Course Outcomes (COs)

SEMESTER 1

1. GEOGMAJ101: Geotectonic

- CO1: Explain Earth's internal structure, tectonic theories (plate tectonics, continental drift), and volcanic processes.
- CO2: Construct linear/comparative scales and diagrammatic data representations (line/bar/circle graphs).
- CO3: Analyze geological evidence to evaluate mountain-building theories and geotectonic phenomena.

2. GEOGMAJ102: Settlement Geography

- CO1: Classify rural/urban settlements using morphological models (Concentric Zone, Sector Theory).
- CO2: Design diagonal/vernier scales and map projections (Mercator, Polar Zenithal).
- CO3: Assess settlement hierarchies using Central Place Theory and rank-size rule.

3. GEOGMIN101/GEOGDSC101: Geomorphology

- CO1: Identify landform evolution processes (fluvial, glacial, karst) and slope development theories.
- CO2: Apply linear/comparative/diagonal scales and map projections (Cylindrical Equal Area).
- CO3: Correlate weathering, mass wasting, and drainage patterns with landscape formation.

SEMESTER 2

1. GEOGMAJ203: Geomorphology

- CO1: Evaluate morphogenetic regions, slope theories (Davis, Penck), and landform evolution.
- CO2: Interpret topographic maps to calculate drainage density, stream order, and relief indices.
- CO3: Design river longitudinal/cross-profiles using spatial analysis techniques.

2. GEOGMAJ204: Geography of Resources

- CO1: Classify resources (exhaustible/renewable) and analyze distribution patterns in India.
- CO2: Identify rocks/minerals megascopically and visualize data via choropleth/proportional maps.
- CO3: Propose conservation strategies for forests, water, and minerals using ecological-economic approaches.

3. GEOGMIN202/GEOGDSC202: Settlement Geography

- CO1: Diagnose urban/rural problems (slums, agricultural productivity) using spatial models.
- CO2: Create data visualizations (line/bar graphs, chorochromatic maps) for settlement analysis.
- CO3: Apply Central Place Theory to assess India's urbanization trends and hierarchy.

SEMESTER 3

1. GEOGMAJ305: Climatology

- CO1: Explain atmospheric processes (monsoons, El Niño), climate classifications (Köppen), and change drivers.
- CO2: Operate meteorological instruments (thermometer, barometer) and interpret weather reports.
- CO3: Visualize climate data using climographs/hythergraphs.

2. GEOGMAJ306: Population Geography

- CO1: Analyze population growth theories (Malthus, DTM) and composition (age-sex pyramids).
- CO2: Compute fertility/mortality metrics and migration trends using Excel.
- CO3: Evaluate India's National Population Policy (2000) and demographic dividends.

3. GEOGMIN303/GEOGDSC303: Climatology

- CO1: Describe pressure belts, wind systems (jet streams), and humidity processes.
- CO2: Construct climographs and interpret topographic maps for climate zones.
- CO3: Correlate Köppen climate classification with global biomes.

SEMESTER 4

1. GEOGMAJ407: Geographical Information System

- CO1: Operate QGIS for georeferencing, digitization, and thematic mapping.
- CO2: Differentiate raster/vector data models and DBMS applications in GIS.
- CO3: Implement GIS in urban planning, disaster management, and environmental monitoring.

2. GEOGMAJ408: Geography of India

- CO1: Synthesize India's physiographic divisions, climate variability, and agricultural patterns.
- CO2: Prepare field reports on socio-economic issues using primary/secondary data.
- CO3: Analyze industrial/transport spatial patterns and agro-climatic regions.

3. GEOGMIN404/GEOGDSC404: Economic Geography

 CO1: Apply location theories (Von Thunen, Weber) to agricultural/industrial activities.

- CO2: Calculate statistical measures (central tendency, dispersion) for economic data.
- CO3: Map global distributions of crops (wheat, cotton), fisheries, and industries.

SEMESTER 5

1. GEOGMAJ509: Environmental Geography

- CO1: Diagnose pollution sources, degradation drivers, and EIA significance.
- CO2: Compute biodiversity indices (Shannon-Weiner) and interpret ombothermic graphs.
- CO3: Advocate conservation through environmental laws and global initiatives (Ramsar, Rio 1992).

2. GEOGMAJ510: Rural Development

- CO1: Critique rural development paradigms (Gandhian, Big Push Theory) and Panchayati Raj.
- CO2: Apply statistical tools (Lorenz curve, regression) to poverty/unemployment data.
- CO3: Assess Indian schemes (MGNREGA, PMGSY) for sustainable rural growth.

3. GEOGMAJ511: Geographical Thought

- CO1: Trace geography's evolution from ancient to modern schools (German, French).
- CO2: Conduct surveys (prismatic compass, theodolite) and levelling techniques.
- CO3: Debate dualisms (determinism/possibilism) and welfare geography's societal role.

4. GEOGMAJ512: Agricultural Geography

- CO1: Relate crop distribution (rice, tea) to climatic factors and agricultural revolutions.
- CO2: Delineate crop combination regions (Weaver's method) and efficiency indices.
- CO3: Propose climate-smart solutions for low productivity in Indian agriculture.

5. GEOGMIN505/GEOGDSC505: Population Geography

- CO1: Compute demographic metrics (CBR, TFR) and design age-sex pyramids.
- CO2: Map migration trends using flow diagrams and Lee's migration laws.
- CO3: Appraise India's population policies and compositional diversity (race, religion).

6. GEOGDSC506: Environmental Geography

- CO1: Identify pollution remediation strategies and solid waste management techniques.
- CO2: Apply box/scatter plots for environmental data visualization.
- CO3: Link deforestation/soil erosion to sustainable development goals.

SEMESTER 6

1. GEOGMAJ613: Soil and Biogeography

- CO1: Classify soil profiles (Laterite, Chernozem) and biogeochemical cycles (C, N).
- CO2: Plot soil texture ternary diagrams and interpret geological maps.
- CO3: Propose biodiversity conservation measures for global biomes (taiga, savanna).

2. GEOGMAJ614: Urban Geography

• CO1: Evaluate urban models (CBD, gentrification) and master plans (Chandigarh).

- CO2: Apply rank-size rule, nearest neighbor analysis, and regression to urban data.
- CO3: Critique India's urban schemes (Smart Cities, AMRUT) for inclusive development.

3. GEOGMAJ615: Fundamentals of Remote Sensing

- CO1: Explain sensor resolutions, EMR interactions, and digital image classification.
- CO2: Interpret aerial/satellite imagery and compute indices (NDVI, NDWI) using QGIS.
- CO3: Assess remote sensing applications in disaster management/agriculture.

4. GEOGMAJ616: Industrial Geography

- CO1: Analyze industrial location theories (Weber, Losch) and global production patterns.
- CO2: Prepare field reports on industrial regions (India, Germany) using primary data.
- CO3: Evaluate India's Industrial Policy (1991) and Make in India initiatives.

5. GEOGMIN606/GEOGDSC607: Geography of India

- CO1: Synthesize India's physiography, drainage, climate, and soil-vegetation zones.
- CO2: Map resource distributions (coal, iron ore) and agricultural/industrial patterns.
- CO3: Develop field reports on physical/human geography themes.

6. GEOGDSC608- Oceanography, Soil & Biogeography

- CO1: Classify soil profiles (Laterite, Chernozem) and biogeochemical cycles (C, N).
- CO2: Plot soil texture ternary diagrams and interpret geological maps.

CO3: Propose biodiversity conservation measures for global biomes (taiga, savanna).