GTECH 20300- Introduction to Remote Sensing
Fall 2017, Section 01

I. Class Time & Location Information:

Room: **North Building 1090B-2**
Class Time: **Friday, 11:10 AM – 3:00 PM**
Note: **There will be a break half way through the session**

II. Instructor Contact Information:

Instructor: **Paradorn Wongchanapai**
Email: **pwongcha@hunter.cuny.edu**

Email Policy: When you send me an e-mail, **you MUST do the following**:
1) **Include "GTECH203"** in the subject line.
2) **Sign your full name (i.e. your first and last name)** at the end of the message.

- I do not answer an e-mail that fails to meet the requirements listed above.
- Students' email will be responded to within 48 hours. Please note there will be a delay for messages sent over the weekend or during non-business hours (i.e. after 5:00 PM EST.)
- Please use your Hunter College email (@myhunter) when you email me. My Hunter college email has a strong spam filter and I may not receive your email if you use non-Hunter email, such as yahoo or gmail. In this case, it is **YOUR RESPONSIBITY** to follow up with the issue.

Office: HN1032
Office Phone: 212-772-4351
Office hours: Friday, 3:15 PM – 4:15 PM and by appointment

Department Information: Department of Geography, room HN1006, Phone: 212-772-5265

III. Course Materials:

Textbooks:

- **(Optional)** ***An Introduction to Remote Sensing (1st edition)***, Qihao Weng, McGraw-Hill Professional; 1 edition (January 19, 2012) **ISBN-10:** 0071740112 , **ISBN-13:** 978-0071740111.

IV. Course Description:

Prerequisites: GTECH 20100

Course Credits*:* 3 credits.

Course structure: The first half of each class is lecture and the second half is lab.

Course Description: This course provides an introduction to remote sensing science and technology. Topics include basic remote sensing principles, aerial photography, photogrammetry, image interpretation and satellite sensors and remote sensing applications. It emphasizes the use of remote sensing technology to study our changing environment. Weekly labs explore the use of various image display and analysis tools to visualize, interpret and analyze remote sensing images.

Course Objectives and Learning Outcomes: By the end of the semester, you will

- Have the basic knowledge of remote sensing science and technology.
- Understand how the remote sensing data are collected and used to study the environment and to monitor our changing planet.
- Gain the basic remote sensing image interpretation and analysis skills.

Class Communications-BlackBoard

- Blackboard will be used for posting course announcements, lab assignments, your scores, and etc. Therefore, you should check Blackboard frequently.

V. Course Evaluation:

Grading:

❖ **Attendance & Participation:**	**5%**
❖ **Quizzes:**	**25%**
❖ **Lab exercise:**	**50%**
❖ **Final Project:**	**20%**
Total:	**100%**

Brief Descriptions of Course Evaluation:

❖ **Attendance & Participation (5%)** is graded based on attendance and in-class discussion.

- I take attendance every class and it is computed as part of your final grade.
- I expect you to come to class on time. Therefore, 3 latenesses equal 1 absence.
- If you miss more than 2 classes without providing documented reason(s), your course grade will be drop one grade for each additional class you miss. For instance, 3 unexcused absences will result in deducting your course grade from ‘A’ to ‘B’.

- **Quizzes: (25%)** Instead of the in-class midterm exam, quizzes will be given throughout the semester. Quizzes will be a mixed format of short-answer, multiple choice, and true or false questions based on the material covered from previous lectures.
    - You are allowed to **make up a quiz only if you contact me within 48 hours of the missed exam and provide me with VALID REASON(s) and proper DOCUMENT(s).**

- **Lab Exercises (50%)** include computer-based analysis of remotely sensed images, supplemented by topics covered during lectures. You will learn basic image interpretation, some web-based image processing skills, Google Earth, and ENVI image processing software through various lab exercises.
    - Lab exercises will be available on Blackboard unless I specify other methods.
    - Submit your completed work through Blackboard unless I specify other methods.
    - **I do not accept late assignments.**
        - After the due dates, assignment submission links will disappear from Blackboard.
        - You will receive a 0 for any assignment you fail to submit by the due date.
    - **For written assignments:** If you take information from other sources, such as newspapers, online websites, magazines, academic journals, and etc., **YOU MUST CITE YOUR SOURCES**. You may use any citation style as long as the style is consistent throughout the paper.

