

# Syllabus Geography (Programme)

2  
0  
2  
2



CBCS Syllabus for 3-Year Undergraduate  
General Course in GEOGRAPHY

## BANKURA UNIVERSITY

Bankura, West Bengal, 722155



<b>1. Introduction .....</b>	<b>3</b>
<b>2. Scheme for CBCS Curriculum</b>	
2.1 Credit Distribution across Courses.....	4
2.2 Choices for Discipline Specific Electives... ..	5
2.3 Choices for Skill Enhancement Course .....	5
<b>3. Core Subjects Syllabus</b>	
3.1 SPGEO/101/C-1A: Physical Basis of Earth .....	6
3.2 SPGEO/201/C-1B: Human Geography .....	8
3.3 SPGEO/301/C-1C: Cartographic Techniques... ..	10
3.4 SPGEO/401/C-1D: Economic Geography.....	12
<b>4. Department Specific Electives Subjects Syllabus</b>	
4.1 SPGEO/501/DSE-1A: Hydrology and Oceanography.....	14
4.2 SPGEO/501/DSE-1A: Urban Geography .....	16
4.3 SPGEO/601/DSE-1B: Soil and Biogeography.....	18
4.4 SPGEO/601/DSE-1B: Population Geography .....	20
<b>5. Skill Enhancement Subjects Syllabus</b>	
5.1 SPGEO/304/SEC-1: Statistical Methods in Geography .....	22
5.2 SPGEO/404/SEC-2: Computer Basics and Applications.....	23
5.3 SPGEO/504/SEC-3: Remote Sensing Techniques .....	24
5.4 SPGEO/604/SEC-4: Geographic Information System .....	25
<b>6. Semester wise Model Structure in General Programme .....</b>	<b>26</b>
<b>7. Programme Objective.....</b>	<b>28</b>
<b>8. Programme Outcome.....</b>	<b>28</b>
<b>9. Programme Specific Outcome .....</b>	<b>29</b>



## 1. Introduction

The syllabus for Geography at undergraduate level using the Choice Based Credit system has been framed in compliance with model syllabus given by UGC. This is the second revision after its implementation in 2017. The revision has been made on the basis of the local issues as well as developments in different sectors during this time which demands for the inclusion and exclusion of some of the topics in the syllabus.

The main objective of framing this new syllabus is to give the students a holistic understanding of the subject giving substantial weightage to both the core content and techniques used in Geography. The syllabus has given equal importance to the two main branches of geography – Physical and Human.

The ultimate goal of the syllabus is that the students at the end are able to secure a job. Keeping in mind and in tune with the changing nature of the subject, adequate emphasis has been given on new techniques of mapping and understanding of the subject.

The syllabus has also been framed in such a way that the basic skills of subject are taught to the students, and everyone might not need to go for higher studies and the scope of securing a job after graduation will increase.

While the syllabus is in compliance with UGC model curriculum, but since it did not offer much choice on electives in Physical Geography, one more elective "Soil and Biogeography" has been added.

This new syllabus will train undergraduates to get jobs in the information and technology areas as there is great demand for preparation of digital maps and storage and retrieval of geospatial data.

**2.1 Credit Distribution across Courses for General Programme**

	<b>Course Type</b>	<b>Total Papers</b>	<b>Theory + Practical</b>	<b>Theory*+Tutorials</b>
<b>Core Courses</b>	4 papers each from 3 disciplines of choice	12	12*4 =48 12*2 =24	12*5 =60 12*1=12
	2 papers each from 3 discipline of choice including interdisciplinary papers	6	6*4=24 6*2=12	6*5=30 6*1=6
<b>Ability Enhancement Language Courses</b>		2	2*2=4	2*2=4
<b>Skill Enhancement Courses</b>		4	4*2=8	4*2=8
<b>Totals</b>		<b>24</b>	<b>120</b>	<b>120</b>

\*Tutorials of 1 Credit will be conducted in case there is no practical component

All Programme courses will have 3 subjects/disciplines of interest. Student will select 4 core courses each from discipline of choice including Geography as one of the disciplines. Student will select 2 core courses each from discipline of choice including Geography as one of the disciplines.

Student may also choose Skill Enhancement courses in Geography.



