

REVISED UG SYLLABUS UNDER CBCS
(Implemented from Academic Year 2020-21)
PROGRAMME: FOUR YEAR B.Sc.,

Domain Subject: Geography
Skill Enhancement Courses (SECs) for Semester V, from 2022-23
(Syllabus-Curriculum)

Structure of SECs for Semester – V

(To choose One pair from the Four alternate pairs of SECs)

Univ. Code	Course 6&7	Name of the Course	Th. Hrs. / Week	IE Marks	EE Marks	Credits	Prac. Hrs./ Wk	Marks	Credits
	6A	Economic Geography	3	25	75	3	3	50	2
	7A	Industrial Geography	3	25	75	3	3	50	2

OR

Univ. Code	Course 6&7	Name of the Course	Th. Hrs. / Week	IE Marks	EE Marks	Credits	Prac. Hrs./ Wk	Marks	Credits
	6B	Environmental Geography	3	25	75	3	3	50	2
	7B	Disaster Management	3	25	75	3	3	50	2

OR

Univ. Code	Course 6&7	Name of the Course	Th. Hrs. / Week	IE Marks	EE Marks	Credits	Prac. Hrs./ Wk	Marks	Credits
	6C	Tourism Geography	3	25	75	3	3	50	2
	7C	Resource Geography	3	25	75	3	3	50	2

OR

Univ. Code	Course 6&7	Name of the Course	Th. Hrs. / Week	IE Marks	EE Marks	Credits	Prac. Hrs./ Wk	Marks	Credits
	6D	Agricultural Geography	3	25	75	3	3	50	2
	7D	Remote sensing & GIS	3	25	75	3	3	50	2

Note-1: For Semester–V, for the domain subject Botany, any one of the four pairs of SECs shall be chosen as courses 6 and 7, i.e., 6A & 7A or 6B & 7B or 6C & 7C or 6D & 7D. The pair shall not be broken (ABCD allotment is random, not on any priority basis).

Note-2: One of the main objectives of Skill Enhancement Courses (SEC) is to inculcate field skills related to the domain subject in students. The syllabus of SEC will be partially skill oriented. Hence, teachers shall also impart practical training to students on the field skills embedded in the syllabus citing related real field situations.

Course Outcomes:: Department of Geology

Sl. No.	Year	Subject Code	Subject Name	Course Outcome Code	Course Outcome
1.	2021		6A Economic Geography		Introduce the students to geographical mode of thinking in application various economic phenomena.
2.	2021		7A Industrial Geography		Students will get the knowledge of relation of industries, their geographical distribution and their significance
3.	2021		6B Environmental Geography		A student will learn about different processes of development and adoption triggered by the environmental prerogatives in distinct regions.
4.	2021		7B Disaster Management		Students acquire knowledge on the nature of impacts, anthropogenic disasters, soil degradation and desertification, water and atmospheric pollution. Will get knowledge on disaster management plans.
5.	2021		6C Tourism Geography		Students will be able to evaluate the human cultural geographic resources and classes of tourism, historical resources on tourism.
6.	2021		7C Resource Geography		Students will be able to synthesize geographic knowledge and apply innovative strategies to solve problems in resource conservation, environmental change.

7.	2021		6D Agricultural Geography		Students understand agriculture, study approaches applied in agriculture and understand the influence of physical, Economic and technological factors on agriculture patterns.
8.	2021		7D Remote sensing & GIS		Students understand the principles of Remote Sensing, able to comprehend the energy interactions with earth surface features, spectral properties of various materials. Get the knowledge of application of GIS in mapping of various earth features.

6A Economic Geography

Unit I

Meaning and approaches to Economic Geography, new Economic Geography. Goods and services, production, exchange and consumption. Concept of economic man, theories of choices. Economic distance and transport costs

Unit II

Concept and classification of economic activity, Factors Affecting location of Economic Activity with special reference to Agriculture, Location of Economic Activity: Von Thunen Theory and Weber's theory.

Unit III

Primary Activities: Types and problems and agriculture, agricultural regions of the world, forestry and fishing.

Unit IV

Secondary Activities: Manufacturing (Cotton Textile, Iron and Steel), Regions of the world: Special Economic Zones and its significance.

Unit V

Tertiary Activities: Transport, Roads and Railways, Air and Water, Trade

Suggested readings

1. Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Wheeler J. O., 1998: Economic Geography, Wiley.
3. Durand L., 1961: Economic Geography, Crowell.
4. Willington D. E., 2008: Economic Geography, Husband Press. 5. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford.

