter 2: Rural Space

Rural Space and the Physical Environment

The Diversity of Rural Spaces

1. Common Factors

2. Diversity of Spaces Rural areas (geographic and structural)

Large rural areas

1. Agricultural areas

2. Forest areas

3. Mountain areas

4. Pastoral areas

Agrarian structures

Housing in the rural world

Relationship between rural towns

Changes in the rural world

Practical work:

Basic topographic mapping:

. Reference system and geodetic networks

. Geographic coordinates

. Map projections

. Scales of representation

1.2. Content and reading of the topographic map

. Different types of information

. Methods of representing relief, infrastructure, and natural features

. Topographic cross-section and the creation of block diagrams

. Commentary on topographic cross-sections in various geographic environments

. Calculating altitude and slopes

1.3. Topography and hydrographic network

. Map and hypsometric curve Slope map

Network organization and hierarchy

Isohyet maps and climate gradients

Assessment method: Continuous assessment and exam

Semester 1:

Course Unit: UEF12

Subject Title F122: Cartographic Techniques

Credits: 4/Coefficient: 2

Course Objectives:

The aim is to introduce students to reading textual/statistical information, representing it, and visualizing it using the various graphic methods taught throughout this subject.

Recommended Prior Knowledge:

High School Diploma (Baccalaureate)

Subject Content:

Chapter I: Introduction to Cartographic Representation

1-1- Introduction to the use of cartographic tools.

- Introduction to the different drawing media.

- Map Design: title, legend, scales, writing.

1-2- The Basics of Cartographic Expression

- Layout (point, linear, zonal)/- Visual Variables (image and separation)

1-3- Types of Maps to Create

1-3-1- Analysis Maps

Point maps, proportional symbols of the abacus, qualitative symbols, network symbols, flow symbols, area and range symbols.

1-3-2- Summary Maps

- Alternating Band Maps

- The Triangular Diagram

Chapter II: Introduction to Graphics

1- Introduction: The Importance of Graphics

2- Purpose of Graphics

- Levels of Information/- Forms of Graphical Intervention:

- Matrix Analysis of a Problem

- Graphical Processing of Information

3- Graphical Constructions

- Permutation Matrices: Orderable, Weighted, Curve Inventory, Networks

Assessment Method: Continuous + Exam

Semester 1:

Course Unit: Methodology

Subject Title: M111: Biology

Credits: 3

Coefficient: 2

Course Objectives: The Biology course covers fundamental concepts regarding living organisms and their relationships with the environment (notions of cytophysiology, notions of ecology, etc.). The practical work focuses on the study of organism skeletons.

Biology instruction aims to develop knowledge of cytophysiology and cytogenetics.

Recommended Prior Knowledge

Biology concepts acquired in high school.

Subject Content:

Introduction

Chapter 1: Concept of Cytophysiology

1- Prokaryotic Cell: Mandatory and Optional Elements

2- Animal and Plant Eukaryotic Cells

Plasma Membrane

Interphase Nucleus (concept of cytogenetics - mutations and evolution). Endomembrane system and proteins.

Semi-autonomous organelles and energy production.

Main specializations of the plant cell

- Chloroplast and photosynthesis

- The plant cell wall and its modifications

Chapter 2: Concepts of ecology

1- Definitions

2- Structure and function of ecosystems

- Trophic levels

- Main biogeochemical cycles (water, carbon, oxygen, and nitrogen)

- Energy flow

3- Ecological balance and environment

Chapter 3: Some concepts on the basic classification of the living world

Assessment method: Continuous **+ Exam**

Semester 1:

Course Unit: Methodology Unit

Subject Title M112: Chemistry

Credits: 3

Coefficient: 2

Chapter 1: Structure of Matter

- The Constitutions of the Atom

- Chemical Elements and Isotopes. Concept of Radioactivity. Nuclear Reactions

Bohr Atom, Quantization of Energy

- The Atom in Quantum Mechanics: Quantum Numbers – Concept of Orbitals

- Atomic Structure of the Elements

- Periodic Table, Periodic Properties of the Elements

Chapter 2: Chemical Bonds

- Molecular Structures – Structural and Electronic Aspects

- Covalent Bonds: Lewis-VSEPR-Hybridization Theory (SP, SP^2, and SP3)

Metallic Bonds: Simple Cubic, Body-Centered Cubic, and Face-Centered Cubic Metallic Structures

- Ionic Bonds: NaCl and CsCl types Weak Bonds: Hydrogen Bonds and Van Der Walls Bonds

Chapter 3: Introduction to Thermodynamics

Concept of System, Quantities, and State Function (Application to Ideal Gases)

First Law of Thermodynamics (Energy, Work, and Heat (U, W, Q))

Thermochemistry (Enthalpy and Heat of Reaction)

Second Law of Thermodynamics: Entropy and Free Energy

Chapter 4: Chemical Equilibrium

Law of Mass Action

Le Chatelier's Law (Influence of Temperature, Pressure, and Concentration)

Acid-Base Equilibrium: pH of Solutions – Acid-Base Determination

Redox Equilibrium

Heterogeneous Equilibrium (Soil-Liquid) Concept of Solubility

Chapter 5: Physical Methods of Analysis

UV-Visible /IR/X-Ray

Assessment Method: Continuous Assessment and Exam

Semester 1:

Course Unit: Methodology

Subject Title M113: Mathematics 1: Algebra and Analysis

Credits: 3

Coefficient: 2

Course Objectives

The objective of this module is to teach students data processing methods in order to present, analyze, and use observations for problem solving. This subject includes the Analysis section, which covers sets, numerical sequences; numerical series; real functions, etc.

Recommended Prior Knowledge

Bachelor's level mathematics in Natural Sciences and Exact Sciences.

Subject Content:

1 – Linear Algebra

- Vector space, basis, dimension.

- Linear map, kernel, range, rank.

- Matrices, Determinants

- Systems of Linear Equations

2- Geometry in Space

- Review of Plane Analytic Geometry

- Fundamentals of Geometry in Space

- Definition of a Plane

- Relative Position of a Line and a Plane

- Lines Perpendicular to a Plane, Parallel and Perpendicular Planes, Particular Planes

3- Point Transformations: (Translations, Homotheties, Projections, Symmetries, Similarities, Isometries, etc.)

- Definition, Properties, Characteristic Elements

- Characterization and Matrix Study of Different Transformations

- Representation in the Complex Plane

4- Polyhedra: Prisms, Parallelepipeds, Pyramids. Volumes of Revolution. Spheres, Ellipses

Assessment Method: Continuous + Exam

Semester 1:

Course Unit: Methodology

Subject Title: M114: Physics 1

Credits: 2/Coefficient: 1

Course Objectives:

Through this subject, students acquire a foundation in general statistics to process geographic information of all types. It allows them to study the basic techniques for assessing the existence of a relationship between the characteristics of a statistical population. Recommended Prior Knowledge:

Basic Physics

Course Content:

Chapter 1: Electricity and Magnetism

1°- Electrostatics

- Electric Field and Potential;- Equilibrium of Conductors;- Capacitors

2°- Electrokinetics

- Electrical Conduction;- Ohm's Law, Joule's Law/

- Electrical Circuits/- Thévenin and Norton's Theorems

3°- Electromagnetism

- Definition of the Magnetic Field/- Current-Field Interaction (Laplace's Law)/- Ampere's Formula

Chapter 2: Radiation

1°- General Information

Electromagnetic Radiation; Particle Radiation; Detection of Radiation

Energy Spectrum of Radiation; Photoemissive Cell

2°- X-ray Production

3°- Radiation-Matter Interactions

Photoelectric Effect; Compton Effect; Materialization Effect

Attenuation – Protective Screen Practical work:

