Department of Agricultural Science (AGSC)

Chairperson: Bashour, Isam
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Research Associate: Moussa, Ziad; Nemer, Nabil

The mission of the Department of Agricultural Science is to provide a stimulating education and prepare graduates for productive careers in agricultural technology, natural resources management, and agribusiness who are capable of serving Lebanon, the Middle East and other regions of the world.

The department will participate in offering courses within the core undergraduate program in FAFS leading to the BSc degree in Agriculture and Diploma of Ingénieur Agricole.

The department offers courses in the areas of agronomy, horticulture, soils, water sciences, entomology, plant pathology, weed science, mechanization and agricultural economics.

The following courses are offered by the department:

Course Descriptions

Core Courses for the BS Degree in Agriculture

AGSC 201 Orientation to Agriculture and Food Systems 2.0; 2 cr.
A survey of the natural resource potentialities with emphasis on the principal input requirements for agricultural development; and the current trends in modernization of agricultural production with emphasis on the difficulties this process faces.

AGSC 212 Agricultural Economic Principles and Policy 3.0; 3 cr.
An introduction to basic economic principles and their applications in the agricultural sector.

AGSC 215 Introduction to Soils 2.3; 3 cr.
Origin, properties, classification, and management of soil with emphasis on soil behavior in relation to irrigated agriculture, ecology, and the environment. Prerequisite: CHEM 200.

AGSC 220 Principles of Plant Physiology 2.3; 3 cr.
An introduction to environmental and physiological factors affecting crop growth and development. Prerequisite: BIOL 200.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>AGSC 221</td>
<td>Principles of Entomology</td>
<td>2.3; 3 cr.</td>
<td>Prerequisite: BIOL 200.</td>
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<tr>
<td>AGSC 222</td>
<td>Farm Practices</td>
<td>0.6; 1 cr.</td>
<td>Prerequisite: AGSC III standing and eligibility for enrollment in the regular program at AREC.</td>
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<tr>
<td>AGSC 223</td>
<td>Agricultural Project</td>
<td>0.6; 2 cr.</td>
<td>Prerequisite: AGSC III standing and eligibility for enrollment in the regular program at AREC.</td>
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<td>AGSC 224</td>
<td>General Horticulture</td>
<td>2.3; 3 cr.</td>
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<td>AGSC 225</td>
<td>Rural Social Systems</td>
<td>3.0; 3 cr.</td>
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<td>AGSC 226</td>
<td>Farm Power and Machinery</td>
<td>2.3; 3 cr.</td>
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<td>AGSC 227</td>
<td>Surveying and Irrigation Principles</td>
<td>0.3; 1 cr.</td>
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<td>AGSC 228</td>
<td>Irrigation Principles</td>
<td>2.3; 3 cr.</td>
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<td>AGSC 231</td>
<td>Principles of Agronomy</td>
<td>2.3; 3 cr.</td>
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<td>AGSC 232</td>
<td>Principles of Plant Pathology</td>
<td>2.3; 3 cr.</td>
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<td>AGSC 235</td>
<td>Agricultural Extension in Development</td>
<td>2.0; 2 cr.</td>
<td>Prerequisite: AGSC 225.</td>
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<td>AGSC 241</td>
<td>Farm Management</td>
<td>3.0; 3 cr.</td>
<td>Prerequisite: AGSC 212 or ECON 203.</td>
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<td>AGSC 265</td>
<td>Soil Fertility</td>
<td>2.3; 3 cr.</td>
<td>Prerequisite: AGSC 215.</td>
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AGSC 284  Fundamentals of Weed Science  2.3; 3 cr.
Fundamentals of weed biology and weed management practices with emphasis on chemical weed control.

AGSC 290  Project Planning and Appraisal  3.0; 3 cr.
Introduces different techniques commonly used in project planning and appraisal.

AGSC 296  Agriculture Project Presentation  1 cr.
Prerequisite: AGSC IV standing.

Elective Courses for the BS Degree in Agriculture

AGSC 230  Natural Management of Garden Pests  3.0; 3 cr.
This course introduces students to living organisms regarded as pests and to methods that help in management of these pests. The emphasis is on concepts and techniques that can be applied in harmony with the health of humans, domestic animals, and the general environment. This environmentally oriented course shows how to prevent, manage, and combat pests in the garden. Free elective. Students majoring in agriculture or Landscape cannot receive credit for AGSC 230.

