

**AGRICULTURAL ENGINEERING**      **AE**

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

**053 Engine and Equipment Maintenance**  
Spring. 2(2-2) R: Open to students in the Institute of Agricultural Technology.

Principles of two-stroke and four-stroke engines. Fuel systems, ignition systems, lubrication, carburation, differentials, clutches and transmissions, and hydraulic systems. Operation and maintenance procedures. Offered first ten weeks of semester.

**072 Electrical Wiring I**  
Fall. 4(3-2) R: Open to students in the Institute of Agricultural Technology.

National Electrical Code requirements for residential, light commercial and agricultural branch circuits and services. Safe use of hand tools.

**073 Electrical Occupations**  
Spring. 1(1-0) R: Open to students in the Institute of Agricultural Technology.

Electrical wiring trade, job openings, preparation of a resume, interviewing for a job, preparing reports. Offered first ten weeks of semester.

**082 Electrical Wiring II**  
Spring. 2(1-3) RB: AE 072 R: Open to students in the Institute of Agricultural Technology.

Installation of electrical circuits for residential, light commercial and agricultural installations. Offered first ten weeks of semester.

**085 Electrical Applications**  
Spring. 3(3-2) RB: TSM 121 R: Open to students in the Institute of Agricultural Technology.

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.

**092 Electrical Wiring III**  
Fall. 4(2-4) RB: AE 082 R: Open to students in the Institute of Agricultural Technology.

Commercial agricultural and industrial wiring, planning and installation, including transformers, poly-phase systems, conductor sizing and explosion-proof wiring.

**094 Electrical Systems Planning**  
Fall. 4(4-0) RB: AE 082 R: Open to students in the Institute of Agricultural Technology.

Basic electrical calculations and wiring layout. Circuit requirements, outlet location, branch circuits and services sizing, blueprint reading and cost estimation.

**150 Metal Fabrication Technology**  
Fall. 2(1-2) SA: ATM 150

Physical principles and safety techniques for electric and gas welding. Soldering, brazing, cutting, tool use, machine shop equipment use, and hot and cold metalworking.

**252 Gasoline and Diesel Engine Technology**  
Fall. 3(2-2) SA: ATM 252  
Operating principles of gasoline and diesel engines and their systems. Operation and maintenance requirements.

**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.