- **Final Project: (20%)** You are required to do a course final project. The final project will allow you to demonstrate your remote sensing knowledge and the skills you have accumulated throughout the semester.
    - You are required to **(1)** give a final project presentation and submit **(2)** a final paper describing your final project and **(3)** presentation material (i.e. PowerPoint presentation.)

Grading Policy

- Grading will following Hunter College policy as outlined in the latest online undergraduate catalog that can be found at http://catalog.hunter.cuny.edu/.

- I do not give extra credit assignments.

- I do not give incompletes (IN) except under the most extraordinary, and documented, circumstances. You must contact me within 24 hours of the final exam and request IN as a grade. At that time you will schedule a date to meet with me at the college and complete a Contract to Resolve Incomplete Grades. Otherwise, I will average the grades I have for you and record you the grade you have earned.

- If you miss an exam, you must **(1)** contact me within 24 hours of the missed exam, **(2)** present acceptable documentary evidence for your absence, and **(3)** be available for the make-up exam (Note: there will be one make-up exam day at the end of the semester held outside of class for those eligible). A make-up exam covers the same material as the regular exam but will not be the same exam given as scheduled. (Therefore, **DON'T MISS AN EXAM**).

- The last day to hand-in Credit/No Credit (CR/NC) form is **12:00 PM-noon on Friday, December 8, 2017**. **Only students who have completed ALL of the course requirements are eligible for consideration of CR/NC as a grade**.
  http://www.hunter.cuny.edu/onestop/repository/files/registrar/creditnocredit_reg.pdf

VI. Essential Polices:

Hunter College Statement on Academic Integrity

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures. Plagiarism, dishonesty, or cheating in any portion of the work required for this course will be punished to the full extent allowed according to Hunter College regulations.

ADA Policy

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230.

Hunter College Policy on Sexual Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, on contacting the College's Public Safety Office (212-772-4444)
b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) of Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link: http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf

Syllabus Change Policy

- Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change **with advance notice.**
- An updated course syllabus will be posted on Blackboard

Please see the next page for class schedule

VI. (Tentative) Course Schedule

Week	Class	Date	Lecture Topic	Lab
1	**1**	**Fri, Aug 25**	Lecture 1- Overview of Remote Sensing	Lab 1-Google Earth
2	**2**	**Fri, Sep 1**	Lecture 2-Aerial Photography Interpretation	Lab 2-Image Interpretation
3	**3**	**Fri, Sep 8**	Lecture 3-Photogrammetry	Lab 3-Photogrammetry Measurements
4	**4**	**Fri, Sep 15**	Lecture 4- Electromagnetic Radiation Principles	Lab 4-Explore Online Digital Images
	NO CLASS	**Fri, Sep 22**	**NO CLASS**	**NO CLASS**
	NO CLASS	**Fri, Sep 29**	**NO CLASS**	**NO CLASS**
5	**5**	**Fri, Oct 6**	Lecture 5-Characteristics of Remote Sensing Data	Lab 5-Color Theory
6	**6**	**Fri, Oct 13**	Lecture 6-Remote Sensors & Earth observation Satellites	Lab 6-Explore NASA Satellite Visualization in 3D
7	**7**	**Fri, Oct 20**	Lecture 7-Process in remote sensing	Lab 7- ENVI software functions part 1
8	**8**	**Fri, Oct 27**	Lecture 8-Digital Image Analysis	Lab 8-ENVI software functions part 2
9	**9**	**Fri, Nov 3**	Lecture 9-Digital Image Analysis part 2 Final project overview	Lab 9-ENVI software functions part 3 - Download satellite data
10	**10**	**Fri, Nov 10**	Lecture 10-Images from Space (Landsat Image)	Lab 10-ENVI software functions part 4 Final Project Proposal due
11	**11**	**Fri, Nov 17**	Lecture 11-RS application: vegetation Final Project discussion	Lab 11-ENVI software functions part 5
14	**12**	**Tue, Nov 21**	Lecture 12 - Remote Sensing research process with ENVI	Hands-on advance ENVI exercises Work on final project in class
	NO CLASS	**Fri, Nov 24**	**NO CLASS**	**NO CLASS**
13	**13**	**Fri, Dec 1**	**Course Review**	Work on final project in class
14	**14**	**Fri, Dec 8**	Work on final project in class	Work on final project in class
15	**15**	**Fri, Dec 15**	**Final Exam Day** **Final Project Presentation**	Final project paper is due.

Hunter College Academic Calendar: http://www.hunter.cuny.edu/onestop/calendars/academic-calendars