

# Agronomy: Agriculture and the Environment

## NRES 373/573

**Instructor:** Dr. Jacob Prater

Office: 274 TNR

Phone: 346-4180

E-mail: jprater@uwsp.edu

Office Hours: by appointment.

Course Hours: Lecture M and W 1-1:50 PM TNR 255, Lab/Discussion R 11:00-1:50 TNR 255.

**Objectives:** Students completing this course will be able to

1. Understand the basics of food production systems
  - a. Soil fertility and fertilizer use
  - b. Pest management
  - c. Soil management
  - d. Crop growth and care
2. Use terminology commonly used by agronomists
3. Describe the effect of environmental factors on crop production
4. Compare and contrast the impacts of various crop management practices on the environment
5. Discuss the economics and policies affecting crop production decisions
6. Respond professionally to questions from the public about agriculture

**Disabilities:** Please address any special needs or accommodations with me at the beginning of the semester, or as soon as you become aware of them. Those seeking accommodations based on disabilities should obtain an Accommodation Request Form from Disability Services Room 609 Learning Resource Center phone: (voice) 715-346-3365 • (TTY) 715-346-3362.

**Texts:** *Introduction to Agronomy: Food, Crops, and Environment*. 2<sup>nd</sup> Ed. Sheaffer and Moncada 2012. Available at text rental.

Various handouts, library books, and online resources will also be used.

**Course Description:** Basic introduction to agricultural practices, morphology and management of grain, forage, and other crops in agricultural enterprises. The role of crops in causing environmental problems and in providing potential solutions. 2hrs Lecture, 3hrs Lab per week.

**My expectations of you:** I expect academic integrity, and courtesy toward me and toward your fellow students. I expect you to view lectures, and to read the assigned readings before each lecture. If you are going to miss a lab/discussion, please let me know in advance (email is fine) if you can. I expect you to submit assignments on time. Finally, I expect you to tell me when you don't understand material. Interrupting (courteously!) a session with a question tells me that you're awake, paying attention, and wanting to understand – how could I object? I also expect excellence in your work (not perfection, just your best).

**My obligations toward you:** Academic integrity, and courtesy. I am responsible for providing you with information, for helping you to learn, for fostering an environment conducive to learning, and for fairly and promptly evaluating your understanding of the material presented in class.

**Student Evaluation:**

- a. Lecture: Quizzes (50 points) on D2L pertaining to previous lecture and assigned reading material and recently discussed topics.
- b. Exams: Midterm 50 points and Final 50 points
- c. Lab: 100 points
  - a. Reports 100 points
- d. A two-page research paper and a ten-minute oral presentation by you to the class about a selected crop of agronomic use and value someplace in the world. This will be presented in the last quarter of the semester. 100 points for the paper and 100 points for the presentation. (See page 6 for more information)
- e. 5 one-page (typed) compare/contrast articles from newspaper, web newsletters, trade journals, *with the article text attached*. 10 points for each article, 2 will be graded (25 points each, selected at random). (See page 5 for more information)
- f. 3 professional e-mail responses (20 points each) you will respond to a question from a public inquiry as an expert in the field.

\*\*\*Expect the A,B,C,etc breakdown to follow the 90,80,70, etc. percent of total points earned (Plus/Minus will be used).

**Academic Honesty:**

Cheating and/or plagiarism will not be tolerated as per Ch. 14 of the UW System Student Handbook. You may work together in lab and class discussions, but you will do all assignments and exams independently. Outside reading summaries will represent your thoughts on the piece. See <http://www.uwsp.edu/admin/stuaffairs/rights/rightsChap14.pdf> for more information

Date		Reading	Assignments	Week
Week 1	Intro and Plant Breeding	Chapter 1		1
	Meet and Intro			1
Week 2	Plant Breeding	Chapter 1		2
	Rotational Grazing	p. 486-490		2
	Field Trip TBD			2
Week 3	What is a farm?	Chapter 2		3
	Farm Policy	Chapter 2		3
	Field Trip TBD			3
Week 4	Agronomic Crop Types	Chapter 4		4
	Plant Morphology	Chapter 7		4
	Field Trip TBD			4
Week 5	Fundamental Plant Growth Processes	Chapter 8		5
	Plant Growth and Development	Chapter 8		5
	TBD			5
Week 6	Crop Improvement	Chapter 9		6
	Climate and Weather	Chapter 10		6
	TBD			6
Week 7	Climate and Weather	Chapter 10		7
	Soil and Land	Chapter 12		7
	TBD			7
Week 8	Soil and Land	Chapter 12		8
	Plant Nutrients and Fertilizers	Chapter 12		8
	TBD			8
Week 9	Plant and Soil Water			9
	Pests in Crop Production	Chapter 15 & 16		9
	IPM			9
Week 10	Pests in Crop Production	Chapter 16		10
	Organic Crop Production	Chapter 18		10
	IPM			10

