



Syllabus  
for  
B.A. Geography

Mizoram University

Under  
Choice Based Credit System (CBCS)

2021 Revision

**B.A GEOGRAPHY COURSE STRUCTURE under CBCS**

Semester	Course	Course No.	Course Code	Category	Credit	Marks		
						Continous	End Semester	Total
<b>I</b>	English-I			FC	5	25	75	100
	Physical Geography	<b>I</b>	GEOG-101	CC	6	25	75	100
	Elective Subject-II			EC	6	25	75	100
	Elective Subject-III			EC	6	25	75	100
	<b>Total</b>				<b>23</b>	<b>100</b>	<b>300</b>	<b>400</b>
<b>II</b>	English-II			FC	5	25	75	100
	Human Geography	<b>II</b>	GEOG-201	CC	6	25	75	100
	Elective Subject-II			EC	6	25	75	100
	Elective Subject-III			EC	6	25	75	100
	<b>Total</b>				<b>23</b>	<b>100</b>	<b>300</b>	<b>400</b>
<b>III</b>	MIL			FC	5	25	75	100
	Geography of India	<b>III</b>	GEOG-301	CC	6	25	75	100
	Elective Subject-II			EC	6	25	75	100
	Elective Subject-III			EC	6	25	75	100
	<b>Total</b>				<b>23</b>	<b>100</b>	<b>300</b>	<b>400</b>
<b>IV</b>	Environmental Studies			FC	5	25	75	100
	Cartographic Technique (Practical)	<b>IV</b>	GEOG-401	CC	6	25	75	100
	Elective Subject-II			EC	6	25	75	100
	Elective Subject-III			EC	6	25	75	100
	<b>Total</b>				<b>23</b>	<b>100</b>	<b>300</b>	<b>400</b>
<b>V</b>	Geographical Thought	<b>V</b>	GEOG-501	CC	6	25	75	100
	Climatology	<b>VI</b>	GEOG-502	CC	6	25	75	100
	Surveying & Statistical Technique (Practical)	<b>VII</b>	GEOG-503	CC	6	25	75	100
	Population & Settlement Geography (Optional-A)	<b>VIIIA</b>	GEOG-504A	CC	6	25	75	100
	Urban Geography (Optional- B)	<b>VIIIB</b>	GEOG-504B					
	<b>Total</b>				<b>24</b>	<b>100</b>	<b>300</b>	<b>400</b>
<b>VI</b>	Geomorphology	<b>IX</b>	GEOG-601	CC	6	25	75	100
	Remote Sensing & Geographical Information System (Practical)	<b>X</b>	GEOG-602	CC	6	25	75	100
	Project work (Practical)	<b>XI</b>	GEOG-6031	CC	6	25	75	100
	Oceanography (Optional-A)	<b>XIIA</b>	GEOG-604A	CC	6	25	75	100
	Biogeography (Optional-B)	<b>XIIB</b>	GEOG-604B					
	<b>Total</b>				<b>24</b>	<b>100</b>	<b>300</b>	<b>400</b>
<b>Entire Programme Total</b>					<b>140</b>	<b>600</b>	<b>1800</b>	<b>2400</b>

**SEMESTER - I**

**Paper – I: Physical Geography**

**Course No: GEOG -101**

**Credits: 6**

---

**UNIT-I**

1. Nature and scope of physical geography; Origin of solar system-Nebular hypothesis of Laplace, Inter-stellar dust hypothesis and Big bang theory; Geological time-scale

**UNIT-II**

2. Landform development: Exogenetic Forces-River, Wind and Glacier; Endogenetic Forces-Epeirogenic and Orogenic

**UNIT-III**

3. Rocks and minerals: Origin and composition; Interior of the earth; Continental drift; Plate Tectonic; Seafloor spreading; Earthquake and volcano.

