

**DEPARTMENT OF GEOGRAPHY
FACULTY OF NATURAL SCIENCES
JAMIA MILLIA ISLAMIA
NEW DELHI - 110 025**

(A Central University by an Act of Parliament)



CBCS for B.A. / B.Sc. (H) Geography

Syllabus (w.e.f. 2015-2017)

Courses offered under CBCS for B.A. / B. Sc.

Semester	Paper	Title	Credits	Type
I	GEB-103 (Theory)	Fundamentals of Remote Sensing	04	CB
II	GEB-202 (Theory)	Principles of Ecology	04	CB
III	GEB-304 (Practical)	Land Surveying and GPS	04	AECC
IV	GEB-403 (Theory)	Environmental Issues and Management	04	CB
V	GEB-503 (Theory)	Population and Development	04	CB
VI	GEB-604(Practical)	GIS	04	SEC

B.A. / B. Sc.
Semester - I
Credits: 4 (CB)
Paper - III (GEB-103)
Fundamentals of Remote Sensing

Unit - I:

Introduction to Remote Sensing; EMR and EMS; Stages of Remote Sensing; Remote Sensing and its Types; Interaction of EMR with Atmosphere and Earth Surface Features.

Unit - II:

Remote Sensing Platforms and Sensors; Satellite Series: IRS, Spot, IKONOS and Quick Bird.

Unit - III:

Digital images and their types; Image Resolutions: Spatial, Spectral, Radiometric and Temporal; Image Histograms; Image Rectification: Radiometric and Geometric.

Unit - IV:

Aerial Photographs and their types; Geometry of Aerial Photographs; Scales of Aerial Photographs; Difference between Aerial Photographs and Maps; Difference between Aerial photographs and Imageries.

Books Recommended:

1. Lillisand,T., Keifer, Ralph W., Chipman, J. 2011. Remote Sensing and Image Interpretation. John Wiley Pub., New York.
2. Campbell, J.B. 1996(2nd edition). Introduction to Remote Sensing. Taylor and Francis, London.
3. Curran, P. 1985. Principles of Remote Sensing. Longman, London.
4. Sabins, J.F.F. 1997. Remote Sensing: Principles and Interpretation. W.H. Freeman & Co., New York.
5. Jenson, J.R. 2013. Remote Sensing and Environment. Pearson India
6. Kumar, S. 2005. Basics of Remote Sensing and GIS. Laxmi Publication.

B.A. / B. Sc.
Semester - II
Credits: 4 (CB)
Paper - V (GEB-202)
Principles of Ecology

Unit - I:

Introduction; Definition, Scope, Evolution and development; Difference between Ecology and Human Ecology; Environmentalism; Conservation Ethics.

Unit - II

Man and Environment Interaction; Human Adaptation and Modification; Environmental Adaptation Types, Aquatic, Desert and Land adaptations.

Unit - III

Nutrient cycles: Water Cycle. Nitrogen Cycle, Carbon Cycle, Phosphorous Cycle; Human Population Size and Growth; Carrying Capacity of Earth.

Unit - IV

Ecosystem: Definition, Components, Types and functions; Food Chain, Food Webs and Energy Trophic Levels; Energy flow within the Ecosystem: Y- Shaped Model.

Books Recommended:

1. Odum, E.P. 2004. Fundamentals of Ecology. Cengage Learning, New York.
2. Arumugam, N. 2014. Concepts of Ecology. Saras Publication, Delhi.
3. Pushpam Kumar, Reddy B. Sudhakar. 2007. Ecology and Human Well Being. Sage Publications.
4. Robert Ezra Park. 2003. Human Communities: The City and Human Ecology. Freeman Press.
5. Vladimir F. Krapivin., Costas A. Varotsos. 2005. Biogeochemical Cycles in Globalization and Sustainable Development. Springer.
6. Lovett G.M., Jones C., Turns M.G., Weather K.C. 2005. Ecosystem Function in Heterogenous Landscapes. Springer.
7. Yueh-Hsin Lo, Juan A. Blanco and Shovonlal Roy. Biodiversity in Ecosystem. InTech Publishers.
8. Herbert C. Hanson. 1962. Dictionary of Ecology. Philosophical Library Publisher.
9. Ehrlich, P.R, Ehrlich, A.H. and Holdren, J.P. 2000(Revised). Human Ecology. W.H. Freeman & Co. San Francisco.

B.A. / B. Sc.
Semester - III
Credit: 4 (AECC)
Practical - III (GEB - 304)
Land Surveying and GPS

Unit - I:

Surveying: Definition, Principles, Methods, Classification; Plane and Geodetic Surveys; Triangulation: Principles, base line measurement, extension of the base.

Unit - II:

Plane Table Survey: Radiation, Intersection and Resection Methods; Dumpy Level Survey: Simple and Compound Levelling.

Unit - III:

Overview of Global Positioning System; GPS: Receivers, Satellite Constellations, Segments, Antennas, Signal Codes and Errors; Accuracy of GPS measurements; Application of GPS.

Unit - IV:

GPS Surveying and Mapping: Field Exercises using Hand Held GPS.