7A Industrial Geography

Unit I

Basic Concepts: Meaning and scope of industrial geography; Recent trends in industrial geography; Classification of industries.

Unit II

Concepts of industrialization, industrial complex and industrial estate; Role of industries in regional development.

Unit III

Location Factors and Theories: Factors of industrial location; Linkage in Industries; Theories of industrial location: Weber, Hoover, Lösch and Smith.

Unit IV

Spatial Arrangement of Industries: Localization and distribution of iron & steel, cotton textile and sugar industries; Bases of identification of industrial regions; Industrial regions of U.S.A. and West Europe.

Unit IV

Industrial development and policies; Industrial regions and complexes; Impact of globalization on industries; Problems of industrialization; Environmental impact of industrialization; Tourism as an industry; Tourism in Uttar Pradesh.

Suggested Readings

1. Alexanderson, C. (1967): Geography of Manufacturing. Prentice-Hall of India, New Delhi.
2. Hoover, E. M. (1948): Location and Space Economy. McGraw Hill, New York.
3. Lodha, R.M.(2005): Audyogika Bhoogol, Rajasthan Hindi Granth Academy, Jaipur
4. Miller, E. (1962): Geography of Manufacturing. Prentice-Hall, Englewood Cliffs, New Jersey.
5. Riley, R. C. (1973): Industrial Geography, Chatto and Windus Ltd. London.
6. Sharma, V.N. (2001): Industrial Development and Planning in India, Radha Publications, New Delhi,

7. Singh, M. B. (1990): *New Perspectives in Industrial Geography*. Lotus Publication, Varanasi.
8. Singh, M. B. (1988): *Industrial Geography*. Lotus Publication, Varanasi.

6B Environmental Geography

Unit I

Concept and Scope of Environmental Geography. Environmental contrast - Biotic Abiotic, Global, Continental, Local. Environmental control of light, Temperature, Water, topography and edaphic factors.

Unit II

Ecosystem – Concept, Structure and Functions, Tropic level, Food Chain, Biogeo-chemical Cycle (Nitrogen and Carbon), Energy flow in Ecosystem.

Unit III

Environmental Problems in Tropical, Temperate and Polar Ecosystems. Environmental pollution (water and air). Concept of holistic environment and systems approach. Ecosystems and their relation with habitats

Unit IV

Human-Environment Relationships – Historical Progression, Adaptation in different Biomes. Wetland ecosystem with special reference to East Kolkata Wetlands. Rural environmental issues: Special reference to sanitation and public health. Urban environmental issues with special reference to waste management.

Unit V

Environmental Programmes and Policies – Major Global & National programme and policies, concept of spaceship earth, earth summit 1992, wildlife act of India 1972, water pollution control act of India 1974, National Environmental tribunal – 1995 of India.

Suggested References

1. Basu, R. and Bhaduri, S. (Eds) 2007. *Contemporary Issues and Techniques in Geography*, Progressive Publishers.
2. Chandna, R.C. 2002. *Environmental Geography*, Kalyani Press.
3. Chapman, J.L., Reiz, M.J. 1993. *Ecology: Principle and Applications*, Cambridge University Press. Cunningham, W.P., Cunningham, M.A. 2004. *Principals of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill.
4. Goudie, A. 2001. 2013. *The Human Impact on the Natural Environment: Past, Present, and Future*, 7th ed, Wiley-Blackwell.

5. Gilpin, A., 1994. Environmental Impact Assessment: Cutting Edge for the 21st Century, Cambridge University Press.
6. Miller, G.T. 2004. Environmental Science: Working with the Earth, Thomson Brooks

7B Disaster Management

Unit I

Introduction on Disaster Different Types of Disaster: A) Natural Disaster: such as Flood, Cyclone, Earthquakes, Landslides etc B) Man-made Disaster: such as Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail & Road), Structural failures (Building and Bridge), War & Terrorism etc. Causes, effects and practical examples for all disasters.

Unit II

Risk and Vulnerability Analysis 1. Risk: Its concept and analysis 2. Risk Reduction 3. Vulnerability: Its concept and analysis 4. Strategic Development for Vulnerability Reduction.