## 2.2 Choices for Discipline Specific Electives

Discipline Specific Elective – 1 to 4	
<b>SPGEO/501/DSE-1A</b>	<b>SPGEO /504/DSE-2</b>
Hydrology and Oceanography	Soil and Biogeography
Urban Geography	Population Geography

## 2.3 Choices for Skill Enhancement Courses

Skill Enhancement Courses	
<b>SPGEO /304/ SEC-</b>	<b>SPGEO /404/SEC-</b>
Statistical Methods in Geography	Computer Basics and Applications
<b>SPGEO /504/ SEC-3</b>	<b>SPGEO /604/SEC- 4</b>
Remote Sensing Techniques	Geographical Information System



## 3. Syllabus for Core Subject

### 3.1 SPGEO/101/C-1A: Physical Basis of Earth

**Physical Basis of Earth**

**6 Credits**

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

#### Unit 1: Earth: Origin and Evolution

- 1.1 Origin of Earth (Nebular Hypothesis of Laplace)
- 1.2 Geological Time Scale and Geological History of the Earth
- 1.3 Isostasy: Origin of the concept, Theories of Airy and Pratt, Isostatic Adjustments,
- 1.4 Internal Structure of the Earth: Seismological Evidences, Physical, chemical and seismic properties of Earth layers.

#### Unit 2: Tectonic Theories and Processes

- 2.1 Continental Drift Theory of Alfred Wegener
- 2.2 Palaeo-magnetism and Sea Floor Spreading
- 2.3 Plate Tectonic Theory; Plate Composition, Plate Movement, Plate Margins, Triple Junctions.
- 2.4 Tectonic Processes in relation to Plate Tectonics; Orogenesis, Earthquake, Vulcanicity

#### Unit 3: Process Geomorphology

- 3.1 Evolution of landforms on Uniclinal, Folded and Faulted Strata
- 3.2 Landscape Evolution Models: Davis, Penck and Hack
- 3.3 Climatic Geomorphology: Basic concepts,
- 3.4 Hillslopes: Genesis and Morphology



### Reference Books

- ▶ Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
- ▶ Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
- ▶ Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
- ▶ Thornbury W. D., 1969: Principles of Geomorphology, Wiley.
- ▶ Khullar, D.R. (2012), Physical Geography, Kalyani Publishers, New Delhi
- ▶ Mukhopadhyay, S.; Mukhopadhyay, M.; Pal, S. (2010), Advanced River Geography, ACB Publications, Kolkata
- ▶ Choudhuri, S.K. (2018), Fundamentals of Geotectonics, New Central Book Agency, Kolkata
- ▶ Mukhopadhyay, S.; Das, R. (1994), Bhumirup: Udvab o Prakriti Vol-I & II in Bengali, Paschimanga Rajya Pustak Parshad, Kolkata
- ▶ Basu, P. (2006), Bhugathonik Prakriya o Bhumirup in Bengali, Books and Allied, Kolkata
- ▶ Sil, A. (2012), Bhugathon o Bhumirupbidya in Bengali, The Himalayan Books, Kolkata
- ▶ Sil, A. (2013), Prakriya Bhumirupbidya in Bengali, The Himalayan Books, Kolkata
- ▶ Basu, P. (2014), Prakriya Sonkranta Bhumirupbidya o Sanshlisho Jalobigyan in Bengali, Books and Allied, Kolkata
- ▶ Das, C; Pramanick, T.K. (2018), Prakritik Bhugol in Bengali, Innova Publications, Kolkata
- ▶ Chattopadhyay, G. (2019), Mahajagotik Rahasyo in Bengali, Akshar Prakashan, Kolkata
- ▶ Sengupta, P.K. ( 2019), Bhumikampo in Bengali, Education Forum, Kolkata
- ▶ Saha, S; Roy, T. (2019), Bhugathonik Prakriya o Bhumirupbidya in Bengali, Kalyani Publishers, Kolkata
- ▶ Maity, A.K.; Manna, S. (2020), Bhugathonik o Bhumirupbidya Prosonge in Bengali, Deb Prakashani, Kolkata
- ▶ Tikadar, S. (2022), Prakritik Bhugol in Bengali, Book Syndicate, Kolkata



