Western Illinois University - Department of Agriculture
ATM 464: Grain Drying, Handling, and Storage Systems (3)
Course Syllabus - Fall 2009

COURSE MEETS: Lecture: M 3:00 to 3:50 in KH 152
Lecture/Lab: (**sec. 31, star # 38688**) W. 3:00 to 4:50 in KH B1 or KH 307
Lecture/Lab: (**sec 32, star # 44351**) Th. 3:00 to 4:50 in KH B1 or KH 307

TEXT: 1. Natural Air/Low Temperature Crop Drying , by K. Hellevang
2. Grain Drying, Handling and Storage Handbook , By MWPS

INSTRUCTOR: Dr. Buck Tillotson E-mail: RJ-Tillotson@wiu.edu

OFFICE: B-22 Knoblauch Hall Office telephone 298-2395
Home telephone 776-3584

LAB FEE: $10.00

OFFICE HOURS: MTWTh 10:00 to 11:00 or by appointment

Dr. Tillotson's Fall Semester 2009 Class Schedule:

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00 to 8:50		AGTM 360			
9:00 to 9:50	AGTM 360	Lab	AGTM 360	AGTM 360	
10:00 to 10:50	Office hour	Office hour	Office hour	Office hour	
11:00 to 11:50					
12:00 to 12:50	AGTM 461		AGTM 461	AGTM 461	
1:00 to 1:50		AGTM 461			
2:00 to 2:50		Lab			
3:00 to 3:50	AGTM 464		AGTM 464	AGTM 464	
4:00 to 4:50			Lecture/Lab Sec. 31	Lecture/Lab Sec. 32	
5:00 to 5:50		Ag Mech Club 2nd & 4th Tues			
6:00 to 6:50					

Catalog Course Description: Application of engineering principles pertaining to drying, storing, and handling of agricultural products.

Overall Course Objectives:

A. Understand grading requirements and correctly grade a sample of corn and soybeans
B. Know the materials handling options and sizing conveying equipment for a given grain handling application
C. Describe the principles behind drying grain and determine approximate drying time given a grain moisture content, drying air volume, and drying air temperature.
D. List and explain the operation and application for at least six different grain drying methods.

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Weekly Schedule - Fall 2009

Week 1

Mon.	Aug. 24	Course introduction and objectives
W/Th	Aug. 26/27	Preservation methods; principles of grain storage

Week 2

Mon.	Aug. 31	Grain aeration
W/Th	Sept. 2/3	Grain aeration system design

Week 3

Mon.	Sept. 7	Labor Day – no class
W/Th	Sept. 9/10	Grain grading

Week 4

Mon.	Sept. 14	Safety, Principles of grain drying
W/Th	Sept. 16/17	Principles of grain drying

Week 5

Mon.	Sept. 21	Principles of psychometrics; psychometrics in grain drying
W/Th	Sept. 23/24	Psychometric processes continued

Week 6

Mon.	Sept. 28	Grain shrinkage
W/Th	Sept. 30/Oct.1	Scale model grain dryer setup

Week 7

Mon.	Oct. 5	Batch dryer drying time, burner sizing
W/Th	Oct. 7/8	Grain storage airflow

Week 8

Mon.	Oct. 12	**Exam I**
W/Th	Oct. 14/15	Moisture testing (**bring in a moisture tester**)

Week 9

Mon.	Oct. 19	Fan performance and selection
W/Th	Oct. 21/22	Fan performance and selection

Week 10

Mon.	Oct. 26	Materials handling methods - augers
W/Th	Oct. 28/29	Materials handling methods - belt and bucket elevators

Week 11

Mon.	Nov. 2	Materials handling methods - pneumatics, chains, belts, and grain spreaders
W/Th	Nov. 4/5	Pits, hoppers, wet holding bins, and surge tanks

Week 12

Mon.	Nov. 9	Grain drying methods
W/Th	Nov. 11/12	Grain drying methods

Week 13

Mon.	Nov. 16	Grain drying and storage facility tour
W/Th	Nov. 18/19	Grain drying methods

THANKSGIVING BREAK: Nov. 23-27

Week 14

Mon.	Nov. 30	Grain equipment guest speaker
W/Th	Dec. 2/3	Layout and design of grain systems

Week 15

Mon.	Dec. 7	Layout and design of grain systems
W/Th	Dec. 9/10	Final review

FINALS WEEK -- DECEMBER 14 –18

FINAL EXAM: Wednesday December 16 from 3:00 to 4:50 in room KH 307

COURSE EVALUATION

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

Grading Scale:	90% - 100%	= A
	80% - 89%	= B
	70% - 79%	= C
	60% - 69%	= D
	<60%	= F

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.

ABSENCE POLICY

One hundred percent class attendance is expected. If because of illness or other unavoidable event a class or laboratory is missed, it is the student's responsibility to make arrangements with Dr. Tillotson to make up the work missed. Arrangements should be made ahead of time if the student knows that he/she is going to have to miss a class.

ADA COMPLIANCE

In accordance with University policy and the Americans with Disabilities Act (ADA), accommodations in the area of test or note taking may be made for any student who notifies me of the need for an accommodation. It is imperative that you take the initiative to bring such needs to my attention, as I am legally not permitted to inquire about the particular disability needs of students. Furthermore, I would like also to request that student who may require special assistance in emergency evacuations (i.e., fire, tornado, etc.) contact me as to the most appropriate procedures to follow in such an emergency.