

# Agricultural Systems Technology Management (ASTM)

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## Courses

### **ASTM 16101. Fundamentals of Agricultural Systems Technology Laboratory. 1 Hour.**

Study of basic mathematical and physical science concepts important in the mechanization of agriculture. Laboratory required for agricultural education, communication and technology majors enrolled in ASTM 16103, optional for others enrolled in ASTM 16103. Corequisite: ASTM 16103. (Typically offered: Fall)

### **ASTM 16103. Fundamentals of Agricultural Systems Technology. 3 Hours.**

Introduction to basic physical concepts important in agricultural technical systems: applied mechanics, power and machinery management, structures and electrification, and soil and water conservation. Lecture 3 hours per week. (Typically offered: Fall)

### **ASTM 21203. Metals and Welding. 3 Hours.**

An introduction to agricultural mechanics shop work to include hot and cold metal work, arc welding, and gas welding and cutting. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. (Typically offered: Fall and Spring)

### **ASTM 29003. Agricultural and Human Environmental Sciences Applications of Microcomputers. 3 Hours.**

Lecture and laboratory assignments covering the contemporary use of microcomputers in agricultural, food and life sciences. Emphasis placed on learning to use selected, appropriate Microsoft (Windows, Word, Excel, PowerPoint and Access), email/Internet, and collaboration software packages. (Typically offered: Fall, Spring and Summer)

### **ASTM 31001. Small Power Units/Turf Equipment Laboratory. 1 Hour.**

Testing, evaluation, and maintenance of engines, hydrostatic power transmission systems, and equipment commonly used in the turf and landscaping industries. Corequisite: ASTM 31002. Prerequisite: MATH 11003 or higher. (Typically offered: Spring)

### **ASTM 31002. Small Power Units/Turf Equipment. 2 Hours.**

Principles of operation, adjustment, repair, maintenance, and trouble shooting of small air-cooled engines and power units, including various engine systems, service and maintenance of turf equipment and machinery. Lecture 2 hours per week. Corequisite: ASTM 31001. Prerequisite: MATH 11003 or higher. (Typically offered: Spring)

### **ASTM 31503. Surveying in Agriculture and Forestry. 3 Hours.**

Techniques and procedures normally used in determining areas and characterizing the topography of agricultural and forest lands. Includes basic concepts of surveying; use and care of level, transit, distance measuring equipment; topographic mapping and public land surveys. (Typically offered: Fall)

### **ASTM 31703. Electricity in Agriculture. 3 Hours.**

Principles of electricity; wiring of home, farmstead and other agricultural structures; selection of electric motors and their care and application in the broad field of agriculture; lighting and special uses of electricity such as heating and electrical controls. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

### **ASTM 4000V. Special Problems. 1-6 Hour.**

Individual research or study in electrification, irrigation, farm power, machinery, or buildings. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

### **ASTM 4020V. Special Topics in Agricultural Mechanization. 1-4 Hour.**

Topics not covered in other courses or a more intensive study of special topics in agricultural mechanization. (Typically offered: Irregular) May be repeated for degree credit.

### **ASTM 42003. Mechanized Systems Management. 3 Hours.**

Selection, sizing, and operating principles of agricultural machinery systems, including power sources. Cost analysis and computer techniques applied to planning and management of mechanized systems. Corequisite: Lab component. Prerequisite: MATH 11003 or higher. (Typically offered: Fall Even Years)

### **ASTM 4750V. Internship in Ag Systems. 1-6 Hour.**

A supervised practical work experience in Ag Systems Technology Management which is designed to give the student an insight into the role of ag systems employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

This course is cross-listed with ACOM 4750V, AGLE 4750V, EXED 4750V.

### **ASTM 49703. Irrigation. 3 Hours.**

Methods of applying supplemental water to soils to supply moisture essential for plant growth, sources of water, measurement of irrigation water, pumps, conveyance structure, economics, and irrigation for special crops. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

### **ASTM 5010V. Special Topics in Agricultural Mechanization. 1-4 Hour.**

Topics not covered in other courses or a more intensive study of special topics in agricultural mechanization. Graduate degree credit will not be given for both ASTM 4020V and ASTM 5010V. (Typically offered: Irregular) May be repeated for degree credit.

### **ASTM 5100V. Special Problems in Ag Systems Technology. 1-4 Hour.**

Individual investigation of a special problem in agricultural communications which is not available through regular courses. These will be directed by a member of the graduate faculty. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

### **ASTM 52003. Mechanized Systems Management. 3 Hours.**

Selection, sizing, and operating principles of agricultural machinery systems, including power sources. Cost analysis and computer techniques applied to planning and management of mechanized systems. Graduate degree credit will not be given for both ASTM 42003 and ASTM 52003. Corequisite: Lab component. Prerequisite: MATH 11003. (Typically offered: Fall Even Years)

### **ASTM 5750V. Internship in Agricultural Systems. 1-6 Hour.**

Scheduled practical field experiences under supervision of a professional practitioner. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

This course is cross-listed with ACOM 5750V, AGLE 5750V, EXED 5750V.

### **ASTM 59703. Irrigation. 3 Hours.**

Methods of applying supplemental water to soils to supply moisture essential for plant growth, sources of water, measurement of irrigation water, pumps, conveyance structure, economics, and irrigation for special crops. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both ASTM 49703 and ASTM 59703. Corequisite: Lab component. (Typically offered: Spring)