Potentiometric assembly/Topography of an electromagnetic field (rheographic tank)

Oscilloscope (function, use, and application to ddp measurements)

Measurements of resistances and characteristics

RC and RL circuits in transient conditions/RLC circuits in resonance/Spectral analysis/Study of the photoemissive cell/Emission and reception of X-rays/Attenuation of radiation

Assessment method: Continuous + Exam

Semester 1:

Course Unit: Cross-Curricular Unit

Subject Title T111: Computer Science 1

Credits: 2

Coefficient: 1

This subject allows students to become familiar with computer tools and immerse themselves in the Windows and Microsoft environment. Recommended Prior Knowledge:

Computer Basics

Subject Content:

Chapter 1: Introduction

Chapter 2: - Hardware

- Introduction to the Concept of a Computer

- Introduction to the Computer

- Types of Computers

- Computer Structure

Chapter 3: - Operation

- Operating Systems

- Windows - Word Processing

Chapter 4: Office Software (Manipulation)

Word,

Excel, ……

Office Automation Practicals (Manipulation)

- The Internet

The Network

Internet

The Web

- Navigation

- Searching on the Internet

- Email

Assessment Method: Exam

Semester 1:

Course Unit: Cross-Curricular Unit

Subject Title: T112: French Language 1

Credits: 2

Coefficient: 1

Course Objectives:

Upgrade students' knowledge of the French language. Courses will focus on introductory grammar, conjugations, and sentence composition.

Recommended Prior Knowledge.

Baccalaureate Level Knowledge

Subject Content:

GRAMMAR

- Punctuation

- Sentence Types: Negative Form, Simple Sentence, Interrogative Sentence

- Subject Noun Phrases: G – N – S

- Verb Phrases

- Qualifying Adjectives

- Articles

CONJUGATION

- Verbs/- Tenses, Moods, Persons

- Present Indicative Tense of the 3 Groups

- The past tense

VOCABULARY

- Homonyms

- Opposites

- Words from the same family

- Word formation

- Verb and suffix

- Suffixes

- Prefixes

Assessment method: Exam

Semester 2

Course Unit: Fundamental Course Unit UEF21

Subject Title F211: Geographical Analysis and Regional Planning 2

3h C 3h Practical Work

Credits: 8

Coefficient: 4

Course Objectives:

Subject Title F211: Geographical Analysis and Regional Planning 2:

Objective: To trace the history of urbanization and cities, allowing students to become familiar with urban history and understand the mechanisms that led to the formation of cities. Recommended Prior Knowledge

Baccalaureate Knowledge

Subject Content:

Chapter 1: Urban Space

The Different Facets of Urban Space

Site and Location

Methods of Approach and Definition of the Urban Phenomenon

Typology of Cities

Organization of Urban Structure (Theories)

- Urban Structure;- Urban Grids;- Urban Plans

The City, Development, and the Environment

Current Problems of the City

Chapter 2: Organization of Space

Types and Hierarchy of Space;Unorganized Spaces;Unbalanced Spaces;Organized Spaces

Chapter 3: Spatial Planning Policy

Concept of Region and Territory;City and Region;Regionalization

Spatial Planning in Algeria;Experience in Other Countries Practical work

- Sectorization map;- Population and population density map

- Urban and regional flow map;- Urban morphology map

- Network map;- Easement map;- Facilities map;- Urban dynamics map

- City hierarchy;

Assessment method: Continuous assessment and exam

Semester 2:

Course Unit: Fundamental Course (UEF22)

Subject Title: F221; Urban Planning

Credits: 5

Coefficient: 3

Course Objectives: This subject provides a general understanding of cities and urban planning to students from diverse backgrounds and educational backgrounds at the beginning of their undergraduate degree. It provides a general introduction, as well as an overview of the ideas and interpretive systems of urbanism.

Recommended Prior Knowledge (brief description of the knowledge required to follow this course – Maximum 2 lines).

Subject Content:

1- Definition of the concept of urban planning

2- Discussion: Theories of urban planning: the place of urban planning in history

- Progressive urban planning

- Culturalist urban planning

- Naturalist urban planning 3- Urban Models in Geography

- Burgess's Concentric City (1925)

- Hoyt's Sectorial City (1935)

- Harris and Ullman's Multiple-Nucleus City (1945)

4- Urban Planning and Spontaneous Urban Planning

5- Regulatory Urban Planning and Operational Urban Planning

6- Urban Policy

7- Urban Operations and Interventions

Assessment Method: Continuous and Exam

Semester: 2

Course Unit: Fundamental Course UEF22

Subject Title F222: Geomorphology

Credits: 4

Coefficient: 3

First-Year Geomorphology Program (GAT and STU)

Geomorphology is the study of landforms and the processes that shape them, generally through erosion, transport, and deposition. This introductory course to geomorphology examines landforms at different spatial scales. The processes that shape and modify the environment will be covered in detail in the second and third-year courses. The course covers:

Basic definitions: Topography, landforms, geomorphology, orders of magnitude of the Earth's crustal relief, etc

A brief history of geomorphology (catastrophism (Georges Cuvier), uniformitarianism, evolutionists, the Davis model, the W. Penck model, the Eduard Brückner model, and the Albrecht Penck model, etc.)

Tectonic forms (plate tectonics, types of plate movement, plate convergence), orogeny, deformation (folding, faulting, fractures, and joints), jointing, domes and basins, Horst and Graben, rift valleys, and the world's major mountain ranges (Rocky Mountains, the Appalachians, the Andes, the European Alps, and the Himalayan range).

Volcanic landforms: intrusive igneous rocks (batholiths, plutons, sills, laccoliths, and dikes). Monadnocks), extrusive igneous rocks (cinder cones, shield volcanoes, stratovolcanoes, calderas, lava domes, volcanic hotspots, volcanic necks, flood basalts

Karstic Relief: 1) the karst environment (karst and pseudokarst), 2) karst and pseudokarst processes: solution and precipitation (limestone, dolomites, evaporites and silicate rocks), slow mass movements and collapses, fluvial and hydrothermal processes, 3) surface and internal karst forms (caves, sinkholes, ouvalas, limestone pavements or limestone pavements, poljes, karst springs, karst towers, etc.)

Fluvial Systems and Forms: Fluvial Systems and Processes

Longitudinal Profile and Watersheds, Dams and Lakes

Mountain Streams, Braided, Meandering or meandering, entrenched meandering, branching rivers, straight rivers, floodplains, fluvial terraces, waterfalls, alluvial deltas, etc.

Glacial forms: Alpine ice and glaciers, Ice fields and ice caps, Piedmont Glacier, erosion processes and forms (abrasion, snaking, fluvio-glacial and glacio-karst erosion, roches moutonnées, glacial cirques, U-shaped glacial valleys, hanging valleys, ridges, horns and passes, locks and umbilicus, etc.), accumulation forms: glacial deposits (lateral, median, and terminal moraines, drumlins, erratics, etc.), fluvio-glacial deposits (sandur, eskers, kames, terraces), and glaciolacustrine deposits.

Aeolian landforms: Aeolian environments, landforms shaped by wind erosion (Reg, Hamada, Yardan, etc.), landforms shaped by aeolian deposits (dunes, loess, riparian dunes, and sandbanks, etc.).

Coastal landforms: coastal environments (swells, waves, currents, and tides), coastal erosional landforms (cliffs, abrasion platforms, etc.), coastal deposit forms (beaches, beach rock, beach crescents, spits, tombolos, barrier islands, etc.), estuaries, deltas, and mangroves.

