Teaching Plan for Academic Session: 2025-26
Department of Geography
Jagannath Barooah College(Autonomous), Jorhat

Name of the Teacher: Shyamolee Sarmah
Semester: ODD(UG I, III, V & PG III) & EVEN (UG II, IV, VI & PG II, IV)

Class/Semester	Title & Code of The Paper Allotted (Credit)	Method of Teaching	Teaching Material	Unit	Topic	Period/ Hours Required	Details of the Contents	Remarks / Books
UG Sem I	MAP STUDY GGRSK-011 (3 Cr.)	Lecture, PPT, Discussion, Project, Class work	Textbook, Diagrams, Globe, Toposheet, Cadastral Map, Thematic Maps	I	Introduction to map	14	Definition of map, essential characteristics of map (location, symbol, scale and orientation), types of map (including introduction to topographic map), uses of map, concept of map scale, types of scale (statement, graphical scale and representative fraction), Conversion of scale from one type to another	Fundamentals of Cartography by R.P. Misra and A. Ramesh

UG Sem II	MAP STUDY GGRSK-021 (3 Cr.)	Lecture, PPT, Discussion, Project, Class work	Textbook, Diagrams, Globe, Toposheet, Cadastral Map, Thematic Maps	I	Introduction to map	14	Definition of map, essential characteristics of map (location, symbol, scale and orientation), types of map (including introduction to topographic map), uses of map, concept of map scale, types of scale (statement, graphical scale and representative fraction), Conversion of scale from one type to another	Fundamentals of Cartography by R.P. Misra and A. Ramesh
UG Sem III	MAP STUDY GGRSK-031 (3 Cr.)	Lecture, PPT, Discussion, Project, Class work	Textbook, Diagrams, Globe, Toposheet, Cadastral Map, Thematic Maps	I	Introduction to map	14	Definition of map, essential characteristics of map (location, symbol, scale and orientation), types of map (including introduction to topographic map), uses of map, concept of map scale, types of scale	Fundamentals of Cartography by R.P. Misra and A. Ramesh

							(statement, graphical scale and representative fraction), Conversion of scale from one type to another	
UG Sem III	ENVIRONMENTAL GEOGRAPHY GGRMJ 032 (4 Cr.)	Lecture, Seminar, Interactive, Project	PPT, Diagrams, Maps, Book	II	Basic concepts of Environmental Geography	16	Ecology : Concepts,Approaches and basic concepts; Ecosystems: Concept, Structure, Energy flow, Stability & Equilbrium; Biomes & Biodiversity: Concepts, Distribution of Biomes; Biodiversity: Basic Concepts, India as a Mega Biodiversity nation, Threats to Biodiversity and Conservation of Biodiversity in India.	1.Chandna R. C, 2002; Environmental Geography, Kalyani, Ludhiana 2.Saxena,H.N (2005) Environmental Geography; Kalyani Publishers
UG Sem IV	Quantitative Techniques in Geography GGRMJ 042 (4 Cr.)	Lecture, Board work, Interaction, Class work	Board, Book, PPT, Graph	I	Introduction to the measures of central tendency	12	Significance of quantification of in Geography, types of data - primary and	Statistics for Economics by P.K. Dhar

							secondary, finding mean, median and mode using geographical data, measurement of median and mode using graphical method.	
UG Sem V	G e o i n f o r m a t i c s (T h e o r y) GGRMJ 053(4 Cr.)	Lecture, Board work, Interaction	Board, Book, PPT	III	Satellites in Remote Sensing	12	Platforms – types and their characteristics ;Satellites and their characteristics – geo-stationary and sun-synchronous; Earth Resources Satellites - LANDSAT, SPOT, IRS, IKONOS satellite series; Meteorological satellites – INSAT, NOAA, GOES.	Remote Sensing and GIS by Basudeb Bhatta
UG Sem V	G e o i n f o r m a t i c s (T h e o r y) GGRMJ 053(4 Cr.)	Lecture, Board work, Interaction	Board, Book, PPT	IV	Sensors and Resolutions	12	Sensors – types and their characteristics, across track (whiskbroom) and along track (pushbroom) scanning; Optical	Remote Sensing and GIS by Basudeb Bhatta

							mechanical scanners – MSS, TM, LISS, WiFS, PAN; Concept of resolution – spatial, spectral, temporal, radiometric; Basic concept and principles of thermal, microwave and hyperspectral remote sensing.	
UG Sem V	Geoinformatics (Practical) GGRMJ 054 (4 Cr.)	Lecture, Board, Demonstration,Assignments	Book, Computer, GIS Software	I	GIS Software	12	Types of GIS software, installation of QGIS software, introduction to the GUI of QGIS, installation of plugins in QGIS.	NA
UG Sem V	Geoinformatics (Practical) GGRMJ 054 (4 Cr.)	Lecture, Board, Demonstration,Assignments	Book, Computer, GIS Software	III	Vector Data Handling	16	Importing vector data in QGIS, creating vector layer, creating subset (clip), creating buffer, creating map layout.	NA
UG Sem V	Geoinformatics (Practical) GGRMJ 054 (4 Cr.)	Lecture, Board, Demonstration,Assignments	Book, Computer, GIS Software	IV	Familiarisation With Google Earth	16	Introduction to the GUI of Google Earth, navigation, putting placemark, creating KML	NA

