

GOVERNMENT COLLEGE (AUTONOMOUS), RAJAMAHENDRAVARAM
DEPARTMENT OF GEOGRAPHY
SYLLABUS
THIRD YEAR B.A. /B.Sc. SEMESTER – V

PAPER - 6 : PRINCIPLES OF REMOTE SENSING

UNIT-I

Basics of Remote Sensing: definition, History, Advantages -Aerial Photography and Satellite Remote Sensing.

UNIT- II

Components of Remote Sensing System :Energy Source, Energy- Atmosphere Interaction, Energy- Matter Interaction, Platforms, Sensor, Data handling system, Data users Energy Interaction with Atmosphere and Surface Materials: Nature of Electromagnetic Radiation – Electromagnetic Radiation Spectrum Interaction of Electromagnetic Radiation with Atmosphere and with Earth Surface Materials – Spectral Signatures.

UNIT- III

Remote Sensing Platforms: Aircrafts and Satellites - Orbital Characteristics of Sun – synchronous Earth Resource Satellites and Geostationary Communication – Special purpose Satellites.

UNIT- IV

Remote Sensing Sensors:Types of Sensors: Active and Passive – Framing System (Cameras) – Scanning Systems Sensors Characteristics: Spatial Resolution, Spectral Resolution, Radiometric Resolution, Temporal Resolution. - Cameras: Single Lens, Multiple Lens, Strip and Digital – Filters

UNIT- V

Scanners: Cross – track Vs. Along – Track – Mono – Spectral Vs. Multi – Spectral Scanners
Products: Visual and Digital - Remote Sensing in India: Development and Growth – Satellites.

Basic Texts:

1. Campbell, James, B (1987) Introduction to Remote Sensing, The Guilford Press, New York.
2. Curran, P (1985) Principles of Remote Sensing, London .
3. Kang- tsng Chang (2003) Geographic Information Systems, Tata Mc Graw hill, New Delhi

4. Lillisand, T.M. and R.W Kifer (1997) Remote Sensing and Image Interpretation, John Wiley and Sons, New York.
5. Star J, and J. Estes, (1994), Geographic Information Systems: An Introduction, Prentice Hall, New Jersey.

Additional Texts:

1. Anji Reddy, M (2006) A Text Book of Remote sensing and Geographical Information System, B.S Publications, Hyderabad.
2. Clark, Keith C. (1999) Getting Started with Geographic Information Systems, Prentice Hall, New Jersey.
3. Lo Albert, C.P., and Yeung, K.W (2003) Concepts and Techniques of Geographical Information Systems, Prentice Hall of India Pvt. Ltd., New Delhi.

GOVERNMAENT COLLEGE (AUTONOMOUS), RAJAMAHENDRAVARAM
DEPARTMENT OF GEOGRAPHY
PRACTICAL SYLLABUS
THIRD YEAR B.A. /B.Sc. SEMESTER - V

PRACTICAL PAPER - 6: PRINCIPLES OF REMOTE SENSING

1. Air Photographs and Satellite Imageries: Describing the Marginal Information
2. Air Photo Interpretation: Using Stereoscop, Stereoscopic Vision Test, Flight line Marking, Land use Mapping, Relief and Drainage Mapping.
3. Imagery Interpretation: Visual Methods – Mapping of Land use / Land Cover / Drainage.

Basic Texts:

1. Campbell, James, B (1987) Introduction to Remote Sensing, The Guilford Press, New York.
2. Clarke, Keith C.(1999) Getting Started with Geographic Information Systems, Prentice Hall, New Jersey.

Additional Texts:

1. Anji Reddy ,M(2006): A Text Book of Remote Sensing and Geographical Information Systems, B.S. Publications, Hyderabad.
2. Curran, P (1997) Principles of remote Sensing, Longman, London.
3. Lillisand, T.M. and R.W Kiefer (1997) Remote Sensing and Image Interpretation, John Wiley and Sons, New York.