

AGRICULTURAL SYSTEMS MANAGEMENT (ASM)
ASM 373: **Tractor and Power Units**

Class Information:

Credit – 3
Spring 2018
Class Room: ABEN 208
Time: 8:00 – 9:15 am Tues. and Thurs.

Instructor:

Matt Olhoft
ABEN 204
Phone: 701-231-7269
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Office Hours: By appointment or drop in. Usually available Tuesdays and Thursdays 8-5.

Course Description: Overview of engines and power units. Understanding what makes a system function on an engine increases the ability to diagnose, understand, and fix problems in that system.

TEXT: "Engine and Tractor Power", Goering, 4th edition 2004

COURSE OBJECTIVES:

1. To develop an introductory understanding of engines and their systems.
2. To develop good problem solving skills and to learn to look for alternative solutions to problems.
3. To solve basic, applied, and practical problems on tractors and power units.
4. To provide an introduction to higher level thinking and problem solving in engines.

REQUIRED RESOURCES: Text book, non-spiral letter size paper for homework, pencil, eraser, basic calculator

BLACKBOARD: Blackboard will be used for announcements, class presentations, assignments, and temporary grades presentation

GRADING

<u>Items</u>		Total Points
Tests	(Four tests, 100 pts each)	400
Book Questions	(16 question sets, 10 pts each)	160
Unannounced quizzes	(2 quizzes, once in every 8 weeks, 15 pts each)	30
		Total pts: 590

All the home works and quizzes must be submitted on time. No late submissions are accepted.

(There may be extra credits for students in addition to the formal grading. So the total grade points can be more than 590).

The cut off for letter grades: 100-90% = A; 89-80% = B; 79-70% = C; 69-60% = D; 59% = F

MISSING EXAMS

The exam dates are set at the beginning of the semester. All other extracurricular activities should not be scheduled on these dates. If for some emergency reasons, someone misses an exam, the instructor must be notified BEFORE the exam is given. Notification by e-mail or other written formats are acceptable. Missing an exam without notifying the instructor BEFORE the exam date will result in a "0" for that exam - **no exceptions!**

MISSING QUIZZES

Quizzes cannot be made up. For legitimate emergency, contact me before the class and allowance can be made. If you miss a quiz, your score for the quiz is "0". Quizzes will be unannounced and will be given for one or more of the following reasons:

1. To see if the class understands some of the concepts.
2. To encourage response to questions in the form of quiz.
3. To encourage class attendance.

If you are unable to attend the class, let the instructor know ahead of time by e-mail or other written formats. In this case, the instructor will not have unannounced quiz.

MISSING CLASSES

You are expected to attend all class periods but there is no roll-call. If a class is missed, contact the instructor or class mates for notes. The PowerPoint presentations will be posted in the blackboard.

IMPORTANT NOTIFICATION

Academic Honesty: All students taking any course in the College of Agriculture, Food Systems, and Natural Resources are under the Honor System (<http://www.ag.ndsu.edu/academics/honor-system-1>). The Honor System is a system that is governed by the students and operates on the premise that most students are honest and work best when their honesty, and the honesty of others, is not in question. It functions to prevent cheating as well as penalize those who are dishonest. It is the responsibility of the students to report any violations of the honor pledge to the instructor, honor commission or the Dean of the College of Agriculture, Food Systems, and Natural Resources.

The academic community is operated on the basis of honesty, integrity, and fair play. [NDSU Policy 335: Code of Academic Responsibility and Conduct](#) applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the [Office of Registration and Records](#). Informational resources about academic honesty for students and instructional staff members can be found at www.ndsu.edu/academichonesty.

Students with special requirements: Any students with disabilities or other special needs, who need special accommodations in this course are invited to share these concerns or requests with the instructor as soon as possible. The instructor may ask for verification and that, plus other assistance, can be requested from Disability Services in Wallman Wellness Center 170 (231-8463). <http://www.ndsu.edu/disabilityservices/>.

Veterans and military personnel: Veterans or military personnel with special circumstances or who are activated are encouraged to notify the instructor as early as possible.

Important Dates

Spring 2020

Variable Length Session Drop/Add Deadlines

Date	Day	Description
Jan 1	Wed	HOLIDAY — New Year's Day Observed (<i>offices closed</i>)
Jan 13	Mon	Classes begin at 4:00 p.m.
Jan 14	Tue	First full day of classes
Jan 20	Mon	HOLIDAY — Martin Luther King, Jr. Day (<i>no classes, offices closed</i>)
Jan 22	Wed	Last day for Campus Connection Wait Lists to run
Jan 23	Thu	Last day to Add classes via Campus Connection* Permit needed after this date.
Jan 23	Thu	Last day for no-record Drop of classes @ 100% refund* (<i>full semester classes only</i>)
Jan 23	Thu	Last day to Withdraw to Zero Credits @ 100% refund* (<i>full semester classes only</i>)
Jan 23	Thu	Attempted credits calculated for financial aid SAP (11:59 p.m.)**
Jan 23	Thu	Eligible Pell/TEACH/ND Grants/Scholarships based on enrollment at 11:59 p.m.
Jan 28	Tue	Financial aid applied to NDSU account balances
Jan 29	Wed	Payments due for NDSU account balances*

