SMRJ Government College, Siwani (Bhiwani)

(Affiliated to Chaudhary Bansi Lal University, Bhiwani)

Session: 2025-26

Lesson Plan

(Department of Geography)

Teacher: Mr. Rahul
Class: MSc. Final
Semester: 3rd
Maximum Marks: 100
End Term Exam Marks: 80

Course Type & Title: Geography & Disaster Management
Course Code: 19 GEO 308
Credits: 04
Internal Assessment Marks: 20

Course Outcomes:

Through this course following outcomes will be: -

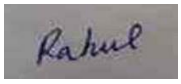
- **theoretical understanding of various disasters, their origin, management and mitigation**
- **understanding for vulnerability and developing community resilience**

Sr. No.	Week/Month, 2025	Unit/ Topic/ Chapter to be covered	Assignment/ Test/ Remarks, if any
1	01.08.2025 – 02.08.2025	Familiar with Syllabus	
2	04.08.2025 – 09.08.2025	Regional physiography, geology, soils, drainage,	
3	11.08.2025 – 16.08.2025	climate, land use and land cover of India	
4	18.08.2025 – 23.08.2025	natural hazards risk prone areas. Hazard risk,	
5	25.08.2025 – 30.08.2025	vulnerability and disaster: concepts and relationships; measuring hazard risks, vulnerability and disasters.	
6	01.09.2025 – 06.09.2025	Regional extreme events in India: earthquakes, floods, drought,	
7	08.09.2025 – 13.09.2025	cyclone, tsunami, landslides, avalanches, snow, rain, and wind storms.	
8	15.09.2025 – 20.09.2025	Disaster magnitude and impacts: case study/ examples from recent disasters.	**Assignment**
9	22.09.2025 – 27.09.2025	Earthquake disaster vulnerability assessment	
10	29.09.2025 – 04.10.2025	Flood disaster zonation and vulnerability assessment	
11	06.10.2025 – 11.10.2025	Landslides and avalanches disaster zonation and mapping	
12	13.10.2025 – 18.10.2025	Drought disasters zonation and mapping. Multi hazard risk assessment.	

13	27.10.2025 – 01.11.2025	Understanding manmade disasters, fires and forest fires; nuclear,	
14	03.11.2025 – 08.11.2025	biological and chemical disaster, road accident and building collapses	**Test**
15	10.11.2025 – 15.11.2025	Regional capacity, preparedness and response; governance and institutions for disaster management	
16	17.11.2025 – 22.11.2025	awareness among people, capacity building	
17	24.11.2025 – 29.11.2025	state disaster management plan.	

Recommended Books/ E resources/ LMS

1. Contemporary natural and manmade disaster (2004) Master of disaster mitigation. World institution building programme centre.
2. Disaster management in India- a status report (2004) National disaster management division, ministry of home affairs, Govt of India.
3. Sharma, Vinod K. (1994) Disaster management, NCDM, IIPA, New Delhi.
4. National disaster response plan, (2001) NCDM, New Delhi.
5. Dave, R K. (2018) Disaster management in India: Challenges and strategies



Signature of the teacher concerned

Head of the Department

SMRJ Government College, Siwani (Bhiwani)

(Affiliated to Chaudhary Bansi Lal University, Bhiwani)

Session: 2025-26

Lesson Plan

(Department of Geography)

Teacher: Mr. Rahul
Class: B.A. & B.A. with Major in Geography
Semester: 1st
Maximum Marks: 100
End Term Exam Marks: 50 (T) + 20 (P) = 70

Course Type & Title: Physical Geography
Course Code: 24UN-GEO-101
Credits: 03 + 01 = 04
Internal Assessment Marks: 20 (T) + 10 (P) =30

Course Outcomes:

Through this course following outcomes will be: -

1. acquire the knowledge about basic concepts of geo- tectonics.
2. understand about the agents and processes of change on the surface of earth.
3. enrich knowledge about atmosphere and its climate.
4. attain knowledge about ocean surface configuration and circulation in oceanic water.

