

# AGRICULTURAL SYSTEMS MGT (ASM)

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## **ASM 107 Beginning Welding (3 credits)**

Principles of operation, use, and care of arc and acetylene welding equipment. One lecture, one 2-hour lab, and two hours of individual practice per week. Enrollment limited to 12 per section. Cooperative: open to WSU degree-seeking students.

## **ASM 112 Introduction to Agricultural Systems Management (3 credits)**

Application of basic engineering principles to solving problems dealing with farm machinery, buildings, processing, irrigation, and energy use. Recommended Preparation: high school algebra.

## **ASM 200 (s) Seminar (1 credit, max arranged)**

## **ASM 202 Agricultural Shop Practices (3 credits)**

Primarily for agricultural systems management and agricultural education students. Operation, use, and care of shop tools and equipment. One lecture, one 3-hour lab, and two hours of individual practice per week.

## **ASM 204 (s) Special Topics (1-16 credits)**

Credit arranged

## **ASM 210 Small Engines (3 credits)**

Principles of engine operation, tune-up, and maintenance; repair and overhaul of small engines. One lecture, one 2-hour lab, and two hours of individual practice per week. Enrollment limited to 12 per section.

## **ASM 240 Computer Applications in Biophysical Systems (3 credits)**

This course is designed as an introductory course to computer applications with specific emphasis on applications used in agriculture and life sciences. Content includes spreadsheet management, database management, data analysis, data visualization, and presentation applications. Recommended preparation: three credits of college math. Two lectures and one 2-hour lab per week.

## **ASM 299 (s) Directed Study (1-16 credits)**

Credit arranged

## **ASM 305 GPS and Precision Agriculture (3 credits)**

This course will cover the fundamentals of global positioning, yield monitors, and variable rate applications. Instrumentation used in agriculture, environmental science, and industry will be discussed. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

## **ASM 315 Irrigation Systems and Water Management (3 credits)**

Irrigation methods, irrigation management, water rights, conveyance and measurement, pumps, soil-water-plant relationships, and drainage. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

**Prereqs:** SOIL 205, MATH 108, MATH 143, MATH 160 or MATH 170 or Permission

## **ASM 331 Electric Power Systems for Agriculture (3 credits)**

Basic circuits; wiring and the code; motors and controls; heating, lighting, and power. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

## **ASM 398 (s) Internship (1-6 credits, max 6)**

Graded P/F.

**Prereqs:** Permission

## **ASM 400 (s) Seminar (1-16 credits)**

Credit arranged

## **ASM 403 (s) Workshop (1-16 credits)**

Credit arranged

## **ASM 404 (s) Special Topics (1-16 credits)**

Credit arranged

## **ASM 405 Precision Agriculture Science and Technology (3 credits)**

This course focuses on the operation, application, and calibration of current agricultural equipment technologies used in the digital and precision agriculture industry including precision sprayer application, row/section/nozzle control, air drills, crop yield/quality monitors, proximal crop/soil sensing, in-situ environmental sensors, and data control/storage/communication.

**Prereqs:** MATH 143

## **ASM 407 Advanced Welding (1 credit)**

This course provides the student an opportunity to learn various advanced welding theories, practices and applications for ferrous and non-ferrous metals, which include Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) and Plasma Arc Cutting (PAC). These are only introduced in ASM 107, Beginning Welding, and will be covered in depth in this course. This course will also provide the student with a technical understanding of calculating material and use of proper procedures for the completion of project manufactured in the lab. Student presentations and demonstrations are required. This course will introduce emerging technologies in welding and fabrication industries.

**Prereqs:** ASM 107 and Permission

## **ASM 409 Agricultural Tractors, Power Units and Machinery Management (4 credits)**

This course focuses on the selection, operation, adjustment, and servicing of farm tractors and power units. Fuels, lubrication, cooling, and electrical systems will also be covered. Machinery operation, power transmission systems, hitching, traction, and safety are also discussed. The course will conclude with discussions on depreciation and machinery replacement. Three 1-hour lectures and one 3-hour lab a week.

## **ASM 476 Remote Sensing Application with Unmanned Aerial Systems (UAS) (3 credits)**

Cross-listed with REM 475

This course introduces students to the fundamental components of UAS, sensors and platforms, UAS operational concepts, the principles of UAS data collection, the legal framework for UAS operations, photogrammetric theory, image processing software, and the generation and analysis of orthomosaics and 3D point clouds. The course emphasizes the use of UAS in the context of natural resource science, technology and applications. Typically Offered: Varies.

**Prereqs:** FOR 375 or equivalent

## **ASM 498 (s) Internship (1-6 credits, max 6)**

Graded P/F.

**Prereqs:** Permission

## **ASM 499 (s) Directed Study (1-16 credits)**

Credit arranged