◆ CIVIL UNIVERSITY ◆ FOURTH YEAR I SEMESTER ◆ CODE A70140

UNIT – I
INTRODUCTION TO PHOTOGRAMMETRY:
PRINCIPLES& TYPES OF AERIAL PHOTOGRAPH,
GEOMETRY OF VERTICAL AERIAL PHOTOGRAPH,
SCALE & HEIGHT MEASUREMENT ON
SINGLE VERTICAL AERIAL PHOTOGRAPH, HEIGHT
MEASUREMENT BASED ON RELIEF
DISPLACEMENT, FUNDAMENTALS OF
STEREOSCOPY, FIDUCIAL POINTS, PARALLAX
MEASUREMENT USING FIDUCIAL LINE.

UNIT – II
REMOTE SENSING –: BASIC CONCEPT OF REMOTE
SENSING, DATA AND INFORMATION,
REMOTE SENSING DATA COLLECTION, REMOTE
SENSING ADVANTAGES & LIMITATIONS,
REMOTE SENSING PROCESS.
ELECTRO-MAGNETIC SPECTRUM, ENERGY
INTERACTIONS WITH ATMOSPHERE AND WITH
EARTH SURFACE FEATURES (SOIL, WATER,
VEGETATION), INDIAN SATELLITES AND SENSORS
CHARACTERISTICS, RESOLUTION, MAP AND IMAGE
AND FALSE COLOR COMPOSITE,
INTRODUCTION TO DIGITAL DATA, ELEMENTS OF
VISUAL INTERPRETATION TECHNIQUES.

UNIT – III
GEOGRAPHIC INFORMATION SYSTEMS: INTRODUCTION TO GIS;
COMPONENTS OF A
GIS; GEOSPATIAL DATA: SPATIAL DATA-ATTRIBUTE DATA – JOINING
SPATIAL AND
ATTRIBUTE DATA; GIS OPERATIONS: SPATIAL DATA INPUT- ATTRIBUTE
DATA MANAGEMENT
–DATA DISPLAY- DATA EXPLORATION- DATA ANALYSIS. COORDINATE
SYSTEMS:
GEOGRAPHIC COORDINATE SYSTEM: APPROXIMATION OF THE EARTH,
DATUM; MAP
PROJECTIONS: TYPES OF MAP PROJECTIONS-MAP PROJECTION
PARAMETERS-COMMONLY
USED MAP PROJECTIONS - PROJECTED COORDINATE SYSTEMS

UNIT –IV
VECTOR DATA MODEL: REPRESENTATION OF
SIMPLE FEATURES- TOPOLOGY AND ITS
IMPORTANCE; COVERAGE AND ITS DATA
STRUCTURE, SHAPE FILE; DATA MODELS FOR
COMPOSITE FEATURES OBJECT BASED VECTOR
DATA MODEL; CLASSES AND THEIR
RELATIONSHIP; THE GEOBASE DATA MODEL;
GEOMETRIC REPRESENTATION OF SPATIAL
FEATURE AND DATA STRUCTURE, TOPOLOGY
RULES

UNIT –V
RASTER DATA MODEL: ELEMENTS OF THE RASTER
DATA MODEL, TYPES OF RASTER
DATA, RASTER DATA STRUCTURE, DATA
CONVERSION, INTEGRATION OF RASTER AND
VECTOR DATA.
DATA INPUT: METADATA, CONVERSION OF
EXISTING DATA, CREATING NEW DATA;
REMOTE SENSING DATA, FIELD DATA, TEXT DATA,
DIGITIZING, SCANNING, ON SCREEN
DIGITIZING, IMPORTANCE OF SOURCE MAP, DATA
EDITING

TEXT BOOKS:
1 REMOTE SENSING OF THE ENVIRONMENT – AN EARTH
RESOURCE PERSPECTIVE
– 2ND EDITION – BY JOHN R. JENSEN, PEARSON
EDUCATION.
2 INTRODUCTION TO GEOGRAPHIC INFORMATION
SYSTEM – KANG-TSUNG CHANG,
TATA MCGRAW-HILL EDUCATION PRIVATE LIMITED.
REFERENCES:
1. CONCEPTS & TECHNIQUES OF GIS BY C.P.LO ALBERT,
K.W. YONNG, PRENTICE
HALL (INDIA) PUBLICATIONS.
2. REMOTE SENSING AND GEOGRAPHICAL INFORMATION
SYSTEMS BY M.ANJI
REDDY JNTU HYDERABAD 2001, B.S.PUBLICATIONS.
3. PRINCIPALS OF GEO PHYSICAL INFORMATION
SYSTEMS – PETER A BURRAGH
AND RACHAEL A. MC DONNELL, OXFORD PUBLISHERS
2004.
4. BASICS OF REMOTE SENSING & GIS BY S.KUMAR,
LAXMI PUBLICATIONS.

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TRAINING - 2/UNIT TRAINING
SELF - 4/UNIT ASSIGNMENT
PRESENTATION – 2/UNIT
SHOWTIME - 2/UNIT

SYLLABUS PERIOD
TRAINING – 2/2 HRS/UNIT
REMOTE - 2/2 HRS/UNIT
DURATION - SEMESTER
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