Sr. No.	Week/Month, 2025	Unit/ Topic/ Chapter to be covered	Assignment/ Test/ Remarks, if any
1	01.08.2025 – 02.08.2025	Familiar with Syllabus	
2	04.08.2025 – 09.08.2025	Interior of the earth, geological time scale,	
3	11.08.2025 – 16.08.2025	Rocks and their types	
4	18.08.2025 – 23.08.2025	Theory of isostasy	
5	25.08.2025 – 30.08.2025	Continental drift Theory	
6	01.09.2025 – 06.09.2025	Plate Tectonic Theory	
7	08.09.2025 – 13.09.2025	Degradational processes: weathering,	
8	15.09.2025 – 20.09.2025	Mass wasting and resultant landforms.	**Assignment**
9	22.09.2025 – 27.09.2025	Landforms generated by following geomorphic agents: river, under-ground water	
10	29.09.2025 – 04.10.2025	Landforms generated by following geomorphic agents: wind and glacier.	
11	06.10.2025 – 11.10.2025	Weather and climate: Atmosphere-composition and structure.	

12	13.10.2025 – 18.10.2025	Atmospheric temperature, pressure	
13	27.10.2025 – 01.11.2025	Atmospheric moisture: measurement and distribution.	
14	03.11.2025 – 08.11.2025	Surface configuration of ocean floors: surface relief of the Pacific	**Test**
15	10.11.2025 – 15.11.2025	Surface relief of the Atlantic and Indian Ocean.	
16	17.11.2025 – 22.11.2025	Circulation of oceanic waters: current of the Pacific,	
17	24.11.2025 – 29.11.2025	Current of the Atlantic and Indian Ocean.	

Recommended Books/ E resources/ LMS

1. Barry, RG and Chorley, RJ (1998) Atmosphere, Weather and Climate, Routledge, London.

2. Bunnett, RB (1987) Physical Geography in Diagrams, Pearson Education, New Delhi.

3. Critchfield, H (2002) General Climatology, Prentice-Hall of India, New Delhi.

4. Kale, V and Gupta, A (2001) Element of Geomorphology, Oxford University Press, Calcutta.

5. Khullar, DR (2014) Physical Geography, Kalyani Publishers, New Delhi.

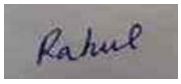
6. Monkhouse, FJ (1960) Principles of Physical Geography. Hodder and Stoughton, London.

7. Singh, S (1998) Geomorphology, Prayag Publication, Allahabad.

8. Singh, S (2012) Physical Geography, Prayag Publication, Allahabad.

9. Thornbury, WD (1969) Principles of Geomorphology, John Wiley and Sons, New York.

10. Trewartha, GT (1981) An Introduction to Climate, Mc-Graw Hill, New York.



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Session: 2025-26

Lesson Plan

(Department of Geography)

Teacher: Mr. Rahul	**Course Type & Title: Statistical Methods in Geography**
Class: MSc. 1st	**Course Code: 25PG-GEO-104**
Semester: 1st	**Credits: 03 + 01 = 04**
Maximum Marks: 100	**Internal Assessment Marks: 20 (T) + 10 (P) =30**
End Term Exam Marks: 50 (T) + 20 (P) = 70	

Course Outcomes:

