

DEPARTMENT OF GEOLOGY AND GEOPHYSICS, UAF
GEOS 422: Geoscience applications of Remote Sensing (Instructor: Anupma Prakash)
Class Schedule : Fall 2008 (Version: October 15, 2008)
(lectures 1.00 - 2.00 pm Reichardt Building 237; labs 2.00 - 5.00 pm Reichardt Building 316)

| Date | Day | Lecture/Lab No. | Topic | Comments |
|-----------|-----------|-----------------|---|---|
| Sep-04-07 | Thursday | | No structured lab this week | Follow instructions in intro email |
| Sep-08-07 | Monday | Lecture 1 | Introduction to Remote Sensing | Read chap. 1, pp. 1-23 (for lec 2-4) |
| Sep-10-07 | Wednesday | Lecture 2 | The Electromagnetic Spectrum | |
| Sep-11-07 | Thursday | Lab 1 | Remote sensing and image resources | web resources view and compilation |
| Sep-15-07 | Monday | Lecture 3 | Principles of Remote Sensing -1 | Read chap. 6, pp.397-485 (for lec 5) |
| Sep-17-07 | Wednesday | Lecture 4 | Principles of Remote Sensing -2 | Read chap. 4, pp.193-205 (for lec 7) |
| Sep-18-07 | Thursday | Lab 2 | Introduction to projects + ERDAS Imagine | Discuss your ideas |
| Sep-22-07 | Monday | Lecture 5 | Sensors/platforms | HW assignment: satellites and sensors |
| Sep-24-07 | Wednesday | Lecture 6 | Aerial Photography | |
| Sep-25-07 | Thursday | Lab 3 | EDG search + data mining | data from ASF, GINA, USGS, NASA, etc |
| Sep-29-07 | Monday | Lecture 7 | Elements of Visual Image Interpretation | |
| Oct-01-07 | Wednesday | Lecture 8 | Digital Image Processing -1 | Read chap 7 (for lec 8-14) |
| Oct-02-07 | Thursday | Lab 4 | Data import/export, display, management | time intensive lab |
| Oct-06-07 | Monday | Lecture 9 | Discussions + clarification on principles) | Lecture moved to Friday Oct 10, 2008 |
| Oct-08-07 | Wednesday | | QUIZ | closed book quiz |
| Oct-09-07 | Thursday | Lab 5 | Statistics and multiband data handling | |
| Oct-13-07 | Monday | Lecture 10 | Digital Image Processing -2 | |
| Oct-15-07 | Wednesday | Lecture 11 | Operations on multiband images | |
| Oct-16-07 | Thursday | Lab 6 | Project work | |
| Oct-20-07 | Monday | Lecture 12 | Introduction to SAR | Lecturer: Rudi Gens |
| Oct-22-07 | Wednesday | Lecture 13 | Applications of SAR | Lecturer: Rudi Gens |
| Oct-23-07 | Thursday | Lab 7 | SAR data Import, processing, interpretation | Supervision: Rudi Gens |
| Oct-27-07 | Monday | Lecture 14 | Image rectification (radiometric) | |
| Oct-29-07 | Wednesday | Lecture 15 | Image rectification (geometric) | |
| Oct-30-07 | Thursday | Lab 8 | Image rectification | Read chap 5, pp.347-393 (for lec 18-19) |
| Nov-03-07 | Monday | Lecture 16 | Image enhancements | Take home test and homework |
| Nov-05-07 | Wednesday | Lecture 17 | Image Classification | |

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| Nov-06-07 | Thursday | Lab 9 | Image Classification | |
| Nov-10-07 | Monday | Lecture 18 | Thermal remote sensing | |
| Nov-12-07 | Wednesday | Lecture 19 | Hyperspectral remote sensing | |
| Nov-13-07 | Thursday | Lab 10 | Model Maker - Temp estimation | Also go through image fusion tutorial |
| Nov-17-07 | Monday | Lecture 20 | Application: volcanoes | Guest: John Dehn |
| Nov-19-07 | Wednesday | Lecture 21 | Application: planetary science | Guest: Robby Herrick |
| Nov-20-07 | Thursday | Lab 11 | Visit to Industry/ASF/AVO | Details TBD |
| Nov-24-07 | Monday | Lecture 22 | Final Project: Report, Presentation | Past examples |
| Nov-26-07 | Wednesday | Lecture 23 | Application: Geologic Mapping and others | |
| Nov-27-07 | Thursday | Lab 12 | Thanksgiving | |
| Dec-01-07 | Monday | Lecture 24 | Application: natural hazards | |
| Dec-03-07 | Wednesday | Lecture 25 | Application: Landcover and habitat mapping | |
| Dec-04-07 | Thursday | Lab 13 | Image fusion + mapmaking + Project work | |
| Dec-08-07 | Monday | Lecture 26 | Recap + discussions + any other concerns | Prakash available |
| Dec-10-07 | Wednesday | Lecture 27 | Project work | Prakash available |
| Dec-11-07 | Thursday | | Make project presentation and backup | |
| Dec-15-07 | Monday | | Final Exam | Time and schedule TBA |

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| Basic Principles |
| Digital Image Processing |
| Applications |
| Exam |
| No Class |

Text Book: Remote Sensing and Image Interpretation, fifth edition
by Lillesand, Kiefer and Chipman

HW :Homework; GSA :Geological Society of America;