### 3.2 SPGEO/201/C-1B: Human Geography

#### Human Geography

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>
<b>Question Pattern:</b>	<b>Section-A Definition Oriented (5x2=10)</b>
	<b>Section-B Short Answer Type (5x4=20)</b>
	<b>Section-C Long Answer Type (1x10=10)</b>

#### Unit 1: Nature and Principles

- 1.1 Nature and scope; Recent trends. Elements of Human Geography
- 1.2 Approaches to the study of Human Geography; Resource, Locational, Landscape, Environmental
- 1.3 Evolution of humans. Concept of race and ethnicity
- 1.4 Space, society and cultural regions (language and religion)

#### Unit 2: Society, Demography and Ekistics

- 2.1 Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies
- 2.2 Population growth and distribution,
- 2.3 Population composition
- 2.4 Demographic transition model

#### Unit 3: Ekistics and Adaptation

- 3.1 Human adaptation to environment: Eskimo and Santhals
- 3.2 Population growth and environment change with special reference India.
- 3.3 Social morphology and rural house types in India
- 3.4 Types and patterns of Rural Settlements





### Reference Books

- ▶ Bergman, E.F (1995): Human Geography-Culture, Connections and Landscape, Prentice Hall, New Jersey
- ▶ Chisholm. (1975): Human Geography, Penguin Books, Hermondsworth.
- ▶ Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
- ▶ Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
- ▶ Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
- ▶ Norton. W. (2001): Human Geography, 4th Edition Oxford University press, Oxford
- ▶ Pearce D. (1995): Tourism Today: A Geographical Analysis, 2nd edition, Longman Scientific & Technical, London
- ▶ Pickering K. and Owen A. A. (1997): An Introduction to Global Environmental Issues, 2nd edition Rutledge, London.
- ▶ Raw, M. (1986): Understanding Human Geography: A Practical Approach, Bell and Hyman. London
- ▶ Rubenstein, J.M. (2002), The Cultural Landscape, 7th edition, Prentice Hall, Englewood Cliffs
- ▶ Smith D M (1982): Human Geography: A Welfare Approach, Edward Arnold, London
- ▶ Roy, T.; Mandal, B.; Maity, M.C. (2020), Manabiya Bhugol Anneshwan in Bengali, Kalyani Publishers, Kolkata
- ▶ Dhara, S. (2013), Janasonkhya o Basoti Bhugol in Bengali, Naboday Publications, Kolkata
- ▶ Mandal, M. (2016), Samajik Bhugol in Bengali, Naboday Publications, Kolkata

**3.3 SPGEO/301/C-1C: Cartographic Techniques****Cartographic Techniques****6 Credits****Total Marks: 50 (IA-10 Marks + ESE-40 Marks)****Question Pattern: Question-1 (1x10=10)****Question-2 (1x10=10)****Question-3 (1x10=10)****Lab Note Book & Viva-Voce (5+5=10)****Instruction for Laboratory Note Book**

- **Practical works are to be completed in the classroom.**
- **Works are to be done in pen/pencil and neatly hand written and signed by class teachers.**
- **Laboratory Note Books have to be submitted in the examination**

**Unit-1: Scale and Cartograms**

- 1.1 Construction of Linear and Comparative (Unit)
- 1.2 Cartograms: Circle, Square and Pie graph
- 1.3 Age-Sex Pyramid, Dependency Ratio
- 1.4 Population Maps and Diagrams: Choropleth, and Dot method

**Unit-2: Map Projections and Surveying**

- 2.1 Map Projections: Nature and Classification
- 2.2 Principles, Theories, Construction and Properties of select Map Projections: Simple Conical with one standard parallel, Cylindrical Equal Area, Polar Zenithal Stereographic
- 2.3 Surveying: Concepts and Principles- Angles, Bearing and Azimuths, Traversing, Radiation, Intersection by Prismatic Compass: Preparation of Land Use maps by open and closed traverse; computations of compass traverse- Included Angle, Area of traverse
- 2.4 Levelling by Dumpy Level: Profile

**Unit-3: Field Report**

Each student will prepare an individual report based on primary data collected from field survey and secondary data collected from different sources for either a rural area (mouza) or an urban area (municipal ward) or watershed based on cadastral, municipal or any base maps to study **related specific problems**.

