Western Illinois University - School of Agriculture  
AGTM 458 - Agricultural Construction and Confined Animal Environments (4)  
Course Syllabus – Fall 2012

**COURSE MEETS:** Lecture/Lab: T, Th 3:00 to 4:50 in KH 307/B1

**TEXT:** Structures & Environment Handbook, MWPS-1

**INSTRUCTOR:** Dr. Bart E. Gill  
E-mail: BE-Gill@wiu.edu

**LAB FEE:** $15.00

**OFFICE:** B-22 Knoblauch Hall  
Office Telephone: 309.298.2395  
Home Telephone: 717.443.7017

**OFFICE HOURS:** MTW 10:00 to 11:00  
W 2:00 to 3:00 or by appointment

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**Dr. Gill’s Class Schedule - Fall 2012:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tr>
<td>8:00 to 8:50</td>
<td>AGTM 360</td>
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<td>9:00 to 9:50</td>
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<td>AGTM 461 Lab</td>
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**Catalog Course Description:**  
Addresses principles, design and construction of wood, metal, and concrete structures in agriculture. Study of livestock manure and water systems, and environmental control of confined livestock facilities.

**Overall Course Objectives:**  
A) To develop an understanding of the principles of animal environment and the associated physical and mechanical systems necessary to achieve an optimum environment.  
B) To develop an understanding of the factors included in the location, design, and construction of farm buildings.

**COURSE EVALUATION**

Hour Exams, quizzes, laboratories, assignments, and final exam.

<table>
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<tr>
<th>Grading Scale</th>
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<tr>
<td>90% - 100%</td>
<td>A</td>
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<tr>
<td>85% - 89%</td>
<td>B+</td>
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<td>80% - 84%</td>
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<td>75% - 79%</td>
<td>C+</td>
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<tr>
<td>70% - 79%</td>
<td>C</td>
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<td>60% - 69%</td>
<td>D</td>
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<td>&lt;60%</td>
<td>F</td>
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Use of unauthorized notes or aids during quizzes and tests will be dealt with according to University regulations. Student’s rights and responsibilities can be found by going to the WIU home page, Personnel, Provost Page, Student Rights and Responsibilities.

I encourage you to obtain help if you do not understand how to do a "take home" assignment. I am available at most any time to assist you, but if this is not convenient, you may get someone else from the class to explain or demonstrate the task at hand. I do, however, strongly suggest that you do your own work. That is, you must mentally and physically work through the assignment so that you can demonstrate, when required, that you have the required competency (ies).

Assignments are due on the day specified. Assignments turned in after the graded assignment is returned to the rest of the class will be scored ZERO.

**Western Online:**
Students are required to use the course website at: www.westernonline.wiu.edu and most assignments will be submitted through the website. Course notes, handouts, and additional material may be posted throughout the semester on this website.

**Weekly Journal:**
At the end of each week (Weeks 1 – 15; 15 total entries worth 10 pts. each) students will be expected to write a journal entry reflecting on the events of the week. The journal entries will be submitted through Western On-line. Each journal entry should include a summary of new knowledge gained and how it will assist the student in the future. Also, each entry should consist of the student’s reaction to the new knowledge gained (negative or positive). The final journal entry will focus on your overall experience throughout the class.

**Written Assignments:**
- Should be typed using 12 pt. font, 1 inch margins, double spaced (unless otherwise noted).
- Should be submitted with a cover sheet including your name, the date, the class, and the assignment title.
- Assignments submitted on Western On-line should be submitted as an attached word document, unless otherwise specified.

**ATTENTION EDUCATION MAJORS**

The changes within the state certification requirements, which go into effect immediately for all of those students who graduate in the spring 2012 and after, state you are required to receive a grade of a “C” or better in this course.
in order to meet these new requirements. With the new university +/- grading system, receiving a "C-" or below will require you to retake this course or find a substitute course to meet School of Agriculture graduation requirements.

**ABSENCE POLICY**

Attendance is required; it will be taken each class session. **You are allowed THREE unexcused absences. Starting on the FOURTH, your grade will drop 5% for each additional unexcused absence.** If you anticipate an excused absence, notify me in advance (in writing). In cases where advanced notification is not feasible (e.g. accident, or emergency), you must provide notification by the end of the second working day after the absence. Notification for all excused absences should include a written explanation indicating the reason for the absence, why notice could not be sent prior to the missed class (if applicable), all documentation required, and suggested arrangements for making up what you missed in class (assignments, participation points, etc.) After two working days, notification and documentation for excused absences may not be accepted.

**Participation and Expectations:**

Class participation will be worth 10% of your final grade. Participation may be addressed in various formats, such as class activities, assessments, discussion, attendance and etc. Check your email every day—when out of the classroom, this is my only way to communicate with you; every effort will be made to notify you of any issues in advance.