Practical work

The practical work in Geomorphology focuses primarily on the analysis of topographic maps, aerial photographs, satellite images, and digital terrain models.

Semester 2:

Course Unit: Methodology Unit UEM21

Subject Title M211: Mathematics 2: Statistics

Credits: 3

Coefficient: 2

Course Objectives:

Through this subject, students can acquire training in general statistics; a very useful tool for processing geographic information of all types. It allows them to study the basic techniques for assessing the existence of a relationship between the characteristics of a statistical population.

Recommended Prior Knowledge:

General Mathematics.

Subject Content:

CH1: Introduction

- Definition of Descriptive Statistics

- Population and Statistical Units

- Sample of a Statistical Population

- Analysis of a Statistical Population According to Different Criteria or "Characteristics"

- Methods of Grouping Statistical Units

CH2: Study of a Variable

- Presentation: Tables and Graphs

- Sample Sizes; - Cumulative Sample Sizes; - Frequencies

- Location Parameters; - Dispersion Parameters

CH3: Study of Two Variables; - Functional Dependence

- Function/- Graphical Presentation

- Linear Adjustment/- Deviations

- Least Squares Line/CH4: Random Variables

- Distribution of a Variable's Values/- Properties of Probabilities/- Distribution Function

- Discrete and Continuous Variables

- Position Parameters and Dispersion Parameters

- Probability Laws (Gauss, Galton, Gumble, Frechet, Person III Laws)

Assessment Method: Continuous Assessment and Exam

Semester 2:

Course Unit: Methodology Unit UEM21

Subject Title M212: Physics 2

Credits: 3

Coefficient: 2

Course Objectives (Describe the skills the student is expected to have acquired after successfully completing this subject – maximum 3 lines).

Acquire basic concepts of fluid dynamics and the following: the concept of pressure, the concept of stress, the relationships between stress and deformation (Hooke's law, Young's modulus, Poisson's ratio) or between stress and flow velocities (viscosity).

Recommended Prior Knowledge (brief description of the knowledge required to follow this course – maximum 2 lines).

Fundamental Physics

Course Content:

Chapter 1: Electricity and Magnetism

1°- Electrostatics

- Electric Field and Potential/- Equilibrium of Conductors/- Capacitors

2°- Electrokinetics

- Electrical Conduction; - Ohm's Law, Joule's Law; - Electrical Circuits

- Thévenin and Norton's Theorems

3°- Electromagnetism

- Definition of the Magnetic Field/- Current-Field Interaction (Laplace's Law)/- Ampere's Formula

Chapter 2: Radiation

1°- General Information

Electromagnetic Radiation, Particle Radiation, Detection of Radiation

Energy Spectrum of Radiation; Photoemissive Cell

2°- Production of X-rays

3°- Radiation-Matter Interactions

Photoelectric Effect; Compton Effect; Materialization Effect

Attenuation – Protective Screen/Practical Exercises:

Potentiometric Assembly; Topography of an electromagnetic field (rheographic tank)

Oscilloscope (function, use, and application to ddp measurements)

Measurements of resistances and characteristics; RC and RL circuits in transient conditions

RLC circuits in resonance; Spectral analysis; Study of the photoemissive cell

Emission and reception of X-rays; Attenuation of radiation

Assessment method: Continuous + Examination

Semester 2:

Course Unit: Methodology Unit UEM21

Subject Title M 213: Introduction to Geomatics

Credits: 3

Coefficient: 2

1. Geomatics

- Definition of concepts

- Disciplines of geomatics: (Cartography, Geographic Information Systems (GIS), Computer Science, Aerial and spatial imagery, Geodesy, Topometry, Remote sensing

Photogrammetry, Mathematics)

- Application of geomatics

2. Geographic information system:

- Components of a GIS (Hardware, Software, Data, Users, etc.)

- Geographic database

- Components of a GIS (Geoprocessing, geovisualization, geodatabase)

- Areas of application of GIS

- Advantages of using GIS

3. Remote sensing:

- Principles of operation; - Electromagnetic radiation

- Satellites

- Multispectral signatures

- Resolution

- Areas of application of remote sensing

- Advantages of using remote sensing

Assessment method: Continuous exam

Semester 2:

Course Unit: Discovery Unit UED21

Subject Title D221: Computer Science 2

Credits: 2

Coefficient: 1

Course Objectives:

To introduce students to digital image processing using software dedicated to the graphic design profession.

Recommended Prior Knowledge:

Computer Science.

Subject Content:

1. Characteristics of a digital image

2. Introduction to digital image processing (Photoshop)

3. Use of important terms (format, scanning, color chart, background color, foreground color, density, brightness, contrast, etc.)

4. Use of image transmission systems

5. Acquisition of digital image processing techniques

6. Recovery of images and photographs

7. Digital image editing

Assessment Method: Exam

Semester 2:

Course Unit: UET21 Cross-Curricular Unit

Subject Title T221: Foreign Language

Credits: 2

Coefficient: 1

Course Objectives:

Complete the knowledge acquired in grammar, conjugation, and vocabulary during the first semester.

Recommended Prior Knowledge

Knowledge acquired in UET11 (T111).

Subject Content:

Improvement of oral and written English (scientific English applied to geography).

- Practice of everyday and technical English.

Assessment Method: Exam.

Semester 3:

Course Unit: Fundamental Course Unit UEF31

Subject Title F311: Hydrology

Credits: 5

Coefficient: 3

Course Objectives:

The objective is to study water as a resource that structures space; analyze its use patterns. Teach students the different methods for calculating flow rates and mapping surface and groundwater basins.

Recommended Prior Knowledge

Elements of the Natural Environment, Thematic Mapping

Subject Content:

Chapter 1: Introduction to Hydrology

Chapter 2: The Watershed

- Physical Characteristics; - Morphometric Characteristics

Chapter 3: Data Processing

- Homogenization; - Gap Filling

Chapter 4: Frequency Analysis of Hydro-Pluviometric Variables

- Fitting Samples to Probability Distributions (Normal Distribution (Gaussian)).

- Probable Variables; - Recurring Variables

- Adequacies; - Confidence Intervals

Assessment Method: Continuous Assessment and Exam

Semester 3:

Course Unit: Fundamental Course Unit UEF31

Subject Title F312: Bioclimatology

Credits: 4

Coefficient: 3

Introduction

I - General Climatology

- The Mechanisms of General Atmospheric Circulation

- Study and Analysis of Climate Parameters/- Climate Extremes

II - Climate Classification

- Based on Temperature/- Based on Temperature and Rainfall

- Aridity (Different Characterization Indices)

IV - Bioclimatic Synthesis

- Aridity and Anthropogenic Degradation/- Vegetation-climate relationship

- Biological classification of climates/- Climate and bioclimatic mapping

V - Ecological factors

- Classification of ecological factors/- Development and evolution of ecosystems

Work to be completed

- Gaussen's ombrothermic diagram

- Classification of climates according to the Emberger quotient

- Characterization of climatic drought using different indices

- Calculation of potential evapotranspiration

- Calculation of the water balance

- Calculation of altimetric gradients

- Development of rainfall and temperature maps

- Development of ETP maps

- Methods for analyzing and interpreting these maps

- Creation of a bioclimatic summary map

Semester 3:

Course Unit: Fundamental Course Unit UEF31

Subject Title F321: Cities and Regions

Credits: 4

Coefficient: 2

Objective: Understanding the mechanisms that led to the formation of cities (urban history)

A- Recommended Prior Knowledge

. Baccalaureate Knowledge

Subject Content:

1. Urban Systems "The Notion of Territory, Urban System"
2. Components of the Urban System
3. Genesis and Formation of the City
4. Elements of Urban Construction
5. The Urban Network
6. Types of Housing
7. Elements for Classifying Urban Construction
8. The Formation of the City
9. The City and its Rural Hinterland
10. The Region: Concept and Definitions
11. The Region: Structure and Spatial Dimension
12. Metropolitanization of Space
13. Conditions of Regional Change
14. Spatial Distribution and Urban Hierarchy
15. Territorial Attractiveness and Competitiveness
16. Zones of Influence and Urban Regions

Assessment Method: Continuous Assessment and Exam

Semester 3:

Course Unit: Fundamental Course Unit UEF31

Subject Title F322: Demographic Analysis

Credits: 4

Coefficient: 2

Introduction: Definition of demography.

