NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF ENVIRONMENTAL ENGINEERING
SANITARY ENGINEERING PROGRAM

AA214 – NATURAL RESOURCES

I. GENERAL INFORMATION

CODE	**:**	AA214 Natural Resources
SEMESTER	**:**	1
CREDITS	**:**	2
HOURS PER WEEK	**:**	4 (Theory, Practice)
CONDITION	**:**	Compulsory

II. COURSE DESCRIPTION

The course prepares students in the application of sustainable development using renewable and non-renewable natural resources. Economic issues of natural resources are analyzed considering supply, demand and allocation. Students understand and appraise the importance of natural resources for present and future generations, as well as the criteria of biological biodiversity for a fundamental aspect of natural resources management.

III. COURSE OUTCOMES

At the end of the course, students:

1. Understand the importance of natural resources in human life, as well as the importance of making a rational use of them.
2. Apply environmental preservation laws associated to extraction, transformation, processing, commercialization, environmental retribution and the contribution to sustainable development of natural resources.
3. Analyze the management of natural resources with sustainability criteria.

IV. LEARNING UNITS

1. INTRODUCTION

General aspects / Thematic approach to natural resources efficient treatment / Theory of life sustainability / Health, environment and sustainable development / Global trends and current laws in the field of natural resources.

2. ECOLOGY

Ecology / Relationships between living organisms and their environment / Vital connections between plants, animals and the world around / Use or Earth resources for present and future generations / Animals and vegetables habitats / Different kind of environments.

3. EXTRACTION AND TRANSFORMATION OF NATURAL RESOURCES

Framework for the extraction and transformation of natural resources / Renewable and non-renewable natural resources, integration with ecology and economics / Population, development, life and resources quality.

4. ECONOMICS OF NATURAL RESOURCES

Economics of natural resources / Supply, demand, and allocation of Earth natural resources / Interaction between economic and natural systems / Development of sustainable and efficient economies / Productive sectors: use and transformation of the natural resources

5. MANAGEMENT OF NATURAL RESOURCES

Water, soil and air resources / Basins management and water resources / Biodiversity: Definition, intrinsic values, main topics and terms / Forest resources / Genetic resources / Protected natural areas / Peruvian environment / Final exam.

V. PRACTICAL EXPERIENCES

1. Work: Vital connections between plants and animals
2. Work: What is sustainable development
3. Work: Use and transformation of natural resources

VI. METHODOLOGY

The course takes place in theory and practice sessions. In theory sessions, faculty presents concepts, methods and applications. In practice sessions, various problems are solved and their solution analyzed. At the end of each practical experience, students present results and conclusions. Student's active participation is promoted throughout the course.

VII. GRADING FORMULA

The Final Grade PF is calculated as follow:

PF = (EP + EF + PL) / 3

EP: Mid-term Exam. EF: Final Exam.
PL: Average of Practice Works.

VIII. BIBLIOGRAPHY

1. **NATURAL RESOURCES AND ENVIRONMENTAL CODE**
   Peruvian Political Constitution
   Lima, Peru.
2. **WATER GENERAL REGULATIONS**
   21st Agenda, Commerce Global Organization
   ONERN, Lima, Peru.
3. **NATURAL RESOURCES AND DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN**
   Dourojeannni Marcos
   University of Lima, Lima, Peru.