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Syllabi   Course Syllabi

Fall 9-1-2001

FOR 551.01: Digital Image Processing

LLoyd Queen
University of Montana, Missoula

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FOR551   DIGITAL IMAGE PROCESSING
FALL 2001

INSTRUCTOR: LLoyd Queen
                     SC430
                     lpqueen@ntsg.umt.edu

NUMBER OF CREDITS: 4
MEETING TIMES: Arranged
TEXT: *Introductory Digital Image Processing*.   Jensen. 1996. 2nd ed. Prentice Hall.
SUPPLEMENTAL TEXT: *Remote Sensing and Image Interpretation*.   1994.   Lillesand and
                     Kiefer.   Wiley.   3rd or 4th ed.

COURSE DESCRIPTION:

This course will concentrate on the extraction of spatial and thematic information from digital image data.   Hands-on lab exercises involving image preprocessing, rectification, classification, accuracy assessment, and macro programming will be conducted throughout the semester.   The educational goals of the course will be addressed through lectures covering the concepts and theory of image processing.   Students will then work through a tutorial exercise designed to train them in the use of ERDAS/IMAGINE image processing software.   Students will make presentations throughout the course on sensing systems, literature, and the results of their processing exercise(s).

MAJOR TOPICS:

·   A review of the physics of remote sensing; energy/matter interactions
·   Concepts of digital remote sensing; analog-to-digital transformations
·   Major terrestrial sensors and platforms
·   Overview of image processing software and hardware; the IMAGINE environment
·   Image preprocessing; rectification, resampling, calibration, and data reduction
·   Image classification; supervised, unsupervised, and hybrid classifiers
·   Macro programming using ERDAS MACRO LANGUAGE
·   Accuracy assessment; thematic and cartographic accuracy

GRADING

There are no exams scheduled in this class.   We will meet for lecture periods (time/place to be arranged) during the first 8 weeks of the semester.   The remainder of the semester will consist of hands-on lab exercises and student presentations.   Each presentation must be accompanied by an annotated bibliography and a full copy of lecture notes; with one copy to be given to each class member.   Grades will be determined (based on lab exercises and presentations) during a review to be held with individual students and the class instructors.