Unit III

Disaster Preparedness and Response Preparedness - Disaster Preparedness: Concept and Nature. Disaster Preparedness Plan - Prediction, Early Warnings and Safety Measures of Disaster. Role of Information, Education, Communication, and Training. Role of Government, International and NGO Bodies. Role of IT in Disaster Preparedness - Role of Engineers on Disaster Management.

Unit IV

Response 1. Disaster Response: Introduction. Disaster Response Plan - Communication, Participation, and Activation of Emergency Preparedness Plan - Search, Rescue, Evacuation and Logistic Management. Role of Government, International and NGO Bodies. Psychological Response and Management (Trauma, Stress, Rumor and Panic). Relief and Recovery, Medical Health Response to Different Disasters.

Unit V

Rehabilitation, Reconstruction and Recovery - Reconstruction and Rehabilitation as a Means of Development. Damage Assessment, Post Disaster effects and Remedial Measures. Creation of Long-term Job Opportunities and Livelihood Options, Disaster Resistant House Construction, Sanitation and Hygiene, Education and Awareness, Dealing with Victims' Psychology, Long-term Counter Disaster Planning - Role of Educational Institute.

Suggested References

1. Dr. Mrinalini Pandey Disaster Management Wiley India Pvt. Ltd.
2. Tushar Bhattacharya Disaster Science and Management McGraw Hill Education (India) Pvt. Ltd.
3. Jagbir Singh Disaster Management : Future Challenges and Opportunities K W Publishers Pvt. Ltd.
4. J. P. Singhal Disaster Management Laxmi Publications.
5. Shailesh Shukla, Shamna Hussain Biodiversity, Environment and Disaster Management Unique Publications
6. C. K. Rajan, Navale Pandharinath Earth and Atmospheric Disaster Management: Nature and Manmade B S Publication

6C Tourism Geography

Unit I

Meaning and Definition of tourism. Nature, Scope, Importance of tourism, Tourism as an interdisciplinary Subject. Recent Trends in Tourism Geography

Unit II

Factors affecting tourism development - Physical Factors – Relief, Climate, Vegetation, Wildlife, Water Bodies. Socio-Cultural Factors, Religious Factors, Historical and Cultural Factors, Economic Factors. Transportation, Accommodation.

Unit III

Classification and Recent Concepts of Tourism. Classification on the basis of – Nationality, Time of travel Number of tourist, Purpose. Mode of transportation. Season, Nature of tourism.

Unit IV

Recent Concepts of Tourism. Agro-tourism. Eco-tourism. Heritage tourism. Adventure tourism.

Unit V

Impact of Tourism On- Economy, Socio-cultural aspects , Environment. Sustainable Development of Tourism.

Suggested Readings

1. Bhatia A.K.: International Tourism
2. Bhatia A.K.: Tourism Development
3. Dev Manoj : India – A Tourist Paradise
4. Dhar Pramnath: Development of Tourism and Travel Industry
5. Gupta V.N.: Tourism in India
6. Negi Jagmohan: Tourism Development and Resource Conservation.

7C Resource Geography

Unit I

Natural Resources: Concept and classification. Approaches to Resource Utilization: Utilitarian, Conservational, Community based adaptive. Significance of Resources: Backbone of Economic growth and development.

Unit II

Pressure on resources. Appraisal and Conservation of Natural Resources. Problems of resource depletion—global scenario (forest, water, fossil fuels). Sustainable Resource Development.

Unit III

Distribution, Utilisation, Problems and Management of Metallic Mineral Resources: Iron ore, Bauxite, copper, Lead and Zinc.

Unit IV

Distribution, Utilisation, Problems and Management of Non-Metallic Mineral Resources: Limestone, Mica, Gypsum, Barite, Asbestos.

Unit V

Distribution, Utilization, Problems and Management of Energy Resources: Conventional and Non-Conventional [6] 10. Contemporary Energy Crisis and Future Scenario. Politics of Power resources. Limits to Growth and Sustainable Use of Resources; Concept of Resource sharing.

