PRGR 617
Energy Efficiency in Agriculture: Evaluation and Design (2 credits)

Catalog description (2 credits):
The course will address energy use and conservation in agriculture and food production systems. The course will explore energy conservation improvements through reduced fossil fuel dependency and use of renewable resources.

No pre-requisite courses are required.

References:
Coordinator:
Mohamad G. Abiad, Assistant Professor, Food Processing and Packaging, American University of Beirut (ma192@aub.edu.lb)

Prerequisite by Topic:
No pre-requisite courses are required for this course.

Educational Objectives/Learning Outcomes
After the successful completion of the course, students will be able to evaluate energy use in various agriculture and food production systems. They will gain a better understanding of the concepts of sustainability and energy conservation and be able to implement proper energy management through the selection of energy efficient agriculture technologies. The students will also have a better view of available technologies that utilize renewable resources thus decreasing the carbon footprint, greenhouse gas emissions and fossil fuel dependency of the agriculture sector.

Topics covered
- Energy use in crop production
- Energy use in tillage and irrigation
- Energy use in livestock production
- Energy use in food processing, packaging, and refrigeration
- Environmental impacts of energy use in agriculture
- Energy conservation
- Renewable energy systems

No lab required.

Assessment and grades
- Class Participation (10%)
- Homework assignments (20%)
- Project (30%)
- Exam (40%)

Resources for the course
- Course handouts and slides
- Case studies
- Web-based Material