



Purpose: It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

Course Title – Agricultural Power Units (Formerly Farm Machinery)

Course Prefix and Number – AGRI 2301

Department - Agriculture

Division – Life Sciences

Course Type: (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course
- WECM course (This course is a Special Topics or Unique Needs Course: Y or N)

Semester Credit Hours # : Lecture hours# : Lab/other hours # **3:2:2**

Equated Pay hours for course – 3 equated pay hours per course

List Lab/ Other Hours
Lab Hours 2
Clinical Hours
Practicum Hours
Other (list)

Course Catalog Description - Fundamentals of internal combustion engines: gasoline, diesel, and liquefied petroleum. Maintenance and adjustments of the electrical, ignition, fuel, lubricating, and cooling systems of agricultural power machinery.

Prerequisites/Corequisites - None

Approvals – the contents of this document have been reviewed and are found to be accurate.

Prepared by Dr. Dan Lawlor	Signature 	Date April 24, 2007
Department Head Dr. Dan Lawlor	Signature 	Date April 24, 2007
Division Chair Kim Raun	Signature 	Date 10-31-07
Vice President Dr. Ty Pate	Signature 	Date 11-1-07



I. Topical Outline – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non lecture instruction):

Lecture:

TOPICAL OUTLINE	DEDICATED INSTRUCTIONAL TIME
Tractor Power, Types of Farm Tractors	One week
Tractor Engines, Tractor Fuel Systems	One week
Air Induction Systems, Tractor Electrical Systems	One week
Cooling and Lubrication Systems, Tractor Power Transmissions	One week
Tractor Chassis, Primary Tillage	Two weeks
Disk Tillers, Seedbed Preparation, Cultivation	One week
Soil Pulverizers, Packers, and Mulchers; Shredders,	One week
Fertilizer Distributors, and Manure Spreaders	One week
Grain Drills. Row-Crop Planters, and Row-Crop Cultivators	One week
Sprayers and Dusters	One week
Forage Harvesting, Combines	Two weeks
Cotton Harvesters	One week
Machinery Management	One week

II. Course Learning Outcomes

Outcome/Objective	Assessment Method
1. Distinguish between horsepower ratings commonly used in tractor advertising, and Identify a given tractor as to type and select the right type of tractor for a given job.	1. Lecture exams
2. Describe the 2-stroke and 4-stroke cycles of operation for both spark-ignition and diesel engines	2. Lecture exams and assignments
3. Contrast and compare gasoline and diesel fueled engines	3. Lecture exams
4. Identify the major parts of an engine and the purposes of each, and Disassemble and reassemble a small gasoline engine	4. Lecture exams and assignments
5. Describe the components and operation of the fuel, cooling, lubrication, electric, hydraulic, and power transmission systems as used in farm tractors	5. Lecture exams and assignments
6. In regards to the farm implements and harvesting equipment covered in the scope of this course, a student should: (a) understand the components and operation of each type of machine; (b) be familiar with alternate designs of farm equipment; and (c) understand the basis for routine servicing of equipment.	6. Lecture exams and assignments
7. Develop a partial budget for machinery costs	7. Lecture exams and assignments

III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.

Farm Power and Machinery Management, Tenth Edition. D. Hunt. 2001. Blackwell Publishing, Ames, Iowa 50014. ISBN 0-8138-1756-0 (required)

IV. Suggested Course Maximum – 24

V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.

The lecture room should include sufficient dry erase (or chalk) board for notes and illustrations, a computer with internet access and overhead computer projector, and a traditional overhead projector.

VI. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course:

Students are required to read the textbook chapters assigned to them. Throughout the semester, the students have 3 major lecture exams, attendance/participation, several quizzes and assignments.

Evaluative Procedures:

Three major exams, attendance, timely and satisfactory completion of assignments/quizzes/projects.

Each exam equals 1/5 of the final grade along with attendance/participation counting 1/5 of the final grade, and quizzes/assignments/projects counting 1/5 of the final grade.

The grade classifications as outlined in the College Catalog are employed:

A	90 – 100% -Excellent
B	80 – 89% - Good
C	70 – 79% - Average
D	60 – 69% - Poor
F	Below 60% - Failure
W	Withdrawn

VII. Curriculum Checklist

- **WECM Courses**

Include the following:

- SCANS Competencies (attach Program SCANS Checklist)
- WECM and other outcomes/objectives in space provided below.

- **General Education Courses (ACGM but non-Core)**

Include the following:

- Objectives/outcomes in space below.

- **WCJC Core Course**

Include the following:

- Basic Intellectual Competencies
- Exemplary Educational Objectives
- Perspectives (attach Core Curriculum Checklist)

Additional objectives/outcomes in space provided below.