

**DEMAND****PAVIATH INTEGRATED SOLUTION****CIVIL ENGG****CIVIL POLY****SURVEYING – II****Paviath ONLINE**

◆ CIVIL POLY ◆ II YEAR IV SEM ◆ CODE CEM43

OBJECTIVES:

ON COMPLETION OF THE COURSE, THE STUDENT WILL POSSES KNOWLEDGE ABOUT

- THEODOLITE SURVEYING
- TACHEOMETRIC SURVEYING
- TRIGNOMETRIC SURVEYING
- CURVE SETTING
- BASICS OF REMOTE SENSING
- PHOTOGRAMMETRIC SURVEYING
- HYDROGRAPHIC SURVEYING
- TOTAL STATION
- GEOGRAPHICAL INFORMATION SYSTEM

THEODOLITE SURVEYING

INTRODUCTION - TYPES OF THEODOLITES : TRANSIT AND NON-TRANSIT THEODOLITE. VERNIER AND MICROMETER THEODOLITES - ELECTRONIC THEODOLITE (PRINCIPLES AND DESCRIPTION ONLY) - COMPONENT PARTS OF A TRANSIT THEODOLITE - FUNCTIONS - TECHNICAL TERMS USED IN THEODOLITE SURVEYING - TEMPORARY ADJUSTMENTS - FUNDAMENTAL LINES AND RELATIONSHIP BETWEEN THEM - MEASUREMENT OF HORIZONTAL ANGLE BY METHOD OF REPETITION AND REITERATION - MEASUREMENT OF VERTICAL ANGLE AND DEFLECTION ANGLE - READING BEARING OF A LINE - THEODOLITE TRAVERSING - METHODS - FIELD CHECKS IN CLOSED TRAVERSE - LATITUDE AND DEPARTURE - CONSECUTIVE COORDINATES - INDEPENDENT COORDINATES - PROBLEMS ON COMPUTATION OF AREA OF CLOSED TRAVERSE - BALANCING THE TRAVERSE

TACHEOMETRIC SURVEYING
INTRODUCTION - INSTRUMENTS USED IN TACHEOMETRY - SYSTEMS OF TACHEOMETRY : STADIA AND TANGENTIAL TACHEOMETRY - PRINCIPLES - FIXED HAIR METHOD OF TACHEOMETRY - DISTANCE AND ELEVATION FORMULAE - ANALLACTIC LENS (NO PROOF) : ADVANTAGES AND USES - SIMPLE PROBLEMS - DISTOMATS (DESCRIPTION ONLY) - DIRECT READING TACHEOMETERS - DETERMINATION OF CONSTANTS OF A TACHEOMETER : PROBLEMS - TACHEOMETRIC TRAVERSE - ERRORS IN TACHEOMETRIC SURVEYING.

3.1 TRIGNOMETRICAL LEVELLING

INTRODUCTION - FINDING ELEVATION OF OBJECTS - BASE ACCESSIBLE - BASE INACCESSIBLE: SINGLE PLANE AND DOUBLE PLANE METHODS - PROBLEMS ON DETERMINATION OF ELEVATION OF OBJECTS.

3.2 REMOTE SENSING, PHOTOGRAMMETRIC SURVEYING**AND HYDROGRAPHIC SURVEYING**

REMOTE SENSING - DEFINITION - BASIC PROCESS - METHODS OF REMOTE SENSING - APPLICATIONS - PHOTOGRAMMETRIC SURVEYING - DEFINITION - TERRESTRIAL AND AERIAL PHOTOGRAPHS - APPLICATIONS - HYDROGRAPHIC SURVEYING - DEFINITION - USES - SOUNDING: DEFINITION, PURPOSE, INSTRUMENTS NEEDED - STEPS IN HYDROGRAPHIC SURVEYING.