Through this course following outcomes will be: -

1. Explain demographic theories, transitions, and spatial population structures in developed and developing regions.

2. Analyze the relationships between population growth, human development, resources, and environmental sustainability.

3. Evaluate contemporary population issues such as migration, ageing, urbanization, and gender disparities.

4. Apply demographic data, GIS tools, and statistical techniques to population mapping and regional analysis.

Sr. No.	Week/Month, 2025	Unit/ Topic/ Chapter to be covered	Assignment/ Test/ Remarks, if any
1	01.08.2025 – 02.08.2025	Familiar with Syllabus	
2	04.08.2025 – 09.08.2025	Fundamentals of Statistical Analysis in Geography: Nature and significance of statistical methods in geography, Types and sources of data: primary, secondary, spatial, and temporal data,	
3	11.08.2025 – 16.08.2025	Measures of central tendency (mean, median, mode)	
4	18.08.2025 – 23.08.2025	Measures of dispersion (standard deviation, coefficient of variation),	
5	25.08.2025 – 30.08.2025	Probability distributions: normal, binomial, and Poisson, Data visualization: histograms, box plots, scatter diagrams, cartograms.	
6	01.09.2025 – 06.09.2025	Correlation: Bivariate and multiple correlation analysis,	
7	08.09.2025 – 13.09.2025	Regression, and Hypothesis Testing: Bivariate and multiple correlation analysis, Linear regression: applications in spatial and environmental studies, Hypothesis formulation, significance testing, levels of confidence	

8	15.09.2025 – 20.09.2025	Parametric and non-parametric tests: t-test, chi-square, ANOVA, Mann-Whitney U-test.	**Assignment**
9	22.09.2025 – 27.09.2025	Multivariate and Spatial Statistical Techniques: Principal Component Analysis (PCA) and Factor Analysis,	
10	29.09.2025 – 04.10.2025	Cluster analysis and spatial classification, Discriminant analysis and canonical correlation, Time series analysis and trend forecasting in climatology and demography,	
11	06.10.2025 – 11.10.2025	Introduction to geostatistics: kriging, interpolation, and spatial modelling, Use of R, SPSS, and GIS for spatial statistical computation.	
12	13.10.2025 – 18.10.2025	Descriptive statistics and data visualization using Excel and SPSS (02)	
13	27.10.2025 – 01.11.2025	Correlation and regression analysis of geographical data (02)	
14	03.11.2025 – 08.11.2025	Principal Component and Factor Analysis using SPSS or R (02)	**Test**
15	10.11.2025 – 15.11.2025	Spatial autocorrelation and mapping using Moran's I in GIS (02)	
16	17.11.2025 – 22.11.2025	Trend and time series analysis in climate or population datasets (01)	
17	24.11.2025 – 29.11.2025	Application of kriging/interpolation using GIS (QGIS/ArcGIS) (01)	

Recommended Books/ E resources/ LMS

1. Mahmood, A. (1977). Statistical methods in geographical studies. Rajesh Publications.

2. Gregory, S. (1978). Statistical methods and the geographer. Longman.

3. Ebdon, D. (1985). Statistics in geography: A practical approach (2nd ed.). Blackwell.

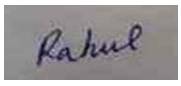
4. Hammond, R., & McCullagh, P. S. (1980). Quantitative techniques in geography: An introduction (2nd ed.). Oxford University Press.

5. Rogerson, P. A. (2015). Statistical methods for geography: A student's guide (4th ed.). Sage.

6. Wong, D. W. S., & Lee, J. (2005). Statistical analysis with ArcGIS. Wiley.

7. Johnston, R. J., & Semple, R. K. (2010). A quantitative revolution in geography. Routledge.

8. de Smith, M. J., Goodchild, M. F., & Longley, P. A. (2018). Geospatial analysis: A comprehensive guide (6th ed.). Winchelsea Press.



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Session: 2025-26

Lesson Plan

(Department of Geography)

Teacher: Mr. Rahul
Course Type Title: Digital Cartography & Morphometric Analysis (Practical)
Class: MSc. 1st **Course Code: 25PG-GEO-105**
Semester: 1st **Credits: 03 + 01 = 04**
Maximum Marks: 100 **Internal Assessment Marks: 30**
End Term Exam Marks: 70

Course Outcomes:

Through this course following outcomes will be: -

1. Develop proficiency in digital mapping using GIS tools and cartographic principles.
2. Analyze terrain features using morphometric techniques with spatial datasets. .
3. Apply GIS-based tools and DEMs to interpret surface processes and watershed dynamics.
4. Design high-quality cartographic outputs and quantitative morphometric reports.