AGSC 233  Vegetable Production  2.3; 3 cr.
The principles and techniques of vegetable crop production, including nutrition, culture, and harvest of crops in organic and conventional production systems. Prerequisite: AGSC 224 or consent of instructor.

AGSC 243  Marketing and Food Products  3.0; 3 cr.
A course that examines in detail the marketing of agricultural and food products, using case studies.

AGSC 250  Theory and Practice of Organic Farming Systems  3.0; 3 cr.
Advances in organic farming and growing systems with emphasis on farm planning, certification, marketing, information, and organic farming practices.

AGSC 251  Living Organic  3.0; 3 cr.
An introduction to organic farming and growing systems with emphasis on how to use growing practices in horticulture and animal production. Science elective. Not offered to FAFS students.

AGSC 261  Hydraulics  3.0; 3 cr.
Principles of mass and energy conservation, pipe flow, canal flow, measurement of fluid flow, and application of hydraulic principles to irrigation system design.

AGSC 262  Irrigation Methods  3.0; 3 cr.
Hydraulics of surface irrigation systems; design of border, furrow, and controlled flooding irrigation; hydraulics of sprinkler and drip irrigation systems; methods of evaluation of each system.

AGSC 263  Pesticide Application Technology  2.3; 3 cr.
Basics of sprayers, principles of operation of field and orchard sprayers, performance parameters and evaluation, drop size technology, spray transport and dispersal, drift and deposition measurement, pesticide reduction drift control, and safety in handling and storage.

AGSC 270  Computer Applications in Agriculture  1.3; 2 cr.
An overview of computer hardware and software; applying basic programming language and other packages to problem solving in agriculture.
AGSC 271  Environment Control in Agriculture  3.0; 3 cr.
Materials and design characteristics of farm structures; basics of heat and mass transfer; design
of environment control systems for animals, plants, and storage of agricultural materials and
products.

AGSC 273  Plant-Soil-Water Relationships  3.0; 3 cr.
Physical relationships of soil moisture and plant growth, soil physical properties, determination
of crop water use and irrigation requirement, and irrigation scheduling.  Prerequisite: AGSC 228 or consent
of instructor.

AGSC 277  Basic Hydrology  3.0; 3 cr.
Applied methods in hydrologic analysis and design; hydrologic cycle components including
precipitation, infiltration, ground water, and surface runoff; basic considerations of reservoir flow
routing and management.

AGSC 287  Crop Production in Dry Regions  3.0; 3 cr.
A detailed account of crop production in dry regions: physical characteristics, widely grown crops,
and suitable cultural practices.

AGSC 288  The Art of Honey Making  2.3; 3 cr.
The art and science of keeping honeybee colonies.  Covers the processes of caring for bee colonies
through utilizing available resources around the social honeybee colony, and wild and cultivated
plants in the use of food, to glean as many potential products and services from the colony as
possible.  Science elective.  Not offered to FAFS students.

AGSC 291  Introduction to Beekeeping  2.3; 3 cr.
Different aspects of culturing the honeybee starting with the behavioral patterns of bee colonies
and ending with bee management considerations.

AGSC 293  Integrated Plant Health Management  3.0; 3 cr.
for Economic Crops
Basic concepts of the integrated approach to the proper management of plant diseases and insect
pests of economic crops including components of plant health management (PHM) programs, and the
feasibility and economics of various management strategies; specific PHM cases on major crops are
discussed.  Prerequisites: AGSC 221 and AGSC 232.

AGSC 294  Applied Plant Protection  2.3; 3 cr.
Observation and study of insect pests and plant diseases on field and greenhouse crops, with
emphasis on recognition, evaluation, and control.  Prerequisites: AGSC 221, AGSC 232 or equivalent.

AGSC 295  Pesticides  3.0; 3 cr.
A survey of the commonly used insecticides, fungicides, rodenticides, and related materials as to
their chemistry, mode of action, and relation of structure to activity, toxicity, metabolism, and
hazards to the environment.

AGSC 299  Special Topics in Agricultural Science  2 cr.
Directed study. Tutorial.  Prerequisites: fourth year standing and consent of instructor.