

Civil and Environmental Engineering Department
Course Syllabus

Instructor Name	Dr. Sameh S. Ahmed				
Course Title:	<i>Photogrammetry</i>	Course code:	CE 474	Cr.Hrs:	(3,1,0)
Prerequisite:	CE372	Co-requisite:	---	Tutorial Time:	MO: 2:00– 3:00 PM
Academic Year:	2018\2019		Semester:	First	
Lecture Times:	SU: 10-12 am	SU: 1-2 PM	Lab Time:		
Office Hours		TU: 10-11:00		Office number	003-2-40-5

Course Objectives

This course aims to achieve the following objectives	
1	Provide the student an introduction to the principles of photogrammetry
2	Data collection using Photogrammetric methods
3	Applications of photogrammetry in map projection and in civil engineering projects
4	Training on photogrammetric instruments and one of the modern photogrammetric software's

Student Learning Outcomes

Course Learning Outcomes		ABET Student Outcomes
By the end of this course the students will be able to		
1	Understand the theory and applications of Photogrammetry	a,e,h,j
2	Understand the geometry of aerial photographs	a,b,e,
3	Understand how data can be measured using aerial photography	a,b,c,e
4	Create maps from aerial photographs using photogrammetric techniques	a,d,e
5	Recognize the difference between remote sensing and Photogrammetry w.r.t. techniques and applications	a,e,i,j

Assessment

N	Methods of Assessment	Assessed Learning Outcomes	Maximum Score
1	First exam	1,2	20
2	Second exam	2,3,4	20
3	Quizzes	1,2,3,4	10
4	Report, and homework assignments	1,2,3,4,5	10
5	Final Exam	1,2,3,4,5	40
	Total		100

Course Contents

N	Short Description	Week
1	History of photogrammetry:	1
2	Aerial cameras and Camera calibration:	2
3	Geometry of the aerial photograph: Principles points - Ground points - Control points - Central Projection - Interior and Exterior Orientation - Image Capture Practicalities	2
4	Stereoscopy and stereoscopes:	1
5	Parallax theory and techniques of plotter orientation	1
6	Midterm 1	1
7	Extraction of engineering information from single aerial photo:	1

8	Extraction of engineering information from two aerial photo	1
9	Least squares, preparation and measuring of coordinates from aerial photos	1
10	Planning a photogrammetric project	1
11	Midterm-II	1
12	Project #2, Cont.	1
13	Applications using computer software's	1

Books	
Textbook:	Paul R. Wolf, "Elements of Photogrammetry", Mc Graw Hill, (Latest edition)
References:	<ul style="list-style-type: none"> - Burr, F. K. and Glemen Bird, S. J., "Surveying, Principles and Applications", Prentice Hall, 2000. - C. Burnside, "Mapping from Aerial Photographs", Tranada Publishers. (Latest edition).