

Subject : Applied Surveying

Class : Second Year

Hours : 2hrs (Theoretical) , 3hrs (Practical)

Objectives:

Introducing the fundamentals, purposes & the required calculations of the applied surveying to the students as well as qualifying him to use the different kinds of surveying instruments in design & execution of civil engineering projects.

Week	Theoretical syllabus
1	Theodolites , Principle of construction
2	Measuring Horizontal angles
3	Measuring angles in vertical plane
4&5	Directions , Whole circle bearing , Reduce Bearing
6	Traverse Surveys , Bearings , forward & Back bearing
7	Close circle traverse, coordinates calculations
8	Close connected traverse , coordinates calculations
9	Tacheometry , stadia tacheometry , Inclined sights
10	Electromagnetic distance measurement(EDM), basic concept, systems
11	Total station, Field Techniques, point location, missing line measurements
12	Resection , Azimuth, elevation , Layout Positions and area computation
13	Motorized Total stations, Automatic ,remote control, computerized
14&15	Horizontal Curves , Kinds , computations
16&17	Vertical Curves , Kinds , Computations
18	Setting out construction , small & large building
19	Balancing thermal furnaces
20	Tunnel surveying
21	Aerial photogrammetric surveying
22	Photogrammetric traditional surveying
23	Photogrammetric Instruments &Flight design
24	Computer Programs
25&26	Global Positioning System (GPS)
27	Geographic Information system (GIS)
28&29&30	Field measurements by using total station and calculation for certain projects

References :

- 1- **Surveying for construction / William Irvine , FRICS.**

- 2- **Text book of surveying / S.K. Husain , M.S. Naga. Raj.**
- 3- **Elements of photogrammetry / Wolf , Pual R.**
- 4- المساحة المستوية / د . فوزي الخالصي
- 5- المساحة المستوية والمائية / د . علي شكري