5.1- Sources of demographic data

Census, vital statistics, surveys (national, regional, global).

5.2- Natural population growth.

2-1: Types of population growth in the world (Malthusian news)

4-1: Different rates: birth rate, death rate, infant mortality, fertility. Average and completed fertility.

4-2: Theory of demographic transition

4-3: The abbreviated life table

4-4: The marriage table (average age at first marriage)

4-5: The reproduction table.

4-6 Evolution of Time and Age (The LEXIS Diagram).

- Generations and Cohorts.

2-8: Multiplications or SPRAGUE Coefficient

5.3- Migration:

4-1: Definitions – Types – Rates – Indices.

4-2: Migration Flows.

4-3: International Migration: Evolution and Aspects. History, the New Trend of Migration (Illegitimate).

4-4: Internal Migration – Rural Exodus.

Assessment Method: Continuous Assessment and Examination

Semester 3:

Course Unit: Methodological Unit: UEM31

Subject Title: M311: Remote Sensing

Credits: 5

Coefficient: 2

Course Objectives:

Demonstrate the role and usefulness of remote sensing in a geographical approach to the territory. Also, provide the theoretical and methodological elements essential for understanding the information provided by aerial photographs and satellite images. Recommended Prior Knowledge: None

Course Content:

I. Photo-Interpretation

1- Introduction to Photo-Interpretation

1.1- Preliminary Definitions

1.2- Stereoscopic Use

2- Photo-Interpretation

2.1- Keys to Interpretation

2.2- Photo-Identification at 1:20,000

2.3- Photo-Interpretation of Relief at 1:20,000

2.4- Photo-Interpretation of Land Use at 1:20,000

2.5- Photo-Interpretation in Rural Environments

2.6- Photo-Analysis of a Concrete Space

2.7- Field Surveys, Surveys, and Data Updating

II. Remote Sensing

1. Introduction

1.1. Definition of Remote Sensing

1.2. Role of Remote Sensing in Research

1.3. Practical Goals of Remote Sensing

1.4. Remote Sensing Application Scale

2. Physical Basis of Remote Sensing

2.1. Electromagnetic Radiation (EMR)

2.2. Production of EMR

2.3. EMR-Matter Interaction

2.4. Elements of Radiometry

2.4.1. Directions

2.4.2. Radiation Sources

3. Vectors and Sensors

3.1. The Product of Remote Sensing

3.2. Earth Observation Satellites

3.2.1. Geostationary Satellites

3.2.2. Paths

3.2.2.1. Active Sensors

3.2.2.2. Passive Sensors

4. Data Processing

4.1. Color Compositions

4.2. Geometric Correction

5. Synthesis of Matter Using Comparison Between Satellite Images, Aerial Photographs, and Field Surveys

Assessment Method: Continuous Assessment and Examination.

Semester 3:

Course Unit: Methodological Unit: UEM31

Subject Title: M312: Introduction to Geographic Information Systems

Credits: 4

Coefficient: 2

Course Objectives:

This course covers computer-assisted thematic mapping. Focusing on vector modeling and statistical data representation, it teaches students how to structure geographic information and represent it cartographically using specialized thematic mapping software.

Recommended Prior Knowledge:

Cartography, Statistics, Basic knowledge of Excel and Illustrator, etc.

Subject Content: Introduction: What's the Benefit of GIS? 1- History and basic functions of GIS

- How GIS was born;- Main partners and basic functionalities

- Aspects to consider before selecting the tool

2- Type of data (Raster and Vector)

- Raster data (geographic projections, georeference principle)

- Vector data;- Topology

3- Data structuring and integration in GIS

- Data modeling and implementation in a GIS

- Vectorization (creation of vector objects and entry of identifiers and attributes)

- Structured vector databases

- Census data

4- Data exploitation in a GIS

- The concept of query

- Different operators (arithmetic, geographic)

- Data aggregation

- Functions (measurement, character strings, date fields, etc.)

- 3D view and digital terrain model (DTM)

Assessment method: Continuous assessment and exam.

Semester 3:

Course Unit: Discovery Unit UED31

Subject Title D311: Analysis of Cartographic Documents

Credits: 2

Coefficient: 1

1/ Topographic Analysis

Basic mapping:

- Ellipsoid geoid
- Geographic coordinates
- Main cartographic projections
- Geodetic networks and reference systems
- Presentation scales

Analysis of the topographic map

- Presentation of the topographic map with its main characteristics
- Principles of reading topographical forms
- Analysis of topographical forms (plains, hills, plateaus, mountains, hydrographic networks)
- The topographic profile (production principle)

2/ The geological map:

Introduction to the major structural domains (……)

General information on the geological map:

- The legend of geological maps
- The geological section

Laboratory work:

- Thematic maps ((derived)
- Topographic profile
- Hypsometric map (relief)
- Slope map
- Hydrographic network (BV perimeter, surface area, drainage density)
- Lithological diagram
- Structural diagram

Assessment method: continuous review

Semester 3:

Course Unit: Discovery Course Unit UED31

Subject Title D312: Economics

Credits: 1

Coefficient: 1

General Information:

-Definitions: Economics, Microeconomics, Macroeconomics

Economic Activity:

Economic Agents:

Companies

Administrations

Financial Institutions

Households

External Market

Overview of the Algerian Economy

Essential Characteristics

Economic Geography

GDP Structure

Trade Balance

Mechanisms of the Contemporary Economy - Money

- Inflation/- Employment and Unemployment

- Market (Law of Supply and Demand)/- Monopoly, Oligopoly

- Competition/4- Territorial Economics

- Concept of Geographical Economics and Territorial Economics

- Polarization of Space, Centralities, Factors of Attractiveness of Economic Centers, Polarization of Activities

- Territorial Development/Underdevelopment

- Development Models (Case of the Algerian Economy)

Assessment Method: Exam.

Semester 3:

Teaching unit: UE Transversale UET31

Title of subject T311: Language 3

English language

Credits: 1

Coefficient: 1

Teaching objectives

Understand and learn to effectively use geographical and environment terms in English and become more familiar with using English language in the field of geography and planning.

Recommended prior knowledge

Basic reading and oral communication, grammar, vocabulary building, listening and speaking. Reading of simple scientific texts, their analysis, understanding of the main idea and a basic ability to communicate and exchange information in a simple way.

Content of the material:

Introduction: Understanding basic geography concepts in English

Speaking: logical development of ideas, participation in a discussion presentation, dialogue, interview, discussions, interpretation, assessment and generalization on the specialty topics.

Listening: to authentic/simulated texts (presentations, lectures, academic discussions, conversations) of average complexity on specialty topics. Types of texts: practical guidelines and instructions, descriptions of a process, an interview, a conversation.

Language in use: forming and expanding professional / specialty vocabulary on the basis of the topics discussed, learning to use grammatical structures typical of scientific texts in all language skills: tenses of the verbs, active/passive voices, order of adjectives, nominal adjectives, adverbs.

