***Syllabus***

***Geog 430: Remote Sensing***

**Objectives**

* An understanding of the general principles of digital remote sensing, including: multispectral, thermal, radar, and hyperspectral sensing
* the history of satellite remote sensing and current operational satellites
* digital image processing, including image rectification, enhancement, contrast manipulation, and classification.
* Use of ERDAS Imagine software for solving image processing problems.

**Syllabus**

Prerequisite, GEOG 330 or GEOL 210 or permission of instructor. Principles of acquisition, analysis, and use of remotely sensed imagery (Landsat, SPOT, Ikonos, etc). 3 hours lecture; 3 hours lab per week. Same as GEOL 430/530. Students may not receive credit for more than one course. Applied experience using image processing software.

**Professor:**

Dr. Robert Hickey

234 Dean Hall

Phone: 963-2178

e-mail: rhickey@cwu.edu

Home Page: <http://www.onlinegeographer.com>

**Lecture/Lab Program**

Lecture/lab MWF 9:00-10:50, 201/206 Dean Hall.

Office hours: tues/Thursday 10:00 – 10:50

**Text**

* Remote Sensing and Image Interpretation by Lillesand, Kiefer, and Chipman. Highly recommended, if only because this is THE remote sensing reference book out there. An older version would be fine.
* GEOG 430 Readings.
* Lecture information (very rough lecture notes, reading lists, syllabus, etc..) will be on my website.
* Canvas will be used for posting grades and announcements only.

**Requirements**

The following requirements are compulsory. Failure to comply with these instructions will result in the student failing the class.

Assignments, labs, projects, and reading writeups must be submitted by the DUE DATE to qualify for full marks unless PRIOR arrangements have been made with the professor. Late assignments will be penalized by reducing the marks achieved by 25 percent (or .5 point, whichever is larger) for each day or part of day that the work is late.

**Assessment**

|  |  |  |
| --- | --- | --- |
| **Type** | **Percent** | **Description** |
| Lab exercises | 37 | See class website for more information |
| Article Summaries (1% each) | 8 | Each week, an outline/summary of that week’s required reading will be due. |
| Major Project | 15 |  |
| Midterm Exam | 20 |  |
| Final Exam | 20 | Wednesday, 16 March. 8-10. |
| Total | 100 |  |

*Note: While students are not marked on attendance, students are responsible for ALL material covered in lecture (or tutorials), unless otherwise stated. Also, the final exam is comprehensive.*

**Office Hours:**

Tuesday/thursday 10:00-11:00 or by appointment. Or just drop by. Seriously, if you can’t get ahold of me, shoot me an email and we’ll schedule something.

**Lab TA:**

There is a part-time lab TA in 206 Dean who can assist you with remote sensing questions. She sits in the graduate student office just to the right of the main entrance of Dean 206 when you walk into the lab. She is assigned to assist students for 20 hours a week. During those hours, please feel welcome to approach her with question. Her schedule is posted on her door.

**Misc. Rules:**

* Copying another student's work with or without his/her knowledge or giving/receiving aid during any test or examination is cheating.
* Copying an author's work without proper citation is plagiarism. Ensure that you provide proper citation in ALL WRITTEN WORK submitted in this class.
* The submission for assessment of identical or nearly identical work by two or more students is collusion.
	+ Students who engage in copying, plagiarism, or collusion will receive zero (0) points for the work submitted. At the professor's discretion, the student may be reported to the appropriate administrator.
* At the instructor's discretion: points will be deducted for classroom interruptions. This includes (but is not limited to) cell phones - a maximum of 1 point will be deducted for every time the phone rings (not per call). Answering the phone is included as a separate distraction. For example, Johnny's phone rings three times before he answers it (not turns it off) - he could lose 4 points (same as 4% of his final grade). And will lose more if he continues to chat during class.

**Grading scale:**

A............................................ 93% - 100%

A-........................................... 90% - 93%

B+.......................................... 87% - 90%

B............................................ 83% - 87%

B-........................................... 80% - 83%

C+.......................................... 77% - 80%

C............................................ 73% - 77%

C-........................................... 70% - 73%

D+.......................................... 67% - 70%

D............................................ 63% - 67%

D-........................................... 60% - 63%

F < 60%

**Student conduct rules and regs**. Please review:

* <https://apps.leg.wa.gov/WAC/default.aspx?cite=106-125-020> Note, this is the State’s rules and regs regarding “Prohibited student conduct” which we all follow. It’s worth a read.
* <https://apps.leg.wa.gov/wac/default.aspx?cite=106-125> for more stuff vaguely related to you and CWU.

“CWU expects every member of the university community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events.”

Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. If you anticipate or experience any obstacles to learning, contact Disability Services to discuss a range of available options. Student Disability Services is located in Hogue 126. Call (509) 963-2214 or email ds@cwu.edu for more information.

In compliance with RCW 28B.137.010, Central Washington University makes every effort to deal reasonably and fairly with students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Students must present written notice to their instructor within the first two weeks of class listing the specific dates on which accommodations are required. Contact the Dean of Student Success at (509) 963-1515 for further information or questions.

**GIS lab code of conduct**

The GIS lab in Dean 206 is a community space where everyone should feel comfortable working at all times. It is your space – treat it well, and it will take care of you.

Since many people share the lab, you are expected to maintain a professional demeanor and act and speak in a way that does not create a distracting or hostile environment for your fellow students. This includes:

* Sexual harassment, intimidation, and bullying are prohibited. If something improper is happening, please come see me.
* If you need to work in the lab and there is a class in session, please quietly use the annex room in 206D (the one with the plotter). If that lab is full, most instructors don’t mind if you remain in the main 206 room as long as there is computer space available for their own students and you don’t make any noise.
* Everyone can hear you, so keep your voices at a quiet level, speak respectfully, and avoid profanity (I know this can be difficult, especially when working with GIS software).
* No booze.
* Do not play music or videos without headphones unless you are the only person in the lab.
* Do not use the video screen or lab audio-visual system without instructor approval.
* Do not access or create sexually explicit materials using lab equipment.
* For security purposes, please avoid propping open the lab doors.
* If you make coffee or use one of the provided mugs, clean things up for the next person.

Seriously, we have worked hard to make this a great space for students to work. Good computers, all the other equipment you might need, comfy chairs, 24-hour access, a lab TA to help out, and coffee. As long as no one causes problems, it will remain a [most excellent](https://giphy.com/gifs/ifc-80s-bill-and-ted-excellet-l46CDHTqbmnGZyxKo) place.

### ****References and letters of recommendation****

Occasionally students ask if I will provide recommendations for jobs, graduate school, or other opportunities. I often agree to do this; however, I typically only provide recommendations for students who earned at least a B grade in their most recent class with me (or have at least a B average in the classes they’ve taken with me). I won’t provide recommendations for students who were consistently late/absent from class or who regularly handed in late work.

If I agree to provide a reference or recommendation, you must complete a FERPA privacy release so that I can discuss your enrollment and performance in class. This form is downloadable from my website, right under current classes.