The duration of the field work shall not exceed 3 days.

Report should be hand written with the following Tentative Chapter Schemes:



### **Preface & Acknowledgement**

**Introduction:** Objective, Extent and Space Relations, Data sources and Methodology

**Physical Environment:** Lithology, Drainage, Slope, Climate, Soil, Vegetation etc.

**Socio Economic Environment:** Population Characteristics, Occupational Structure, Ethnic and Religions Composition, Per-Capita Income, any other aspects.

**Problems and Prospects**

**Conclusion**

**Bibliography/References if any**

**Appendix:** Survey Questionnaire(s), Additional Tables if any if any

Word Limit: 3000 (Excluding Tables and Appendix).

2. A copy of the bound report, duly signed by the concerned teacher, should be submitted at the time of examination.

### **Reference Books**

- ▶ Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pergamon Press.
- ▶ Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
- ▶ Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
- ▶ Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
- ▶ Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
- ▶ Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
- ▶ Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
- ▶ Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
- ▶ Adhikari, S. (2005), Honours Byaboharik Bhugol, Vol-I, Dove Publishing House, Midnapore
- ▶ Das, N.; Khatun, S. (2021), Kartographi- Dharona o Prayog in Bengali, Kalyani Publishers, Kolkata
- ▶ Roy, T.; Mandal, B.; Bandyopadhyay, C.; Maity, M.; Bishal, P. (2021), Bhugolik Gobeshana Paddhoti o Kshetra Somikha in Bengali, Kalyani Publishers, Kolkata



### 3.4 SPGEO/401/C-1D: Economic Geography

#### Economic Geography

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

#### Unit 1: Agriculture: Systems and Model

1.1 Concept of Agricultural Systems

1.2 Plantation Agriculture

1.3 Mixed Farming

1.4 Model of Agricultural land use : Von Thunen Model

#### Unit 2: Industry: Models and Regions

2.1 Location Factors; Role of transport in industrial location

2.2 Models of Industrial Location: Weber & Losch

2.3 Industrial Regions: Asansol-Durgapur, Haldia

2.4 Problems of De-industrialization in West Bengal

#### Unit 3: Trade and Transport System

1.5 Role of WTO, EEC, SAARC in International Trade

1.6 Role of OPEC in Petroleum Industry

1.7 Transport Network: Accessibility and Connectivity

1.8 Major transport problems in India



## Reference Books

- ▶ Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- ▶ Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- ▶ Hodder B. W. and Lee Roger, 1974: Economic Geography, Taylor and Francis.
- ▶ Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- ▶ Wheeler J. O., 1998: Economic Geography, Wiley..
- ▶ Durand L., 1961: Economic Geography, Crowell.
- ▶ Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylor and Francis.
- ▶ Willington D. E., 2008: Economic Geography, Husband Press.
- ▶ Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford
- ▶ Baud-Bovy, M. and Lawson, F. (1977), "Tourism and Recreation Development", The Architectural Press Ltd, CBI Publishing Company, Boston
- ▶ Boniface, B.G. and Cooper, C.P. (1987), "The Geography of Travel & Tourism", Heinemann Professional Publishing, Oxford.
- ▶ Butler, R.W. (2010), ed, "The Tourism Area Life Cycle: Conceptual and Theoretical Issues", Vol-2, Viva Books Private Limited, New Delhi.
- ▶ Cooper, C., Fletcher, J., Gilbert, D. and Wanhill, S. (1993), "Tourism: Principles and Practice", Pitman, London.
- ▶ Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
- ▶ Mathison, A. and Wall, G. (1982), "Tourism: Economic, Physical and Social Impacts", Longman, Harlow.
- ▶ Mill, R. C. and Morrison, A. M. (1985), "The Tourism System: An Introductory Text", Prentice Hall, New Jersey.
- ▶ Pearce, D. (1989), "Tourism and Regional Development", Longman, London.
- ▶ Pearce, D. (1995), Tourism Today: A Geographical Analysis, Longman, London



#### 4. Discipline Specific Elective Subjects Syllabus

##### 4.1 SPGEO/501/DSE-1A: Hydrology and Oceanography

### Hydrology and Oceanography 6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>	
<b>Question Pattern:</b>	<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
	<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
	<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

#### Unit 1: Hydrology

- 1.1 Global hydrological cycle
- 1.2 Run off: controlling factors. Infiltration and evapotranspiration. Run off cycle
- 1.3 Rainwater harvesting and watershed management
- 1.4 Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement.

