AGRICULTURAL ENGINEERING AE

Department of Biosystems and Agricultural Engineering
College of Agriculture and Natural Resources

101 Electrical Wiring Maintenance for Residential and Agricultural Facilities
Fall, Spring, Summer. 2(2-0) R: Not open to students in the Electrical Technology Major. Not open to students with credit in AE 072.
Introduction to electrical circuit maintenance, safety issues, and installation practices for residential and agricultural facilities.

102 Electrical Lighting for Residential and Agricultural Facilities
Fall, Spring, Summer. 2(2-0) Not open to students with credit in AE 085.
Introduction to electrical lighting sources, efficacies, productivity enhancement, and basic lighting design practices for residential and agricultural facilities.

131 Agricultural Water Resource Management
Spring. 3(3-0) RB: (CSS 210) or similar basic soil science course R: Open to students in the Institute of Agricultural Technology.
A basic knowledge, skills and tools course on water resources use and protection in agricultural production. Field trip required.

143 Application of Precision Agriculture Technologies
Spring. 3(3-0) R: Open to students in the Institute of Agricultural Technology.
Practical application of the use of the tools of precision farming with a focus on widely adopted guidance, monitoring and global positioning systems. Field trip required.

151 Fabrication Technology
Fall, Spring. 2(1-2) SA: AE 150
Introduction to principles and practices for shop fabrication including assembly options, fabrication nomenclature, drawing interpretation, 3D printing, tool and equipment use, welding and safety practices.

153 Engine and Equipment Technology
Spring. 2(2-2) SA: AE 053, AE 252
Principles of gasoline and diesel engines. Fundamentals of gasoline and diesel fuel systems, ignition and cooling systems. Principles of hydraulic systems including components and hydrostatic transmissions. Maintenance and troubleshooting of engines and equipment. Offered first ten weeks of semester.

172 Electrical Wiring I
Fall. 4(3-2) R: Open to students in the Institute of Agricultural Technology. SA: AE 072
National Electrical Code requirements for residential, light commercial and agricultural branch circuits and services. Safe use of hand tools.

173 Electrical Occupations
Spring. 1(1-0) R: Open to students in the Institute of Agricultural Technology. SA: AE 073
Electrical wiring trade, job openings, preparation of a resume, interviewing for a job, preparing reports. Offered first ten weeks of semester.

182 Electrical Wiring II
Spring. 2(1-3) RB: AE 172 R: Open to students in the Institute of Agricultural Technology. SA: AE 082
Installation of electrical circuits for residential, light commercial and agricultural installations. Offered first ten weeks of semester.

185 Electrical Applications
Spring. 3(3-2) RB: TSM 121 R: Open to students in the Institute of Agricultural Technology. SA: AE 085
Application of electrical utilization equipment. Fundamentals and application of artificial illumination sources, and lighting design practices. Types, characteristics and connection of AC and DC motors. Principle of motor controlling AC, DC, stepper and servo motors. Application of variable frequency drives for induction motors. Offered first ten weeks of semester.

192 Electrical Wiring III
Fall. 4(2-4) RB: AE 182 R: Open to students in the Institute of Agricultural Technology. SA: AE 092
Commercial agricultural and industrial wiring, planning and installation, including transformers, polyphase systems, conductor sizing and explosion-proof wiring.

194 Electrical Systems Planning
Fall. 4(4-0) R: Open to students in the Institute of Agricultural Technology. SA: AE 094
Basic electrical calculations and wiring layout. Circuit requirements, outlet location, branch circuits and services sizing, blueprint reading and cost estimation.

290 Independent Study
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Approval of department; application required.
Supervised individual student study in electrical technology or agricultural technology.

452 Watershed Concepts
Fall, Spring, Summer. 3(3-0) Interdepartmental with Crop and Soil Sciences and Forestry and Fisheries and Wildlife. Administered by Agricultural Engineering. RB: Organic chemistry SA: ESA 452, RD 452, CSUS 452
Watershed hydrology and management. The hydrologic cycle, water quality, aquatic ecosystems, and social systems. Laws and institutions for managing water resources.

841 Building and Implementing Watershed Management Plans
Fall, Spring, Summer. 3(3-0) RB: AE 452 SA: ACR 841, CSUS 841, RD 881
Developing and implementing watershed management plans. Problem definition, data collection, public consultation, and program evaluation.

842 Watershed Assessments and Tools
Fall, Spring, Summer. 3(3-0) RB: AE 452 or AE 841 SA: ACR 842, CSUS 842
Assessing and predicting physical, chemical, biological and socioeconomic conditions within watersheds. Tools and techniques for identifying, evaluating, and prioritizing problems.

843 Legal, Financial and Institutional Frameworks in Watershed Management
Fall, Spring, Summer. 3(3-0) RB: AE 452 or AE 841 or AE 842 SA: ACR 843, CSUS 843
Watershed management laws and regulations. Resolving financial and human conflicts arising from regulation.