

AGRICULTURAL ENGINEERING TECHN (AGET)

AGET 2301. Fund Ag Power Units & Ctrl Sys. 3 Hours.

Selection, maintenance and service of agricultural power units including small engines overhaul and preventive maintenance on agricultural tractors.

AGET 2303. Intro to Ag Engineering Tech. 3 Hours.

Introduction to current and emerging topics and industry related to agricultural engineering technology. Topics covered include: bio-diesel, wind energy, GPS/GIS applications, nanotechnology, theory of fusion of metals, efficiency of internal combustion engines, and other technology-related subjects.

Prerequisite: None.

AGET 2396. Spec Top in Ag Engineer Tech. 3 Hours.

This course will examine special topics/issues in Agricultural Engineering Technology at an introductory level. This course may be repeated up to three times as topics and subject matter changes.

AGET 3300. Agricultural Electrification. 3 Hours.

Principles and theory of electricity and applications in agriculture. Topics covered will include the transmission and distribution of electricity, Ohm's Law, DC/AC current, safety, NEC, converting bio-mass to electrical power, peak demand, dispatchable power, wind energy, photo-voltaic cells, and net-metering. Sophomore standing.

Prerequisite: AGET 2303 or ETDD 1361.

AGET 3380. Agricultural Machinery. 3 Hours.

Design, construction, adjustment, operation and testing of agricultural machinery and equipment systems. Topics include theoretical and effective capacities, costs of operation, valuation of used equipment and queuing theory. Sophomore standing. Completed 55 hours.

Prerequisite: AGET 2303 or ETDD 1361.

AGET 3383. Soil & Water Conservation Engr. 3 Hours.

This course includes principles of soil and water conservation, erosion control, storm water management, structures for floodwater routing, culvert design, design of waterways, and retention basins. Plane surveying, topographic mapping, geographical information and global positioning systems will be utilized. Sophomore standing.

Prerequisite: AGET 2303 or ETDD 1361.

AGET 3386. Agricultural Structures and Environmental Control Systems. 3 Hours.

Functional requirements of agricultural buildings; valuation, appraisal and estimating; structural requirements of agricultural buildings; planning and designing major service and processing buildings. Topics discussed will include thermodynamics, confined livestock housing, and environmental controls. Junior standing.

Prerequisite: AGRI 2303 or ETDD 1361.

AGET 4369. Special Topic. 3 Hours.

AGET 4381. Adv Agricultural Mechanics. 3 Hours.

This course serves as a capstone course for agricultural science students with previous experience in the area of agricultural engineering technology. Teams will address and solve a complex problem and as a result may design and construct a building, trailer, or other equipment in the laboratory.

Prerequisite: AGET 2303 or ETDD 1361 and Junior standing.

AGET 4384. Fusing & Joining of Metals & Non-Metals. 3 Hours.

A comprehensive study of the theories, principles, and procedures of bonding and fusing metallic and non-metallic materials by the electric arc, oxy-fuel, and adhesive processes. Technical classroom instruction, laboratory exercises, and field trip experiences will involve selection and utilization of new and emerging technologies and equipment, workplace planning, supervision, and management. Junior standing.

Prerequisite: AGET 2303 or ETDD 1361.

AGET 4385. Applied Electronics/Hydraulics. 3 Hours.

Cutting edge applications and integration of electronic and hydraulic principles and applications in agricultural and industrial processes and distribution systems. Topics include Ohm's Law, Pascalis Law, and principles and theory of fluid dynamics. Junior standing.

Prerequisite: AGET 2303 or ETDD 1361.

AGET 4387. Agricultural Engines & Tractor. 3 Hours.

Principles of the internal combustion engine, fuel injection, carburetion, and computerized engine monitoring equipment. Selection, valuation, wear analysis, and maintenance of power units for agricultural and industrial applications including those powered by alternative fuels will be covered. Junior standing.

Prerequisite: AGET 2303 or ETDD 1361.

AGET 4390. Turf & Cropland Irr & Drainage. 3 Hours.

Design and selection of surface or sub-surface irrigation and drainage systems for golf courses, greenhouses, sports fields, crops, landscape applications, and construction sites. Principles of pressurized irrigation systems including crop water requirements, soil moisture, irrigation scheduling, sprinkler irrigation, trickle irrigation, pumps, pipelines, and irrigation wells will be covered.

Prerequisite: AGET 2303 or ETDD 1361 and Junior standing.

AGET 4392. GPS Applications in Agriculture and Construction. 3 Hours.

Global positioning and geographic information system software and equipment will be applied in settings involving precision farming and construction.

Prerequisite: AGET 2303 or ETDD 1361 and Junior Standing.

AGET 4393. Renewable Energy Sources for Agriculture. 3 Hours.

This course will familiarize students with existing and potential alternative energy sources and production capacities including wind, solar, bio-mass conversion, hydrogen, ethanol, vegetable oil, and bio-diesel. Impacts on the environment, ecological systems, world food supply, and economy will be studied.

Prerequisite: AGET 2303 or ETDD 1361.

AGET 4396. Directed Study in Agricultural Engineering Technology. 3 Hours.

Arranged professional development learning experiences incorporating a practical application of Agricultural Engineering Technology skills and practices. To include internships, individual research and industry studies. May be repeated for credit up to six hours.

Prerequisite: Sophomore standing.