#### Unit 2: Oceanography

- 2.1 Major relief features of the ocean floor: characteristics and origin according to plate tectonics.
- 2.2 Air-Sea interactions, ocean circulation
- 2.3 Concept of wave and tide
- 2.4 Ocean temperature and salinity: Distribution

#### Unit 3: Ocean resources and Sea Level Change

- 3.1 Coral reefs: Formation, classification and threats
- 3.2 Marine resources: Classification and sustainable utilization
- 3.3 Concept of Sea Level Changes
- 3.4 Global Warming and Sea Level Changes



## Reference Books

- ▶ Andrew. D. Ward and Stanley, Trimble (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.
- ▶ Karanth, K.R., 1988: Ground Water: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.
- ▶ Ramaswamy, C. (1985): Review of floods in India during the past 75 years: A Perspective. Indian National Science Academy, New Delhi.
- ▶ Rao, K.L., 1982: India's Water Wealth 2nd edition, Orient Longman, Delhi,
- ▶ Singh, Vijay P. (1995): Environmental Hydrology. Kluwer Academic Publications, the Netherlands.
- ▶ Anikouchine W. A. and Sternberg R. W., 1973: The World Oceans: An Introduction to Oceanography, Prentice-Hall.
- ▶ Garrison T., 1998: Oceanography, Wordsworth Company, Belmont.
- ▶ Kershaw S., 2000: Oceanography: An Earth Science Perspective, Stanley Thornes, And UK.
- ▶ Pinet P. R., 2008: Invitation to Oceanography (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
- ▶ Sverdrup K. A. and Armrest, E. V., 2008: An Introduction to the World Ocean, McGraw Hill, Boston.
- ▶ Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Landscape ecology and water management. Proceedings of IGU Rohtak Conference, Volume 2. Advances in Geographical and Environmental Studies, Springer
- ▶ Sen, J.; Sengupta, P. (2020), Jalobigyan o Samudra Bhugol in Bengali, Kalyani Publishers, Kolkata
- ▶ Gayen, S. (2010), Bhu-Jalobidya in Bengali, Deb Prakashani, Kolkata
- ▶ Sil, A. (2016), Jalobidya, 4<sup>th</sup> Edition in Bengali, The Himalayan Books, Kolkata
- ▶ Sengupta, D.; Goswami, P.; Rudra, K. (2014), Jal in Bengali, Avenel Press, Kolkata
- ▶ Sil, A. (2014), Samudrabidya in Bengali, 4<sup>th</sup> Edition, The Himalayan Books, Kolkata
- ▶ Choudhury, S.K. (2017), Samudra Bhugol in Bengali, Central Book Agency, Kolkata



## 4.2 SPGEO/501/DSE-1A: Urban Geography

### Urban Geography

6 Credits

**Total Marks: 50 (IA-10 Marks + ESE-40 Marks)**

**Question Pattern:**

<b>Section-A Definition Oriented</b>	<b>(5x2=10)</b>
<b>Section-B Short Answer Type</b>	<b>(5x4=20)</b>
<b>Section-C Long Answer Type</b>	<b>(1x10=10)</b>

#### Unit -1: Basic Concepts

- 1.1 Urban Geography: nature and scope, different approaches and recent trends in urban geography
- 1.2 Origin of urban places in Ancient, Medieval, Modern and Post-Modern periods-factors, stages, and characteristics.
- 1.3 Aspects of urban places: Location, site and situation, Size and Spacing of Cities: The Rank Size Rule,
- 1.4 Urban Hierarchies: Central Place Theory;

#### Unit -2: Urban Processes

- 2.1 Ecological processes of urban growth; Urban fringe; City- Region
- 2.2 Theories of city structure-concentric zone theory, sector theory, multiple nuclei theory
- 2.3 Aspects of urban places: Location, site and situation
- 2.4 Patterns of urbanization in developed and developing countries

