Programme	Semester 1	Course Code	GIS-101	Credit Hours	2+1
Course Title	Introduction to Geographic Information Systems				

Course Introduction

- Introduction to Geographical Information System.

The course is designed to understand the fundamental understanding and application of GIS.

Learning Outcomes

On the completion of the course, the students will:

1. Digitization
2. Georeferencing
3. Satellite Images
4. Drone Cameras
5. Software Use

Course Content		Assignments/Readings
Week 1	Introduction to Geographical Information System.	
	Fundamental theory of Geographic Information Science.	
Week 2	History and evolution of GIS.	
	Components of GIS.	
Week 3	Concepts of Geo-Spatial data (its acquisition and development).	
	Concept of Geo-Workspace environment	
Week 4	Geo-referencing & Geocoding	
	Data structures and models. (Raster & Vector)	
Week 5	Levels of Measurements in GIS.	
	Vector Data entry operator in GIS	
Week 6	Concepts of Spatial layering in GIS.	
	Concept of four M's (Mapping, Modeling, Management & Monitoring)	
Week 7	Fundamental operations in GIS.	

	Application of GIS	
Week 8	Introduction to Open Source and Commercial Software	
Week 9	Coordinate Systems	
Week 10	Introduction to Geo-workspace	
Week 11	Geo-referencing	
Week 12	Plot a geographic grid of graph paper (manual).	
Week 13	Handheld GPS based survey.	
Week 14	Incorporation of spreadsheet data with GIS	
Week 15	Creating shape file and spatial database files	
Week 16	Digitization [preparation of Land-use Map]	

Textbooks and Reading Material

1. Chang, K. T. (2010). Introduction to Geographical Information Systems. Higher Education, McGraw-Hill
2. Clarke, K. (2010). Getting started with Geographic Information System, 5th Edition, New York: Prentice Hall, ISBN –10: 0131494988
3. Huisman, O. & de By, R. A.(2009). Principles of Geographic Information Systems: An Introductory Textbook, ITC Educational Textbook Series; 1, ISBN 978-90-6164-269-5
4. Gopi, S., Sathikumar, R., &Madhu, N. (2007). Advance Surveying Total Station, GIS and Remote Sensing. New Delhi, India: Dorling Kindersley.

5. Bolstad, P. (2007), GIS Fundamentals", 3rd Edition, Atlas Books. ISBN: 978-0-9717647-2-9

6. Heywood, I., Cornelius, S. & Carver, S. (2006). An introduction to Geographic Information System, 3rd Edition, Prentice Hall. ISBN-10: 0131293176

7. Longley, P. A., Goodchild, M. F., Maguire, D. J., & David, W. R. (2011). Geographic Information Systems and Sciences, 3rd Edition, John Wiley & Sons.

8. Ormsby, T., Napoleon, E., Burke, R., Groessl, C., & Bowden, L. (2010). Getting to Know ArcGIS Desktop: Basics of ArcView, ArcEditor, and ArcInfo, 2nd Edition, ESRI Press. ISBN: 9781589482609.

Teaching Learning Strategies

1. Lectures
2. Written Assignments
3. Quizs
4. Lab Work

Assignments: Types and Number with Calendar

1. Practical
2. Quiz
3. Presentation
4. Assignment