COURSE CODE: **FWM 315:**

COURSE TITLE: **REMOTE SENSING AND MAPPING TECHNIQUES**

NUMBER OF UNITS: **3 units**

COURSE DURATION:

COURSE DETAILS:

Course Coordinator:
Email:

Office Location:
Other Lecturers:

COURSE CONTENT:

Development of Remote Sensing as a tool in Environmental Studies. Principles and concept of Remote Sensing.
Nature and functions of common remote sensors. The use of Remote Sensing in weather, resource management and studies.
Agricultural land-use.
Map and their limitations.
Sources of data for Agro-meteorological and drainage studies.
Methods of mapping of Agro-meteorological and drainage information.
Base map for different purposes.
Choice of base map for quantitative representation of agro-meteorological and drainage data.

COURSE REQUIREMENTS:

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READING LIST:

Avery, T.E. and G.L. Berlin. 1992. *Fundamentals of Remote Sensing and Air-photo Interpretation, 5th ed*. Macmillan Publishing Company, New York, NY.

- Campell, J.B. 1996. *Introduction to Remote Sensing*, 2nd ed. The Guilford Press, New York, NY.
- Lillesand, T.M. and R.W. Kiefer. 1994. *Remote Sensing and Image Interpretation*. John Wiley & Sons, New York, NY.

- Smith, P. *Hydrologic Data Development System*. Department of Civil Engineering, University of Texas at Austin. 1995. CRWR Online Report 95-1.
- Thompson, M.M. 1966. *Manual of Photogrammetry, 3rd ed.* American Society of Photogrammetry, Falls Church, VA.
- U.S. Geological Survey. 1998. Internet site, http://www.usgs.gov/research/gis/title.html.
- Wolf, P.R. 1974. *Elements of Photogrammetry (With Air Photo Interpretation and Remote Sensing)*. McGraw-Hill Book Company, St. Louis, MO.

LECTURE NOTES

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Introduction

Development of Remote Sensing as a tool in Environmental Studies

Nature of Remote Sensing Data
Electro-magnetic radiation

Importance of Remote Sensing Application to Environmental Studies

Factors affecting the quality of Images used for Remote Sensing

Characteristics of major imaging systems

- Photographic Cameras
- Television Cameras
- Scanning Radiometers
- Microwave Imagers (Active and Passive)

Image Interpretation
Manual and Computer-Assisted

Application Areas in Environmental Studies

Mapping Techniques

Features of a map

Location of places in a map (using grid reference, longitude and latitudes)

Base Maps

Plotting of features in a map (Ways of representing data in maps)

Isopleths Maps (Types and Plotting).