Topics to be studied: Population, Destruction and conservation of the rainforests, Biodiversity and Genetic Resources, Ozone layer and the Greenhouse effect, Air Water and Soil pollution, Non-renewable energy resources, Urban expansion, Industrial pollution and waste disposal, traffic, Poverty and environmental damage, Sustainable development.

Method of assessment: examination.

Semester 4

Course Unit: UEF21 Basic

Subject 1: Algeria, Space and Society

Credits: 4

Coefficient: 2

Course Objectives

Understand the Algerian reality through the space-society interface: space as an element of society description, society as an element of geographical explanation.

Recommended Prior Knowledge

Introduction to Geography, Elements of the Natural Environment, and Human Geography

Subject Content: Introduction

1- The Algerian Natural Environment

1.1. Major Natural Units (Plains, Mountains, Valleys, Plateaux, etc.)

1.2. Major Climatic and Bioclimatic Units

1.3. The Hydrographic Network and Water Resources

1.4. Specific Areas

1.5. Major Environmental Constraints (Aridity, Erosion, Desertification)

2- Algerian Society

2.1. Characteristics and Distribution of the Population

2.2. Demographic Characteristics and Trends

2.3. Urban Society

2.3.1. Urbanization in Algeria (Forms and Evolution)

2.3.2. Algerian Cities (Location and Growth)

2.4. Rural Societies

2.4.1. Ancient Agrarian and Rural Societies

2.4.2. Contemporary Agrarian Societies

3. The Economic Construction of the Country

3.1. The Post-Independence Planned Economy

3.2. The Economic Crisis and the Opening of the Market

3.3. Economic Recovery and Its Impacts

Assessment Method: Continuous Assessment and Examination

Semester: 4

Course Unit: UEF21 Basic

Subject 2: Water and Development

Credits: 4

Coefficient: 2

Course Objectives

Understand the types of water mobilization, the different uses, and conflicts of use.

Recommended Prior Knowledge

Knowledge of spatial analysis, hydrogeology, and hydrology

Subject Content:

Introduction

1. State of Water Resources in Algeria

1.1. Conventional Water

1.2. Non-Conventional Water

2. Water Resource Mobilization

2.1. Infrastructure and Structures

2.2. Pipelines and Treatment

2.3. Major Transfers

2.4. Traditional Means of Mobilization

3. Human Consumption

3.1. Agricultural Use

3.2. Domestic Use

3.3. Industrial Use

4. International Water Law

5. Prospects for Mobilizing and Protecting Water Resources

5.1 Critical Areas

5.2 Increasing Tensions

5.3 Major Environmental and Health Issues

Assessment Method: Continuous Assessment and Examination

Semester: 4

Course Unit: UEF 2.2.2

Subject 1: Physical Environments

Credits: 4

Coefficient: 2

Course Objectives

This subject provides students with the methodological foundations necessary for analyzing the dynamics of physical environments.

Recommended Prior Knowledge

This subject requires prior knowledge of the elements of the natural environment and basic geomorphology.

Subject Content:

Chapter 1: Introduction, New Concepts in Physical Geography

Chapter 2: Edaphic Components of the Physical Environment

1/ Landforms; - Typology, - Absolute and Relative Elevation Differences; - Slopes; - Exposure

2/ Geological Structure/- Lithology; - Structure

3/ Morphology/- Plateaus and Peneplains; - Plains; - Valleys; Glacis and Terraces, etc.

Chapter 3: Bioclimatic Components of the Physical Environment

1/ Climate and Its Components: - Temperature; - Solar Radiation; - Solar Constant; - Ground Energy Balance/- Humidity; - Absolute Humidity; - Relative Humidity; - Condensation Phenomena- recipitation (Typology, Regimes, Distribution, etc.); - Atmospheric Pressures and Winds

2/ Soils and Vegetation

Introduction

1. Dynamic Processes and Geosystems

2. Physical Characteristics of Soil

3. Flows (Hydrodynamic Concepts)

4. Erosive Dynamics (Quantification of Erosion)

5. Analysis of Mass Movements

6. Active Tectonics and Seismotectonics

7. Socialization (Anthropomorphism) of Geosystems

Assessment Method: Continuous Assessment and Exam

Semester: 4

Course Unit: UEF 2.2.2

Subject 2: Rural Environment

Credits: 4/ Coefficient: 2

Course Objectives

Due to its synthetic nature, this subject focuses on describing and analyzing the evolution of the rural environment in spatial, social, and economic terms.

Recommended Prior Knowledge

Geographical Space, Population, and Demographic Analysis

Subject Content: Introduction

1. Rural Space (Definitions and Characteristics)

2. Diversity of Rural Spaces

2.1. Common Factors

2.2. Causes of Diversity

2.3. Consequences of Diversity in Rural Spaces

2.4. Typology

3. Demographic Dynamics

4. Rural Housing

4.1. Clustering and Dispersion

4.2. Village Forms

4.3. Rural Houses

4.4. Infrastructure and Equipment

5. Rural Development in Algeria

5.1. The Place and Importance of Agriculture in Rural Areas

5.2. Rural Area Structures and Their Evolution

5.3. Mountain Area Development

5.4. Pastoralism

5.5. Saharan Agriculture

Assessment Method: Continuous Assessment and Examination

Semester: 4

Course Unit: UEF 2.2.2

Subject 3: Urban Environment

Credits: 4

Coefficient: 2

Course Objectives

This subject aims to give students the ability to understand an urbanized space by distinguishing between the different spatial entities that compose it and the functions they perform. This allows them to analyze the resulting dynamics.

Recommended Prior Knowledge

Analysis of Geographic Space, Population and Activities, Cities and Regions

Subject Content: Introduction

1 - The City, a Construction in Space

2 - Limits and Differentiations of Urban Space

3 - Urban Concentration

3.1. Demographic Concentration

3.2. Functional Concentration (Activities and Facilities, etc.)

3.3. Measurement and Factors of Urban Concentration

4. The Urban Fabric

4.1. Urban Housing

4.2. Facilities

4.3. Infrastructure

5. Urban Land and Land Use

6. Distribution of Functions and Its Consequences

6.1. Selective Location of Activities in Urban Spaces

6.2. Cities and Changes in Production Systems

6.3. Economic Specialization of Cities

7. Dynamics of Evolution and Reorganization of Urbanized Spaces

7.1. Urban Sprawl/7.2. Peri-urbanization/7.3. Urban Centralities and Changes in City Centers

7.4. Urban Reorganization and Social Issues

Assessment Method: Continuous Assessment and Examination

Semester: 4

Course Unit: UEM2.2

Subject 1: Survey Techniques

Credits: 3

Coefficient: 2

Course Objectives

To teach students survey techniques, questionnaire design, and data processing.

Recommended Prior Knowledge

Descriptive statistics, population, and demographic analysis.

Subject Content:

Introduction

The Usefulness of Surveys and Definitions

1. Types of Surveys (Definitions)

1.1. Semi-Directed Surveys (Interviews)

1.2. Direct Surveys (Questionnaire)

2. Stages of Surveys

2.1. The Interview/2.1.1. Determining Objectives

2.1.2. Classifying Respondents/2.1.3. Orienting the Discussion and Framing Key Questions

2.1.4. Interview Transcription and Conclusion

2.2. The Questionnaire/2.2.1. Definition of the Purpose of the Survey

2.2.2. Inventory of the Survey Materials

2.2.3. Pre-Survey and Hypotheses

2.2.4. Drafting the Draft Questionnaire

2.2.5. Sampling, Types, and Calculations

2.2.6. Testing and Updating the Questionnaire

3. Computer Processing of the Surveys

3.1. Examining the Questionnaires

3.2. Analysis of the Results and Writing the Report

Assessment Method: Continuous Assessment and Exam

Semester: 4

Course Unit: UEM2.2

Subject: Field Internship

Credits: 4

Coefficient: 2

Course Objectives

Recommended Prior Knowledge

Knowledge acquired throughout the program.

