



**DEPARTMENT OF GEOGRAPHY
JAMIA MILLIA ISLAMIA**

MA/MSC (SEM-I) SYLLABUS AS PER NEP

S. No.	Subjects	Credit
1	Earth Surface Processes	4
2	Human and Environment Dynamics	4
3	Contextualizing Geographical Thought	4
4	Rural and Urban Geography	4
5 (i)	Research Methodology I – Qualitative and Quantitative Techniques (Practical)	2
5 (ii)	Advanced Surveying (Practical)	2
	SWAYAM – I	4
	Total	24

Earth Surface Processes

Credits: 4 (CC)

Unit I: Fluvial processes

Fluvial cycle of erosion; erosional work of river; erosional landforms; sediment transport; hydraulic geometry; channel patterns; depositional work of river; depositional landforms; karst topography

Unit II: Aeolian processes

Aeolian environment arid cycle of erosion; savanna cycle of erosion; erosional work of wind; erosional landforms; transportational work of wind; depositional work of wind; depositional landforms; fluvial desert landforms

Unit III: Glacial processes

Types of glaciers; movement of glaciers; glacial geomorphic cycle; erosional work of glaciers; erosional landforms; transportational work of glaciers; depositional work of glaciers; depositional landforms; periglacial cycle of erosion; periglacial landforms

Unit IV: Coastal processes

Coastal environment; development of shorelines and marine cycle of erosion; agents of coastal erosion; processes and mechanism of marine erosion; erosional landforms; transportational work; coastal depositional landforms; sea level and shoreline changes

Books Recommended:

1. Hart, M. G. (1986): *Geomorphology: Pure and Applied*, George Allen and Unwin, London.
2. Chorley, R. J., Schumm, S. A. and Sugden, D. E. (1984): *Geomorphology*, Methuen, London.
3. Hails, J. R. (1977): *Applied Geomorphology*, Elsevier, Amsterdam.
4. Leopold, L. B., Wolman, M. G. and Miller, J. P. (1964): *Fluvial Processes in Geomorphology*, W. H. Freeman, San Francisco.
5. Davis, R. A. (1985): *Coastal Sedimentary Environments*, Springer, New York.
6. Bloom, A. L. (2002): *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi.
7. Kale, V. S. and Gupta, A. (2010): *Introduction to Geomorphology*, Universities Press, Hyderabad.
8. Fryirs, K. A. and Brierley, G. J. (2013): *Geomorphologic Analysis of River Systems*, Wiley-Blackwell, Chichester
9. Downs P. W. and Gregory K. J. (2004): *River Channel Management*, Arnold, London
10. Charlton, R. (2008): *Fundamentals of Fluvial Geomorphology*, Routledge, Oxon
11. Robert, A. (2003): *River Processes- An Introduction to Fluvial Dynamics*, Arnold, London
12. Sharma, V.K (2010), *Introduction to Process Geomorphology*, CRC Press
13. Singh Savindra (2018). *Geomorphology*, Pravalika Publications, Allahabad

Human and Environment Dynamics

Credits: 4 (CC)

Unit I: Conceptual Foundations of Human-Environment Studies

Human and Environment Dynamics: Meaning, Scope and Significance; Concepts, Components and Theories of the coupled human-environment system; Environmental Determinism, Possibilism and Neo-determinism; Ecology and human ecology interface; Relevance of studying ecology in Geography; Concept of carrying capacity; Ecosystem: components, functions and energy flow.

Unit II: Human Modification of Environmental Processes

Anthropocene: Human beings as a geological force, Biogeochemical cycles: interactions and impact between human and natural systems; Nitrogen cycle, Carbon cycle, Water cycle, human-induced intrusions in cycles and Acid rain; Human group adaptation and specific ecosystems: Subsistence, Commercial and Mechanized agriculture; Industrialization and Urbanization as agents of environmental modification.