							layer, measuring distance.	
UG Sem VI	Geography of Assam GGRMI 061 (4 Cr.)	Lecture, Board work, Interaction	Board, Book, PPT, Map	III	Agriculture	14	Major Food Crops – Paddy, wheat and Pulses and their distribution, methods of cultivation. Plantation and cash Corps – Tea, Jute, Sugarcane, Rubber and Oilseed. Change in cropping pattern in recent decades; irrigation and market infrastructure.	Geography of Assam by A.K. Bhagawati, A.K. Bora and B.K. Kar
PGSem II	Environmental Geography PGGRD-201 (4 Cr.)	Lecture & Discussion	Book, PPT, Map	III	Environmental Disasters and their Mitigation	12	Case studies: Chernobyl blast, Bhopal Gas tragedy Amazon Forest fire Man-induced disasters-industrial disaster, urban flood Mitigation	1.Chandna R. C, 2002; Environmental Geography, Kalyani, Ludhiana 2.Saxena,H.N (2005) Environmental

							measures for both natural and man-induced disasters Role of remote sensing and GIS in environmental studies	Geography ; Kalyani Publishers
PG Sem III	Research Methodology PGGRC-302 (4 Cr.)	Lecture, Interaction, Assignment	Books, PPT, Software	III	Research Design	6	Review of research works and Referencing	Research Methodology (Methods and Techniques) by C.R. Kothari
PG Sem III	REMOTE SENSING TECHNIQUES PGGRA-301 (2 Cr.)	Lecture, Interaction, Assignment	Books, PPT	II	Fundamentals of GIS	10	Sources of data to GIS; data types-vector and raster, concepts of digitization, georeferencing, editing and their significance; GIS as a support to decision making, spectral analysis techniques and thematic representation in GIS.	Remote Sensing and GIS by Basudeb Bhatta
PG Sem III	Geoinformatics (Theory) PGGRD-301-A (4 Cr.)	Lecture, Notes, Interaction	Textbooks, PPT	III , IV & V	1.Remote sensing platforms, sensors and satellite series	36	1.Platforms-their types and orbital characteristics; sensors and their	Remote Sensing and GIS by Basudeb Bhatta

					2. GIS in geography 3. Spatial data analysis		bands; satellite series- IRS, SPOT, IKONOS, Quick Bird, MODIS, RADARSAT, ERS, CARTOSAT and their characteristics. 2. Basic concept, components of GIS; data types and their structures; Data Base Management System (DBMS); data models, geographical data- spatial and non-spatial data; application of Global Positioning System (GPS) in geographical studies; relationship of GIS and Cartography. 3. Elements of spatial data; data sources- primary and secondary; integration of remote sensing & GPS to GIS; digital elevation	

							models- DEM and TIN.	
PG Sem III	Fundamentals of Remote Sensing (Practical) PGGRC-303 (4 Cr.)	Lecture , Demonstration, Interaction	PPT, Computer, Softwares	I & II	1.Digital Image Processing 2. Image Interpretation	30	1.Image correction, Filtering/ Image Enhancement, Supervised and Unsupervised classification. 2. Interpretation of satellite image for land-use/ land-cover, urban sprawl and slope mapping.	NA
PG Sem IV	Geography of Rural Development PGGRC-402 (4 Cr.)	Lecture , Notes, Interaction	Books, PPT	IV	Rural Development Policies and programs in India	12	Plans, prpgrams and policies undertaken in India for rural development; Rural Poverty Mitigation Programs in India and sustainable livelihood of the rural people	Textbook of Rural Developme nt by S. Mondal and G.L. Ray
PG Sem IV	Remote Sensing and GIS (Part II) PGGRA-402 (2 Cr.)	Lecture , Notes, Interaction	Books, PPT	II	Importance of GIS	10	Advantage over traditional maps and CAD Advantage of analysis, modelling, presentation and decision making Application in land use & land cover study and	Remote Sensing and GIS by Basudeb Bhatta

							flood mapping	
PG Sem IV	Geoinformatics (Theory)	Lecture , Notes, Interaction	Books, PPT	I, III & V	1.Digital Image Processing 2.Active Remote Sensing 3.Application of GIS	36	1.Digital Image and data formats, resolution, pre-processing, image enhancement, image transformation, image classification 2.Concept of active and microwave remote sensing, RADAR, LiDAR, SONAR, Speckle 3.Sitye suitability assessment for construction of dam, studies related to land use and land cover, morphometric study and flood related study, forestry study	Remote Sensing and GIS by Basudeb Bhatta
PG Sem IV	Project Report PGGRC-403 (4 cr.)	Supervision	Journals, Internet	NA	NA	Continuous	Individual dissertation topics	NA