Subject Content

Semester: 4

Course Unit: UED2.2

Subject 1: Sociology

Credits: 1

Coefficient: 1

Course Objectives

This subject offers a sociological approach to rural and urban spaces.

Recommended Prior Knowledge

Human Geography

Subject Content:

Introduction

1. Introduction to Sociology

2. Basic Concepts of Sociology

2.1. Social Structure

2.2. Social Relations

3. Rural Sociology

3.1. What is "the Rural" (Definition of Rural Space)

3.2. Sociological Characteristics of Rural Society (Rural Sociology/Urban Sociology Duality)

3.3. The Social Status of the "Fellah" and Sociological Significance

4. The City, a Sociological Phenomenon

5. The City, a Social Form

5.1. Social Morphology

5.2. Production of Space and Cohesion of Social Groups

5.3. Places of Residence and Social Affiliations

6. The City, Lifestyles

7. The City, a Political Organization

Assessment Method: Continuous Assessment and Exam

Semester: 4

Course Unit: UET2.2

Subject 1: Ethics and Professional Conduct

Credits: 1

Coefficient: 1

Course Objectives

To inform and raise students' awareness of the risks of corruption and encourage them to contribute to the fight against corruption.

Subject Content:

Introduction

1. Concept of corruption:

- Definition of corruption.

- Religion and corruption.

2. Types of corruption:

- Financial corruption.

- Administrative corruption.

- Moral corruption.

- Political corruption, etc.

3. Manifestations of administrative and financial corruption:

- Nepotism

- Favoritism

- Mediation

- Extortion and fraud.

- Looting of public funds and illegal spending.

- Delays in completing transactions (project implementation, etc.). - Administrative, functional, or organizational violations by the employee and the manager.

- Violations committed by the civil servant while performing their duties during the year.

- Lack of respect for working hours, taking time to read newspapers, receiving visitors, refraining from performing work, and lack of responsibility.

4. Reasons for administrative and financial corruption:

4.1. Causes of corruption from the theoreticians' perspective:

- According to the first category:

- Civilizational causes.

- Political reasons.

- According to the second category:

- Structural reasons.

- Causes of value judgments.

- Economic reasons.

- According to the third category:

- Biological and physiological reasons

- Social causes.

- Complex reasons.

4.2. General Causes of Corruption:

5. The Effects of Administrative and Financial Corruption:

- The Impact of Administrative and Financial Corruption on Social Aspects

- The Impact of Financial and Administrative Corruption on Economic Development

- The Impact of Administrative and Financial Corruption on the Political System and Stability

6. The Fight Against Corruption by Local and International Agencies and Organizations

- Transparency International:

- United Nations Convention on Combating Administrative Corruption

- World Bank Program to Assist Developing Countries in Combating Administrative Corruption

- International Monetary Fund

- Algeria's Anti-Corruption Efforts: Anti-Corruption Law 06-01, the Role of the Judicial Police in Combating Corruption, etc.

7. Treatment Methods and Means to Combat Corruption

The Religious, Educational, Political, Economic, Legislative, Legal, Administrative, and Human Aspects... 8. Models of some countries' experience in the fight against corruption:

- The Indian experience, the Singapore experience, the United States experience, the Hong Kong experience, the Malaysian experience, and the Turkish experience

Assessment method: Exam

Semester: 4

Teaching unit: UET2.2

Title of subject T311: Foreign language

English language

Credits: 1

Coefficient: 1

Teaching objectives

Understand and learn to effectively use geographical and environment terms in English and become more familiar with using English language in the field of geography and planning.

Recommended prior knowledge

Basic reading and oral communication, grammar, vocabulary building, listening and speaking. Reading of simple scientific texts, their analysis, understanding of the main idea and a basic ability to communicate and exchange information in a simple way.

Content of the material:

Introduction: Understanding basic geography concepts in English

Speaking: logical development of ideas, participation in a discussion presentation, dialogue, interview, discussions, interpretation, assessment and generalization on the specialty topics.

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Topics to be studied: Population, Destruction and conservation of the rainforests, Biodiversity and Genetic Resources, Ozone layer and the Greenhouse effect, Air Water and Soil pollution, Non-renewable energy resources, Urban expansion, Industrial pollution and waste disposal, traffic, Poverty and environmental damage, Sustainable development.

Method of assessment: examination.

Semester 5

Course Unit: UEF 3.1.1

Subject 1: Planning Techniques and Practices

Credits: 5

Coefficient: 3

Course Objectives

The main objective of this course is to provide theoretical mastery of the field of land use planning and all its components. Understanding the organization of spaces, acquiring analytical and design skills, and mastering practical planning techniques are the foundations of this subject.

Recommended Prior Knowledge

Analysis of geographic space, population and activities, demographic analysis, and geographic information systems.

Subject Content:

Introduction

1. Planning and its Objectives

2. Structuring Elements of Planning

3. Preliminary Planning Studies

3.1. Natural Variables

3.2. Demographic Variables

3.3. Socioeconomic Variables

3.4. Land Value and the Legal Nature of Land

4. Planning Practices

4.1. Planning Projections

4.2. Regional Planning

4.3. Planning Natural and Rural Environments

4.4. Urban Planning

5. Humans and Planning: Analysis of Relationships

5.1. Planning and Development

5.2. Stakeholders and Territorialities

6. Examples of Planning

Assessment Method: Continuous Assessment and Examination

Semester: 5

Course Unit: UEF 3.1.1

Subject 2: Spatial Planning Policies

Credits: 4

Coefficient: 2

Course Objectives

This subject aims to enable students to understand and analyze spatial planning practices through the study of policies implemented. Identifying the institutions responsible for territorial management and the tools for action consolidates their knowledge in this subject.

Recommended Prior Knowledge

Analysis of geographic space, demographic analysis, planning techniques and practices.

Subject Content:

Introduction

1. Planning and Territorial Organization

1.1. Administration/1.2. Means of Implementing Planning Policies

1.2.1. Planning and Financial Means/1.2.2. Participatory Action in Planning

2. Planning Legislation/2.1. Legislative Framework

2.1.1. Laws and Codes (General and Specific)

2.1.2. Implementing Texts

3. Territorial Planning Instruments

3.1. The National Spatial Planning Plan (SNAT)

3.2. The Regional Spatial Planning Plan (SRAT)

3.3. The Wilaya Development Plan (PAW)

3.4. Sectoral Development Plans

4. Local Planning Instruments

4.1. The Master Plan for Urban Development and Planning (PDAU)

4.2. The Land Use Plan (POS)/4.3. The Territorial Coherence Plan

4.4. Tourism Expansion Zones

5. Land Management

6. Means of Urban Planning Control

7. Comparative Planning Policies in Various Countries

Assessment Method: Continuous Assessment and Examination

Semester: 5

Course Unit: UEF 3.1.2

Subject 1: Networks and Territory

Credits: 4

Coefficient: 2

Course Objectives

This subject aims to present the concepts, methods, and techniques for approaching territorial functioning in systems and networks.