Unit III: Environmental Hazards, Vulnerability and Regional Dynamics

Concept of hazard, risk, vulnerability and resilience; Climate Change and Global Warming: Causes and Consequences; Environmental pollution and Population: Air, Water, Soil and Noise; Land degradation, Desertification and Deforestation; Environmental hazards in the Indian context: Floods, Droughts, Earthquakes and Landslides, Cyclones, Integrated assessment of vulnerability, risk, resilience and sustainability;

Unit IV: Human Environment Dynamics and Policy Frameworks

Population Dynamics and demand for resources, Spatial Distribution and Carrying capacity, Consumption Patterns and Carbon Emissions, Sustainable Development Goals (SDGs) and Bi-Directional Dynamics; Paris Agreement and Nationally Determined Contributions (NDCs); International Conference on Population and Development (ICPD) Programme of Action; Panchamrit (Five Nectar Elements) Declaration: Non-Fossil Capacity, Renewable Energy Share, Emissions Reduction, Carbon Intensity, Net-Zero Target.

Suggested Readings:

1. Odum, Eugene P. (2004). Fundamentals of Ecology. Cengage Learning.
2. Clarke, George L. (1967). Elements of Ecology. John Wiley & Sons.
3. Hoyt, John B. (1992). Man and the Earth. Prentice Hall.
4. Ehrlich, Paul R., Ehrlich, Anne H., Holdren, John P. (2000, Revised). Human Ecology. W. H. Freeman & Co.
5. Park, Robert Ezra. (2003). Human Communities: The City and Human Ecology. Free Press.
6. Lapedes, Daniel N. (ed.). (1974). Encyclopaedia of Environmental Science. McGraw Hill.
7. World Commission on Environment and Development. (1987). Our Common Future. Oxford University Press.
8. Adams, William M. (2009). Green Development: Environment and Sustainability in a Developing World (3rd ed.). Routledge.
9. Singh, R.B., Schickhoff, Udo, Mal, Suraj (eds.). (2016). Climate Change, Glacier Response, and Vegetation Dynamics in the Himalaya: Contributions Toward Future Earth Initiatives. Springer.
10. Sachs, Jeffrey D. (2015). The Age of Sustainable Development. Columbia University Press.
11. Parmesan, Camille, Yohe, Gary. (2003). A Globally Coherent Fingerprint of Climate Change Impacts Across Natural Systems. Nature, 421(6918), 37-4

Geographical Thought

Credits: 4 (CC)

UNIT-I: Development and Evolution of Geography as Discipline

Place of geography in the classification of knowledge, Changing nature and scope of geography: Fundamentals concepts of geography; Approaches to Geography; Dualism and dichotomy in Geography; Anomalous character and contemporary relevance of geography

UNIT-II: Development in ancient and Medieval times

Contribution of Greek, Roman and Arab and Indian Geographers; Broadening horizons: Impact of voyages and discoveries; Renaissance and its impact on Geographical Thought; Foundation of Scientific Geography: contributions of Varenus and Kant.

UNIT - III: Foundation of Modern Geography

Founders of modern Geography: Contribution of Humboldt and Ritter; Darwin's impact on Geography during the latter half of the nineteenth century; School of thoughts in Geography German, French, British, American, India and Russia, Schaefer-Hartshorne debate, Exceptionalism

UNIT - IV: Modern concepts in Geographical Thought

Empiricism, Positivism, and Quantitative revolution, Humanistic geography; Behavioralism in Geography; Radical geography; Applied Geography; Modernism and Post modernism in Geography; Modern concepts: Pragmatism, Functionalism, Idealism, Phenomenology and realism

Books Recommended:

1. Dickinson. 1969. The Maker's of Modern Geography. Routledge and Kegan Paul, London.
2. Hartshorne. R. 1939. The Nature of Geography. Association of American Geographers, Lancaster, Pennsylvania.
3. Hartshorne. R. 1959. Perspective on the Nature of Geography. Rand McNally and Company, Chicago.
4. Harvey, D. 1991. The Condition of Post Modernity: An Enquiry into the Origins of Cultural Change. Wiley-Blackwell, Oxford.
5. Husain, M. 2002. Evolution of Geographic Thought (also in hindi). Rawat Publications, Jaipur.
6. Singh, J. 1988. Bhaugolik Chenta ka karam vikas. Gyanodaya. Gorakhpur.
7. Peet, R. 1998. Modern Geographical Thought. Blackwell, Oxford.
8. Adhikari, S. 2015. Fundamentals of Geographical Thought. Orient Blackswan. Hyderabad, India
9. Dikshit, R.D. Geographical Thought. 1997. PHI Learning Pvt. Ltd., New Delhi.
10. Martin G.J. 2005. All Possible Worlds. OUP, USA.
11. Cresswell, T. 2012. Geographical Thought: A Critical Introduction. Wiley Pub.
12. Lalita Rana. 2008. Geographical Thought: A Systematic Record Of Evolution. Concept Publishing Company.
13. Arild Holt-Jensen. 2009. (2nd edition). Geography: History and Concepts. Sage Pub.

