

**AEN**

**Agricultural Engineering**

**AEN 103 BASIC PRINCIPLES OF SURVEYING. (2)**

General use of surveying equipment, development of topographic maps, layout of engineering systems, earthwork computations, and introduction to boundary surveys for Agriculture students. This course is not available for credit to persons who have received credit in another introductory surveying course. Lecture, one hour; laboratory, three hours. Prereq: A course in trigonometry, enrollment in the College of Agriculture and/or consent of instructor.

**AEN 203 BASIC PRINCIPLES OF SURVEYING. (3)**

This course provides an introduction to the basic principles of surveying, the general use of surveying equipment, and basic surveying methods. This course is not intended for students who are seeking to become licensed surveyors. Lecture, two hours; laboratory, two hours. Prereq: A minimum of high school trigonometry, and enrollment in the College of Agriculture or consent of the instructor. (Same as TSM 203.)

**AEN 220 PRINCIPLES OF INTERNAL COMBUSTION ENGINES. (3)**

Principles of selection of internal combustion engines. Operating principles of internal combustion engines including fuel injection, ignition, lubrication, and maintenance. Power transmission application and efficiency are considered. Lecture, two hours per week; lab, two hours per week. (Same as TSM 220.)

**AEN 252 FABRICATION AND CONSTRUCTION FOR TECHNICAL SYSTEMS. (3)**

Lecture, 1 hour; laboratory 4 hours. Wood and metal work, including reading engineering drawings, welding, power woodworking tools, soldering and pipe work. Prereq: Major in agricultural education, or Individualized Agriculture Curriculum (TSM), or a minor in TSM, or consent of instructor. (Same as TSM 252.)

**AEN 263 AGRICULTURAL SAFETY AND HEALTH. (3)**

The course provides an overview of major safety and health hazards in agricultural production (farms) and of the basic approaches to prevention of agricultural injuries and illnesses.

**AEN 340 PRINCIPLES OF FOOD ENGINEERING. (4)**

The functional requirements and principles of operation of systems for the handling and processing of food and agricultural products are studied. The areas covered are mass and energy balances, fluid mechanics, heat transfer, refrigeration, food freezing, evaporation, drying and special topics such as extrusion and microwave heating. Prereq: Completion of PHY 211 and MA 123 or MA 113 or MA 137 and junior standing in Food Science major or Technical Systems Management option in AICU. (Same as TSM 340.)

**AEN 341 BREWING SCIENCE AND TECHNOLOGY. (3)**

Introduction to the science and technology associated with the brewing of beer. Topics will include the history of beer, varieties of beer, and production of beer. Within the discussions about the production of beer, the effect of raw materials, processing, microbiology, and storage on the taste and appearance of the beer will be studied. The class will also cover beer appreciation and sensory perception, which will complement the discussions of science and technology in the production of beer. Prereq: All students must be 21 by the first day of class. (Same as TSM 341.)

**AEN 461G BIOMETEOROLOGY. (3)**

An introduction to the impact and relationship of the atmosphere on living organisms. Emphasis on the practical application of meteorology to everyday problems within the biosphere. Weather analysis, interpretation, psychometrics of the atmosphere, and the impact of weather and climate on animals, plants and man are discussed. Lecture, two hours; laboratory, two hours per week. Prereq: Junior, Senior, or Graduate standing. (Same as TSM 461G.)

**AEN 462 RESIDENTIAL AND COMMERCIAL IRRIGATION DESIGN. (3)**

The utilization of hydraulic principles in the design, assimilation, installation and operation of residential and commercial irrigation systems in applications which emphasize water conservation, nutrient management and environmental protection. Lecture, two hours; laboratory, two hours per week. Prereq: Consent of instructor.