Texas A &M University -Commerce **AMC – 426**
School of Agriculture **Ag Power & Energy Management**
Agricultural Mechanization & Technology **Fall 2016**

Syllabus

Instructor
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Office Hours
Face to face - by appointment; Email - anytime.

Course Description
A study of the principles and theories needed to comprehend and manage agricultural and environmental technology associated with machinery/equipment and energy systems. Reduction and synthesis of natural and applied science principles which involve mechanical, electrical, fluid power systems; the adjustments, fabrication, maintenance, repair and management of machines and equipment utilized in said systems; knowledge of entrepreneurship, communications, safety, service, planning, and regulation of technologies associated with agriculture and the environment. Prerequisites: AMC 315 and junior standing.

Course Objectives
Upon successful completion of this course, a student should be able to

- Identify engine components and explain the operation of two-stroke and four-stroke cycle, spark-ignition and compression engines.
- Define and calculate the concepts of bore, stroke, compression ratio, and piston displacement for given internal combustion engines.
- Disassemble and assemble a small gasoline engine such that all parts are assembled correctly and the engine runs and accelerates without hesitation.
- Operate precision measurement instruments (feeler gauge, wire gauge, telescoping gauge, dial calipers, and micrometers).
- Explain the extent of fluid power use in current society and provide several specific examples.
- Explain the symbols used to designate components in fluid power circuit diagrams.
- Identify and explain the parts of circuit diagrams typically used with fluid power equipment..

Class Hours:
Wednesday; LEC : 11:00 AM – 12:40 PM LAB: 3:00 – 4:50 PM, AGIT 149

Textbook:
Roth, A. C. (2012). Small Gas Engines: fundamentals . service . troubleshooting . repair . applications. (9th edition). Tinley Park, Illinois: The Goodheart-Wilcox Company, Inc.
ISBN: 978-1-59070-970-2

Required class material
Safety glasses and appropriate protective clothing.

Attendance
Students are expected to be present for all class meetings. Students are responsible for learning about and complying with the attendance policy stated in this syllabus. Additional information can be found here: http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

Required Reading
Readings are to be done prior to class date. The student is expected to go through the assigned readings and come prepared to the class.

Grades will be determined by:

Module	Number	Points	Total Points
Lab Activities	10	50	500
Exam I & II	2	100	200
Final Exam	1	100	100
Engine Run	1	200	100
Attendance		100	100
Total			**1000**

Letter grades will be assigned using the following scale:

Points Scored	Letter Grade
900 and above	**A**
800 - 899	**B**
700 - 799	**C**
600 - 699	**D**
599 and below	**F**

Course Schedule

Week	Day	Date	Topic	Required Reading
1	W	8/29	Orientation, Shop Tour, Syllabus Safety in the Shop	Chapter 1
2	W	9/5	Tools and Measuring Instruments	Chapter 2
3	W	9/12	Introduction to Engine systems **Lab # 1**: Engine Test Run	Chapter 5
4	W	9/19	Two-Cycle and Four-Cycle Engines	Chapter 5
5	W	9/26	Carburation **Lab # 2/ 3**: Carburetor Teardown & Assembly	Chapter 9
6	W	10/3	Governor Systems **Lab # 4** Governor Systems	Chapter 9
7	W	10/10	Piston and Piston rings **Lab # 5**: Cylinder Head	Chapter 6
8	W	10/17	Ignition System **Lab # 7**: Ignition System	Chapter 10
9	W	10/24	Cooling & Lubricating Systems **Exam I**	Chapters 11 & 12 **Chapters 1, 2, 5, & 6**
10	W	10/31	Crankcase Disassembly **Lab # 7**: Engine Disassembly & Inspection	Chapter 16
11	W	11/7	Engine Reassembly **Lab #8**: Engine Reassembly & Break-In	Chapter 19
12	W	11/14	Engine Final Assembly & Test Run **Exam II**	**Chapters 9, 10, 11, & 12**
13	W	11/21	Electrical Motors and Selection **Lab # 9**: Nameplate Interpretation	PowerPoint
14	W	11/28	Hydraulics & Fluid Power **Lab 10:** Hydraulics Symbols	PowerPoint
15	W	12/5	Hydraulic Trainer Operation & Uses **Shop Clean-up**	PowerPoint
			Final Exam **All Chapters covered**	

Note: The course schedule is subject to change. Any changes will be announced well in advance.

UNIVERSITY SPECIFIC PROCEDURES:

ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislatio requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu
Student Disability Resources & Services

Campus Concealed Carry

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to ((http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.