AGSM - Agricultrl Systems Mgmt (AGSM)

AGSM 125 Introduction to Agricultural Systems Management
Credit 1. 2 Lab Hours.
Introduction to technical management of agricultural systems using management projects presented by agricultural managers from industry; problem definition, information search, idea generation and development of management solutions.
Prerequisite: Freshman or sophomore classification or approval of instructor; majors only.

AGSM 201 Agricultural Energy and Power Systems
Credits 3. 2 Lecture Hours. 2 Lab Hours.
(AGRI 2301) Agricultural Energy and Power Systems. A study of the types of power and energy sources used in agricultural equipment and systems; management considerations for selecting, operating and maintaining internal combustion engines, electric equipment and motors, and renewables as power sources.

AGSM 284 Internship
Credits 0. 0 Lecture Hours. 0 Lab Hours. 0 Other Hours.
No Credit. Practical experience working in a professional agricultural systems management setting. May be taken three times.
Prerequisite: Freshman or sophomore classification; approval of the instructor.

AGSM 285 Directed Studies
Credits 0 to 4. 0 to 4 Other Hours.
Selected problems in any phase of agricultural systems management; credit and specific content dependent upon background, interest, ability and needs of student enrolled; individual consultations and reports required.
Prerequisites: Freshman or sophomore classification; approval of instructor.

AGSM 289 Special Topics in...
Credits 1 to 4. 1 to 4 Lecture Hours.
Selected topics in an identified area of agricultural systems management. May be repeated for credit.
Prerequisite: Approval of instructor.

AGSM 291 Research
Credits 0 to 3. 0 to 3 Other Hours.
Research conducted under the direction of faculty member in agricultural systems management.
Prerequisites: Freshman or sophomore classification and approval of instructor.

AGSM 301 Systems Analysis in Agriculture
Credits 3. 3 Lecture Hours.
Operations research and systems theory applied to management problems in food and agricultural industries; linear programming, queuing theory, simulation and critical path method; provides the knowledge and computer skills to better manage resources for the evolving agricultural industries.
Prerequisites: MATH 141 and MATH 142 with a grade of C or better.

AGSM 301 Agricultural Machinery Management
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Selection of a matched complement of power units and machines for farming operations; consider constraints such as crops, season, weather, personnel and capital; apply systems techniques such as linear programming, optimization, queuing theory and inventory models; utilize available software programs and learn to develop electronic spreadsheets and other customized software.
Prerequisites: AGSM 301; AGEC 330; or registration therein.

AGSM 310 Agricultural Machinery Management
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Selection of a matched complement of power units and machines for farming operations; consider constraints such as crops, season, weather, personnel and capital; apply systems techniques such as linear programming, optimization, queuing theory and inventory models; utilize available software programs and learn to develop electronic spreadsheets and other customized software.
Prerequisites: AGSM 301; AGEC 330; or registration therein.

AGSM 315/FSTC 315 Food Process Engineering Technology
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Elementary mechanics, physical and thermal properties of food and processing materials, heat transfer, mass and energy balances, psychrometrics (properties of air), insulation.
Prerequisites: PHYS 201 or PHYS 218, or approval of instructor.
Cross Listing: FSTC 315/AGSM 315.

AGSM 325 Agri-Industrial Applications of Electricity
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Elements of electric current generation and transmission, applications of electric heating, lighting and power, wiring, motors, energy rates, meter reading, safety rules and regulations.
Prerequisite: Agricultural systems management majors only or approval of instructor.

AGSM 335 Water and Soil Management
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Elementary principles of surface and ground water supply, flood control, water distribution systems and irrigation systems; principles of drainage, soil conservation and erosion control; elementary surveying, chaining, leveling and mapping applied to agricultural and natural resource needs; illustrated by practical examples of terracing and farm pond design.
Prerequisite: AGSM 301.

AGSM 337 Technology for Environmental and Natural Resource Engineering
Credits 3. 3 Lecture Hours.
For the nonengineering student in the environmental and management sciences; concentrates on the application of technology for solving local environmental problems while considering global issues; reduction of water, air and hazardous waste pollutants; legislative issues and modeling.
Prerequisites: AGSM 301 and MATH 142.

AGSM 355 Energy and Conversion Systems
Credits 3. 3 Lecture Hours.
Basic physical conversion principles of energy use, including historical and future patterns; conservation measures, alternative energy sources, and the environment impact of U.S. and world energy use.
Prerequisites: Junior or senior classification; non-majors only.

AGSM 360 Occupational Safety Management
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Safety considerations in the work environment, including safety mandates, safety mission, personal and business liability, fire, chemical, dust, machine noise, personal protective devices; design and implementation of safety programs.
Prerequisite: Junior or senior classification.
AGSM 403 Processing and Storage of Agricultural Products  
**Credits 3. 2 Lecture Hours. 2 Lab Hours.**  
Factors influencing the nature of biological materials and the preservation of quality throughout the harvesting, handling and processing system; a systems approach to cereal grains includes principles of drying, quality deterioration, storage, conveying and handling; processing of fiber crops.  
**Prerequisites:** AGSM 310 and AGSM 315/FSTC 315.

