

PRECISION AGRICULTURE TECHNOLOGY AND MANAGEMENT
ASM125: **Fabrication and Construction Technology (14272)**

Class Information:

Credit – 3

Spring 2025

Class Room: Ladd 107

Time: Lecture: 9-9:50 am MW

Lab Section 1: 2:00-4:50 pm Mon.

Instructor:

Matt Olhoft

Ladd 104H

Phone: 701-231-7269

E-mail: matthew.olhoft@ndsu.edu

Office Hours: By appointment or drop in. Usually available Tuesdays and Thursdays 8-5.

Course Description: Overview of Agricultural techniques of fabrication and construction related to engines, machinery, structures, electricity, processing, and conservation applications.

TEXTS: **"The Visual Handbook of Building and Remodeling"** by Charles Wing. Third Edition. The Taunton Press, 63 South Main Street, PO Box 5506, Newtown, CT 06470-5506.
"Farm and Workshop Welding" by Andrew Pearce. First Edition. Fox Chapel Publishing, FoxChapelPublishing.com

COURSE OBJECTIVES:

1. To develop and introduce new ideas in the many study areas in Agricultural Systems Management.
2. To develop and introduce new terminology in the many study areas in Agricultural Systems Management.
3. To solve basic, applied, and practical problems in Agricultural Systems Management.
4. To provide a tactile opportunity to practice skills in an agricultural shop system.

REQUIRED RESOURCES: Text book, non-spiral letter size paper for homework, pencil, eraser, basic calculator. (For Lab) Personal protection equipment consisting of long pants, closed toed shoes, and safety glasses. Safety glasses will be worn at all times in the shop/lab. No exceptions!

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
Lab work	(10 Lab projects, 10 points each)	100
<u>Unannounced quizzes</u>	<u>(2 quizzes, once in every 8 weeks, 15 pts each)</u>	<u>30</u>
Total pts: 530		

All the home works and quizzes must be submitted in time. The due date for homework will be announced when the home work is given. 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 530).

Grading will be on the straight system: A=100-90%, B=89-80%, C=79-70%, D=69-60%, F=59%

The students are encouraged to work lab problems sets together. Working together can be a good learning experience. But the solution and submission of home work and lab problem sets should be individual. There will be two unannounced quizzes, once in each eight weeks, either at the beginning or end of the class.

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 HOMEWORK ASSIGNMENTS

Homework is an important learning tool and assessment for you. It helps to understand the concepts discussed in class and it helps to develop good problem solving skills, which will be important in later courses and in professional life. You are expected to complete all homework assignments and hand them in for grading on time. Homework will be collected at the beginning of class. **No late submissions of Homework are accepted.**

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

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 who need accommodations in this course are invited to share these concerns or requests with the instructor and contact the [Center for Accessibility and Disability Resources](#) as soon as possible.

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 and are encouraged to provide Activation Orders.

Family Educational Rights and Privacy Act (FERPA)

Your personally identifiable information and educational records as they relate to this course are subject to [FERPA](#).

Important Dates (Full NDSU dates/deadlines can be found [here](#))

Jan 1 Mon HOLIDAY — New Year's Day (offices closed)

Jan 8 Mon Classes begin at 4:00 p.m.

Jan 9 Tue First full day of classes

Jan 15 Mon HOLIDAY — Martin Luther King, Jr. Day (no classes, offices closed)

Jan 16 Tue Last day to be added to Campus Connection Wait Lists

Jan 18 Thu Last day to Add classes via Campus Connection* Permit needed after this date.

Jan 18 Thu Last day for no-record Drop of classes @ 100% refund*(full semester classes only)

Jan 18 Thu Last day to Withdraw to Zero Credits @ 100% refund*(full semester classes only)

Jan 24 Wed Payments due for NDSU account balances

Jan 29 Mon Last day to submit requests to Audit, Pass/Fail

Feb 19 Mon HOLIDAY — Presidents' Day (no classes, offices closed)

Feb 19 Mon Last day to Withdraw to Zero Credits @ 75% refund*full semester classes only)

Mar 4-8 Mon-Fri Spring Break Week (no classes, offices open)

Mar 15 Fri Late fee applied to unpaid account balances (11:59 p.m.)

Mar 21 Thu Last day to Withdraw to Zero Credits @ 50% refund*(full semester classes only)

No refunds issued for withdraw to zero credits after this date.

Mar 29-Apr 1 Fri-Mon HOLIDAY -- Spring Recess (no classes, offices closed Friday, offices open Monday)

Apr 5 Fri Last day to Drop classes with 'W' record*

Apr 5 Fri Last day to Withdraw to Zero Credits for Spring

Apr 15 Mon Late fees applied to unpaid account balances (11:59 p.m.)

Apr 29-May 3 Mon-Fri Dead Week

May 6-10 Mon-Fri Final Examinations

May 11 Sat Commencement ceremony

Field Trips

Field trips may be required for this course or its lab. You will need to be prepared to leave campus and meet at a location or meet for transport to a location. Field trips will be scheduled during regular class hours, however, sometimes they last longer.

GENERAL CLASS SCHEDULE (subject to change)

Period	Date	Topic	Unit
1	Jan. 15	Introduction	
2	20	Planning	1&2
3	22	Planning	1&2
4	27	Construction of Small Buildings	3&4
5	29	Construction of Small Buildings	3&4
6	Feb. 03	Lumber	5&7
7	05	Lumber	5&7
8	10	Lumber	5&7
9	12	Framing	6
10	17	Exam 1	
11	19	Siding, Walls, Roofing	8,9,10,13
12	24	Siding, Walls, Roofing	8,9,10,13
13	26	Siding, Walls, Roofing	8.9.10,13
14	Mar. 03	Plumbing	11
15	05	Electrical	
16	17	Exam 2	12
17	19	Hand Tools	pp
18	24	Power Tools	pp
19	26	Fasteners and Hardware	21
20	31	Metal Fabrication	Intro

21	Apr. 02	Metal Fabrication	
22	07	Exam 3	Intro
23	09	Arc Welding	1
24	14	Arc Welding	1
25	16	MIG Welding	2
26	21	Oxy Fuel Welding	3&5
27	23	Oxy Fuel Welding	3&5
28	28	TIG Welding	4&8
29	30	Tap, Dies, and Soldering	7&9
30	May 05	Blacksmithing and Tempering	10
31	07	Plastic Welding	
32		Other Welding	
33		Review	

ASM 125 Labs

Period Topics may include:

- 1 Introduction
- 2 Bill of materials
- 3 Drawing of garage framing
- 4 Gears, chains, and belts
- 5 Stair and rafter layout, Connector construction
- 6 Tool fitting
- 7 Hot metal, welding, lathe
- 8 Hot metal, welding, lathe
- 9 Plumbing
- 10 Electric wiring
- 11 Wood wall construction
- 12 Electrical motors and test equipment
- 13 3D Printing
- 14 Review or makeup

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.

THE DATE FOR FINAL EXAM IS Wednesday May 14, 2025 at 10:30 am.