Sr. No.	Week/Month, 2025	Unit/ Topic/ Chapter to be covered	Assignment/ Test/ Remarks, if any
1	01.08.2025 – 02.08.2025	Familiar with Syllabus	
2	04.08.2025 – 09.08.2025	Introduction to GIS Interface and Data Management: Exploring the GIS environment: QGIS, ArcGIS, Global Mapper,	
3	11.08.2025 – 16.08.2025	Working with vector and raster datasets, understanding file formats: shapefiles, GeoTIFFs, CSVs, Managing layers, attributes, metadata, Coordinate systems and layer properties.	
4	18.08.2025 – 23.08.2025	Understanding Map Scale and Projections: Types of map scales: representative fraction, verbal, and graphical, Understanding coordinate reference systems (CRS) and UTM/Zones,	
5	25.08.2025 – 30.08.2025	Transformation and reprojection of spatial data, Using EPSG codes and custom projections in GIS.	
6	01.09.2025 – 06.09.2025	Cartographic Design and Thematic Mapping: Principles of map design: visual hierarchy, color, symbology, typography,	
7	08.09.2025 – 13.09.2025	Preparation of thematic maps: land use, rainfall, soil, drainage.	
8	15.09.2025 – 20.09.2025	Use of classification methods: natural breaks, quantiles, equal interval, Creating legends, north arrows, scale bars, inset maps, Map layout preparation and export for publication.	**Assignment**

9	22.09.2025 – 27.09.2025	Terrain Analysis Using Digital Elevation Models (DEMs): Sources of DEMs: SRTM, ASTER, LiDAR,	
10	29.09.2025 – 04.10.2025	Generating slope, aspect, hill shade, and contour maps, Elevation profiling and 3D surface visualization,	
11	06.10.2025 – 11.10.2025	Applications in hazard mapping, urban planning, and watershed studies.	
12	13.10.2025 – 18.10.2025	Linear and Areal Morphometric Analysis: Stream ordering (Strahler and Horton), stream length, bifurcation ratio,	
13	27.10.2025 – 01.11.2025	Drainage density, stream frequency, texture ratio, Basin shape indices: form factor, circularity ratio, elongation ratio, Relief aspects: basin relief, ruggedness number, relief ratio.	
14	03.11.2025 – 08.11.2025	GIS-Based Watershed Delineation and Analysis: Watershed boundary delineation from DEMs, Flow direction, accumulation, stream network extraction, sink filling and hydrologic correction, Sub-watershed analysis and prioritization using morphometric parameters.	**Test**
15	10.11.2025 – 15.11.2025		
16	17.11.2025 – 22.11.2025	Small group project: Digital mapping and morphometric assessment of a selected basin and Interpretation of morphometric outputs in relation to geology and land use etc.	
17	24.11.2025 – 29.11.2025		

Recommended Books/ E resources/ LMS

1. Burrough, P. A., & McDonnell, R. A. (1998). Principles of geographical information systems (2nd ed.). Oxford University Press.

2. Chorley, R. J., Schumm, S. A., & Sugden, D. E. (1984). Geomorphology. Methuen.

3. Clarke, K. C. (2018). Getting started with geographic information systems (6th ed.). Pearson.

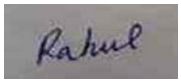
4. de Smith, M. J., Goodchild, M. F., & Longley, P. A. (2022). Geospatial analysis: A comprehensive guide (7th ed.). Winchelsea Press.

5. Dent, B. D., Torguson, J. S., & Hodler, T. W. (2008). Cartography: Thematic map design (6th ed.). McGraw-Hill.

6. Field, K. (2018). Cartography. Esri Press.

7. Gorr, W. L., & Kurland, K. S. (2016). GIS tutorial for ArcGIS Pro 2.6. Esri Press.

8. Jenson, S. K., & Domingue, J. O. (1988). Extracting topographic structure from digital elevation data. Photogrammetric Engineering & Remote Sensing, 54(11), 1593–1600.



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