



NRES 906 - Crop Growth and Yield Modeling

Taglines - We Do The Heavy Lifting

1. **COURSE DESCRIPTION:** 3 CR I (Lect 2, Lab 2). Descriptive and explanatory crop growth and yield models will be studied in detail. Descriptive models will focus on yield predictions using easily available inputs while the processes that lead to yield will be examined in explanatory models.
2. **PREREQUISITES:** NRES 408/808, Microclimate: The Biological Environment or equivalent; experience in programming in a high level computer language.
3. **MEETINGS:** Days and times: Lecture: Tuesday, Thursday 1400-1450, TBA; Laboratory/Discussion: Wednesday 1400-1550, TBA.
4. **INSTRUCTOR:** Albert Weiss, 703 Hardin Hall, 472-6761. E-mail: aweiss1@unl.edu
5. **TEXT:** A set of journal articles, which are required readings for this class, will be available on Blackboard or will be on file in C. Y. Thompson Library. Copies of articles may also be handed out in class as necessary.
6. **COURSE OBJECTIVES:** Upon completion of this course the student should be able to:
 1. Describe descriptive and explanatory models and discuss their strengths and weaknesses.
 2. Quantify the knowledge and information that goes into an explanatory model.
 3. Use crop models to predict yields on a field or regional level.
 4. Test hypotheses using explanatory crop models as a research tool.
7. **BASIS FOR GRADES :**
 - Homework 50%
 - Project 50%

As noted above, a project constitutes a major part of your grade. We will discuss and decide whether to have individual projects or a class project. As with many things in life, there are advantages and disadvantages associated with each choice. If the latter, we must decide on a topic and an appropriate division of labor. We must also decide on a method to evaluate each student's contribution to this joint effort.

Students will be required to turn in an outline and problem statement at mid-semester, and turn in the final project at the beginning of Dead Week. Also required for this project are appendices that show the necessary details, which cannot be included in the formal presentation.

To be handed in at each discussion session is a brief report on the assigned papers (i.e., the set of articles available on Blackboard or in CYT library). Each report should be no longer than 1.5 typewritten pages. The format for this report is: Title, author, purpose of article, description of methodology, summary of results, and critique (was the paper valuable, why?).

Laboratory assignments are due 1 week after the lab session. If an emergency arises and you cannot complete an assignment on time, please contact me as soon as possible.

I will be glad to help you with any difficulties you may encounter in this course. While an appointment is preferable, it is okay to stop by my office. The former situation guarantees adequate time to respond in detail to any concerns you may have, while the latter is acceptable for brief discussions.

Revised: December 19, 2006