AGSM 417/FSTC 417 Food Process Engineering Technology II  
**Credits 3. 3 Lecture Hours.**  
Applications of basic engineering concepts to understand common unit operations in the food (and related) industry.  
**Prerequisites:** AGSM 315/FSTC 315 or FSTC 315/AGSM 315.  
**Cross Listing:** FSTC 417/AGSM 417.

AGSM 435 Irrigation Principles and Management  
**Credits 3. 2 Lecture Hours. 3 Lab Hours.**  
Principles of irrigation and management for efficient use of water; soil-water-plant relationships; methods of application; power and labor requirements; automated systems and components.  
**Prerequisites:** AGSM 335, AGSM 301, MATH 141.

AGSM 439 Management of Agricultural Systems I  
**Credits 3. 3 Lecture Hours.**  
Application of agricultural systems management principles in solving realistic problems faced by agribusiness managers; project selection from problems posed by biological and agricultural industrial consultants; project feasibility study and outline; management and application philosophy; teamwork and communication, economics; product liability and reliability; standards and codes; goal setting and time management.  
**Prerequisites:** AGSM 301, AGSM 315/FSTC 315, AGSM 325, and AGSM 360; AGSM 335, AGSM 337 and AGSM 403 or registration therein; senior classification; must be taken prior to AGSM 440; AGSM majors only.

AGSM 440 Management of Agricultural Systems II  
**Credits 3. 2 Lecture Hours. 3 Lab Hours.**  
Management of agricultural systems through team solution of management problems posed by agribusiness managers, farmers, extension specialists and other industry consultants; application of management principles to give students experience in solving realistic problems faced by agribusiness managers; critical evaluation of results by students, staff and consultants.  
**Prerequisites:** AGSM 439; should be taken last spring semester prior to graduation.

AGSM 461/SPSC 461 Geographic Information Systems for Resource Management  
**Credits 3. 2 Lecture Hours. 2 Lab Hours.**  
Geographic Information System (GIS) approach to the integration of spatial and attribute data to study the capture, analysis, manipulation and portrayal of natural resource data; examination of data types/formats; integration of GIS with remote sensing and Global Positioning System; lab use of GIS applications to conduct analyses of topics in natural resources.  
**Prerequisite:** Junior or senior classification or approval of instructor.  
**Cross Listing:** SPSC 461/AGSM 461.

AGSM 470 Agricultural Electronics and Control  
**Credits 3. 2 Lecture Hours. 2 Lab Hours.**  
Technology of electronic systems in agricultural production and processing, sensors, actuators, and controllers, controller hardware and computer bases.  
**Prerequisite:** AGSM 325.

AGSM 473 Project Management for Agricultural Systems Technology  
**Credits 3. 3 Lecture Hours.**  
Development of fundamental skill set in project management; basic knowledge of project management methods, tools and techniques; includes organization and life cycle, management processes, integration management, time management, cost management, quality management, communications management, risk management, procurement management, stakeholder management.  
**Prerequisites:** AGSM 301 and senior classification.

AGSM 475 Applied Information Technologies for Agricultural Systems  
**Credits 3. 2 Lecture Hours. 2 Lab Hours.**  
Definition and documentation of the value of information in agriculturally-based technology companies; methods for mapping information flow within the company and across companies; articulation value of information within a value chain for a food product by simulation; and projects using project management software and web-based interactions.  
**Prerequisites:** ISTM 209 or equivalent; junior or senior classification.

AGSM 481 Seminar  
**Credit 1. 1 Lecture Hour.**  
Professional development; ethics; career opportunities and topics of interest related to the practice of agricultural systems management.  
**Prerequisite:** Senior classification.

AGSM 484 Internship  
**Credits 0 to 6. 0 to 6 Other Hours.**  
Practical experience working in a professional agricultural and/or food systems management setting. May be taken three times.  
**Prerequisites:** Junior or senior classification; approval of the instructor.

AGSM 485 Directed Studies  
**Credits 0 to 4. 0 to 4 Other Hours.**  
Selected problems in any phase of agricultural systems management; credit and specific content depend on background and interest of student; individual consultations and reports required.  
**Prerequisites:** Junior classification; approval of department head; 2.0 GPR.

AGSM 489 Special Topics in...  
**Credits 1 to 4. 1 to 4 Lecture Hours.**  
Special topics in an identified area of agricultural systems management. May be repeated for credit.

AGSM 491 Research  
**Credits 0 to 3. 0 to 3 Lecture Hours.**  
Research conducted under the direction of faculty member in agricultural systems management. May be repeated 2 times for credit. Registration in multiple sections of this course are possible within a given semester provided that the per semester credit hour limit is not exceeded.  
**Prerequisites:** Junior or senior classification and approval of instructor.