

ESRM 430 Final Examination Prep Guide

All students are required to take the final exam; there will be no 'makeup' final exam. The final exam has two components:

- Class debate on June 9 at 10:30 to 12:20 in WINK201 worth 10% of the exam grade, you must contribute to the class debate to earn a passing grade
- Written proposal due on June 9th at 5PM worth 10% of the exam grade

What to bring?

- Pen/note pad

What to read and review?

- All assigned readings on the website, book chapters are optional
- Review class lectures, labs and notes

General comments for the class debate:

I would like you to be able to focus on the strengths of remote sensing, but also be aware of the limitations of the data and the techniques used in remote sensing applications. For the final exam debate session you should be able to give examples of applications of remotely sensed data. Be prepared to give the strengths and limitations for the applications, as well as the type of sensor(s) that might be most suitable for that particular application. Thus, I do not require you to remember sensor names, but you might want to use terms like hypertemporal, fine resolution multispectral, coarse resolution, aerial imager, etc. If you have taken other remote sensing classes or other geospatial classes, I would like you to draw on the knowledge that you gained in these classes and compliment your answer.

Example of issues that the proposal should address:

You will be required to write a project proposal, emphasizing the application of hyperspatial remote sensing as a tool/technique to address and research question of your choice.

Proposal Design:

- Problem definition --- you can call this the introduction
- Appropriateness of remote sensing platforms --- this can be a subsection in the introduction
- Interpretation methods --- this section can be called methods
- Quality control --- this section can be called methods
- Accuracy assessments; lack of field data or field access --- this section can also be incorporated into the methods section
- Expected results --- since the proposal is different than a scientific paper there are no results I expect you to present, you can call this section expected results
- Appropriate use of project results --- this can be incorporated into the section of expected results

Document settings:

5 single spaced (references do not count in the 5 page limit)

12 point Times New Roman Font

No figures other than a flow chart diagram of methodology (1 page maximum)

At least 10 citations

Class Debate

Consider the pros and cons of the following:

Passive Energy Source

- Solar level changes
- Day only
- Slope and Aspect Reflection Changes

Active Systems Dangers

- Radar
- Lasers

Atmosphere

- Absorption
- Windows
- Temporal Changes

Interaction with Earth Surface

- Patterns without identifiable signatures
- Similar signatures for different materials
- Mixed materials
- Surface roughness

Sensors

- Spatial Resolution
- Spectral Resolution
- Temporal Resolution
- Radiometric Resolution
- Width of bands
- Number of bands
- Time between looks
- Analog to digital conversion

Data Processing

- Storage size
- Processing speed
- Training requirements
- Time delays
- Security
- Ownership

Image Analysts and Remote Sensing Users

- Art and science
- Subjective results in objective “form”
- Experts and non-experts
- Persuasion by remote sensing “flash”

Project Design

- Problem definition
- Appropriateness of remote sensing platforms
- Interpretation methods
- Quality control
- Accuracy assessments; lack of field data or field access
- Appropriate use of project results