Books Recommended:

1. Aylmer Johnson. 2004. Plane and Geodetic Surveying. CRC Press.
2. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
3. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.

B.A. / B. Sc.
Semester - IV
Credit: 4 (CB)
Paper - XI (GEB - 403)
Environmental Issues and Management

Unit - I: Conceptual Context

Environment: Definition and components; Environment as life- support system; Human and Environment Interaction; Environmental disorders: Human impact on land, climate, natural vegetation and non-renewable natural resources.

Unit - II: Environmental Issues

Population dynamics and food security and disaster; Global problems: Global warming, ozone depletion and acid rain; Climate change, desertification; Local and Regional Problems: Extreme hydrological events, deforestation, pollution of air and water; Depletion of fresh water resources and degradation of soils.

Unit - III: Management Strategies

Uncertainty in managing environmental problems: Uncertainty in risk assessment; Preservation and conservation; Integrated management, and community participation in management.

Unit - IV: Environmental Management

Management of air and water resources; Management of soil and forest resources; Management of biodiversity; Management of habitats; population management; Management of disaster, and adaptation to climate change.

Books Recommended:

1. Adams, W.M.1995: Green development: Environmental sustainability in the Third World, London: Rout ledge.
2. Alexander, D. 1993: Natural Disasters, New Delhi: Research Press.
3. Allaby, M. 1996: Basics of Environmental science, London: Routledge.
4. Baarrshes, W.H. 1996: Eco-fiction: Understanding the Environmental Debate, London: Routledge.
5. Brayant, E.A.1991: Natural Hazards, Cambridge: Cambridge University press.
6. Canter,L. W.1996: Environmental Impact Assessment, 2nd edition, New York: McGraw Hill.
7. Chapman,D. 1994: Natural Hazards, Melbourne: Oxford University Press.
8. Chapman J.L. and Reiss, M.J. 1993: Ecology: Principles and applications, Cambridge: Cambridge University Press.
9. Colls, J.1997: Air Pollution: An Introduction, London: Chapman and Hall.

B.A. / B.Sc. (H) Geography
Semester - V
Credit: 4 (CB)
Paper - XIV (GEB - 503)
Population and Development

Unit - I: Introduction to Population Geography

Subject matter and scope of Population geography, Demography and population Geography; Sources of Population Data: Census, Vital Statistics and National Sample Survey; Approaches in population Geography.

Unit - II: Population Distribution and Growth

Population Growth and change: Trends of Population Growth in the World; World Pattern of population distribution; factors affecting population distribution; Population Dynamics: Fertility, Mortality and Migration, Theories of Population growth: Malthusian theory, Theory of Demographic Transition.

Unit - III: Population Composition

Age and Sex Composition; Rural and Urban Composition; Economic Composition Literacy and Education; Religion/Caste/ Race etc.

Unit - IV: Population Problems and Policies-India

Declining Sex Ratio, Gender issues: Ageing, crime against Women, Human Trafficking, Child Abuse; HIV/AIDS; Population Policy of India.

Books Recommended:

1. Barret, H.R. (1995): Population Geography, Oliver and Boyd.
2. Bhende, A. and Kanitkar T. (2000): Principles of Population Studies, Himalaya Publishing House.
3. Bogue, Donald, J. (1969): Principles of Demography, John Wiley and Sons, New York.
4. Chandana, R.C. (1986): A Geography of Population: Concepts, Determination and Pattern, Kalyani publisher, New Delhi.
5. Chandana, R.C. (2008): Geography of Population: Concepts, Determinants and Patterns, 7th Edition, Kalyani Publishers, New Delhi.
6. Clarke, J.I. (1965): Population Geography, Pergamon press Ltd; Oxford.
7. Clarke, J.I. (1972): Population Geography, Second Edition, Pergamon Press Ltd; Oxford.
8. Clarke, J.I. (Ed.) (1984): Geography and Population: Approaches, Pergamon Press Ltd; Oxford.

9. Demco, G.J; Rose, H.M. Schnell, G.A. (1970): Population Geography, McGraw Hill Book Co; New York.
10. Jones, H.R. (1990): Population Geography, Sage.
11. Jones, H.R. (2000): Population Geography, 3rd Edition, Paul Chapman, London.
12. Peters, G.L. and Larkin R.P (1979): population Geography- Problems, Concepts and Prospects, Kendall Hunt Publication Co.
13. Swain, A.K.P.C. (2008): A Text Book of Population Studies, Kalyani Publishers, New Delhi.
14. Trewartha, G.T. (1969). A Geography of Population: World Patterns, John Wiley and Sons, New York.
15. Weeks John R. (2005): Population: An Introduction to Concepts and Issues. 9th Edition, Belmont, C.A.: Wadsworth Publication.
16. Wilson, M.G.A. (1968): Population Geography, Thomas Nelson, London.
17. Mahendra K. Premi (2001) Population of India, In the New Millennium: Census, National Book Trust, New Delhi.
18. Mahendra K. Premi, Dipendra Nath Das (2011) Population of India, B.R. Publishing Corporation, Delhi.