#### Unit 3: Urbanization in India

- 3.1 Patterns and trends of urbanization in India
- 3.2 Urban Issues: problems of housing, slums, civic amenities (water and transport)
- 3.3 Policies on urbanization.
- 3.4 Case studies of Delhi (NCR) and Kolkata (KMA) ,with reference to land use





### Reference Books

- ▶ Fyfe N. R. and Kenny J. T., 2005: The Urban Geography Reader, Routledge.
- ▶ Graham S. and Marvin S., 2001: Splintering Urbanism: Networked Infrastructures, Technological Mobility and the Urban Condition, Routledge.
- ▶ Hall T., 2006: Urban Geography, Taylor and Francis.
- ▶ Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: Urban Geography, John Wiley.
- ▶ Knox P. L. and McCarthy L., 2005: Urbanization: An Introduction to Urban Geography, Pearson Prentice Hall New York.
- ▶ Knox P. L. and Pinch S., 2006: Urban Social Geography: An Introduction, Prentice-Hall.
- ▶ Pacione M., 2009: Urban Geography: A Global Perspective, Taylor and Francis.
- ▶ Dhara, S. (2013), Janasonkhya o Basoti Bhugol in Bengali, Naboday Publications, Kolkata
- ▶ Mandal, M. (2016), Samajik Bhugol in Bengali, Naboday Publications, Kolkata
- ▶ Sassen S., 2001: The Global City: New York, London and Tokyo, Princeton University Press.
- ▶ Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi
- ▶ Ramachandran, R., 1992: The Study of Urbanisation, Oxford University Press, Delhi
- ▶ Singh, R.B. (Eds.) (2001) Urban Sustainability in the Context of Global Change, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.
- ▶ Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian megacities. Advances in Geographical and Environmental Studies, Springer



### 4.3 SPGEO/601/DSE-1B: Soil and Biogeography

#### Soil and Biogeography

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>
<b>Question Pattern:</b>	<b>Section-A Definition Oriented (5x2=10)</b>
	<b>Section-B Short Answer Type (5x4=20)</b>
	<b>Section-C Long Answer Type (1x10=10)</b>

#### Unit- 1 Soil Geography

- 1.1 Factors of soil formation. Man as an active agent of soil transformation.
- 1.2 Soil profile: Origin and profile characteristics of Laterite and Podzol soils
- 1.3 Definition and significance of soil properties: Texture and structure, pH and organic matter
- 1.4 Soil erosion and degradation: Factors, processes and mitigation measures

#### Unit 2 Biogeography

- 2.1 Concepts of biosphere, ecosystem, biome, Ecotone, community and ecology
- 2.2 Concepts of trophic structure, food chain and food web. Energy flow in ecosystems
- 2.3 Geographical extent and characteristic features of: Tropical rain forest, Taiga and Grassland biomes
- 2.4 Bio-geochemical cycles with special reference to carbon dioxide and nitrogen

#### Unit 3: Human Behavior and its impact on Soil and Biosphere

- 3.1 Soil Erosion and Degradation: Factors, processes and mitigation measures
- 3.2 Deforestation: Causes, consequences and management
- 3.3 Bio-diversity: Definition, types, threats and conservation measures
- 3.4 Response of society to the management



## Reference Books

- ▶ Biswas, T.D. and Mukherjee, S.K. 1997: Textbook of Soil Science, TataMcGrawHill,
  - ▶ Brady, N.C. and Weil, R.R. 1996. The Nature and Properties of Soil, 11th edition, Longman, London :
  - ▶ Floth, H.D. 1990. Fundamentals of Soil science, 8th edition, John Wiley and Sons, New York.
  - ▶ Morgan, R.P.C. 1995 Soil Erosion and Conservation, 2nd edition, Longman, London
  - ▶ Schwab, G.O., Fangmer, D.D. and Elliot, W.J. 1996. Soil and Water Management Systems, 4th edition, John Eiley and sons Inc., New York
  - ▶ Young, A. 2000. Land Resource: Now and Future, Cambridge University Press, Cambridge: 332p. Chapman J.L. and Rens, M.J. 1993. Ecology: Principle and Applications, Cambridge University Press, Cambridge:
  - ▶ Chairas, D.D. Reganold, J.P. and Owen, O.S. 2002. National Resource Conservation and management for a Sustainable Future, 8th edition, PrenticeHall, Englewood Cliffs
  - ▶ Dash, M.C., 2001. Fundamental of Ecology, 2nd edition, Tata McGrawHill, New Delhi
  - ▶ Huggett, R. 1998. Fundamentals of Biogeography, Routledge, London:
  - ▶ Kormondy, E.J. 1996. Concept of Ecology, 4th edition, Prentice- Hall, India, New Delhi
  - ▶ Myers, A. A. and Giller, P.S. (editors) 1988. Analytical Biogeography: an Integrated Approach to the Study of Animal and Plant Distribution. Chapman and Hall, London
-