**UNIT-IV**

4. Surface configuration of the ocean floor; Tides and oceanic currents; Distribution of Ocean Salinity and Temperature.

**UNIT-V**

5. Basic concepts in hydrology; Energy balance as a driver of hydrological cycle; Precipitation & Rainfall- types and distribution; Human impact on hydrological cycle

**Suggested Readings:**

1. Mankhouse, F.J. (1960): *Principles of Physical Geography*; Hodder and Stoughton, London.
2. Strathler, A.N. and Stratler, A.H. (1992): *Modern Physical Geography*, John Wiley & Sons.
3. Thornbury, W.D. (1969): *Principles of Geomorphology*, Wiley.
4. Bryant Richard H. (2001): *Physical Geography*, Rupa & Co., New Delhi, 2001.
5. King, C.A.M. (1980): *Physical Geography*, Blackwell, Oxford.
6. Singh, Savindra (2020): *Physical Geography*, Pravalika Publications, Allahabad
7. Khullar, D.R. (2017): *Physical Geography*, Kalyani Publishers, Reset edition, New Delhi.
8. Hanwell, J. (1980): *Atmospheric Processes*, Allen and Unwin, London.

**SEMESTER - II**  
**Paper – II: Human Geography**  
**Course No: GEOG -201**  
**Credits: 6**

---

**UNIT-I**

1. Nature and scope of human geography; Man- environment relationship; Determinism & Possibilism; Neo- determinism and their contemporary relevance.

**UNIT-II**

2. **Space and society:** Structure and dynamics of space; Relational framework of space; Cultural regions, global distribution of race, religion and language

**UNIT-III**

3. **Population:** Growth and distribution of world population; Theories of population growth: Malthusian Theory and Demographic Transition Theory

**UNIT-IV**

4. **Settlements:** Types and patterns of rural settlement; Structure of towns and cities; Trends and patterns of world urbanization

**UNIT-V**

5. Human adaptation to the environment with references to Eskimos, Bushman, Masai and Gujjar.

**Suggested Readings:**

1. Hussain, M. (1994): *Human Geography*, Rawat Publication, Jaipur.
2. Hagget, P. (1975): *Geography: A Modern Synthesis*, Happer & Raw, N.Y.
3. Boek, J.O.M. (1978): *A Geography of Mankind*, McGraw Hill, N.Y.
4. Rubenstein, J.M. (2002): *Cultural Landscape: Introduction to Human Geography*, Prentice Hall, New Delhi.
5. Singh, L.R. (2012): *Fundamentals of Human Geography*, Third Revised Edition, Sharda Pushtak Bhawan, Allahabad
6. Perpillon, A.V. (1986): *Human Geography*, 2nd Edition, Longman, N.Y.
7. Holt-Jensen, A. (1999): *Geography, History and Concepts: A Student's Guide*, Sage Publications.

**SEMESTER - III**

**Paper – III: Geography of India**

**Course No: GEOG -301**

**Credits: 6**

**UNIT-I**

1. **Physical setting:** Physiographic division, Climate, Drainage and Vegetation

**UNIT-II**

2. **Population:** Distribution, density and growth, Patterns of Urbanization and Internal migration

**UNIT-III**

3. **Economic:** Mineral and power resources - distribution of iron ore, coal, petroleum; Agriculture- productions and distribution of rice, wheat and tea; Green revolution; Agro-Climatic region.

**UNIT-IV**

4. **Social:** Distribution of population by - race, caste, religion, language and tribes

**UNIT-V**

5. **Regional Geography of Mizoram:** Physical geography - Relief, Drainage and Climate; Population growth and distribution; Social and economic characteristics.

**Suggested Readings:**

1. Singh, R.L. (Ed.) (1972): *India – A Regional Geography*, Varanasi.
2. Singh, Jagdish, (2003): *India: A Comprehensive Systematic Geography*, Radha, New Delhi
3. Sharma, R.C. (2004): *Geography of India*, Jawahar Pub. & Distributor, N. Delhi.
4. Pachuau, Rintluanga (2009): *Mizoram: A Study in Comprehensive Geography*, Northern Book Centre, New Delhi
5. Kumar, Girindra (2012): *Dynamics of Development and Planning: Mizoram A Comprehensive Regional Analysis*, Kalpaz Publications, Delhi
6. Singh, L.R. (2012): *Fundamentals of Human Geography*, Third Revised Edition, Sharda Pushtak Bhawan, Allahabad
7. Chandna, R.C. (2015): *Geography of Population: Concepts, Determinants and Patterns*, Kalyani Publishers, New Delhi.
9. Deshpande, C.D. (1990): *India: A Regional Interpretation*, ICSSR, New Delhi

