FOUR YEARS UNDER GRADUATE PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 3rd SEMESTER SKILL ENHANCEMENT COURSE(SEC)

Course Code : SEC334

Title of the Course : Basics of Remote Sensing and GIS

Nature of Course : Skill Enhancement Course (SEC)

End Semester : 60 Marks (45 T + 15 P)

In Semester : 40 Marks

Course Credit : 3 Credit (2+1)

COURSE OBJECTIVES:

- This paper is a Skill Enhancement Course paper that intends to introduce students todifferent Remote Sensing data analysis techniques
- The objective of the course is to develop some practical knowledge and skills indiversified applications of remote sensing data and GIS techniques

Practical Record: A project file consisting of 5 exercises on using any method on above mentioned themes from Unit 3 and Unit 4

UNITS	CONTENTS	L	T	P	Total Hours
1 **(15 Marks)**	**1.1** Aerial Photography: Principles and types; Geometry of Aerial Photography **1.2** Satellite imagery and their basic properties	**5**	**5**		**10**
2 (15 Marks)	**2.1** Concept of resolution – spatial, spectral, temporal, radiometric **2.2** Image interpretation (Visual & Digital): Eléments and Keys of image interpretation, techniques	**5**	**5**		**10**
3 (15 Marks)	**3.1** Digital Image Processing: Image Enhancement and Classification (Supervised and Unsupervised). **3.2** GIS: Definition, Component, Application data structure	**5**	**5**		**10**
4 (15 Marks)	**4.1** Practical on- Georeferencing, Digitization, LULC Mapping (supervised and unsupervised classification) **4.2** Hands on training of using GPS			**30**	**30**
	Total	**15**	**15**	**30**	**60**

Where, L: Lectures T: Tutorials P: Practicals

MODES OF IN-SEMESTER ASSESSMESNT: (40 Marks)

- Two Internal Examination - **30 Marks (20 marks Theory +10 Marks Practical)**
- Others (Any one) **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Practical exercise

LEARNING OUTCOMES:

After successful completion of this course students will be able:

- To develop their skills on using geo-spatial technologies
- To acquaint knowledge which will help them in their further studies
- This Skill Enhancement Course on RS & GIS will prepare the students for different professional services like GIS Analyst etc.

SUGGESTED READINGS:

1. Bhatta, B. (2008) Remote Sensing and GIS, Oxford University Press, New Delhi.
2. Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press
3. Chauniyal, D. (2010) Sudur Samvedana AvamBhaugolikSuchna Pranali, Sharda Pustak Bhawan, Allahabad.
4. Jensen, J. R. (2005) Introductory Digital Image Processing: A Remote Sensing Perspective, Pearson Prentice-Hall.
5. Joseph, G. 2005: Fundamentals of Remote Sensing, United Press India
6. Lilles and T. M., Kiefer R. W. and Chipman J. W., 2004: Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition)
7. Li, Z., Chen, J. and Batsavias, E. (2008) Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences CRC Press, Taylor and Francis, London
8. Mukherjee, S. (2004) Textbook of Environmental Remote Sensing, Macmillan, Delhi.
9. Nag P. and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi.
10. Singh R. B. and Murai S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Pub.
11. Wolf P. R. and Dewitt B. A., 2000: Elements of Photogrammetry: With Applications in GIS, McGraw-Hill.