

GI8013 ADVANCED SURVEYING

DETAILED SYLLABUS

OBJECTIVE:

- To understand the use of Astronomy, Photogrammetry, Total Station and GPS

UNIT I ASTRONOMICAL SURVEYING

Astronomical terms and definition – Motion of sun and stars – Celestial co-ordinate System - Time system - Nautical Almanac – Apparent altitude and corrections – Field observations and determinations of time, longitude, latitude and azimuth by altitude and Hour angle method.

UNIT II AERIAL SURVEYING

Terrestrial Photogrammetry – Terrestrial stereo photogrammetry – Aerial photogrammetry – overlaps – scale of photographs – Vertical and tilted photographs distortion in aerial photographs – stereoscopic vision - photo interpretation – Applications.

UNIT III TOTAL STATION SURVEYING

Classification – basic measuring and working principles of an Electro – optical and Microwave total station- sources of errors in Electro – optical and Microwave total station – Care and Maintenance of total station – trilateration – Applications.

UNIT IV GPS SURVEYING

Basic concepts – Space, Control and User segments – Satellite configuration – Signal structure – Orbit determination and representation – Anti spoofing and selective availability – hand held and geodetic receivers – Field work procedure – Data processing Applications.

UNIT V MISCELLANEOUS

Reconnaissance – Route surveys for highways, railways and waterways – simple, compound, reverse, transition and vertical curve – setting out methods - hydrographic surveying – tides – MSL – Sounding methods – measurement of current and discharge – Tunnel alignment and setting out – Settlement and Deformation studies.

TEXT BOOKS:

1. James M. Anderson and Edward M. Mikhail, "Surveying, Theory and Practice", 7th Edition, McGraw Hill, 2001.
2. Bannister and S. Raymond, "Surveying", 7th Edition, Longman 2004.
3. Alfred Leick, GPS satellite surveying, John Wiley & Sons Inc., 3rd Edition, 2004.
4. Laurila, S.H. Electronic Surveying in Practice, John Wiley and Sons Inc, 1993.

REFERENCES:

1. Roy S.K., "Fundamentals of Surveying", 2nd Edition, Prentice Hall of India, 2004.
2. Arora K.R. "Surveying Vol I & II", Standard Book House, 10th Edition 2008.

Diploma, Anna Univ UG & PG Courses

Notes

Syllabus

Question Papers

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Available @

www.AllAbtEngg.com

3. Guocheng Xu, GPS Theory, Algorithms and Applications, Springer – Verlag, Berlin, 2003.
4. Seeber G, Satellite Geodesy, Water De Gruyter, Berlin, 1998.