Recommended Prior Knowledge

Analysis of Geographic Space, Cities and Regions, Algeria: Space and Society

Course Content:

Introduction

1. Territory

1.1 Definitions

1.2 Components of Territory and Organization

1.5 Hierarchies and Linkages of Geographic Scales

1.6 Relationships and Interrelations

2. Elements of Territorial Systems

2.1 System: Definition and Properties

2.2 Network: Definition and Properties

2.3 Territorial Systems and Networks: General Information

2.4 Evolution of Territorial Systems and Networks

4. Major Technical Networks

4.1 Energy/4.2 ICT

4.3 Passenger and Freight Transportation

5. Relationship Between Network Forms and Functions

5.1 The Notion of Reticularity/5.2 The Notion of Nodality

6. Territory, Systems, and Networks Through Some Examples: Local Networks, Intermediate Networks, and Long-Distance Networks

Assessment method: Continuous assessment and exam

Semester: 5

Course Unit: UEF3.1.2

Subject 2: Mobility and Transportation

Credits: 4

Coefficient: 2

Course Objectives

Develop theoretical and applied knowledge in the specific field of the transportation sector in relation to the territory. Highlight the interactions within the sector and between it and the components of the territory, particularly the regional one.

Recommended Prior Knowledge

Analysis of Geographic Space, Cities and Regions, Algeria: Space and Society, Networks and Territory

Subject Content:

Introduction

1. Transportation, Networks, and Regional Spaces/1.1. Transportation, Communications, and Networks/1.1.1. Understanding Transportation Through the Concept of Networks

1.1.2. Transportation Infrastructure/1.1.3. Connectivity and Accessibility

2. Network Formation/2.1. Networks and Flows/2.2. Network Evolution

2.3. Importance of Technical Progress and Consequences for Networks

3. Role of Transportation in Development Processes and Territorial Construction

3.1. Synergies between Transportation and Development

3.2. Transportation and the Process of Territorial Integration/3.3. Inputs and Outputs

4. Processes Related to Spatial Interaction and the Gravity Model

4.1. Definitions and Problems/4.2. Emissivity and Attractiveness

4.3. Gravity Modeling and the Geography of Transportation

4.4. Specialization and Complementarity through Exchange

4.5. The Notions of Thresholds in Areas of Influence

5. The Complex Characteristics of Transportation Demand and Supply

5. Mobility and Transportation in Time and Space/5.1. Different Forms of Mobility

6. Main Characteristics of Transportation Means

6.1. Topological and Quality Criteria

6.2. Examples of means of transportation and their relationship to space

Assessment Method: Continuous assessment and exam

Semester: 5

Course Unit: UEM3.1

Subject 1: Workshop

Credits: 4

Coefficient: 2

Course Objectives

This subject is a synthesis course, aiming to understand a territory through the observation of natural landscapes and different modes of human occupation and land use.

Recommended Prior Knowledge

Acquired Learning from the Four Semesters

Subject Content:

 The workshop provides the student with an initial experience addressing a regional planning issue.

 The fieldwork to be studied in this workshop must be prepared in the classroom.

 The workshop report will be refined during the post-workshop period and will be subject to a final assessment.

Assessment Method: Continuous Assessment

Semester: 5

Course Unit: UEM3.1

Subject 2: GIS Applications

Credits: 4

Coefficient: 2

Course Objectives

This subject follows the introductory material taught in the third semester and allows students to further engage in the use of geographic information systems in land use planning.

Recommended Prior Knowledge

Geographic spatial analysis, remote sensing, thematic mapping, introduction to GIS, etc.

Subject Content:

Introduction

1. Overview of GIS

2. Presentation of the Subject/2.1. Objectives/2.2. Resources/2.3. Human Resources/2.4. Materials/2.5. Software

3. Database Construction

3.1. Data Collection

3.2. Manual Data Entry

3.3. Data Import, Export, and Format Conversion

4. Statistical Processing and Graphical Representations

5. Acquisition of Base Maps and Digitization

5.1. Topographic (Digital Base Maps, Rasters, DTMs)

5.2. Aerial Photos

5.3. Satellite Images

5.4. Cadastral Maps

5.5. Layer Organization and Calibration

6. Processing by Thematic Layers

7. Data Exploitation in a GIS

8. - The Concept of Query/9. - Different Operators (Arithmetic, Geographic)

10. - Data Aggregation/11. - Functions (Measurement, Strings, Date Fields, etc.)/12. - 3D View and Digital Terrain Model (DTM)

Assessment Method: Continuous Assessment and Exam

Semester: 5

Course Unit: UED3.1

Subject 1: Facilities and Services

Credits: 3

Coefficient: 2

Course Objectives

This course allows students to understand two essential components of geographic space: facilities and services, and to analyze their role in spatial organization.

Recommended Prior Knowledge

Analysis of geographic space, economic activities.

Course Content:

Introduction

1. Types of Facilities

1.1. Essential Facilities

1.2. School Facilities

1.3. Health Facilities

1.4. Sociocultural Facilities

1.5. Structural Facilities

1.6. Industrial Equipment

2. Equipment and Spatial Organization

3. Tertiary and Higher Tertiary Functions

3.1. Banking and Insurance Services

3.2. ICT Services

3.3. Tourism and Mass Tourism Services

4. Services and Spatial Organization

Assessment Method: Continuous Assessment and Examination

Semester: 5

Cross-curricular teaching unit: UET3.1

Subject 1: foreign language

Credits: 1

Coefficient: 1

Teaching objectives

Understand and learn to effectively use geographical and environment terms in English and become more familiar with using English language in the field of geography and planning.

Recommended prior knowledge

Basic reading and oral communication, grammar, vocabulary building, listening and speaking. Reading of simple scientific texts, their analysis, understanding of the main idea and a basic ability to communicate and exchange information in a simple way.

Content of the material:

Introduction: Understanding basic geography concepts in English

Speaking: logical development of ideas, participation in a discussion presentation, dialogue, interview, discussions, interpretation, assessment and generalization on the specialty topics.

Listening: to authentic/simulated texts (presentations, lectures, academic discussions, conversations) of average complexity on specialty topics. Types of texts: practical guidelines and instructions, descriptions of a process, an interview, a conversation.

Language in use: forming and expanding professional / specialty vocabulary on the basis of the topics discussed, learning to use grammatical structures typical of scientific texts in all language skills: tenses of the verbs, active/passive voices, order of adjectives, nominal adjectives, adverbs.

Topics to be studied: Population, Destruction and conservation of the rainforests, Biodiversity and Genetic Resources, Ozone layer and the Greenhouse effect, Air Water and Soil pollution, Non-renewable energy resources, Urban expansion, Industrial pollution and waste disposal, traffic, Poverty and environmental damage, Sustainable development.

Method of assessment: examination.

Semester: 5

Cross-Curricular Unit: UET3.1

Subject 1: Entrepreneurship

Credits: 1

Coefficient: 1

Course Objectives

aims to facilitate business creation

Subject Content

The nine themes of the Conference, based on the SME Competitiveness Pact and the Business Competitiveness Report, are as follows:

1 - Spreading the entrepreneurial spirit among young people

2 - Establishing a sustainable tax framework for entrepreneurs

3 - Mobilizing all talent for business creation

4 - Proposing new sources of financing for businesses

5 - Promoting and enhancing responsible entrepreneurship

6 - Stimulating all forms of innovation within businesses

7 - Offering entrepreneurs comprehensive and tailored support

Assessment Method: Exam

Semester 6

Course Unit: UEF3.2

Subject 1: Governance and Local Development

Credits: 4

Coefficient: 3

Course Objectives

This subject aims to introduce the concept of governance as applied to territories. The aim is for the student to grasp the importance of governance in the functioning of local territories, knowing that the local territory is the most relevant level for networking various territorial actors.