Feb 3	Mon	Last day to submit requests to Audit, Pass/Fail
Feb 7	Fri	Undergraduate/Professional Spring and Summer Degree Applications due
Feb 7	Fri	Graduate student Spring Graduate Degree Applications due
Feb 10	Mon	Last day to Add full semester classes. Permit & Appeal needed after this date.
Feb 17	Mon	HOLIDAY — Presidents' Day (<i>no classes, offices closed</i>)
Feb 24	Mon	Last day to Withdraw to Zero Credits @ 75% refund* (<i>full semester classes only</i>)
Mar First	Week	Summer/Fall schedule available
Mar 6	Fri	Grades of 'Incomplete' convert to 'F'
Mar 9	Mon	2nd half (8-week session) of Spring semester begins
Mar 15	Sun	Late fee applied to unpaid account balances (11:59 p.m.)
Mar 16-20	Mon-Fri	Spring Break Week (<i>no classes, offices open</i>)
Mar 26	Thu	Last day to Withdraw to Zero Credits @ 50% refund* (<i>full semester classes only</i>) No refunds issued for withdraw to zero credits after this date.
Mar 30-Apr 19	Mon	Summer/Fall registration begins online based on total credits completed

Apr 9	Thu	Last day to Drop classes with 'W' record*
Apr 9	Thu	Last day to Withdraw to Zero Credits for Spring
Apr 10-13	Fri-Mon	HOLIDAY -- Spring Recess (<i>no classes, offices closed Friday, offices open Monday</i>)
Apr 15	Wed	Late fees applied to unpaid account balances (11:59 p.m.)
Apr 17	Fri	Graduate student Initial Disquisition submission for May graduation
Apr 20	Mon	Open registration for summer/fall
Apr 24	Fri	Spring Commencement Participation deadline
May 4-8	Mon-Fri	Dead Week
May 5	Tue	Grade entry begins
May 8	Fri	Last day of Spring classes
May 11-15	Mon-Fri	Final Examinations
May 15	Fri	Graduate student Final Disquisition copy due for May graduation
May 15	Fri	Late fees applied to unpaid account balances (11:59 p.m.)
May 16	Sat	Commencement ceremonies (10:00 & 2:00 in Fargodome)
May 19	Tue	Grades due (12:00 p.m.)

GENERAL CLASS SCHEDULE

Period	Date	Topic	Unit
1	Jan. 14	Introduction	1
2	16	Thermodynamics (<i>chap 1 questions 1-5 due Fri.</i>)	2
3	21	Thermodynamics (<i>chap 2 questions 1-10 due Fri.</i>)	2
4	23	Engine components	3
5	28	Engines cycles and timing	4
6	30	Test 1 (<i>chap. 3 problems 1-5 due Fri.</i>)	
	Feb. 4	Engines cycles and timing (<i>chap. 4 prob 1-5 due Fri.</i>)	4
8	6	Power efficiencies and measurement	5
9	11	Power eff. and measurement (<i>ch 5 pr 1-10 due Fri.</i>)	5
10	13	Fuels and combustion	6
12	18	Fuels and combustion (<i>chap. 6 prob 1-10 due Fri.</i>)	6
13	20	Electrical systems	7
14	25	Electrical systems (<i>chap. 7 problems 1-4 due Fri.</i>)	7
15	27	Ignition circuits	8
16	Mar. 3	Fuel systems and carburetion (<i>ch 8 pr 1-4 due Fri.</i>)	9
17	5	Diesel engines (<i>chap. 9 problems 1-4 due Fri.</i>)	10
18	10	Diesel engines (<i>chap. 10 problems 1-5 due Fri.</i>)	10
19	12	Test 2	
21	24	Intake and Exhaust systems	11
22	26	Intake and Exhaust systems (<i>ch 11 pr 1-5 due Fri.</i>)	11

23	31	Cooling Systems	12
24	Apr. 2	Lubricants and lub. systems (<i>ch 12 pr 1,2,4,5,6 Fri.</i>)	13
25	7	Lubricants and lub. systems (<i>ch 13 pr 1-4 due Fri.</i>)	13
26	9	Hydraulic systems and hitching	14
27	14	Hydraulic systems and hitching (<i>ch 14 pr 1-2 due Fri.</i>)	14
	16	Test 3	
28			
29	21	Power trains	15
30	23	Power trains (<i>chap. 15 problems 1-5 due Fri.</i>)	15
31	28	Weight, transfer, traction, and safety	16
32	30	Weight, transfer, traction, and safety (<i>ch 16 pr 1-5</i>)	16
33	May 4	Review	

These are tentative dates for tests and material covered, the actual dates and material may vary. **That is why attendance is important.** Any change in schedule will be notified ahead of time as much as possible.

THE DATE FOR FINAL EXAM IS MONDAY, MAY 14 2020; 1:00 pm.