**SEMESTER - IV**

**Paper –IV: Cartographic Techniques (Practical)**

**Course No : GEOG -401**

**Credits: 6**

-----  
**UNIT-I**

1. Meaning and importance of cartography; Types of scales; Construction of plain scales and diagonal scales

**UNIT-II**

2. Contours and Profiles- Hills; Cliff; Plateau, V-shape Valley; U-shape Valley and River Meander

**UNIT-III**

3. Maps-Classification and types; Map projections-classification, properties and uses; Graphical construction of Polar Zenithal Stereographic, Bonne's and Mercator's projections

**UNIT-IV**

4. Cartograms- Dot method; Shade method; Line Graph, Bar Diagram; Pie Chart; Proportionate Circles and Spheres

**UNIT-V**

5. Conventional signs and symbols; Interpretation of topographical maps in relation to Relief, Drainage, Transportation and Settlements

**Suggested Readings:**

1. Monkhouse, F.J. (1967): *Maps and Diagrams*, Methuen, London.
2. Singh, R.L. (1970): *Elements of Practical Geography*, Banaras.
3. Kanitkar, T.P. (1974): *Surveying and Levelling*, Poona Vidyarthi Griha Prakashan, Pune.
4. Misra, R.P. and Ramesh, A. (1986): *Fundamentals of Cartography*, McMillan Co., New Delhi.
5. Robinson, A.H. et al. (1995): *Elements of Cartography*, John Wiley and Sons, USA.
6. Sarkar, A. (1997): *Practical Geography: A Systematic Approach*, Orient Longman, Kolkata.
7. Singh, R.L. and Singh, Rana .P.B (1991): *Elements of Practical Geography*, Kalyani Publishers, New Delhi
8. Singh, L.R. (2006): *Fundamentals of Practical Geography*, Sharda Pustak Bhawan, Allahabad.

**SEMESTER – V****Paper – V: Geographical Thought****Course No: GEOG – 501****Credits: 6****UNIT-I**

1. Contribution of Greek and Roman Geographers - Hecataeus, Herodotus, Eratosthenes, Strabo; Ptolemy; Contributions of Arab Geographers - Al Muqaddasi, Ibn-Batuta, Al Idrisi, Ibn Khaldun.

**UNIT-II**

2. Contribution of Bernhard Varenius, Immanuel Kant, Alexander von Humbolt, Carl Ritter

**UNIT-III**

3. Environmental determinism- Role of Friedrich Ratzel, Halford John Mackinder, Ellen Churchill Semple, Griffith Taylor; Possibilism – Role of Alfred Hettner, Vidal de la Blache, Carl Sauer.

**UNIT-IV**

4. Concept of region and emergence of regional geography/areal differentiation; Concept of space, quantitative revolution and emergence of spatial science.

**UNIT-V**

5. Behavioral geography; Humanistic geography; Radical geography; Postmodern geography

**Suggested Readings :**

1. Hartshorne, R. (2000): *Nature of Geography*, A.A.G. Lancaster, Penn. (Indian Reprint)
1. Holt-Jensen, A. (1999) *Geography, History and Concepts: A Student's Guide*, Sage Publications.
2. Dickinson, R.E. (1969): *The makers of Modern Geography*, Edward Arnold, London.
3. James, P.R. (1980 Ind. Ed.): *All possible World*, Sachin Pub., New Delhi.
4. Dixit, R.D. (1997): *Geographical Thought*, Prentice Hall, New Delhi.
5. Hagget, P. (1975): *Geography of Modern Synthesis*, Harper & Raw, New York.
6. Hussain, M. (2000): *Evolution of Geographical Thought*, Rawat, Jaipur.
7. Adhikari, S. (1998): *Fundamentals of Geographical Thought*, Chaitanya Pub., Allahabad.
8. Rana, Lalita (2008): *Geographical Thought: A Systematic Record of Evolution*, Concept Publishing Company, New Delhi.
9. Rana, Lalita (2008): *Geographical Thought: Classical to Contemporary*, Revised & Enlarged Edition, Concept Publishing Company, New Delhi.