Recommended Prior Knowledge

Planning Practices, Cities, and Regions

Subject Content:

Introduction

1. Definition of Territorial Governance

2. The Links Between Territory, Local Development, and Governance

3. The Territory as a Dynamic System

4. General Principles of Governance

5. Levels of Territorial Governance

5.1. State/5.2. Local Authorities

5.3. Participation as a Mode of Action at the Local Level (Private – Public)

5.3.1. Individuals

5.3.2. Groups of individuals

5.3.3. Businesses

6. Territorial governance tools

6.1. Decentralization

6.2. The state budget

6.3. Local finances (municipal budget)

6.4. Partnership

6.5. Business location strategies

6.6. Development of local resources

Assessment method: Continuous assessment and exam

Semester: 6

Course Unit: UEF3.2

Subject 2: Activities and Spatial Organization

Credits: 4

Coefficient: 3

Course Objectives

This course provides students with an understanding of different economic activities and their role in the organization of geographical space.

Recommended Prior Knowledge

Population and Activities, Demographic Analysis, Geographical Analysis

Course Content:

Introduction

I. Definitions and Concepts/II. Agricultural Activity/II.1. Types of Agriculture

II.1.1. Traditional Agriculture/II.1.2. Modern Agriculture/II.1.3. Extensive Agriculture

II.1.4. Intensive Agriculture/II.1.5. Livestock Farming

II.2. Fishing and Aquaculture/II.3. Forestry

II.4. Algerian Agriculture/III. Industrial Activity

III.1. Definitions and Classifications

III.2. Origins and Changes

III.2.1. Industrial Revolution

III.2.1. Globalization and Industrial Relocation

III.3. Industry and Geographic Space

III.3.1. Location Factors and Theories

III.3.1. Industry and the City

III.3.2. Industry and Rural Areas

III.4. Industry and Regional Integration

IV. Services

IV.1. Importance and Classification

IV.2. Typology of the Tertiary Sector

IV.3. The Phenomenon of Urban Tertiaryization

Assessment Method: Continuous Assessment and Examination

Semester: 6

Course Unit: UEF3.2

Subject 1: Risks and Territorial Vulnerability

Credits: 4

Coefficient: 2

Course Objectives

This subject aims to teach students the methods used to assess environmental vulnerability and manage major risks.

Recommended Prior Knowledge

Environment, Sustainable Development, Population, and Activities

Subject Content

Introduction

- Concepts: Hazard, Risk, Vulnerability/- Risk Perception: Humans and Society

1. Natural Hazards/1.1. Tectonic Hazards: Earthquakes and Tsunamis

1.2. Hydrometeorological Hazards: Floods and Landslides

1.3. Climatic Hazards: Drought and Forest Fires

1.4. Biological Hazards

2. Industrial and Technological Hazards

2.1. Industrial Hazards and Multifaceted Pollution

2.1.1. Air Pollution Risks

2.1.2. Water Pollution Risks

2.1.3. Urban Fire Risks

2.1.4. Transportation Risks

3. Managing Risk Factors in Regional Planning

3.1. Mobilizing Human Resources

3.2. Risk Control Techniques

3.3. Crisis Management and Control

3.4. Risk Management Instruments and Structures in Algeria

Assessment Method: Continuous Assessment and Examination

Semester: 6

Course Unit: UEF3.2

Subject 2: Environment

Credits: 4

Coefficient: 2

Course Objectives

The objective of this course is to teach students methods for identifying and analyzing environmental constraints and to raise their awareness of the ecological specificities of each type of ecosystem, as well as pollution control techniques.

Recommended Prior Knowledge

Analysis of Geographic Space, Cities, and Regions

Course Content

Introduction

-Concept of the Fragility of the Natural Environment

-Relationship between Environmental Protection and Sustainable Development

1. The Ecosystem and Its Components

1.1. Biotic and Abiotic Elements

1.2. Ecosystem Interactions and Dynamics

1.3. Humans and Environmental Degradation

2. Geo-Environmental Analysis Methods

2.1. Mapping and GIS

2.2. Field Survey /2.3. Laboratory Measurements /2.4. Impact Studies

3. Examples of Environmental Studies by Ecosystem Type

3.1. Coastline and Coastal Zones/2. Mountainous and Forested Areas

3.3. Wetlands and Rivers/3.4. Steppe and Saharan Zones

4. Nature and Types of Environmental Pollution

4.1. Nature of Pollution /4.2. Sources of Pollution /4.3. Types of Pollution

4.3.1. Water Pollution /4.3.2. Air Pollution /4.3.3. Soil and Vegetation Pollution

5. Pollution Control Techniques in Urban Environments

5.1 Sanitation and Design of Wastewater Treatment Plants / 5.2 Controlled Landfills

5.3 Other Techniques / 5.4 Health and Environment in Algerian Cities

Assessment Method: Continuous Assessment and Examination

Semester: 6

Course Unit: UEM3.2

Subject 2: Field Internship

Credits: 10

Coefficient: 5

Course Objectives

Learn to observe, investigate, conduct field surveys, collect the necessary data, and write up a mini-project.

Recommended Prior Knowledge

Knowledge acquired throughout the program.

Subject Content

- Choosing the field internship topic and location

- Documentary Research

- Field Surveys and Surveys

- Collecting Data from Administrative Structures and Organizations

- Field Surveys and Population Surveys

- Data Processing and Mapping

- Report Writing

Assessment Method: Continuous Assessment

Semester: 6

Course Unit: UED3.2

Subject 1: Territories and Globalization

Credits: 2

Coefficient: 1

Course Objectives

Understand the location of economic activities at the local, regional, national, and supranational levels; analyze current issues in economic geography and understand the concept of globalization.

Recommended Prior Knowledge

Economics, Territory, and Networks

Subject Content

Introduction: Concepts and Definitions

- What is Economic Geography?/- What is Globalization?

1. Territory and Its Evolution/1.1.1. States, Borders, and Globalization

1.1.2. Global Cities/1.1.3. Maritime Coastlines

1.1.4. Relationships between Markets and Finance

2. Economic Geography and Territory/2.1. Economy and Spatial Heterogeneity

2.2. Economic Systems (History and Evolution)

3. 1.3 Economic Activities

3.1.1. 1.3.1. The Location of Agricultural Production

3.1.2. 1.3.2. Industrial Relocation

3.1.3. 1.3.3. The Location of Services and New Trends

4. Economic Globalization/4.1. The Actors of Globalization

4.1.1. Trans- and Multinational Firms: Key Players

4.1.2. International Organizations and Institutions

4.2. The Major Areas of Globalization

5. The Geoeconomic Organization of the World/5.1. Flows and Networks: A World in Motion

5.2. A Polycentric World/5.3. A Multiperipheral World

Assessment Method: Exam

Semester: 6

Course Unit: UED3.2

Subject 1: Research Methods

Credits: 2

Coefficient: 1

Teaching Objectives

The objective of this course is to concisely and clearly formulate a research theme and a specific topic. The theme is broad. It is important to highlight what truly constitutes the interest of this theme, and within this theme, what the specific topic is that interests you (without necessarily having a specific question). This is, in a way, the beginning of a problem. The theme should not be too vague and should already focus attention on what is interesting about the subject. The social relevance of this theme and the subject should be evident:

Subject Content

The important questions that each student should ask themselves are:

- Does the theme of my research interest me?

- Should my work contribute something to this theme? - Does my topic fit within my research supervisor's area of expertise and concerns?

- Has my research topic not been revisited several times? (Have several studies already addressed this topic in one way or another?)

- Is my topic impossible to address due to material constraints? (Lack of materials and information, scant, inaccessible, or nonexistent documentation due to classification, etc.)

Assessment Method: Exam