

(NR 452)

ENVIRONMENTAL AGRICULTURAL MANAGEMENT

SECOND SEMESTER 2003/2004

SYLLABUS

Instructor: Dr. Ragheb Tahhan
Department: Natural Resources and the Environment/College of Agriculture
Lecture Time: 9:15 - 10:05 STT
Lecture Place: C5023
Office Hours: 1:15 - 2:15 PM STT (and by appointment).

COURSE OBJECTIVES

- ◆ To understand interactions between agricultural production and the environment.
- ◆ To examine possible environmental impact of agricultural production inputs.
- ◆ To examine techniques employing agricultural production in combating environmental pollution.
- ◆ To examine Pollution prevention techniques.

WHAT YOU ARE EXPECTED TO LEARN FROM THIS COURSE

- ◆ Fertilizers management to reduce adverse effects on the environment.
- ◆ Pesticides management to reduce adverse effects on the environment.
- ◆ Integrated pest management.
- ◆ Irrigation management to reduce adverse effects on the environment.
- ◆ Adverse environmental and economical effects of soil erosion.
- ◆ Minimizing soil erosion.
- ◆ Wastewater use for agricultural production.
- ◆ Using land for wastewater treatment.
- ◆ Possible health and environmental hazards from land wastewater treatments.
- ◆ Using soil for solid waste treatment.
- ◆ Pollution prevention from agricultural land to water bodies.
- ◆ Agricultural land pollution prevention.

LECTURE SCHEDULE

<u>Week</u>	<u>Subject</u>
1-2	<i>The Jordanian National Strategy for Agricultural Development</i> The role of Agricultural Sector in National Development Economic dimension Social dimension Environmental dimension
3	<i>Current Status of the Jordanian Agricultural Sector</i> 30 years of change Managerial and technical problems of agricultural sector in Jordan
4	<i>The future of the agricultural sector in Jordan</i> Future national vision of the sector Objectives of the National strategy
5	<i>Policies and strategies of agricultural sectors development</i> Rainfed agriculture

Irrigated agriculture in Jordan Valley
Irrigated agriculture in the rest of the country
Animal production
Marketing

- 6** ***Land treatment of wastewater***
Overview of municipal wastewater treatment
Wastewater treatment criteria
Land treatment of wastewater
- 7** ***Land treatment of wastewater, cont'd.***
Slow rate process
Rapid infiltration process
Overland flow process
- 8-9** ***Health and environmental effects of wastewater land treatment***
Nitrogen
Phosphorus
Heavy metals
Microorganisms
Trace organics
- 10-11** ***Utilization of agricultural systems for solid waste management***
Types and characteristics of solid wastes
Landfills management
Pollution prevention from landfills
- 12** ***Soil Water management***
Overview of crop water requirements
Irrigated soils in Jordan
Jordan Valley water quality
Brackish and marginal waters usage in agriculture
Fertigation
- 13** ***Agricultural land pollution management***
Agricultural practices causing pollution
Plant nutrients biogeochemical cycling
Plant nutrients management
Fertilization
- 14** ***Agricultural land pollution management, Cont'd***
Pesticides
Integrated pest management
Sustainable agriculture
Organic farming
- 15** ***Agricultural waste management***
Composting
Management of waste from animal production facilities
- 16** ***Other pollution issues related to agriculture***

Textbook: A collection of handouts will be given to the students.

Grading:

1 st Hour Exam	30 points
2 nd Hour Exam	30 points
Final Exam	40 points