Suggested Readings

1. Chiras, D.D., Reganold, J.P. 2009. Natural Resource Conservation: Management for a Sustainable Future, 10th ed, Pearson.
2. Cutter, S.N., Renwich, H.L., Renwick, W. 1991. Exploitation, Conservation, and Preservation: A Geographical Perspective on Natural Resources Use, John Wiley and Sons.
3. Gadgil, M., Guha, R. 2005. The Use and Abuse of Nature: Incorporating This Fissured Land: An Ecological History of India and Ecology and Equity, Oxford University Press.
4. Gregory, D., Johnston, R., Pratt, G., Watts., Whatmore, S. (Eds) 2009. The Dictionary of Human Geography, 5th ed, Wiley.
5. Holechek, J.L.C., Richard, A., Fisher, J.T., Valdez, R. 2003. Natural Resources: Ecology, Economics and Policy, Prentice-Hall.
6. Jones, G., Hollier, G. 1997. Resources, Society and Environmental Management, Paul Chapman.

6D Agriculture Geography

Unit I

Basic Concepts: Meaning and scope; Approaches to study of agricultural geography; Origin and dispersal of agriculture; Role of agriculture on human society; Physical, cultural and institutional factors affecting agriculture.

Unit II

Agricultural Patterns: Agricultural type and typology; Subsistence, plantation, commercial and mixed farming; Crop concentration and crop diversification; Delineation of crop combination regions; Agricultural regions of the world.

Unit III

Agricultural Measures: Land use pattern; concept of carrying capacity of land; Measures of agricultural efficiency and agricultural productivity.

Unit IV

Agricultural Development in India: Agro-climatic regions; Green revolution; Second generation reforms in Indian agriculture: land and institutional reforms; Organic and contract farming; Agricultural planning and policies.

Unit V

Concept of cropping pattern, crop combination, gross and net cropped area, crop rotation. A critical review and contemporary perspective of Von Thünen model; Definition and factors affecting yield. Measures of agricultural productivity. Role of irrigation in Indian agriculture. Problems of agriculture with special reference to South Asian countries.

Suggested Readings

1. Basu, D.N., Guha, G.S. 1996. Agro-Climatic Regional Planning in India, Concept Publication.
2. De, N.K., Jana, N.C. 1997. The Land: Multifaceted Appraisal and Management, Sribhumi Publishing.
3. Grigg, D. 1995. An Introduction to Agricultural Geography, 2nd ed, Routledge.
3. Hussain, M. 1978. Agricultural Geography, Rawat Publication.
- Ilbery, B.W. 1985. Agricultural Geography: A Social and Economic Analysis, Oxford University Press.
4. Mohammad, N. 1992. New Dimension in Agriculture Geography, Concept Pub.
5. Roling, N.G., Wageruters, M.A.E. (Eds.) 1998. Facilitating Sustainable Agriculture, Cambridge University Press.
6. Shafi, M. 2005. Agricultural Geography, Pearson

7D Remote Sensing and GIS

Unit I

Definition -Historical Components of Remote Sensing Principles & methods of remote sensing - Active and Passive remote sensing - Remote Sensing platforms -Electromagnetic radiation-Spectrum- satellites classification – based on orbit- sun synchronous and Geosynchronous based on purpose Earth Resources satellites, communication satellite Weather satellites Spy satellites Sensors.

Unit II

Characteristics of Digital satellite image enhancement Filtering Applications of Aerial photographs and satellite imageries – merits – Limitations – Water resources – watershed management – Urban Studies – Flood Management- Fishing Forestry.

Unit III

Visual Interpretation of Satellite Images – Elements of Interpretation - Interpretation Keys Characteristics of Digital Satellite Image – Image enhancement – Filtering – Classification - Integration of GIS and Remote Sensing.

Unit IV

GIS – Components of GIS – Hardware, Software and Organisational Context – Data – Spatial and NonSpatial – Maps – Types of Maps – Projection – Types of Projection - Data Input – Digitizer, Scanner – Editing – Raster and Vector data structures – Comparison of Raster and Vector data structure – Analysis using Raster and Vector data – Retrieval, Reclassification, Overlaying, Buffering – Data Output – Printers and Plotters.

Unit V

Application of Remote Sensing and GIS – Urban Applications- Integration of GIS and Remote Sensing – Application of Remote Sensing and GIS – Water resources – Urban Analysis – Watershed Management – Resources Information Systems.

Suggested References

1. Anji Reddy, “Remote Sensing and Geographical Information Systems”, BS Publications 2001
2. Anand P.H,”Principles of remote Sensing and Geographical Information Systems”, Sri Venkateswara Publishers, 2003.
3. Lillesand T.M and Kiefer R.W. Remote sensing and Image, Interpretation, John Wiley and Sons, INC, New York, 1987.
4. Burrough P A,”Principle of GIS for land resource assessment”, Oxford University, 1990.