Cairo University
Faculty of Engineering

Department of Aerospace Engineering

Course Specifications

Program(s) on which this course is given:	M. Sc.
Department offering the program:	**Aerospace**
Department offering the course:	**Aerospace**
Academic Level:	Graduate course
Date	2014/2015
Semester (based on final exam timing)	☐ Fall [X] Spring

A- Basic Information

1. Title:	التطبيقات الفضائية فى النظم العمرانية			**Code:**	طير ٦٩٦			
2. Units/Credit hours per week:	Lectures	2	Tutorial	1	Practical		Total	3

B- Professional Information

1. Course description:	
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding**
	(1) Extraction and interpretation of spaceborne remote sensing data related to local boundary layer characteristics, site topology and 3D model of architecture sites, (2) Review of electromagnetic wave propagation in matter, radiometric measurements of satellite sensors, interpretation of satellite remote sensing data
	b) Intellectual Skills
	Physical insight of basic types of earth's cover in relation to received solar radiation, Physical interpretation of satellite remote sensing data in relation to electromagnetic wave processes
	c) Professional and Practical Skills
	Learning how to use major satellite image processing software to retrieve information from the data, site assessment, and aerodynamic modelling of architecture site
	d) General and Transferable Skills
	Setting up software, loading satellite data from international sites, reformatting and analyzing data

3. Contents

Topic	Total hours	Lectures hours	Tutorial/ Practical hours
Examples of satellite image products	6+1	2	4+1
Optical, Infrared and Microwave sensing	6+1	2	4+1
Electromagnetic wave propagation in atmosphere	6+1	2	4+1
Electromagnetic wave propagation in land	6+1	2	4+1
Image processing	6+1	2	4+1

Radar remote sensing	6+1	2	4+1
4. Teaching and Learning Methods	Lectures (X)	Practical Training/ Laboratory ( )	Seminar/Workshop ( )
	Class Activity (X)	Case Study (X)	Projects (X)
	E-learning ( )	Assignments /Homework (X)	Other:

5. Student Assessment Methods	
• **Assessment Schedule**	**Week**
-Assessment 1; Class test	6,8
-Assessment 2; Project Assignment	2, 5, 8
-Assessment 3; Presentations	Bi-weekly
-Assessment 3; Midterm Exam	none
-Assessment 4; Final Exam	End of term
• **Weighting of Assessments**	
-Mid-Term Examination	
-Final-term Examination	60
-Project	20
-Class Test	10
-Presentation	10
-Total	100

6. List of References
Remote Sensing: Principles and Interpretation; F. Sabins, 3rd edition, 2007, Waveland Pr Inc., USA
Tutorial: Fundamentals of remote Sensing; Canada Center for Remote Sensing (Ottawa, Canada)

7. Facilities Required for Teaching and Learning
A set of computers in the computer lab + remote sensing software ENVI + data show system

Course Coordinator:	**Dr. Mohammed Shokr**
Head of Department:	**Dr. Ayman Hamdy**