

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



MASTER SYLLABUS

AGET 105-AGRICULTURAL EQUIPMENT MAINTENANCE AND OPERATION

**Created by: BRANDON BALDWIN
Updated by:**

**AUTOMOTIVE TECHNOLOGY
SPRING 2021**

- A. TITLE:** AGRICULTURAL EQUIPMENT MAINTENANCE AND MAINTENANCE
- B. COURSE NUMBER:** AGET 105
- C. CREDIT HOURS:** 3 CREDIT HOURS, 3 LECTURE HOURS PER WEEK, 3 LAB HOURS PER WEEK FOR 15 WEEKS
- D. WRITING INTENSIVE COURSE:** NO
- E. GER CATEGORY:** NONE
- F. SEMESTER(S) OFFERED:** Fall and Spring

G. COURSE DESCRIPTION:

An introduction to the maintenance of equipment utilized in agricultural applications such as farms, landscape businesses, tree services, and any business with outdoor equipment. Hybrid elective course where the lecture is delivered on-line and the lab is delivered at a remote locations such as agricultural equipment dealerships when the equipment is not located at SUNY Canton. 2-hour lecture, 3-hour lab

H. PRE-REQUISITES/CO-REQUISITES:

- a. Pre-requisite(s): none
- b. Co-requisite(s): none
- c. Pre- or co-requisite(s): none

I. STUDENT LEARNING OUTCOMES:

<u>Course Student Learning Outcome [SLO]</u>	<u>PSLO</u>	<u>GER</u>	<u>ISLO</u>
a. Identify safe practices with Agricultural Machinery.			5. Ind, Pro, Dis Know Skills
b. Identify tools and equipment necessary to perform equipment maintenance.			5. Ind, Pro, Dis Know Skills
c. Describe the fundamentals of engine, hydraulic, and electrical operation.			5. Ind, Pro, Dis Know Skills
d. Operate Agricultural equipment at an introductory			5. Ind, Pro, Dis Know Skills

level.			
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KEY	<u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u>
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

J. **APPLIED LEARNING COMPONENT:** _ Yes__x__ No_____

If Yes, select one or more of the following categories:

Classroom/Lab_X___
 Internship___
 Clinical Practicum___
 Practicum___
 Service Learning___
 Community Service___

Civic Engagement___
 Creative Works/Senior Project___
 Research___
 Entrepreneurship___
 (program, class, project)

- K. TEXTS:** _John Deere Fundamentals of Service Manuals.
- L. REFERENCES:** Agricultural Equipment manuals, Husqvarna manuals, Stihl manuals, Bobcat manuals
- M. EQUIPMENT:** tractors, wagons, disc, spreader, chainsaw, trimmer, splitter, skid-steer, light-duty trucks, ATV, welder
- N. GRADING METHOD:** A-F
- O. SUGGESTED MEASUREMENT CRITERIA/METHODS:**
Tests, homework, and lab performance
- P. DETAILED COURSE OUTLINE:**
- I. Safety**
Identify safe practices in relation to agricultural machinery usage and maintenance.
 - II. Introduction to Mechanical Tools**
 - III. Engines**
 - A. 2 Stroke theory and maintenance
 1. Fuel mixing ratio
 2. Chainsaws and trimmers
 3. Identification factors
 4. Apply this knowledge to 2 stroke engine care.
 - B. 4 Stroke theory and maintenance
 1. Gas engines/spark ignition engines
 2. Diesel engines/compression ignition
 3. Identification factors.
 4. Apply this knowledge to 4 stroke engine care.
 - C. Compare and contrast fuel types for these engines
 - IV. Hydraulics**
 - A. Identification of hydraulic components
 - B. Operation of hydraulic components.
 - C. Apply this knowledge to hydraulic component and circuit care.
 - V. Batteries**
 - A. Identification of battery types and locations
 - B. Jump starting and charging of batteries
 - C. Basic fuse check
 - D. Changing of lighting and simple circuits
 - VI. Introduction to welding and cutting**
 - A. Introduction to Oxyacetylene torch
 1. Cutting
 2. Welding
 - B. Introduction to Mig Welding
 - VII. Basic Machine Operation**
 - A. Operation of trucks, tractors, skid steer, chain saw, ATV/UTV, wood splitter

- B. Attachment of implements to tractors
- C. Generators

Q. **LABORATORY OUTLINE:**

- I. Safety
- II. Tool identification and managing their proper use
- III. Identification of different engine types, then how to maintain and fuel them.
- IV. Identification, operation, and care of hydraulic systems
- V. Battery identification, jump starting, and charging.
- VI. Changing of lighting and simple circuits
- VII. Introduction of basic welding and cutting
- VIII. Introduction of machine operation.