**SEMESTER - V**

**Paper – VI: Climatology**

**Course No: GEOG -502**

**Credits: 6**

-----

**UNIT-I**

1. Meaning and scope of climatology; Composition and structure of atmosphere; Insolation; Heat budget of the earth

**UNIT-II**

2. Air masses – Origin, growth, classification and distribution; Fronts and frontogenesis; Global wind circulation; Tropical & temperate cyclones

**UNIT-III**

3. Mechanism of Monsoon: Classical and Modern Theories; Jet stream, El-Nino, La-Nina and their impact on Indian monsoon and weather system.

**UNIT-IV**

4. Climatic Classifications- Koppen, Thornthwaite and Trewartha

**UNIT-V**

5. Climatic change and global warming – Causes and Effects

**Suggested Readings:**

1. Critchfield, H.J. (1975): *General Climatology*, Prentice Hall, India.
2. Lal, D.S. (2012): *Climatology*, Revised Edition, Sharda Pushtak Bhawan, Allahabad.
3. Bryant Richard H. (2001): *Physical Geography*, Rupa & Co., New Delhi, 2001.
4. King, C.A.M. (1980): *Physical Geography*, Blackwell, Oxford, 1980.
5. Lockwood, J.G. (1978): *The Causes of Climate*, Edward Arnold, London, 1978.
6. Trewartha, G.T. & Horn, L.A. (1980): *An Introduction to Climate*, International Series, New Delhi.
7. Singh, Savindra (2020): *Climatology*, Pravalika Publication, Allahabad.



**SEMESTER - V****Paper –VII: Surveying & Statistical Techniques (Practical)****Course No: GEOG – 503****Credits: 6****(75 + Internal marks 25=100 marks)****UNIT-I****A. Surveying (25 marks)**

1. Plane Table (intersection and radial methods, plotting and interpretation of the surveyed map); Dumpy level; Prismatic compass survey-open and closed traverse

**UNIT-II****B. Data Collection and Survey Methods (25 marks)**

3. Importance of survey; Sources of data
4. Methods of data collection; Sampling techniques
5. Interpretation of data; Report writing

**UNIT-III****C. Statistical Methods (25 marks)**

6. Scales of measurement; Tabulation and frequency distribution; measures of central tendency
7. Measures of dispersion- Range, Standard deviation, and Coefficient of variation.
8. Measures of association- Correlation

**Suggested Readings:**

1. Misra, R.P.& Ramesh, A. (1989): *Fundamental of Geography*, Concept, New Delhi.
2. Monkhouse, F.J. (1967): *Maps & Diagrams*, Methuen, London.
3. Raize, I. (1982): *Principles of Cartography*, McGraw Hill, N.Y.
4. Mahmood Aslam, (1973): *Statistical Methods in Geography*, Concept, New Delhi.
5. Alvi, Zamir (1995): *Statistical Geography*, Rawat Pub. New Delhi
6. Singh, R.L. and Singh, Rana .P.B (1991): *Elements of Practical Geography*, Kalyani Publishers, New Delhi
7. Singh, L.R. (2006): *Fundamentals of Practical Geography*, Sharda Pustak Bhawan, Allahabad.
8. Gupta, Santosh (2010): *Research Methodology and Statistical Techniques*, Deep & Deep Publication Pvt. Ltd., New Delhi
9. Khan, Md. Zufelguar Ahmad (1998): *Text Book of Practical Geography*, Concept Publishing Company, New Delhi

**SEMESTER – V**

**Paper –VIII A: Population & Settlement Geography**

**Course No: GEOG – 504A**

**Credits: 6**

**(Optional-A)**

-----  
**UNIT-I**

1. Nature and scope of population geography; Growth, distribution and density of world population

**UNIT-II**

2. Migration: Types and Determinants; Population composition: Age and Sex composition and its determinants; Workforce and occupational composition

**UNIT-III**

3. Population theory- Malthusian theory and Demographic transition theory; Concept of over-under and optimum population

**UNIT-IV**

4. Types, patterns and morphology of rural settlement; Census classification of Indian towns- Notified towns and Census town.

