SAINT CLARET COLLEGE, ZIRO
B. A. (GEOGRAPHY)
SYLLABUS AS PER RGU SEMESTRAL SCHEME
(Subjected to syllabus enrichment by SCCZ for Claretines)

Semester VI

GEOGCT 351: Fundamentals of RS, GIS & GNSS

Breakup of marks with time	Questions to be set for End term Examination
Total marks :100 (Theory)	
End term Exam : 80 (3hrs)	3 (three) questions to be set from each unit, 2 (two) to attempt i.e 2x8marks= 16 (5 units x 16 = 80)
Internal Exam : 20 (1 hr)	20 marks: Average of best two passed Internal Exams

Objectives: Having studied this paper, a student will be able to-

a. *Learn about Geospatial Technologies.*
b. *Learn Different technologies involved in geographical studies.*
c. *Understand space technologies and their applications.*
d. *Do scientific analysis of geographical phenomenon.*
a. *Apply Geospatial technologies in socio-economic developments.*

Unit 0: Baseline Analysis- : Assessment of baseline knowledge; revision of basic concepts; Fundamentals RS & GNSS; objectives; Goal-setting

Unit I: Bases of Remote Sensing

a. Meaning and definition of Remote Sensing

b. Historical development of Remote Sensing

c. Types of Remote Sensing (Airborne, Space borne)

d. Indian Remote Sensing: Development

Unit II: Electro-Magnetic Radiation Characteristics

a. Principles of EMR

b. Electromagnetic Spectrum

c. Atmosphere - radiation interaction

d. Surface - radiation interaction

Unit III: Aerial Photography and Imaging System

    a. Types of aerial photograph

    b. Principles of photo interpretation

    c. Types of Imaging System (Along track scanner, Across track scanner)

    d. Types of Resolution: spatial, spectral, radiometric, temporal

Unit IV: Digital Image Processing

    a. Need for image processing

    b. Restoration - Radiometric, geometric and atmospheric correction

    c. Image Enhancement

    d. Image Classification - Supervised and Unsupervised

Unit V: GIS and GNSS

    a. Components and functionality of GIS

    b. Spatial data formats: raster, vector

    c. Spatial analysis: union, intersection, clip

    d. GNSS and use

Recommended Readings:

1. Bhatta, Basudeb, (2011): Remote Sensing and GIS, Second Edition, Oxford.

2. Elangovan, K. (2006): GIS Fundamentals, Applications and Implementations, New India Publishing

3. Joseph, George, (2005): Fundamentals of Remote Sensing, Second Edition, University Press

4. Kumar, S. (2016): Basics of Remote Sensing and GIS, Laxmi Publications.

5. Liliesand, Kiffer, Chipman (2011): Remote Sensing and Image Interpretation, Wiley Publication

6. Qihao Weng (2011) An Introduction to Contemporary Remote Sensing. McGraw Hill Professional