

Biology 250
Course Syllabus Form
American University of Beirut

Course Number and Title: Biology 250 **Biosphere**

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Office: Biology 209, ext 3894

Office hours: 11:30-12:30MW and F 2:30-3:30 or by appointment

Catalog Description:

BIOL 250 - Biosphere

Credits: 3.00 *Annually*.

A course that focuses on defining global environmental problems such as global warming, acid rain, deforestation, and loss of biodiversity, and introduces methods that can help eliminate or reduce these problems. *Prerequisite:* Biol 202

College: Arts & Sciences **Department:** Biology

Required text: Environment, by Raven, Berg and Johnson. Saunders College, Publishing, seventh edition

Course Policies: Class starts on time. Students are expected to attend all lectures. Attendance records will be carefully monitored. In the event of an absence, YOU are responsible for any material covered. Class participation will be assessed through contributions to class discussions and attendance. This will contribute to 5% of your grade. Students are expected to adhere to norms of academic integrity. Offences involving academic misconduct (cheating, plagiarism, dishonesty, in-class disruption) will be taken very seriously. If you will miss an exam, make sure to report this before the test date. Final Exam is not comprehensive

General Course Overview: The primary aim of this course is to introduce students to the characteristics of the biosphere. This introduction will include consideration of the major environmental processes and how humans interact with these processes. The course focuses on defining global environmental problems facing man and emphasizes the process of problem solving needs associated with environmental issues. Topics that will be covered include population growth, ecosystem degradation, soil erosion, eutrophication, deforestation, loss of biodiversity and climate change.

Learning Outcomes: At the end of this course, students should be able to:

1. understand the scientific method to identify, evaluate and recommend solutions to environmental problems
2. understand the current and emerging environmental problems and offer potential solutions
3. demonstrate awareness of the individual impact of environmental problems (local, regional and global) on organisms and ecosystems
4. describe the principal interactions between different species and the major forces structuring communities and how they affect species distribution and community structure
5. describe major biogeochemical pathways and nutrient transformations and how they relate to our understanding of a sustainable global ecosystem
6. describe fossil fuel and nuclear energy technologies and demonstrate an understanding of the pros and cons of alternatives to these fuels

Grading: Exam I : 20% of grade
Midterm : 20% of grade.
Project+ Attendance: 20% of grade
Final Exam: 40% of grade

Additional Internet Resources:

<http://www.library.adelaide.edu.au/guide/sci/EnvirBiol/>
<http://www.mhhe.com/biosci/pae/environmentalscience/cunningham6/>
<http://highered.mcgraw-hill.com/sites/0072315474/>
<http://www.nerdworld.com/nw1185.html>
<http://www.lib.utk.edu/refs/ecology/>
<http://www.sws.org/wetlandweblinks.html>
<http://www.anbg.gov.au/net/environment.html>
<http://www.rachelcarsonhomestead.org/ecolinks.html>
<http://www.cit.cornell.edu/atc/itsupport/courseweb.shtml>
<http://www.peak.org/~mageet/tkm/ecolenv.htm>
<http://www.utep.edu/leb/home.html>
<http://www.science-house.org:8530/workshops/web/bioeco.html>

Topics included on Exam I:

I-Introduction: Our changing environment
II- Environmental Science and Sustainability
III-Energy flow in ecosystems
IV-Ecosystems and living organisms excluding succession concept and models

Topics included on Exam II:

V- Ecosystems and the physical environment+ Succession.
VI- Major Ecosystems of the World

Topics included on the Final Exam:

VII-Fossil Fuels and fossil fuel dependency
VIII-Nuclear Energy
IX-Renewable Energy and Conservation
X-Soils Resources
XI-Global Atmospheric Problems
XII-Pesticides and their uses
XIII-Biological Resources
XIV-Water Pollution