

**Student Learning Outcomes:** Upon completion of the course the student will be able to:

1. Identify major types and uses of agricultural structures.
2. Interpret plans and specifications.
3. Evaluate potential and existing building sites.
4. Distinguish between wood and metal framing applications and costs.
5. Develop working/concept drawings for presentation to builder.
6. Perform routine calculations related to construction estimation.
7. Interpret selected engineering standards for planning farm facilities.
8. Develop an extensive bill of materials for an assigned/selected project.
9. Identify, select, and safely utilize materials, tools, and equipment for
  - a. site evaluation and staking of building location
  - b. wood and metal framing
  - c. equipment assembly
  - d. plumbing
  - e. electrical wiring
  - f. concrete slabs, piers, and/or footings
10. Recognize primary features of farm fencing systems.
11. Discuss potential hazards associated with agricultural construction.
12. Recognize safe operating procedures for power construction machinery.

**Reference:** Burch, Monte (1992) *How to Build Small Barns & Outbuildings*. North Adams, MA: Storey Publishing. ISBN 978-88266-773-7  
**(Optional, other similar references acceptable)**

**Virtual References:** The following websites will be useful references. Some are boring. Some are interactive.

*Agricultural Mechanization Shop Safety (Univ. of Kentucky)*

<http://bioengr.ag.utk.edu/safety/safetyplan/17Shopweb/17shopsafety.htm>

*Arc Welding Safety*

<http://www.lincolnelectric.com/en-us/education-center/Documents/mc1145.pdf>

*Barn Repair and Restoration*

<http://www.uvm.edu/~vhnet/hpres/publ/barnb/bbtit.html>

*Pole Barn Building Guide*

[http://www.townofmilo.com/Building%20Guide%20-%20Pole%20Barn\\_2011.pdf](http://www.townofmilo.com/Building%20Guide%20-%20Pole%20Barn_2011.pdf)

*How House Construction Works*

<http://www.howstuffworks.com/house.htm>

*Details for Conventional Wood Frame Construction*

<http://www.awc.org/pdf/wcd1-300.pdf>

*The instructor reserves the right to modify this syllabus during the semester, if needed. The instructor also reserves the right to extend credit for alternative assignments, projects, or presentations.*



### **Construction or Fabrication Project**

Each student will build a project, at his own (or sponsor's) expense that will reflect the student's competence in:

- developing and interpreting plans (or blueprints) and specifications;
- selecting, marking, cutting, and assembling materials;
- safe use of hand and power tools needed for assembly; and
- painting or finishing, if appropriate.

The project may be composed primarily of wood, metal, or concrete materials. The project should be functional in an agricultural/horticultural/outdoor recreational setting. Examples of projects include but are not limited to:

- feed trough,
- hay feeder,
- gate,
- workbench,
- picnic table,
- dog house,
- portable calf/lamb/goat/chicken/rabbit shelter,
- other?

During the last half of the semester, lab time will be allocated for project construction. However, **students may have to spend time working on the project outside of class or lab.**

### **Exams**

Exams will focus on assigned reading in textbook, class lecture/discussions, safety principles and practices, and construction planning. They may include multiple choice, matching, short answer, calculation, selection/identification, and case study formats.

Exam 1 Safety, Tool Use, Differential Leveling, Site-Planning and Layout, Space Requirements

Exam 2 Calculation and Selection of Materials, Framing Types and Methods, Electricity, Plumbing, Interpreting Plans and Specifications.

**Class Syllabus Addendum**

*Professionalism*

Students are expected to attend class and/or laboratory as scheduled. Their participation in class discussion and instructional activities should follow the basic principles of common courtesy and decency. Rude and disruptive behavior, as well as cheating, in any form, will not be tolerated. The use of tobacco products in the classroom, laboratory, or field trip sites is prohibited. Inappropriate conduct will not be tolerated. Failure to comply with instructor's guidelines may result in suspension from class for the remainder of the day's instruction. Repeat offenses may result in additional consequences.

*Reasonable Accommodations*

Requests from students with disabilities for reasonable accommodations must go through the Academic Support Committee. For more information, contact Director of Disability Services at 903/886-5835.

*Office Hours*

Since this course is taught by an adjunct instructor, office hours will consist of 30 minutes prior the start of class, or on an appointment basis, if needed.

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