**NOTE:** Even though you are allowed three absences before you are given an overall grade deduction, you are responsible for what occurs in the classroom on a daily basis. When you are absent, you may miss earning participation points in class.

**ADA COMPLIANCE**

“In accordance with University policy and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. For the instructor to provide the proper accommodation(s) you must obtain documentation of the need for an accommodation through Disability Resource Center (DRC) and provide it to the instructor. It is imperative that you take the initiative to bring such needs to the instructor’s attention, as he/she is not legally permitted to inquire about such particular needs of students. Students who may require special assistance in emergency evacuations (i.e. fire, tornado, etc.) should contact the instructor as to the most appropriate procedures to follow in such an emergency. Contact Disability Resource Center (DRC) at 298-2512 for additional services.”

**SYLLABUS IS SUBJECT TO CHANGE AT THE INSTRUCTOR’S DISCRETION**
STRUCTURES & ENVIRONMENT - AGTM 458

WEEKLY CLASS SCHEDULE

*The content of the first half of this course is dependent upon what construction activity we end up doing and may not match the course content listed below.*

### Week 1
- **Mon. Aug. 20**: Course introduction, syllabus review; Livestock building systems (Read: MWPS-1 pp. 101.1-101.10 & 201.1-201.10)
- **Wed. Aug. 22**: Building materials: sizes, types, quality, and strength (Read: MWPS-1 pp. 204.1-206.2)

### Week 2
- **Mon. Aug. 27**: Building materials: sizes, types, quality, and strength continued; Principles of quality concrete; Materials and mixes for quality concrete (Read: MWPS-1 pp. 207.1-207.2)
- **Wed. Aug. 29**: Casting concrete test cylinders; Calculating concrete yardage; Bill of materials

### Week 3
- **Mon. Sept. 3**: NO SCHOOL – LABOR DAY
- **Wed. Sept. 5**: Crush test cylinders (7 day test); Pole barn design (Read: MWPS-1 pp. 303.1-303.5)

### Week 4
- **Mon. Sept. 10**: Stud framing design (Read: MWPS-1 pp. 303.1-303.5); Stud framed wall exercise
- **Wed. Sept. 12**: **Quiz 1: Building Materials and Bill of Materials**; Crush test cylinders (14 day test); Rafter design

### Week 5
- **Mon. Sept. 17**: Farmstead planning, Building codes & zoning (Read MWPS-1 pp. 501.1-501.10)
- **Wed. Sept. 19**: Crush test cylinders (21 day test); Farmstead planning continued

### Week 6
- **Mon. Sept. 24**: Building layout exercise
- **Wed. Sept. 26**: Crush test cylinders (28 day test); Stair layout exercise

### Week 7
- **Mon. Oct. 1**: Guest Speaker TBA
- **Wed. Oct. 3**: Site preparation, forming & reinforcing concrete; Placing, finishing and curing

### Week 8
- **Mon. Oct. 8**: Concrete block laying exercise
- **Wed. Oct. 10**: **Exam 1**

*Confined Animal Systems*

### Week 9
- **Mon. Oct. 15**: Environmental factors affecting animals
- **Wed. Oct. 17**: Animal thermal environment (Read: MWPS-1 pp. 603.1-603.5);
  Animal heat and moisture production (Read: MWPS-1 pp. 600.1-6 & 604.1-4)
**Week 10**
- **Mon. Oct. 22**  Psychrometrics: terms and table usage (Read: MWPS-1 pp. 602.1-602.10)

**Week 11**
- **Mon. Oct. 29**  Insulation, vapor barriers, and building heat loss (Read: MWPS-1 pp. 631.1-631.15)
- **Wed. Oct. 31**  Building heat loss continued; Heat & moisture balance spreadsheet (Read: MWPS-1 pp. 633.1-633.7)

**Week 12**
- **Mon. Nov. 5**  Natural ventilation system design (Read: MWPS-1 pp. 636.1-636.6)
- **Wed. Nov. 7**  Mechanical ventilation systems; (Read: MWPS-1 pp. 634.1-634.19)

**Week 13**
- **Mon. Nov. 12**  *Field Trip – Carthage Vet Service*
- **Wed. Nov. 14**  **Exam II**

**THANKSGIVING BREAK**  Nov. 19-23

**Week 14**
- **Mon. Nov. 26**  Water supply systems; Sizing water systems (Read: MWPS-1 pp. 801.1-801.18 & 534.1-534.11)
- **Wed. Nov. 28**  Livestock Management Facilities Act, Manure management plan

**Week 15**
- **Mon. Dec. 3**  Manure storage & handling systems (Read: MWPS-1 pp. 703.1-703.7 & 706.1-707.4), Manure Systems presentations
- **Wed. Dec. 5**  Manure Systems presentations

**Final Exam:**  Wednesday Dec. 12 from 3:00 - 4:50 PM (Dependent upon the construction activity done during the second half of the semester)

***Adjustments to the schedule can and will be made at the discretion of the instructor***