**UNIT-V**

5. Rural-urban fringe; Satellite towns; Problems and remedies of urbanization; Sustainable development of cities

**Suggested Readings:**

1. Chandna, R.C. (2000): *Geography of Population: Concepts, Determinants and Patterns*, Kalayani Publishers, New Delhi.
2. Clark, J.I. (1965): *Population Geography*, Permagon Press, New York.
3. Sundram, K.V. & Nangia Sudesh, (editors) (1986): *Population Geography*, Heritage Publishers, Delhi.
4. Peters, G.L. and Larkim, R.P. (1979): *Population Geography: Problems, Concepts and Prospects*, Kendele-Hunt Iowa.
5. GOI (2011): *Census of India 2011 Series-I India Provisional Population Totals*, Published by Registrar General & Census Commissioner, India.
6. GOI(1991): *Census of India, 1991 India: A State Profile*, Published by office of the Registrar General of India, Census Operations, New Delhi.

**SEMESTER – V**  
**Paper –VIII-B: Urban Geography**  
**Course No: GEOG – 504B**  
**Credits: 6**  
**(Optional-B)**

---

**UNIT-I**

1. Meaning, nature and scope of urban geography; Theories of urban origin; Early urban hearths

**UNIT-II**

2. Central place theory; Primate city and Rank size.

**UNIT-III**

3. Models of urban land use- Concentric Zone theory; Sector theory and Multiple Nuclei theory.

**UNIT-IV**

4. Pattern of urbanisation in developed and developing countries; Concept of city region and its delimitation

**UNIT-V**

5. Problems of urbanisation in India; Concept of smart cities and its feasibility in Indian context.

**Suggested Readings:**

1. Carter, H. (1972): *The Study of Urban Geography*, Edward Arnold, London.
2. Hall T. (2006): *Urban Geography*, Taylor and Francis
3. Pacione, M. (2001): *Urban Geography: A Global Perspective*, Routledge, London.
4. Knox P. L. and Pinch S. (2006): *Urban Social Geography: An Introduction*, Prentice-Hall
5. Ramachandran R (1989): *Urbanisation and Urban Systems of India*, Oxford University Press, New Delhi
6. Ramachandran, R. (1992): *The Study of Urbanisation*, Oxford University Press, Delhi

**SEMESTER – VI**  
**Paper –IX: Geomorphology**  
**Course No: GEOG - 601**  
**Credits: 6**

---

**UNIT-I**

1. Fundamental concept of geomorphology; Geomorphic agents and processes: Erosion, Transportation and deposition; Weathering; Mass wasting.