Rural and Urban Geography

Credits: 4 (CC)

UNIT - I: Urban Geography: Concepts and Theories

Definition, Nature and Scope of Urban Geography; Urban Morphogenesis and Evolution of towns; Theories of the Origin of Towns; Urban Morphology and Internal Structure of Cities (Burgess, Hoyt, Harris - Ullman, Christaller; Characteristics and Processes of Urbanization in Developed and Developing Countries; Stages of Urban Development (Klassen and Berg); Urban Systems (Rank Size Rule and Primate City)

UNIT - II: Changing Urban Forms and Restructuring with special reference to India

Concepts of Conurbations, Megalopolises, Megacities, Global Cities and Edge Cities; Changing Urban Forms (peri-urban areas, rural-urban fringe, suburban, ring and satellite towns); Social Segregation in the City, Urban Social Area Analysis, Manifestation of Poverty in the City (slums, informal sector growth, crime and social exclusion); India - Process, Trend and Pattern; Government Programmes and Policies – 74th Constitutional Amendment Act, IDSMT, JNNURM, Master Plans, Smart Cities, National Urban Policy Framework (2018);

UNIT III: Geography of Rural Landscapes: Concepts and Rural Development

Nature, scope and significance of Rural Geography; Concept and characteristics of rural landscapes; Rural–urban continuum and rural–urban linkages; Rural economy: Rural livelihoods and Food Security; Rural development: concept, objectives and indicators; Human–environment interactions and rural development.

UNIT IV: Contemporary Rural Development, Emerging Issues and Spatial Technologies

Rural–urban linkages and changing rural economy; Changing Rural Economy: non-farm employment, agro-processing, rural industries and eco-tourism; Peri-urbanization and changing rural landscape; Environmental issues in rural areas: land degradation, soil erosion and climate change; Sustainable rural development and resource management; Applications of GIS and Remote Sensing in rural planning and development

Books Recommended:

1. Desai, A. R. (1969). *Rural sociology in India*. Popular Prakashan.
2. Harriss-White, B. (2017). *Middle India and Urban–Rural Development: Social, Cultural and Economic Change in Towns and Villages*. Manohar Publishers.
3. Mehta, M. N. (2018). *Urban Geography: Rural and Urban Development*. Writers' World.
4. Mishra, S. (2020). *Rural development: Principles, policies and management*. Sage Publications.
5. Mishra, S., & Puri, V. K. (2012). *Agricultural geography*. Rawat Publications.
6. Pacione, M. (2009). *Urban Geography: A Global Perspective* (2nd ed.). Routledge.
7. Ramachandran, R. (1989). *Urbanization and urban systems in India*. Oxford University Press.
8. Rao, C. H. H. (2005). *Agricultural growth, rural poverty and environmental degradation in India*. Oxford University Press.
9. Saxena, H. M. (2008). *Urban geography*. Rawat Publications.
10. Sharma, S. (2020). *A Textbook of Urban Planning and Geography*. PHI Learning Pvt. Ltd.
11. Sharma, S. L. (2020). *A textbook of urban planning and geography*. PHI Learning.
12. Singh, J. (1979). *Agricultural geography*. Tata McGraw-Hill.
13. Verma, L. N. (2008). *Urban Geography*. RAWAT Publications.
14. Williams, R. (1973). *The Country and the City*. Chatto & Windus / Spokesman Books.

Research Methodology I
Qualitative and Quantitative Techniques (Practical)
Credits: 2

Unit I: Data, Sampling and Levels of Measurement

Concept of data and information; Classification of data; Data sources: Census, NSSO, NFHS, IHDS, and others; Levels of data measurements: Nominal scale, Ordinal scale, Interval scale, and Ratio scale; Methods of sampling: concept, classification and sample size determination.

Unit II: Qualitative Data Analysis Techniques

Methods: Grounded Theory, In-depth Interviews with structured questionnaire schedule, Group Interviews / Focus Group Discussion, Participant Observations, Biographical Research, Ethnographic analysis; Analysis Techniques: Textual Analysis / Content Analysis, Narrative Analysis, Conversational Analysis, Discourse Analysis.

