

# AGRICULTURAL TECHNOLOGY (AGTC)

## AGTC 103 Farm Power 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

This course involves the study of functions, physical capabilities, applications, economics and tractor improvements. Students will participate in operation, testing and analysis of tractors in laboratory and field conditions to maximize operation efficiencies. (C-ID AG-MA108L)

## AGTC 106 Agriculture Welding 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

A study of the fundamental principles theories and concepts of welding used in agriculture construction, fabrication and repair. All positions, joint types, hard surfacing, cutting, brazing, SMAW, GMAW, and OFW will be studied.

## AGTC 201 Small Engines 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

This beginning course is designed to introduce students to the theory and concepts of today's modern power equipment. Applications, basic operation, diagnosis and troubleshooting will be addressed in this course.

## AGTC 202 Farm Equipment Construction 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

This is a study of the basic principles for the construction of farm implements such as feeding equipment, tractor implements, farm trailers or other useful tools on the farm. The course content includes: safety, developing a working drawing, a bill of materials, constructing the project and finishing the project.

## AGTC 210 Agriculture Project Construction 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

This course is designed to give students an understanding of the mechanics and technology of fabrication. This class will study the characteristics, types and costs of construction materials for their use in agriculture and industrial equipment fabrication.

## AGTC 213 Hydraulics 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

This course will provide students with a thorough understanding of oil hydraulic systems used in agriculture. Students will learn open-center and closed-center hydraulic systems including the types of pumps used, pressure control, flow control and directional control valves, accumulators, reservoirs, and various actuators. Students will learn operation maintenance and troubleshooting.

## AGTC 219 Irrigation System Design 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

Irrigation system design fundamentals covering micro, sprinkler, surface, and sub-surface applications. Topics include on-farm systems, piping, and discharge as well as system efficiency and cost. AutoCAD and other common design software will be introduced and utilized.

## AGTC 220 Irrigation Pumps 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

This course focuses on irrigation pumps. Students will learn about the different types of irrigation pumps used in the agriculture industry. Pump curves and pump selection will be covered utilizing crop water requirements and irrigation design specifications. Students will learn about pump efficiency by conduction efficiency tests both in a lab setting and out in the field. Electrical energy efficiency as it relates to pumping will be discussed.

## AGTC 222 Ag Irrigation Systems 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

Fundamentals of irrigation systems and maintenance to include sprinkler, micro, surface and sub-surface applications. As irrigation systems have grown more complex so have their components. Topics include pumping and delivery systems, piping, flow control, filtration, automation, pressure regulation, equipment setup and testing. Emphasis will be placed on cost effective installation and maintenance requirements for efficient operation.

## AGTC 225 Compact Diesel Engines 3unit(s)

Hours: 3 Lecture/Discussion Hours:  
1 Lab

This course provides students with technical knowledge and hands-on experience in the operation and repair of compact diesel engines.  
**Advisory on Recommended Preparation:** AGTC 201 or equivalent college course with a minimum grade of C (may be taken concurrently).

## Fall 2019 Version

### AGTC 219 AG Design and Fabrication - 3 unit(s)

Hours: 3 Lecture/Discussion  
1 Lab

#### Materials Fees: 20

The skills of a fabricator involve design, cost, material choices, joining processes and cost analysis. This course will address the need and the skills for the fabrication of complex agriculture projects.