**UNIT-II**

2. Concepts of Landscape Evolution: WM Davis & W Penck; Slope elements

**UNIT-III**

3. Fluvial geomorphology – Morphometry of drainage basins; Profile of equilibrium; Channel morphology.

**UNIT-IV**

4. Evolution of drainage systems: types and patterns, Fold, fault and denudation chronology.

**UNIT-V**

5. Karst Topography; Aeolian landscape and Coastal landforms

**Suggested Readings:**

1. Dayal, P. (1996): *A Text Book. of Geomorphology*, Shukla Book Depot, Patna.
2. Dury, G.H.(1980): *The Face of the Earth*, Penguin.
3. Earnst, W.G. (2000): *Earth Systems-Process and Issues*, Cambridge Univ. Press.
4. Kale V. & Gupta, A. (2001): *Elements of Geomorphology*, OUP, Kolkata.
5. Singh, S. (1998): *Geomorphology*, Prayag Pustakalaya, Allahabad.
6. Sparks, B.W. (1960): *Geomorphology*, Longmans.
7. Thornbury, W.D. (2002): *Principles of Geomorphology*, Second Edition, First Indian Reprint, CBS Publishers, New Delhi
8. Burchfield, B.Clark, Foster Robert, J.et al. (1980): *Physical Geology*, Charles E. Merrill, Columbus.
9. Bloom, Arthur L. (1998): *Geomorphology*, Pearson Edn. (Singapore) Pte. Ltd.
10. Bryant, Richard H. (2001): *Physical Geography*, Rupa & Co., New Delhi.
11. Mitchell, C.W. (1973): *Terrain Evaluation*, Longman, London.

**SEMESTER – VI****Paper – X : Remote Sensing & Geographical Information System****Course No: GEOG - 602****Credits: 6****UNIT-I**

1. Aerial photography: Meaning and scope; Historical development of aerial photography; Types and geometry of aerial photographs

**UNIT-II**

2. Remote Sensing (Definition, Remote Sensing System, Advantages and Limitations); Electromagnetic Radiation and its Properties (Electromagnetic Radiation Models, Properties of EMR, Electromagnetic Spectrum); Energy Interaction (Atmosphere and Earth)

**UNIT-III**

3. Remote Sensing Platforms (Terrestrial Platforms, Airborne Platforms, Space borne Platforms); Types of Satellites (Earth Observation Satellites, Navigation Satellites); Orbits and Their Types (Geosynchronous Orbit, Sun synchronous Orbit); Parameters of Resolution, Sensor System (Multispectral Imaging Sensor System, Thermal Remote Sensing System)

**UNIT-IV**

4. Geographical Information System: Definition, concepts and components; Types of data (Spatial and Non-spatial); Data models (Raster and Vector).

**UNIT-V**

5. Application of remote sensing and GIS: Elements of image interpretation; Interpretation of land-use and land cover; Urban sprawl analysis; Forest monitoring.

**Suggested Reading:**

1. Pratip Kumar Guha (2013): *Remote Sensing for The Beginner*, East-West Press.
2. Burrough, P.A. (1986): *Principles of Geographic Information Systems*, OUP, Oxford.
3. Campbell, J.B. (2002): *Introduction to Remote Sensing*, Guilford Press, New York.
4. Chang, Kang-tsung, (2002): *Introduction to Geographic Information Systems*, Tata- McGraw-Hill, New Delhi.
5. Curran, P.J. (1985): *Principles of Remote Sensing*, Longman, London.
6. Deekshatulu, B.L. & Rajan, Y.S. (1984): *Remote Sensing*, Indian Academy of Science, Bangalore.
7. DeMers, M.N. (2000): *Fundamentals of Geographic Information Systems*, John Wiley, New York.
8. Joseph, Geogre and Jeganathan, C. (2003): *Fundamentals of Remote Sensing*, Third Edition, Universities Press, Hyderabad.
9. Bhatta, B. (2008): *Remote Sensing and GIS*, Second Edition, Oxford University Press
10. Reddy, M. Anji (2002): *Textbook of Remote Sensing and Geographical Information Systems*, Fourth Edition, BS Publications, Hyderabad.

**SEMESTER – VI****Paper – XI:****Remote Sensing & GIS and Project Work (Practical)****Course No: GEOG - 603****Credits: 6****UNIT-I****Section-A (15 marks including Practical Record book (5 marks) and viva-Voce (5 marks))**

1. Two (2) exercises will be done from aerial photos and satellite images (scales, orientation and interpretation).
2. Three (3) exercises in GIS including (i) Image rectification (ii) Identification of point, linear and aerial features and (iii) Supervised and unsupervised classification should be done by using GIS software.

**UNIT-II****Section – B (15 marks)**

3. Global Positioning System (GPS) – Basic concepts; Principles and applications; Segments of GPS; Errors in GPS; GPS operations and methods;
4. Survey will be done with GPS and processes data to get layout with any GIS software.