<b>Week 11</b>	<b>Agricultural Production Systems</b>	<b>Chapter 13</b>		<b>11</b>
	<b>Transgenics, Rangeland and Pastures: Management</b>			<b>11</b>
	<b>IPM</b>			<b>11</b>
<b>Week 12</b>	<b>Tillage Systems and Farm Energy</b>	<b>Chapter 14</b>		<b>12</b>
	<b>Tillage Systems and Farm Energy</b>	<b>Chapter 14</b>		<b>12</b>
	<b>IPM</b>			<b>12</b>
<b>Week 13</b>	<b>Harvesting and Storage of Crops</b>	<b>Chapter 17</b>		<b>13</b>
	<b>Seeds, Seedling, and Seeding</b>			<b>13</b>
	<b>No Lab Thanksgiving Holliday</b>			<b>13</b>
<b>Week 14</b>	<b>Marketing and Handling Grain Crops</b>			<b>14</b>
	<b>Students Present</b>			<b>14</b>
	<b>IPM</b>			<b>14</b>
<b>Week 15</b>	<b>Students Present</b>			<b>15</b>
	<b>Students Present</b>			<b>15</b>
	<b>IPM</b>			<b>15</b>
<b>Week 16</b>	<b>Students Present</b>			<b>16</b>
	<b>Final Exam</b>			

## Professional E-mail Responses

There will be 3 professional e-mail responses where you will respond to a question from a public inquiry as an expert in the field. This will be graded for: accuracy of response (15 points) and timeliness of reply (5 points, 2 business days). Additionally 1 point will be subtracted for each error (this can become negative!). Errors include: spelling, grammar, improperly addressing audience, or non-professional tone/word choice.

- Always address the author how they sign their e-mail (Mr. Adams would be as Mr. Adams)
- Non-professional tone/word choice would include slang etc...

## Write-Ups for Outside Readings Undergraduate Credit

There will be 5 write-ups required over the course of the semester. In 1 page, summarize the information on a current agricultural topic found via outside reading. Textbooks from other soil courses may not be used as I am hoping you seek out current storylines. Do not use the same source (ex: CSA News) for more than 2 of the readings.

These are worth 10 points each and 2 will be graded (25 points) on your understanding of the material and readability (they should be clearly written and understandable). Keep in mind a public lay audience and communicate the topic at this level, but make sure you still get the information across.

Outside readings material may include:

Scientific Journals

Trade Journals

Newspapers

Web Newsletters

Extension Bulletins

Government/University Websites

### **Include:**

- **Summary of article**
- **Importance of the topic**
- **Include a copy of the article with your write-up!**

## Write-Up of Outside Reading Graduate Credit

Write one 5-10 page literature review summarizing information, found in outside reading, relevant to current agronomic research. This is worth 200 points and will be graded on your understanding of scientific information, relevance, and quality of writing. A minimum of 10 references must be cited, most of which should be from peer reviewed scientific journals.

There will be three deadlines for this project; each student may choose dates that work best in your schedule, but please notify the instructor of these dates. The deadlines should be a couple weeks apart with the 3<sup>rd</sup> falling prior to the final week of classes.

### Deadline 1: Topic Selection

Turn in a brief paragraph explaining the focus of your paper and why it is relevant. The document direction may change to some degree as the reading and writing continue.

### Deadline 2: Draft

Turn in a draft with a list of references.

### Deadline 3: Literature review article is due.

## Research Paper on an Agronomic Crop

Consult with the instructor after selecting the crop you are interested to present about. Choose early, so that you can get the topic you prefer. Write a four-page (at least 2 pages of text) research paper and prepare a ten-minute oral presentation to be presented to the class in the final few weeks of the semester about a selected crop of agronomic use and value someplace in the world. This project will be worth 100 points for the paper and 100 points for the presentation. The order that you present will be determined in early November. Papers are due when you present.

The presentation and paper should include:

- Where the crop originated
- Where it is currently cultivated
- Figures/Tables/Photos
- How many varieties there are
- Economic value of the crop
- Uses of the crop
- How the crop is cultivated
- References

Tips on a successful paper:

- Be clear (check spelling and grammar, ask a classmate to proofread your paper)
- Be concise (say what you need to say in as few words as possible)
- Integrate (make reference in your paper to your figures, tables, or photos and explain what they show)

Tips on a successful presentation:

- Speak slowly (we all would like to hear what you say, we are interested!)
- Speak loudly (we all would like to hear what you say, we are interested!)
- Be confident (you are the expert!)
- Be concise (say what you need to say in as few words as possible)
- Grab our attention with some interesting facts!
- Present as if you are telling a story...