#### 4.4 SPGEO/601/DSE-1B: Population Geography

### Population Geography

6 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>
<b>Question Pattern:</b>	<b>Section-A Definition Oriented (5x2=10)</b>
	<b>Section-B Short Answer Type (5x4=20)</b>
	<b>Section-C Long Answer Type (1x10=10)</b>

#### Unit 1: Basic Concepts

- 1.1 Population distribution: density and growth.
- 1.2 Demographic Transition Model.
- 1.3 World patterns determinants of population distribution and growth. Concept of overpopulation, under population and optimum population.
- 1.4 Population distribution, density and growth profile in India.

#### Unit 2: Population Composition

- 2.1 Population Composition and Characteristics– Age-Sex Composition; Rural and Urban Composition; Literacy.
- 2.2 Measurements of fertility and mortality.
- 2.3 Population composition of India. Urbanisation, Occupational structure.
- 2.4 Migration: Causes and types

#### Unit 3: Population Policies

- 3.1 Population-Resource regions. Concept of Human Development Index (HDI)
- 3.2 Population policies in developed and less developed countries
- 3.3 India's population policies
- 3.4 Poverty and Gender Inequality



### Reference Books

- ▶ Barrett H. R., 1995: Population Geography, Oliver and Boyd.
  - ▶ Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.
  - ▶ Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.
  - ▶ Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
  - ▶ Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
  - ▶ Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth in the 21st Century, Earthscan
  - ▶ Newbold K. B., 2009: Population Geography: Tools and Issues, Rowman and Littlefield Publishers.
  - ▶ Pacione M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
  - ▶ Wilson M. G. A., 1968: Population Geography, Nelson.
- 
- ▶ Premi, M.K. (2006), Population of India-In the New Millennium: Census, 2001, National Book Trust, New Delhi
  - ▶ Sen, J. (2016), Janasonkhya Bhugol in Bengali, 4<sup>th</sup> Edition, Books and Allied, Kolkata
  - ▶ Islam, M. (2019), Janasonkhya Bhugol Nirdeshika in Bengali, Deb Prakashani, Kolkata



## 5. Skill Enhancement Subjects Syllabus

### 5.1 SPGEO/304/SEC-1: Statistical Methods in Geography

#### Statistical Methods in Geography

2 Credits

**Total Marks: 50 (IA-10 Marks + ESE-40 Marks)**

**Question Pattern: Question-1 (1x10=10)**

**Question-2 (1x10=10)**

**Question-3 (1x10=10)**

**Lab Note Book & Viva-Voce (5+5=10)**

#### **Instruction for Laboratory Note Book**

- **Practical works are to be completed in the classroom.**
- **Works are to be done in pen/pencil and neatly hand written/computer typed and signed by class teachers.**
- **Laboratory Note Books have to be submitted in the examination.**

1. Geographical Data Collection and Management: Primary and Secondary data, Population and Sample, Classification and Tabulation
2. Frequency Distribution: Ungrouped and Grouped data
3. Diagrammatic Representation of Frequency Distribution (Histogram, Polygon, Curve and Ogive)
4. Measures of Central Tendency: Mean, Median, Mode



