ACADEMIC CATALOG

ENVIRONMENTAL ENGINEERING

DEGREE PROFILE

An environmental engineer graduated from Universidad de Las Américas (UDLA) is a competent, enterprising professional with international/global vision who proposes innovative engineering solutions to environmental problems through the application of sustainable and environmentally-friendly technology, in accordance with national and international regulations.

An environmental engineer from UDLA is expected to work in multidisciplinary teams, respecting the gender and cultural identity of the collective groups that require inclusion of environmental technology, demonstrating professional ethics and environmental awareness.

LEARNING OUTCOMES

1.- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2.- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

3.- Communicate effectively with a range of audiences within the field.

4.- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

5.- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

6.- Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.

7.- Acquire and apply new knowledge as needed, using appropriate learning strategies.

FIRST SEMESTER

1.- MATZ0339 INTRODUCTION TO CALCULUS

2.- FISZ0121 GENERAL PHYSICS

3.- IAGI1108 GENERAL CHEMISTRY

4.- IGAM1110 INTRODUCTION TO ENVIRONMENTAL ENGINEERING

5.- FGLZ0192 LANGUAGE AND DIGITAL COMMUNICATION

SECOND SEMESTER

1.- MATZ0341 CALCULUS I

Prerequisites :

MATZ0339 INTRODUCTION TO CALCULUS

2.- IAGI2108 ORGANIC CHEMISTRY

Prerequisites :

IAGI1108 GENERAL CHEMISTRY

3.- IGAM1220 GENERAL BIOLOGY

Prerequisites :

IGAM1110 INTRODUCTION TO ENVIRONMENTAL ENGINEERING

4.- FGLZ0180 RESEARCH AND ACADEMIC TEXTS

Prerequisites :

FGLZ0192 LANGUAGE AND DIGITAL COMMUNICATION

5.- FGHZ0942 ART, HUMAN EXPRESSION AND COMMUNITY

THIRD SEMESTER

1.- MATZ0342 CALCULUS II

Prerequisites :

MATZ0341 CALCULUS I

2.- IGAM2200 FLORA AND FAUNA

Prerequisites :

IGAM1220 GENERAL BIOLOGY

3.- IBIO1606 BIOSTATISTICS

Prerequisites :

FGLZ0192 LANGUAGE AND DIGITAL COMMUNICATION

MATZ0341 CALCULUS I

4.- IGAM2010 MASS AND ENERGY TRANSFER OPERATIONS

Prerequisites :

MATZ0341 CALCULUS I

IAGI1108 GENERAL CHEMISTRY

FISZ0121 GENERAL PHYSICS

5.- FGHZ0933 CITIZENSHIP, CULTURE AND HISTORY

FOURTH SEMESTER

1.- IGAM2001 ENVIRONMENTAL MONITORING AND ANALYSIS LABORATORY

Prerequisites :

IAGI2108 ORGANIC CHEMISTRY

IGAM2010 MASS AND ENERGY TRANSFER OPERATIONS

IBIO1606 BIOSTATISTICS

2.- IGAM2211 ECOLOGY

Prerequisites :

IGAM2200 FLORA AND FAUNA

3.- IGAM2100 THERMODYNAMIC PROCESSES

Prerequisites :

IGAM2010 MASS AND ENERGY TRANSFER OPERATIONS

4.- IGAM2516 CLIMATOLOGY AND METEOROLOGY

Prerequisites :

IGAM2010 MASS AND ENERGY TRANSFER OPERATIONS

IBIO1606 BIOSTATISTICS

5.- IBIO1612 EXPERIMENTAL BIODESIGN

Prerequisites :

IBIO1606 BIOSTATISTICS

FIFTH SEMESTER

1.- IGAM2101 ENVIRONMENTAL FLUID MECHANICS

Prerequisites :

IGAM2100 THERMODYNAMIC PROCESSES

MATZ0342 CALCULUS II

2.- IGAM0105 ENVIRONMENTAL REGULATIONS MANAGEMENT

Prerequisites :

IGAM2211 ECOLOGY

IGAM2001 ENVIRONMENTAL MONITORING AND ANALYSIS LABORATORY

FGLZ0180 RESEARCH AND ACADEMIC TEXTS

3.- IGAM2810 TOPOGRAPHY AND MAPPING

Prerequisites :

IGAM2516 CLIMATOLOGY AND METEOROLOGY

4.- IGAM2221 HYDROGEOLOGY

Prerequisites :

IGAM2516 CLIMATOLOGY AND METEOROLOGY

5.- IGAM2511 ATMOSPHERIC POLLUTION

Prerequisites :

IGAM2516 CLIMATOLOGY AND METEOROLOGY

6.- IGAM3625 ECONOMIC ENVIRONMENTAL ASSESSMENT

Prerequisites :

