2019 Report of the Arab Forum for Environment and Development

ENVIRONMENTAL EDUCATION FOR SUSTAINABLE DEVELOPMENT IN ARAB COUNTRIES

Environmental Education in Arab Universities

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Arab universities witnessed a rapid increase in programs related to the environment and sustainable development.
AFED Survey

57 Arab universities surveyed offer 221 degree programs on environmental topics.

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DISTRIBUTION OF ACADEMIC PROGRAMS IN ARAB UNIVERSITIES PER SUB-REGION

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DISTRIBUTION OF OFFERED ACADEMIC PROGRAMS AMONG ENVIRONMENTAL DISCIPLINES IN ARAB UNIVERSITIES

Source: AFED, 2019

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ACADEMIC PROGRAMS RELATED TO THE ENVIRONMENT OFFERED BY UNIVERSITIES IN ARAB COUNTRIES IN 2019

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UNDERGRADUATE and POSTGRADUATE

**FIGURE 7** MAJOR DISCIPLINES OF BACHELOR'S DEGREES RELATED TO ENVIRONMENT OFFERED BY ARAB UNIVERSITIES

- General environmental sciences: 23%
- Environmental Engineering: 16%
- Water: 16%
- Energy: 11%
- Land and agriculture: 8%
- Geology and Earth Science: 7%
- Others: 19%

**Source:** AFED, 2019

**FIGURE 8** POST-GRADUATE DEGREES RELATED TO THE ENVIRONMENT OFFERED BY ARAB UNIVERSITIES

- Sustainable Development: 22%
- Environmental Sciences: 17%
- Water: 14%
- Engineering: 15%
- Energy: 11%
- Geology and Earth Science: 7%
- Others: 14%

**Source:** AFED, 2019

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Research output of Arab universities and research centers on environmental sciences

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Recommendations

- Integrate these three pillars of sustainable

- Strengthen topics such as Environmental Law in law schools, and Green Economy in faculties of economics

- Ecological Footprint and Natural Capital Accounting to be included in economics and policy studies

- Inter-academic and multi-disciplinary cooperation between different faculties
Recommendations

- Student exchanges and more scientific collaboration programs between universities and research institutions

- Introductory course on Environment and Sustainability for first year students
INTRODUCTION TO ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Proposed Course Syllabus

ANNEX 1

INTRODUCTION TO ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Proposed Course Syllabus

COORDINATED BY IBRAHIM ADELGEIL

Course Description:

This course is designed to introduce the essential concepts of environment and sustainable development in junior-level university students from all faculties and specializations. It examines the complex environmental issues in a multidisciplinary approach. The course will focus on the environment through its many diverse interrelationships with the social and economic aspects of sustainable development, through various modes of delivery, including case studies from the Arab region. The course might be split into two courses, with basics in semester 1 and advanced topics in semester 2.

Course Objectives & Learning Outcomes:

Upon completion of this course, the student is expected to:

- Gain basic skills to conduct academic research, technical writing and presentations in environment-related subjects.
- Required Readings & References
- The required readings for the course will be selected from international and local sources. Ultimately, one textbook or more would be produced, specifically developed to teach the course in Arab universities. Additional readings will be given to students in handouts.

Course topics:

I. Basic Definitions (environment, ecology, natural resources)

II. Ecosystems and their Function

1. Definition and origin
2. Types, components and structure

III. Environment and Development

1. Background and definition
2. Interactions between socio-economic systems and environment
3. Concepts of carrying capacity and pollution
4. Ecological Footprint
5. Sustainable Development (definition, evolution and concepts)
6. Sustainable Development Goals (SDGs)
7. Green Growth

IV. Biodiversity

1. Definitions
2. Values of biodiversity (economic, social, ethical, etc.)
3. Threats to biodiversity

V. Land-use and Urbanization

1. Environmental impacts of urbanization
2. Transportation and its impacts on land and air
3. Urban services: waste, water, sanitation (details in VII. X and XI)

VI. Agriculture, and Food Security

1. Agricultural productivity
2. Agricultural chemicals and their environmental impacts
3. Land degradation
4. Organic food
5. Genetically modified crops
6. Food security

VII. Water Sources and Management

1. Hydrological cycle
2. Water pollution
3. Marine pollution
4. Integrated water resources management
5. Usage and efficiency

VIII. Energy Sources

1. Fossil energy (Coal, oil, and gas)
2. Renewable energy (biomass, solar, wind, hydro, geothermal)
3. Nuclear
4. Sustainable energy options

IX. Energy-Water-Food Nexus

1. Definition of the nexus
2. Synergies and trade-offs
3. Management issues

X. Air Quality Issues

1. Sources and types of air pollutants
2. Air quality standards and monitoring
3. Strategies/technologies for air quality management

XI. Waste Management

1. Solid wastes, types, sources and management
2. Wastewater types, sources and management

XII. Global environmental issues

1. Climate change and its impacts
2. Ocean depletion
3. Desertification
4. Biodiversity
5. Oceans and international waters

XIII. Environmental Policy and Governance

1. Environmental laws and regulations
2. Global environmental institutions and governance
3. International conventions and treaties on environment and climate change
4. Environmental Management System-ISO 14001
5. Capacity building, training, and public awareness

Proposed references and reading materials:

Thank you