

University of Puerto Rico
Mayagüez Campus
College of Arts and Sciences
Department of Geology

1. General Information:

Course Number: GEOL 3105
Course Title: Images of Planet Earth
Credit-Hours: 3 credit hours of lecture per week.
Pre-requisites: None

2. Course Description:

This is an introduction to the new, rapidly evolving, and interdisciplinary field of Earth System Science. This course emphasizes the ideas of Earth as a planet within the solar system; the interactions among the components of the geosphere, hydrosphere, atmosphere, and biosphere; and global changes. Studying Earth as a system is accomplished by the analysis of remote sensing data. Images acquired by airborne and spaceborne sensors are used throughout the course.

3. Course Objectives:

- A. Establish the relationship between the components of the Earth System.
- B. Present the latest technology for understanding the Earth at global scale.
- C. Provide a large-scale perspective of the Earth processes.

4. Course time frame and thematic outline:

Topic	Contact Hours
Introduction	1.5
I. The Earth System	
1. The Earth System	1.5
2. Energy	1.5
3. Matter	1.5
4. Space and Time	1.5
II. Observing the Earth from Space	
5. Principles of Remote Sensing	1.5
6. Types of Remote Sensors	3.0
7. Remote Sensing at UPRM	1.5
III. The Geosphere	
8. The Tectonic Cycle	1.5
9. Earthquakes	3.0
10. Tsunamis and Volcanoes	1.5

IV. The Hydrosphere	
11. The Hydrologic Cycle	3.0
12. The Cryosphere	1.5
13. The World Ocean	3.0
V. The Atmosphere	
14. The Atmosphere	3.0
15. Wind and Weather Systems	1.5
16. The Climate System	1.5
VI. The Biosphere	
17. Life, Death, and Evolution	1.5
18. Ecosystems, Biomes, and Cycles of Life	1.5
VII. The Anthroposphere	
19. The Resource Cycle	1.5
20. The Changing Earth System	1.5
Two partial exams and two quizzes	6.0
TOTAL HOURS	45

5. Instructional Strategies:

- A. Conference
- B. Discussion
- C. Diverse Readings
- D. Written Essay

6. Instructional Resources Available or Required:

All course material, including lectures notes, related videos, and additional readings will be available in the institutional Moodle platform: online.upr.edu

7. Evaluation Strategies and Grading System:

Two partial and one final examinations (100 pts. each)

Two quizzes (25 pts. each), attendance/participation (25 pts.) and final assignment (25 pts.)

Final grade will be based on 400 points and using the following ranges:

A = 100-89%

D = 64-55%

B = 88-78%

F = 54-0%

C = 77-65%

8. Bibliography:

Textbook: The Blue Planet, An Introduction to Earth System Science
 Brian J. Skinner and Barbara W. Murck (2011) Third Edition. John Wiley and Sons Inc.
 ISBN 978-0-471-23643-6

Reference book: Introduction to Remote Sensing
James B. Campbell and Randolph H. Wynne (2011) Fifth Edition. The Guilford Press.
ISBN: 978-1-60918-176-5

Reference book: Fundamentals of Geological and Environmental Remote Sensing
Robert K. Vincent (1997) Prentice Hall, ISBN: 0-13-348780-6

Reference book: Remote Sensing of the Environment
John R. Jensen (2007) Pearson Prentice Hall, ISBN: 0-13-188950-8

Reference book: Remote Sensing and Global Environmental Change
Samuel Purkis and Victor Klemas (2011) Wiley-Blackwell, ISBN: 978-1-4051-8225-6

Other readings will be assigned during the semester.

9. Requirements and Policies:

Class attendance: Class attendance is compulsory. The University of Puerto Rico at Mayaguez reserves the right to deal at any time with individual cases of non-attendance. Professors are expected to record the absences of their students. Frequent absences affect the final grade, and may even result in total loss of credits. Arranging to make up work missed because of legitimate class absence is the responsibility of the student.

Absence from examinations: Students are required to attend all examinations. If a student is absent from an examination for a justifiable reason acceptable to the professor, he or she will be given a special examination. Otherwise, he or she will receive a grade of zero or "F" in the examination missed.

Final examinations: Final written examinations must be given in all courses unless, in the judgment of the Dean, the nature of the subject makes it impracticable. Final examinations scheduled by arrangements must be given during the examination period prescribed in the Academic Calendar, including Saturdays.

Partial withdrawals: A student may withdraw from individual courses at any time during the term, but before the deadline established in the University Academic Calendar.

Complete withdrawals: A student may completely withdraw from the University of Puerto Rico at Mayaguez at any time up to the last day of classes.

Law 51: The Comprehensive Educational Services Act for People with disabilities states that after identifying with the instructor and the institution, the student with disabilities will receive reasonable accommodation in their courses and evaluations. For more information contact the Department of Counseling and Psychological services at the Office of the Dean of Students (Office DE 21) or call 787-265-3864 or 787-832-4040 x 3772, 2040 and 3864.

Academic Integrity: The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to:

fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person answers to the questions of an oral or written exam by taking or getting someone else to take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.

Policy Against Discrimination Based on Sex, Sexual Orientation, and Gender Identity: The University of Puerto Rico prohibits discrimination based on sex, sexual orientation, and gender identity in any of its forms, including that of sexual harassment. According to the Institutional Policy Against Sexual Harassment at the University of Puerto Rico, Certification Num. 130, 2014-2015 from the Board of Governors, any student subjected to acts constituting sexual harassment, may turn to the Office of the Student Ombudsperson, the Office of the Dean of Students, and/or the Coordinator of the Office of Compliance with Title IX for an orientation and/or formal complaint.

Sexual Harassment: Certification 130-2014-2015 states: Sexual harassment in the workplace and in the study environment is an illegal and discriminatory act and is against the best interests of the University of Puerto Rico. All persons who understand they have been subject to acts of sexual harassment at the University of Puerto Rico may file a complaint and request that the institution investigate, where necessary, and assume the corresponding action by the university authorities. If the complainant is a student, he or she must refer his or her complaint to the Office of the Student Ombudsperson or that of the Dean of Students.

Certification 06-43 of the Academic Senate states, "The academic guidelines for offering online courses," defines: Traditional face-to-face courses are those that have less than 25% of the course's regular contact hours via the Internet. Therefore, a three-credit course will be considered "face to face" if, of the 45 hours of regular contact, 11 or less are taught via the Internet. According to certification 16-43 of the Academic Senate, a course may include up to 25% of its total contact hours via the Internet. The objective of this is so that all professors have this alternative in the case of any unscheduled eventuality.

Others: Quizzes are unscheduled and may be given at any time. Some questions in the exams will be taken from material discussed only in class and not covered in the textbook or reading material. Students must set to vibrate the phones. NO TEXTING!

10. Instructor Information:

Name:	Dr. Fernando Gilbes Santaella
Title:	Professor and Dean of Arts and Sciences
Office:	Celis-306
Phone:	787-832-4040 Ext. 3828
Office Hours:	Monday and Wednesday: 4:30-5:30 PM or by appointment
E-mail:	fernando.gilbes@upr.edu
Webpage:	gerslab.uprm.edu