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
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
Credit arranged

ASM 305 GPS and Precision Agriculture
3 credits
This course will introduce 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.

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.

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.
Prereq: Permission

ASM 400 (s) Seminar
Credit arranged

ASM 403 (s) Workshop
Credit arranged

ASM 404 (s) Special Topics
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.

Prereq: 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.

Prereq: 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 Applications 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.

Prereq: FOR 375 or equivalent
ASM 498 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: Permission

ASM 499 (s) Directed Study
Credit arranged