
AGSC 132
An Introduction to Computer Applications
in Precision Farming
Fall 2009

First Examination Study Guide

Prepared By

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- Define precision farming
- What is meant by site specific crop management?
- What are the main objectives of precision farming?
- Ways precision farming 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?
- Define GPS and know what does it stand for
- Know the types of positioning systems (from your assigned reading)
- What is the Russian equivalent of GPS and how does it differ from GPS?
- What is the orbital altitude of GPS satellites?
- How many orbital planes are there for GPS and how often these satellites circle the earth?
- What are the three segments of GPS and how these segments function?
- How does a GPS receiver determine its position (remember that you are not responsible for the details of GPS operation as explained in one of the handouts)
- Name the factors that affect GPS accuracy
- What is meant by S/A and why was it instated in the first place?
- What is triangulation from satellites and how many satellites are needed to make measurements with our imperfect receivers?
- What is the key to measuring distances from satellites?
- What is GDOP and how do good satellites minimize its impact on accuracy?
- What is meant by DGPS?
- What are the general types of DGPS that were discussed in class?
- What are the possible sources for real-time DGPS?
- How do the USCG and FAA (WAAS) systems compare and in what ways these help improving GPS measurements.
- What kind of accuracy is needed in precision farming (GPS vs. DGPS)?
- What are the main differences among the Garmin GPS 12, the Garmin GPS 76, and the GeoExplorer 3 systems used during the laboratory exercises?
- What does GIS stand for and how it can be defined?
- What can GIS do?
- What are the primary benefits of GIS?
- List four of the many GIS-related fields and how these relate to GIS
- What is the difference between a map and GIS?
- What are some of the drawbacks of paper maps?
- What are some of the capabilities of GIS?