

Faculty of Engineering & Technology

Geo-informatics 1

Information :

Course Code : SCM 321

Level : Undergraduate

Course Hours : 2.00- Hours

Department : Department of Structural Engineering & Construction Management

Instructor Information :

Title	Name	Office hours
Professor	Ayman Fouad Mohammed Ragab	10
Teaching Assistant	Sarah Salah Sayed Hussein Aly Elsheshtawy	2

Area Of Study :

- Basic concept of Electromagnetic Distance Measurements (EDM).
- Ellipsoidal geometry and geodetic coordinate systems.
- Principles of Global Positioning System (GPS) and map projection.
- Fundamental of Geographic Information System (GIS) along with its various data levels and concept of topology

Description :

Electronic distance measurements, Earth surface, Geodetic coordinate Systems, Geodetic networks, Fundamentals of satellite geodesy, Global positioning system GPS, Fundamentals and structure of Geographic information systems GIS, Basics of astronomy, Map projections.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Study all factors affect the accuracy of measured distance by EDM
2 -	Define the approximate figure of the Earth
3 -	Primary advantages and applications of GPS
4 -	Know the type of map projection for Egypt
5 -	Deal with different formats of acquired surveying data.

b.Intellectual Skills: :

1 -	Ability to compensate all the errors of EDM observations
2 -	Ability to make computations on the actual figure of the Earth
3 -	Ability to differentiate between different types of coordinate systems.
4 -	Ability to merge different types and topologies of acquired data.

c.Professional and Practical Skills: :

1 -	Ability to measure distances by an EDM instruments.
2 -	Ability to distinguish different types of GPS receivers

d.General and Transferable Skills: :

1 -	- Specifying the used instrument suitable for the types of required data
2 -	Role of GPS in world-wide navigation.
3 -	Requirements for mapping in any country

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to GIS	2	1	-
Data formats and its topology	8	3	1
Electromagnetic Distance Measurements	8	2	2
Figure of the Earth	8	2	2
Geodetic coordinate systems and computations	6	2	1
Principles of GPS	8	8	2
Different types of map projection	6	1	2

Teaching And Learning Methodologies :

Lectures

Tutorials

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1st mid term	20.00		
2nd mid term	20.00		
final	40.00		
quiz	20.00		

Course Notes :

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Recommended books :

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Periodicals :

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Web Sites :

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