

**Course syllabus for:  
GEOG/NRES 477  
Introduction to Remote Sensing  
Fall, 2016**

**Course website:** <https://compass2g.illinois.edu/>

**Instructor:**

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234 Computing Applications Building  
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**Office hours:** By appointment. Please email to umar83@illinois.edu to set up a time to meet.

**Meeting times/locations:**

12:30 - 1:50PM Tuesday (Lecture, 338 Davenport Hall)

12:30 - 1:50PM Thursday (Lab, 338 Davenport Hall)

**Course Goals:**

- To understand the physical principles and analytical techniques underlying the remote sensing of different land covers types.
- To be able to design and execute a complete remote sensing analysis.

**Text Book:** Campbell, J.B. and R.H. Wynne. Introduction to Remote Sensing, 5th Edition. Guilford Press.

**Evaluation:**

- Exam I: 30%
- Exam 2: 30%
- Laboratory Exercises: 40%: There will be 5 laboratory assignments, each worth 8% of your grade during the semester which will be graded.

Class and lab participation are **mandatory**. Missing a laboratory without an Absence Letter (<http://www.odos.uiuc.edu/deanonduty>) will result in a loss of 5% off of your overall grade per missed lab.

Plus/minus grades will be given. Minimum guaranteed grade based on percentage:

A:  $\geq 90\%$ ; B:  $\geq 80\%$ ; C:  $\geq 70\%$ ; D:  $\geq 60\%$ ; F:  $< 60\%$

If the mean final percentage for the class is under 75%, I will adjust the final grade such that the mean score is 75%. The curve will be calculated separately for undergraduates and graduates.

**Academic Integrity:** Each student is expected to be familiar with the UIUC definitions and policies on academic integrity: [http://admin.illinois.edu/policy/code/article1\\_part4\\_1-402.html](http://admin.illinois.edu/policy/code/article1_part4_1-402.html),

and adhere to the student code of conduct. Cheating on the exams or assignments will be reported to the university with a default sanction of getting a zero (0) on any assignments or exams the student has cheated on. Note that while you may discuss the laboratory assignments with your classmates, you must turn in your own work, written in your own words. Turning in identical assignments as another student is considered cheating.

**Course Outline (Subject to Change):**

Week	Lecture (Tuesday)	Lab (Thursday)	Reading
8/22	Introduction and EMR Principles I		
8/29	EMR Principles II and Sensors I	Introduction to ENVI	Chapters 1, 2, 4 and 10
9/5	Sensors II	Exploring different image types	Chapters 6, 7, 8, and 9
9/12	Preprocessing of RS Imagery and Image Analysis I	Finding image data	Chapter 11
9/19	Image analysis II and Accuracy Assessment	Preprocessing of RS imagery	Chapters 12, 13, and 14
9/26	Light and Atoms: Geology	Sampling design and field data collection	Chapter 18; Clark, 1999
10/3	Review	Midterm Exam	
10/10	Light and microscopic particles I: Atmospheric Science, Climatology and Hydrology	Basic classification and biophysical parameter analysis; Accuracy assessment	Chapter 19
10/17	Light and microscopic particles II: Soil Science	Geologic image analysis	Chapter 18
10/24	Guest Lectures		TBD
10/31	Light and cells: Agriculture and Plant Health	Hydrologic image analysis	Chapter 17
11/7	Light and small macroscopic structure: Agriculture and Ecology	Vegetation health	Chapter 17

11/14	Light and landscape structure: Terrestrial Ecology	Lidar analysis of vegetated ecosystems	Chapters 17, 20, and 21
11/21	Thanksgiving Break		
11/28	Change Detection	Land use / land cover classification	Chapter 16
12/5	Cutting edge remote sensing, Summary & Review	Change detection	
Week beginning with 12/9	Final exam		