

001-2-2204 Agricultural and Environmental Aspects in Soil Sciences 3 credits

Weekly Lecture Hours	Exercise	Laboratory	Field Trip
3			

Agriculture habitat has significantly changed during the past few decades. During this period concerns have been developed over soil salinization and sodification, overuse of nitrogen fertilizers from organic and inorganic origins and environmental contamination by pesticides, herbicides, trace metals and various emerging pollutants. To produce high yields, protect long term soil productivity and maintain environmental quality, farming must be based on an understanding of how water and dissolved chemicals move through the plant-soil-groundwater or surface-water system and what are the agricultural and environmental concerns involved. This course will provide the student with quantitative tools to understand agricultural and environmental concerns in terrestrial environments.

The following subjects will be addressed:

1. **Chemical quality of irrigation water**
2. Soil salinity and sodicity at the field and regional scales
3. Role and function of organic matter in soils
4. Fate and transport of nutrients and pollutants in terrestrial environments

For each one of the above subjects, the fundamental theory will be presented and case-studies from different parts of the world will be discussed.

The structure of the final course grade is:

Attendance: 5%

Assignments: 40%

Final exam: 55%

Lecturer: Gilboa Arye

Recommended Reading:

Reading material will be provided during the course.