

AGSM - AGRICULTRL SYSTEMS MGMT (AGSM)

AGSM 105 The World Has a Drinking Problem - Global Water Scarcity

Credits 3. 3 Lecture Hours. Study of how drinking water maintains and improves human health, availability of fresh water throughout the world; includes how population changes, cultural influences, and political power affect quality, distribution and cost of water for children, rural communities and under-represented peoples.

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 department head.

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:** Grade of C or better in MATH 140 or MATH 168 and MATH 142 or MATH 151.

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 201; grade of C or better in AGSM 301 or concurrent enrollment; grade of C or better in PHYS 201 or PHYS 206.

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:** Grade of C or better in PHYS 201 or PHYS 206, 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:** AGSM 201; AGSM majors or minors only.

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:** Grade of C or better in MATH 140 or MATH 168; grade of C or better in CHEM 107 and CHEM 117, or CHEM 119; or approval of instructor.

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:** Grade of C or better in MATH 140 or MATH 168 and MATH 142, or MATH 151 and MATH 152, or AGSM 301.

AGSM 360 Occupational Safety Management

Credits 3. 3 Lecture Hours. 0 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; or approval of instructor.

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; approval of instructor. **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. **Prerequisite:** Grade of C or better in MATH 140 or MATH 168; grade of C or better in CHEM 107 and CHEM 117 or CHEM 119.

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:** Grade of C or better in AGSM 301; ENGL 210, AGSM 310, and AGSM 325; AGSM 335, AGSM 337 and AGSM 403 or concurrent enrollment; must be taken prior to AGSM 440; AGSM majors only.

AGSM 440 Management of Agricultural Systems II

Credits 3. 3 Lecture 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 experience in solving realistic problems faced by agribusiness managers; critical evaluation of results by students, staff and consultants. **Prerequisite:** COMM 203; grade of C or better in AGSM 439; should be taken last spring semester prior to graduation.

AGSM 461 Geographic Information Systems for Resource Management

Credits 3. 2 Lecture Hours. 2 Lab Hours. Geographic Information Systems (GIS) approach to solving spatial problems and managing natural resources, including the acquisition, management, manipulation, analysis, and mapping of spatial and non-spatial databases; identification of natural and relevant features from various data sources; integration of relevant technologies and data; extensive use of GIS software to solve real-world problems. Only one of the following will satisfy the requirements for a degree: AGSM 461, ECCB 351, ECCB 651, BAEN 651, or RENR 651. **Prerequisites:** Junior or senior classification or approval of instructor. **Cross Listing:** ECCB 351 and RWFM 351.

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; or approval of instructor.

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:** Grade of C or better in AGSM 301; senior classification.

AGSM 477 Air Pollution Control and Regulatory Compliance

Credits 3. 3 Lecture Hours. Overview of federal and state environmental regulations focusing on permitting requirements for agricultural operations; operation of air pollution abatement systems to include cyclones, bag filters, and scrubbers; dispersion modeling; National Ambient Air Quality Standards. **Prerequisite:** Grade of C or better in AGSM 301, or grade of C or better in MATH 140 and MATH 142, or equivalent.

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.