CE 513: Watershed Management and Remote Sensing Applications (3-0-0:3)

Introduction

Principles of watershed management, Soil water conservation practices, Integrated planning, Multi-disciplinary approach

Management of agricultural lands

Structural and non structural measures, Forest and grass land management, Erosion problems and controlling techniques, Gully control, Landslide and correction techniques.

Remote sensing fundamentals

Physics of remote sensing, Electromagnetic radiation, Interaction of ENR with atmosphere, Earth surface, Soils, Water and vegetation. Data acquisition.

Photographic system and imaging systems

Single vertical photographs, Visible and near infrared imagery, Photo interpretation, Spectral properties of water, Stereoscopic viewing, Application to water resources mapping, area assessment and watershed management.

Satellite data

GPS and GIS utilities, Classification using imageries, Applications in water resources and watershed management.

Text Books and References:

1. Lillesand, K., "*Remote Sensing and Image Interpretation"*, John Wiley & Sons.
2. Tideman, E. M., "*Watershed Management – Guidelines for Indian Conditions"*, Omega Scientific Publishers.
3. Reeves, R. G., "*Manual of Remote Sensing, Volume I and II"*, American Society of Photogrammetry, Falls Church.