Course title: Earth Observation

Course Basic Information	
Academic Unit:	Faculty of Civil Engineering
Course title:	Earth Observation
Level:	Bachelor
Course Status:	Elective
Year of Study:	Year 3, semester 6
Number of Classes per Week:	2+0
ECTS Credits:	3 ECTS
Time /Location:	According to the Timetable
Teacher:	Prof. Asoc.dr. Perparim Ameti
Contact Details:	perparim.ameti@uni-pr.edu
Course Description:	Project management in field of GIS
Course Goals:	The goal of this course is to cover the knowledge on the basics of Remote Sensing, as it uses to mapping the Earth's surface, various phenomena on it and to understand how the Earth works. These approaches include observing the Earth in various forms from sensors from satellites, planes, drones and ships. Understanding the electromagnetic spectrum of radiant energy and radiation emitted from the Earth's surface provides a basis for understanding the types of images available and their characteristics. Image enhancement, classification and quantification techniques have been explored with attention to integration with GIS datasets. The application of remote sensors to change land cover, vegetation classification and environmental quality have been explored. Students will observe environmental changes over spatial and temporal periods through qualitative and quantitative processing of the remote sensor on a local, regional, and global scale.
Expected Learning Outcomes:	- After completing the course, student will be able to know, and understand the basic concepts, principles and applications of remote sensing, especially geometric and radiometric principles; - After completing the course, student will be able to recognize and understand application of RS in several topics, especially in the environment, ranging from data collection, radiation, data resolution from different providers and missions from new technologies.

Student Workload (should be in compliance with student's Learnign Outcomes)			
Activity	**Hours**	**Day/ Week**	**Total**
Lectures	2	15	30
Theory/ Lab Work/Exercises			
Practical Work			

Consultations with the teaher			
Field Work			
Test, seminar paper	1	5	5
Homework			
Self-study (library or home)	1	15	15
Preparation for final exam	3	6	18
Assessment time (test, quiz, final exam)	3	1	3
Projects, presentations, etc.	4	1	4
Total			**75**

Teaching Methods:	- Lecture - Discussion during lectures - Work in group
Assessment Methods:	In evaluation, the percentage of the attendance of each partial evaluation in the final evaluation must be determined. One of the ways of evaluation would be: First Evaluation: 10% Second Evaluation: 10% Homework or other engagement: 5% Attendance 20% Final Exam 55% Total 100%
Primary Literature:	Teaching material prepared by the lecturer of the course and lectures.
Additional Literature:	Remote Sensing of the Environment An Earth Resource Perspective 2nd/E John R. Jensen 2014

Designed teaching plan

Week	Title of the Lecture
Week 1:	Introduction in Remote Sensing
Week 2:	Remote Sensing of the Environment
Week 3:	Physical principles of remote sensing
Week 4:	Aerial Photography
Week 5:	Elements of Visual Image Interpretation
Week 6:	Photogrammetry
Week 7:	Photogrammetry - Fundamentals of Stereoscopy
Week 8:	Multispectral Remote Sensing Systems
Week 9:	Thermal Infrared Remote Sensing
Week 10:	Hyperspectral Remote Sensing
Week 11:	Active and Passive Microwave Remote Sensing
Week 12:	LIDAR Remote Sensing
Week 13:	Remote Sensing of Vegetation
Week 14:	Remote Sensing of Water
Week 15:	In Situ Reflectance Measurement

Academic Policies and Code of Conduct

We start and finish class on time.
Tools used during class must be cleaned and stored away at the end of class.
Mobile/smart phones, and other electronic devices (e.g. iPods) must be turned off (or on vibrate) and hidden from view during class time.
Laptop and tablet computers are allowed for quiet use only; other activities such as checking personal e-mail or browsing the Internet are prohibited.