COURSE INFORMATION
TITLE: Open Source Applications of Remote Sensing in Wildlife Biology
NUMBER: WLF 697
CREDITS: 3
PREREQUISITES: None
LOCATION: 419 Irving I
MEETING TIME: Fall Semester 2017  MWF

INSTRUCTOR
NAME: Falk Huettmann
OFFICE LOCATION: 419 Irving I
OFFICE HOURS: As Needed
TELEPHONE: (907) 474-7882
EMAIL ADDRESS: fhuettmann@alaska.edu

COURSE READINGS/MATERIALS
Additional materials provided by instructor.

COURSE DESCRIPTION
This course covers an overview and application of open source processing for remote sensing. Based on the textbook and related literature, it teaches the relevant techniques used to acquire remote sensing data, processing of remote sensing data, and science-based remote sensing application, specifically as they relate to the student's program and thesis research (for habitat modeling in Alaska).

COURSE GOALS
Student will acquire the knowledge and skills necessary to obtain images and process them with open source software for use in landscape-scale research as well as customized commands using code (eg. R and Python).

STUDENT LEARNING OUTCOMES
After completing this course the student will have remote sensing images that are atmospherically corrected, geo-referenced, rectified and classified using open source code to be used in research, in GIS grid format and for manuscript publication.

INSTRUCTIONAL METHODS
This course will utilize a combination of individual instruction and research assignments such as lectures, labs, exams, and online assignments.

COURSE CALENDAR
WEEK 1: Overview of remote sensing methods and sensors, assigned readings
WEEK 2: Data Acquisition/Techniques (4 images), assigned readings
WEEK 3: cont'd obtain imagery (c.7 channel Landsat) from Uni Maryland, Earth Explorer
WEEK 4: Software (decide from PCI, ERMAPPER, ERDAS, eCOGNITION, open source code)
WEEK 5: Data Processing steps and preparation, assigned readings
WEEK 6: Atmospheric correction, assigned readings
WEEK 7: cont'd
WEEK 8: Geometric correction and geo-referencing, assigned readings
WEEK 9: Classification, unsupervised, assigned readings
WEEK 10: Classification, supervised, assigned readings
WEEK 11: Merge/Mosaic 2 images, assigned readings
WEEK 12: Change detection, assigned readings
WEEK 13: Import into GIS software. Create Map Layout
WEEK 14: Metadata and wrap-up

COURSE POLICIES
Student is expected to have initiative to keep pace and produce results in accordance with course calendar and its assigned topics. Instructor will be available to address student questions/concerns on as needed basis. Flexibility is expected on both ends.

EVALUATION
Pass/fail, dependent on completion of student's final product (a classified remote sensing image, corrected for atmosphere, geometrically corrected and classified ready to be used in GIS; all documented with compliant metadata).

SUPPORT SERVICES
UAF Help Desk
Click here (http://www.alaska.edu/oit/) to see about current network outages and news.
Reach the Help Desk at:
- e-mail at helpdesk@alaska.edu
- fax at (907)-450-8312
- phone in the Fairbanks area is 450-8300 and outside of Fairbanks is 1-800-478-8226

DISABILITIES SERVICES
The UAF Office of Disability Services operates in conjunction with CDE. Disability Services, a part of UAF's Center for Health and Counseling, provides academic accommodations to enrolled students who are identified as being eligible for these services. If you believe you are eligible, please visit their web site (http://www.uaf.edu/apache/disability/) or contact a student affairs staff person at your nearest local campus. You can also contact Disability Services on the Fairbanks Campus by phone, 907-474-7043, or by e-mail (fydso@uaf.edu).