**UNIT-III****Section C- Project Work (45 marks) (Project Report – 35 marks; Viva Voce-10 Marks)**

The candidates are expected to study a village, an urban ward or a small town for a period not exceeding one week and prepare a report (to be typed at A4 size, containing about 40 pages) on a topic assigned to them on any geographical study. The project report is expected to reflect some original interpretation of the theme based on field observations. The concerned department must assign a supervisor and the topic be decided at the end of the fourth semester to enable the student to put in the required time to complete the project report.

\* Colleges are expected to procure materials, instruments and software required to perform the practical and project works in GIS & RS.

**Suggested Readings:**

1. Monkhouse, F.J. (1967): *Maps & Diagrams*, Methuen, London.
2. Raize, I. (1982): *Principles of Cartography*, McGraw Hill, N.Y.
3. Mahmood Aslam, (1973): *Statistical Methods in Geography*, Concept, New Delhi.
4. Pal, S.K. (1998): *Statistics for Geoscientists*, Concept, New Delhi.
5. Misra, H.N & Singh, V.P. (Eds. (2006). *Research Methodology in Geography: Social, Spatial and Policy Dimensions*, Rawat Publication, New Delhi

**SEMESTER – VI**  
**Paper –XIIA: Oceanography**  
**Course No: GEOG – 604A**  
**Credits: 6**  
**(Optional-A)**

---

**UNIT-I**

1. Nature and scope of oceanography; Bottom topography of the Atlantic, Indian and Pacific oceans

**UNIT-II**

2. Temperature and salinity of the oceans; Ocean currents, waves and tides

**UNIT-III**

3. Ocean deposits and marine resources; Biotic, mineral and energy resources

**UNIT-IV**

4. Coral reefs and coral bleaching; Darwin's subsidence theory of coral reefs; Standstill theory; Glacial control theory

**UNIT-V**

5. Sea level change; Law of the sea; Marine pollution

**Suggested reading:**

1. Singh, Savindra (2001): *Oceanography*, Pravalika publications.
2. Webb, Paul (2019): *Introduction to Oceanography*. Rebus Community Publisher
3. Singh (2013): *Oceanography*. Pravalika publication.
4. Lal (2015): *Climatology & Oceanography*, Sharda Pustak Bhawan, New Delhi
5. Garrison T (2012): *Oceanography: An Invitation to Marine Science*, 8th Edition. Cengage Learning publication.

**SEMESTER – VI**  
**Paper – XIIB: Biogeography**  
**Course No: GEOG – 604B**  
**Credits: 6**

---

**UNIT-I**

1. **Biogeography:** Meaning, scope and components; Elements of Biosphere

**UNIT-II**

2. **Soil:** Classification, distribution and soil profile; Degradation and conservation

**UNIT-III**

3. **Plants and Animals:** Factor influencing world distribution of plants and animals

**UNIT-IV**

4. **Ecosystem:** Energy Flow, Food chains, food webs and ecological pyramids;

**UNIT-V**

5. Deforestation and conservation problems; Social forestry; Biodiversity conservation.

**Suggested Readings:**

1. Barry, C. (1977): *Biogeography – An Ecological and Evolutionary Approach*, Cox Blackwell, Oxford.
2. Hagget, R.J. (1988): *Fundamentals of Biogeography*, Routledge, London.
3. Singh, Savindra (2015): *Environmental Geography*, Pravalika Publications, Allahabad
4. Joy, T. (1993): *Biogeography: A Study of Plants in the Ecosphere*, Longman Sci & Tech., U.K.
5. Martin, C. (1975): *Plant Geography*, Methuen.
6. Phillip, J. (1957): *Zoo Geography: The Geographical Distribution of Animals*, John Wiley, N.Y.
7. Robinson, H. (1982): *Biogeography*, McDonald and Evans, London.
8. Seddon, B. (1971): *Biogeography*, Duckworth, London.
9. Spellerberg, I.F. & Sawyer, J.W.D. (1999): *An Introduction to Applied Biogeography*, Cambridge University Press.
10. World Resources 2000-01 (2001): *People and Ecosystem*, World Resources Institute, Washington.