IBIO1612 EXPERIMENTAL BIODESIGN

IGAM2211 ECOLOGY

SIXTH SEMESTER

1.- IGAM3120 TRANSPORTATION, COMBINATION AND TRANSFORMATION OF ELEMENTS IN THE ENVIRONMENT

Prerequisites :

IGAM2101 ENVIRONMENTAL FLUID MECHANICS

2.- IGAM2610 INDUSTRIAL SAFETY

Prerequisites :

IGAM0105 ENVIRONMENTAL REGULATIONS MANAGEMENT

3.- IGAM2430 GEOGRAPHIC INFORMATION SYSTEMS

Prerequisites :

IGAM2810 TOPOGRAPHY AND MAPPING

4.- IGAM2311 HYDRAULIC DESIGN

Prerequisites :

IGAM2101 ENVIRONMENTAL FLUID MECHANICS

5.- IGAM3521 RADIOACTIVE CONTAMINATION

Prerequisites :

IGAM2511 ATMOSPHERIC POLLUTION

6.- IGAM1649 SUSTAINABLE DEVELOPMENT

Prerequisites :

IGAM3625 ECONOMIC ENVIRONMENTAL ASSESSMENT

SEVENTH SEMESTER

1.- IGAM2620 ENVIRONMENTAL MANAGEMENT OF NATURAL RISKS

Prerequisites :

IGAM2430 GEOGRAPHIC INFORMATION SYSTEMS
IGAM3625 ECONOMIC ENVIRONMENTAL ASSESSMENT

2.- IGAM3823 SOLID WASTE MANAGEMENT

Prerequisites :

IGAM0105 ENVIRONMENTAL REGULATIONS MANAGEMENT

3.- IGAM3321 WASTEWATER TREATMENT

Prerequisites :

IGAM2311 HYDRAULIC DESIGN
IGAM3120 TRANSPORTATION, COMBINATION AND TRANSFORMATION OF ELEMENTS IN THE ENVIRONMENT

4.- IGAM2631 ENVIRONMENTAL MANAGEMENT SYSTEMS

Prerequisites :

IGAM2610 INDUSTRIAL SAFETY
IGAM0105 ENVIRONMENTAL REGULATIONS MANAGEMENT

5.- IGAM2530 ECOTOXICOLOGY

Prerequisites :

IGAM2001 ENVIRONMENTAL MONITORING AND ANALYSIS LABORATORY
IGAM3521 RADIOACTIVE CONTAMINATION

6.- IGAM3820 REMEDIATION

Prerequisites :
IGAM2001 ENVIRONMENTAL MONITORING AND ANALYSIS LABORATORY
IGAM3625 ECONOMIC ENVIRONMENTAL ASSESSMENT

EIGHTH SEMESTER

1.- IGAM3341 MANAGEMENT OF HYDROGRAPHIC BASINS
Prerequisites :
IGAM2430 GEOGRAPHIC INFORMATION SYSTEMS

2.- IGAM3331 TREATMENT PLANT DESIGN
Prerequisites :
IGAM3321 WASTEWATER TREATMENT

3.- IGAM2636 ENERGY EFFICIENCY
Prerequisites :
IGAM3625 ECONOMIC ENVIRONMENTAL ASSESSMENT
IGAM3120 TRANSPORTATION, COMBINATION AND TRANSFORMATION OF ELEMENTS IN THE ENVIRONMENT

4.- IGAM3825 PRE-PROFESSIONAL INTERNSHIPS

5.- TITA6841 ENVIRONMENTAL IMPACT ASSESSMENT
Prerequisites :
IGAM2631 ENVIRONMENTAL MANAGEMENT SYSTEMS

NINTH SEMESTER

1.- IGAM2643 ENVIRONMENTAL AUDITS
Prerequisites :
TITA6841 ENVIRONMENTAL IMPACT ASSESSMENT

2.- IGAM3644 LAND-USE MANAGEMENT AND PLANNING
Prerequisites :
IGAM2430 GEOGRAPHIC INFORMATION SYSTEMS
IGAM3823 SOLID WASTE MANAGEMENT
IGAM3341 MANAGEMENT OF HYDROGRAPHIC BASINS

3.- IGAM3824 DRINKING WATER AND WASTEWATER SYSTEMS
Prerequisites :

IGAM3331 TREATMENT PLANT DESIGN

4.- IGAM2648 ENVIRONMENTAL MODELING

Prerequisites :

IGAM3341 MANAGEMENT OF HYDROGRAPHIC BASINS

IGAM3120 TRANSPORTATION, COMBINATION AND TRANSFORMATION OF ELEMENTS IN THE ENVIRONMENT

5.- TITA6842 ENVIRONMENTAL ENGINEERING PROJECTS

Prerequisites :

IGAM3820 REMEDIATION

TITA6841 ENVIRONMENTAL IMPACT ASSESSMENT