



College of Agriculture Food and Natural Resources

Agricultural Systems Management

Course Descriptions

ASM 1020 - Introduction to Agricultural Systems Management (3), Basic introduction to power/energy, grain handling, machinery, electricity, and soil and water.

ASM 1040 - Physical Principles for Agricultural Applications (3), W. Introductory survey course to help CAFNR students formulate problems; learn basic definitions; understand units/accuracy, simple machines, land measurement, power transmission.

Prerequisites: Math 1120

ASM 2220 - Agricultural/Industrial Structures (3), W. Structural component selection, materials of construction, heat and moisture control. A problem solving course.

Prerequisite: Math 1120.

ASM 2320 - Internal Combustion Power (3), F. Basic internal combustion engine principles, mechanisms, combustion cycles, fuels and fuel injection, electrical systems, engine testing.

ASM 2340 - Pesticide Application Equipment (3), W. Principles of pesticide application, sprayer hydraulics, and spray atomization; calibration, mixing calculations and compatibility of tank mixes; personal and environmental protection; pesticide labels and regulations.

Prerequisites: Sophomore standing.

ASM 2360 - Mobile Hydraulics (3), W. Basic power hydraulic theory; hydraulic systems, components and testing; system component selection project.

Prerequisite: Math 1120 and sophomore standing.

ASM 3350/4350/7085/8085 - Problems (1-5), arr. Supervised independent study at the undergraduate level.

Prerequisite: Instructor's consent.

ASM 4020/7020 - Agricultural Accident Prevention (3), W. Analysis, organization and implementation of agriculture safety and health programs, physical and economic impacts of accidents, standards and liabilities. Role of man in the man-machine system.

Prerequisite: Junior standing or Instructor's consent.

ASM 4140 - Electricity: Wiring and Equipment (3), F. Home and agricultural electricity; emphasis on proper selection and use of electrical wiring materials & equipment. Basic electrical theory.

Prerequisite: junior standing.

ASM 4220/7220 - Material Handling and Conditioning (3), W. Principles required for processing and handling of food and feed materials; selection of machines; analysis and development of systems for processing and handling grain.

Prerequisite: Math 1120, junior standing or instructor's consent.

ASM 4320 - Agricultural Equipment and Machinery (3), W. Operation of agricultural machinery. Selection and management of equipment.
Prerequisite: junior standing.

ASM 4360/7360 - (same as Plant Science 4360 and Soil Science 4360). Precision agriculture is an information-based approach to farming whereby variability is managed to optimize crop production and reduce environmental pollution. This course provides an overview of precision agriculture technologies (like GIS, GPS, remote sensing), mapping methods, and case studies illustrating decisions and management.
Prerequisites: SOILS 2100, PLNT S 2110 or instructor's consent.

ASM 4420/7420 - Surface Water Management (3), W. Topics include hydrology; soil erosion precautions; elementary surveying; selection and layout of ponds, terraces and water control structures.
Prerequisites: Math 1120 and junior standing.

ASM 4460 - Irrigation and Drainage (3), F. Soil-water-plant relationships. Selection and layout of irrigation and drainage systems.
Prerequisite: ASM 4420 or instructor's consent.

ASM 4940 - Agricultural Mechanization Internship (1-5), arr. Problem course following prior approved internship work experience. Problem selected by internship company representative, faculty problem advisor and student. Supervised by faculty problem advisor and presented in technical report form.

ASM 4970 - Mechanization System Management (3), F. This course is the "capstone" for ASM courses required of Agricultural Systems Management students. It includes selection, replacement and costs for machine systems, introduction to linear programming and introduction to expert systems modeling. A comprehensive term report (both written and oral) on agricultural management is required.
Prerequisites: ASM 2220, 2360, 4420, 4140 and 4320 or Instructor's consent.