Unit III: Measures of Geographical Patterns, Disparities and Potential Models

Nearest Neighbour Analysis, Gini's coefficient, Lorenz Curve, Transport accessibility indices, Location quotient, Rank-Size Rule, Kendall's ranking method/Division by Mean method, Combinational analysis of Weaver, Gravity and potential models.

Unit IV: Rate, Ratios and Methods of Predictions

Calculation of growth rates: Arithmetic, Geometric and Exponential, Theory of probability, Correlation analysis, Simple linear regression: plotting of regression line, standard error of estimates, goodness of fit, test of significance.

Suggested Readings:

1. Agarwal, B.L. (1988): Basic Statistics, New Age International Publisher, New Delhi.
2. Berg, B.L. and Lune, H. (2012): *Qualitative Research Methods for the Social Sciences*, Pearson Education Limited, New York.
3. Cole, J.P and King, C.A.M. (1970): *Quantitative Geography*, John Wiley and Sons, New York
4. Creswell, J. W. (2009): *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, SAGE Publications, London
5. Croxton, F.E. and Cowden, D.J. (1939): *Applied General Statistics*, Prentice Hall, New Jersey
6. Given, L. M. (2008): *The Sage Encyclopedia of Qualitative Research Methods: A-L ; Vol. 2, M-Z Index*, SAGE, London
7. Dickinson, G.C. (1973): *Statistical mapping and the presentation of statistics*, Edward Arnold, London
8. Marvasti, A. (2003): *Qualitative Research in Sociology*, SAGE Publications, London
9. Healy, F.J., (2010): *Statistics: A tool for Social Research*, Cengage Learning, New York.
10. Rihoux, B. and Ragin, C.C. (2009): *Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques*, SAGE Publications, London
11. Shaw, I. and Gould, N. (2001): *Qualitative Research in Social Work*, SAGE Publications, London

Advanced Surveying (Practical)

Credits: 2

UNIT I

Surveying: Definition, Principles, Methods, Classification; Plane Table survey, Geodetic Surveys. Basic Principles of Total Station, Historical Development, Classifications, applications of total station and comparison with conventional surveying. Overview of Global Positioning System

UNIT II

Land surveying using Plate Table Historical perspective and development, GPS: Receivers, Satellite Constellations, Different segments: space, control and user segments, Antennas, satellite configuration, GPS signal structure, Orbit determination and representation, Anti Spoofing and Selective Availability, Task of control segment - GPS receivers and Errors.

UNIT III

DGPS: differential corrections, accuracy in DGPS; GNSS: different GNSS, GNSS Augmentation; RNSS - IRNSS, WAAS, EGNOS, MSAS, QZSS, SNAS, SDCM and WAGE; advantages and disadvantages. Total Station: Methods of Measuring Distance Geo-positioning- Basic Concepts, NAVSTAR, GLONASS, Indian Regional Navigational Satellite System (IRNSS), Collection of Ground Control Points (GCP), Way Points, and transformation of GNSS/GPS data into GIS; Ground Truth Verification of GIS data; Precision, Factors Affecting GPS Accuracy, Vertical and Horizontal Accuracy, Mobile Mapping basic concepts and Applications, GPS Application in Surveying and Mapping.

Suggested Readings:

1. Hussain, S.K. and Nagaraj, M.S. 1992 :Text Book of Surveying, S. Chand & Co. Ltd., New Delhi.
2. Rueger, J.M. Electronic Distance Measurement, Springer-Verlag, Berlin, 4th edition, 1996
3. Satheesh Gopi, rasathishkumar, N.madhu, “ Advanced Surveying , Total Station GPS and Remote Sensing “ Pearson education , 2007 isbn: 978-81317 00679
4. Laurila, S.H. Electronic Surveying in Practice, John Wiley and Sons Inc, 1993.
5. Guocheng Xu, GPS Theory, Algorithms and Applications, Springer - Verlag, Berlin, 2003.
6. Alfred Leick, GPS satellite surveying, John Wiley & Sons Inc., 3rd Edition, 2004.
7. Seeber G, Satellite Geodesy, Walter De Gruyter, Berlin, 1999