School of Agriculture and
Natural Resources

AGSC 140
Computer Applications in Precision Farming II
Spring 2002

Final Examination Study Guide
Prepared By
Dr. Walid H. Shayya

- Define precision farming and site specific crop management.
- What are the main objectives of precision farming and the ways it can be useful to farmers?
- What does precision farming involve?
- What are the needed components of a precision farming system?
- What are examples of crop production inputs that can be varied?
- Understand how yield can be monitored the three approaches that may be followed to measuring yield.
- What kind of sensors are needed in yield monitoring?
- How is yield mapping related to yield monitoring and data collection?
- Why is soil sampling and testing needed and what are the soil sampling-related factors that influence yield?
- What are the factors that influence crop yield (including nutrients, fertility, pH, and others)?
- What are the soil sampling methods that are may be followed in precision agriculture as well as the factors that one should consider in a soil sampling program?
- Understand the need for using variable rate application and when should it become an integral part of a precision farming system?
- What are the two methods for implementing variable rate application?
- What are the benefits and drawbacks of map-based variable rate application systems as well as its primary components?
- What are variable rate controllers and actuators used for?
- What are some of the issues that one should consider in variable rate application systems?
- What do the terms GPS, DGPS, and GIS stand for?
- What can GIS do and what are its primary benefits?
- What is the difference between a map and a GIS?
- What are the sources of data for GIS?
- What is the main difference between vector and raster data?
- What are the three types of vector data used in ArcView GIS?
- How to work with map scales?
- What is meant by the term "thematic map"?
- Know the basic "tools" for moving around in a view (need to review the completed labs, especially the answer sheets to the posed questions).