



AGTC 120: INTRO AG POWER EQUIP INDUSTRY

Proposer:
Name:

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Effective Term:

Spring 2025

Credit Status:

Credit - Degree Applicable

Subject:

AGTC - Agricultural Technology

Course Number:

120

Discipline:

And/Or	(Discipline)
	(Agricultural Production (Animal science, plant science, beekeeping, aquaculture))
Or		Agricultural Engineering (Equipment and machinery, farm mechanics))

Catalog Title

Introduction to the Agriculture Power Equipment Service Industry

Catalog Description

This course is an introduction to the agriculture power equipment service industry. Students will learn the basics of safe tool operation, dealer software, machine identification, and regulations related to the power equipment industry. This course will prepare students for the Agriculture Power Equipment Technician Program and should be completed towards the beginning of the students' program.

Method of Instruction:

Laboratory
Lecture and/or Discussion

Course Units/Hours:
Course Units Minimum:

3

Lecture Hours Minimum (week)

3

Lab Hours Minimum (week)

1

Total Contact Hours Minimum (semester)

70

Total Outside Hours Minimum (semester)

105

Total Student Learning Minimum Hours (semester)

175

**Repeatability:**

No

Open Entry/Exit:

No

Field Trips:

Not Required

Grade Mode:

Standard Letter

TOP Code:

011600 - * Agricultural Power Equipment Technology

SAM Code:

C - Clearly Occupational

Course Content**Methods of Assessment:**

Multiple choice tests
 Problem solving quizzes or exams
 Project
 Skill demonstrations

Course Topics:

Course Topics	
1	Introduction to farm machinery: basic farm tractors, implements and specialty agriculture equipment.
2	Identification and use of tools used in the power equipment industry: hand tools, electric hand tools, air tools, hydraulic tools, lifting tools and various cleaning equipment.
3	Laws and regulations governing the power equipment service industry.
4	Use of testing equipment such as fluid pressure testing equipment, multimeters, oscilloscopes, and Original Equipment Manufacturers diagnostic tools
5	Personal protective equipment and hazardous materials
6	Use of ventilation and building exhaust systems
7	Identification and operation of tractors, harvesters, excavators, skid steers, forklifts and other farm machinery.
8	Industry software, electronic communication systems, computer based diagnostic programs and reference resources.
9	Technician record keeping and job reporting
10	Agriculture Equipment Dealership overview departments, goals for each department
11	In field and in shop technician practices

Course Objectives:

Course Objectives	
1	Demonstrate the proper safety and usage of hand, air and power tools.
2	Demonstrate the ability to accurately read precision measuring tools and gauges.
3	Demonstrate the ability to safely and properly use lifting equipment used in the shop or field.
4	Demonstrate the ability to use manufacturer software and internet resources to retrieve specifications, part numbers, bulletins, schematics
5	Demonstrate the ability to use fluid pressure testing equipment.
6	Identify basic agriculture power equipment and perform basic operation of that equipment.
7	Properly use personal protective equipment and describe mandated regulations.
8	Keep service records that would be used by service manager and billing department.

- 9 Use various cleaning equipment for machinery and parts.
- 10 Explain the dealership environment the different departments and how those departments function together.

Course Outcomes:

Course Outcomes	
1	Students will be able to safely use tools found in the agriculture power equipment service industry.
2	Students will be able to use dealer and original equipment manufacturer software to complete the tasks of an agriculture power equipment technician.
3	Students will be able to identify and operate basic agricultural power equipment.

Assignments:

Assignment Type:	Details
Reading	Student will read technical publications provided by the original equipment manufacturer.
Writing	Students will write service/repair records to communicate to the dealership and the customer.
Lab	Students will demonstrate proper use of fluid testing equipment
Homework	Students will research various specialty pieces of equipment and explain their development.

Textbooks or other support materials

Resource Type:	Details
Books	Fundamental of Mobile Heavy Equipment; Gus Wright, Owen C. Duffy, Scott Heard. Copyright 2019 ISBN 9781284112917

Equity Review:

Yes

Transferable to CSU

Yes - Proposed

Transferable to CSU Justification

CSU Transferability

1a. Identification of a parallel lower division course at a CSU

Cal Poly SLO BRAE 141 Agricultural Machinery Safety

Course also meets 2a and b

1. There are a large variety of tools and equipment used in the agriculture power equipment field. This course will require students to spend much time outside of class familiarizing themselves with the tools and equipment used. Students will need a broad understanding of the theory of operation of engine systems, hydraulic systems and electrical systems. Many of the topics covered when teaching these systems require understanding and application of physical laws such as Bernoulli's Principle, Pascal's Law and Ohm's Law.
 2. Students will not only need to understand the laws mentioned above but will also need to be able to employ tools to measure variable in these laws. They will then use theoretical knowledge to determine if a system is functioning correctly.
 3. Students will need to articulate if the systems is functioning correctly or not and articulate to a customer who may have limited technical knowledge what is wrong with the system and the measures used to correct the problem.
 4. This course moves students towards competencies of a higher level as students will be learning theories of how systems function in a pieces of machinery, which tool to use to measure the performance of the piece of machinery and then to determine if the machine is functioning properly or not and last students will need to determine the correct action to repair said problem. On top of this students will have to communicate both written and orally to a lay person who has no knowledge of the concepts the student is discussing.
- 2b. This course takes students far above and beyond the skills of a shade tree mechanic as they will learn theory of operation theory of tool usage and diagnostics with the correct tools. Students will also employ the use of computer based analysis equipment to diagnose and troubleshoot equipment as well.

CSU General Education

Transferable to CSU

This course will also be proposed for UC transfer.

No



Other Degree Attributes

Degree Applicable
Not Transferable
Not a Basic Skills Course

Banner Title:

Intro Ag Power Equip Industry

Course Control Number:

CCC000332229