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Department of Civil Engineering	
Surveying II (61322)	
Total Credits	**2**
major compulsory	
Prerequisites	P1 : Surveying I (61220) OR Surveying I (61222) P2 : Surveying Lab. I (61223)

Course Contents

Areas and Volumes. Route surveying, Horizontal control surveys, Introduction to photogrammetry, Global positioning systems (GPS) measurements.

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	Able to calculate and measure most types of areas whether being regular or irregular. They will also learn how to compute volumes of cut and fill needed in most civil engineering projects.	A	25 %
2	Able to calculate and stake out both horizontal and vertical curves needed in transportation engineering.	A	40 %
3	Familiar with the factors that are taken into consideration in the planning and design of horizontal control surveys, as well as the modern techniques used in the measurement and establishment of these networks.	C	15 %
4	Familiar with the basic principles of measurement using photogrammetric and GPS techniques as complementary methods to traditional ground surveying.	K	20 %

Textbook and/ or Refrences

Textbook: Surveying for Engineers by: Dr. Najeh S. Tamim, 2nd edition, 2006. References: 1) Elementary Surveying: An Introduction to Geomatics by: Chrles D. Ghilani &Paul R. Wolf, 12th edition, 2008. 2) Surveying with Construction Applications by: Barry F. Kavanagh, 6th edition, 2007.

Assessment Criteria	Percent (%)
First Exam	25 %
Second Exam	25 %
Final Exam	50 %

Course Plan

Week	Topic
1	Course outline + Areas and Volumes
2	Areas and Volumes
3	Areas and Volumes + Route Surveying
4	Route Surveying
5	Route Surveying
6	Route Surveying
7	Route Surveying
7	1st Midterm:
8	Route Surveying
9	Route Surveying + Horizontal Control Surveys
10	Horizontal Control Surveys
11	Horizontal Control Surveys

12	Photogrammetry
12	2nd Midterm:
13	Photogrammetry
14	GPS
15	GPS + GIS
16	Final Exam