CURVES

INTRODUCTION - TYPES OF CURVES - DESIGNATION OF CURVES - ELEMENTS OF SIMPLE CIRCULAR CURVE - SETTING OUT SIMPLE CIRCULAR CURVE BY: OFFSETS FROM LONG CHORDS, OFFSETS FROM TANGENTS, OFFSETS FROM CHORDS PRODUCED AND RANKINE'S METHOD OF DEFLECTION ANGLES - SIMPLE PROBLEMS - TRANSITION CURVES - OBJECTIVES - VERTICAL CURVES : DEFINITION AND TYPES.

TOTAL STATION AND GEOGRAPHICAL INFORMATION SYSTEM**5.1 TOTAL STATION**

INTRODUCTION - APPLICATION OF TOTAL STATION - COMPONENT PARTS OF A TOTAL STATION - ACCESSORIES USED - SUMMARY OF TOTAL STATION CHARACTERISTICS - FEATURES OF TOTAL STATION - ELECTRONIC DISPLAY AND DATA READING - INSTRUMENT PREPARATION, SETTING AND MEASUREMENT (DISTANCE, ANGLE, BEARING ETC.) - FIELD PROCEDURE FOR CO-ORDINATE MEASUREMENT - FIELD PROCEDURE TO RUN A TRAVERSE SURVEY - LINKING DATA FILES FOR VARIOUS APPLICATIONS.

5.2 GEOGRAPHICAL INFORMATION SYSTEM (GIS)

INTRODUCTION - GEOGRAPHICAL INFORMATION - DEVELOPMENT OF GIS - COMPONENTS OF GIS - STEPS IN GIS MAPPING - ORDINARY MAPPING TO GIS - COMPARISON OF GIS WITH CAD AND OTHER SYSTEM - FIELDS OF APPLICATIONS - NATURAL RESOURCES, AGRICULTURE, SOIL, WATER RESOURCES, WASTELAND MANAGEMENT AND SOCIAL RESOURCES - CADASTRAL SURVEY AND CADASTRAL RECORDS - LAND INFORMATION SYSTEM (LIS).

TEXT BOOK:

1. KANETKAR, T. P. AND S.V. KULKARNI, "SURVEYING AND LEVELLING PART I AND 2", PUNE VIDYARTHI GRIHA, PRAKASHAN, 23RD EDITION, REPRINT 2008.

2. PUNMIA, B.C. ASHOK K. JAIN AND ARUN K. JAIN, "SURVEYING VOLUME I", LAXMI PUBLICATIONS PRIVATE LIMITED, 16TH EDITION 2011.

REFERENCE BOOKS:

1. PUNMIA, B.C. ASHOK K. JAIN AND ARUN K. JAIN, "SURVEYING VOLUME I & II", LAXMI PUBLICATIONS PRIVATE LIMITED, 15TH EDITION 2011.

2. MIMI DAS SAKIA, BHARGAB MOHAN DAS AND MADAN MOHAN DAS, "SURVEYING", PHI LEARNING PRIVATE LIMITED, EDITION 2010.

3. S.K. ROY, "FUNDAMENTALS OF SURVEYING", PHI LEARNING PRIVATE LIMITED, EDITION 2010

4. SATRESH GOPI, R. SATHIKUMAR AND N. MADHU, ADVANCED SURVEYING, PEARSON EDUCATION, CHENNAI.

**STC APM**

SYLLABUS COACHING
TRAINING - 2/UNIT TRAINING
SELF - 4/UNIT ASSIGNMENT
PRESENTATION - 2/UNIT
SHOWTIME - 2/UNIT

MATHS ILLUSTRATION - GEOMETRY EXPRESSIONS**ASCON RENG**

SYLLABUS PERIOD
TRAINING - 2/2 HRS/UNIT
REMOTE - 2/2 HRS/UNIT
DURATION - SEMESTER
ONLINE/REMOTE ACCESS

MECHANICAL EXPRESSIONS - ANALYTIX CAMS**ARCADIA BIM**

FEATURES
TRAINING BY IND. PROFESSIONAL
INDUSTRY APPLICATION
TRAINER OPPORTUNITY
CERTIFICATION