Lecture Plan

Name of the college: Government College of Arts, science and Commerce Sanquelim Goa

Name of Faculty: Dr. Arati Panshekar	**Subject:** Geography	
Paper code and title: GOG-305 Fundamentals of Geographical Information System	**Program: BA**	**Division:**
Academic year: 2025-26	**Semester: VI**	**Total Lectures: 3**

Course Objectives:

This course provides an introduction to the fundamental concepts and applications of Geographical Information Systems (GIS). Students will learn the principles of spatial data, GIS technology, data analysis, and cartographic representation. Through a combination of lectures, hands-on exercises, and projects, students will develop practical skills in utilizing GIS tools for spatial analysis and decision-making.

Expected Course Outcome:

At the end of the successful completion of this course, students will be able to:

1. **Understand** the primary objectives of GIS in terms of spatial data management, analysis, and visualization.
2. **Apply** knowledge of spatial and non-spatial data models to solve real-world problems in various domains.
3. **Integrate** knowledge of coordinate systems and map projections to ensure accurate and meaningful spatial analysis.
4. **Identify** the methods of map creation and **Create** map using different elements of map making

Student Learning Outcome: After completing this course, students will be able to:

Define GIS and explain its evolution, components, and objectives.
Differentiate spatial and non-spatial data and explain raster, vector, and database data models.
Understand coordinate systems and map projections and their importance in GIS analysis.
Use basic GIS software tools for data input, editing, and visualization.

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
January	01-01-2026	01-01-2026	3	Geographic Information System (GIS): Definition and Concept	Mind Mapping, Question bank	Classroom Teaching, Power Point Presentation	1. George Joseph: Fundamentals of Remote Sensing, Second Edition, Universities Press, Hyderabad 2. Jensen J. R.: Remote Sensing of the Environment: An Earth Resource Perspective, Pearson Education, Singapore. 3. Lillesand, Kiefer and Chipman: Remote sensing and Image Interpretation. 5 Ed. Wiley& sons. 4. Reddy Anji M.: Text Book of Remote Sensing and Geographical Information System, BS Publications, Hyderabad, AP 5. Rees, W. G.: Physical Principles of Remote Sensing, Second Edition, Cambridge University Press, UK. 6. Robinson A. H., Sale, R. D., Morrison, J. L., Muehrcke, P. C.: Elements of Cartography, John Wiley & Sons, New York. 7. Sarkar A,: Practical Geography: A Systematic Approach, Orient BlackSwan (Revised edition), Kolkata
	05-01-2026	10-01-2026	3	Evolution and Historical Development of GIS			
	12-01-2026	17-01-2026	3	Components of GIS: Hardware and Software			
	19-01-2026	24-01-2026	3	Components of GIS: Data, Procedures, and People			
	26-01-2026	31-01-2026	3	Objectives and Scope of GIS			
February	02-02-2026	07-02-2026	3	Applications of GIS in Different Fields			
	09-02-2026	14-02-2026	3	Spatial Data: Concept and Sources			
	16-02-2026	21-02-2026	3	Raster Data Model: Structure, Advantages, and Limitations			
	23-02-2026	28-02-2026	3	Vector Data Model: Structure, Advantages, and Limitations			
March	02-03-2026	07-03-2026	3	Non-Spatial (Attribute) Data: Concept and Sources			
	09-03-2026	14-03-2026	3	Database Data Models in GIS: Relational, Network,			

				Hierarchical, and Object-Oriented			
	16-03-2026	21-03-2026	3	Coordinate Systems and Map Projections: Concepts and Implications			
	23-03-2026	28-03-2026	3	Introduction to GIS Software and Basic Operations			

*** Assessment Rubrics**

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
Practical	25
Project	-
Semester End Exam	60