## References

- ▶ Berry B. J. L. and Marble D. F. (eds.): Spatial Analysis – A Reader in Geography.
- ▶ Ebdon D., 1977: Statistics in Geography: A Practical Approach.
- ▶ Hammond P. and McCullagh P. S., 1978: Quantitative Techniques in Geography: An Introduction, Oxford University Press.
- ▶ King L. S., 1969: Statistical Analysis in Geography, Prentice-Hall.
- ▶ Pal S. K., 1998: Statistics for Geoscientists, Tata McGraw Hill, New Delhi.
- ▶ Sarkar, A. (2013) Quantitative geography: techniques and presentations. Orient Black Swan Private Ltd., New Delhi
- ▶ Silk J., 1979: Statistical Concepts in Geography, Allen and Unwin, London.
- ▶ Spiegel M. R.: Statistics, Schaum's Outline Series.
- ▶ Yeats M., 1974: An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York.
- ▶ Gupta, S.C. (2015), Fundamentals of Statistics, 7<sup>th</sup> Edition, Himalaya Publishing House, New Delhi
- ▶ Mahmood, A. (1977), Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi
- ▶ Adhikari, S. (2011), Honours Byaboharik Bhugol, Vol-III in Bengali, Dove Publishing House, Midnapore
- ▶ Moitra, A. (2011), Bhugole Parisonkhyan Poddhati in Bengali, Geo-observing Society, Kolkata
- ▶ Hazra, J.; Banik, G.C. (2020), Bhugole Rashitotter Prayog in Bengali, Naboday Publications, Kolkata



**Statistical Methods in Geography**

**2 Credits**

**Total Marks: 50 (IA-10 Marks + ESE-40 Marks)**

<b>Question Pattern: Question-1</b>	<b>(1x10=10)</b>
<b>Question-2</b>	<b>(1x10=10)</b>
<b>Question-3</b>	<b>(1x10=10)</b>
<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

**Instruction for Laboratory Note Book**

- **Practical works are to be completed in the classroom.**
- **Works are to be done in pen/pencil and neatly hand written/computer typed and signed by class teachers.**
- **Laboratory Note Books have to be submitted in the examination.**

1. Knowing computer: What is Computer, Basic Applications of Computer
2. Computer Memory, Concepts of Hardware and Software; Operating System; Running an Application, Viewing of File, Folders and Directories, Creating and Renaming of files and folders,
3. Computation, Storing and Formatting Spreadsheets: Computation of Rank, Mean, Median and Mode
4. Preparation of Annotated Diagrams: Line, Bar and Pie
5. Making Small Presentation: Microsoft Power point

**Reference Books**

- ▶ Bartee, Thomas C. (1977): Digital Computer Fundamental; McGraw Hill.
- ▶ Chauhan, S.; Chauhan, A. and Gupta, K. (2006): Fundamental of Computer; FirewallMedia.
- ▶ Flake, L.J.; McClintock, C.E. and Turner, S. (1989): Fundamental of Computer Education; Wordsworth Pub. Co.
- ▶ Leon, A. and Leon, M. (1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- ▶ Malvino, A.P. and Leach, D.P. (1981): Digital Principles and Applications; Tata McGrawHill.
- ▶ Mano, Moris M. and Kime, Charles R. (2004): Logic and Computer Design Fundamental; Prentice Hall.
- ▶ Rajaraman, V. (2003): Fundamentals of Computer, Prentice Hall Publisher
- ▶ Sarkar, A. and Gupta, S.K (2002) Elements of computer Science, S





Bankura University Geography (Programme) Syllabus CBCS w.e.f 2022-23  
Chand and Company, New Delhi

- ▶ Blissmer (1996): Working with MS Word; Houghton Mifflin Co.
- ▶ Johnson, Steve (2007): Microsoft Power Point 2007; Pearson Paravia Bruno.
- ▶ Leon, A. and Leon, M. (1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- ▶ Leon, A. and Leon, M. (1999): A beginners Guide to Computers, Vikas



### 5.3 SPGEO/504/SEC-3: Remote Sensing Techniques

#### Remote Sensing Techniques

2 Credits

<b>Total Marks:</b>	<b>50 (IA-10 Marks + ESE-40 Marks)</b>
<b>Question Pattern:</b>	
Question-1	(1x10=10)
Question-2	(1x10=10)
Question-3	(1x10=10)
Lab Note Book & Viva-Voce	(5+5=10)

#### Instruction for Laboratory Note Book

- Practical works are to be completed in the classroom.
- Works are to be done in pen/pencil and neatly hand written and signed by class teachers.
- Laboratory Note Books have to be submitted in the examination.

#### Basic Concepts

- 5.3.1 Basic Concepts: Energy Sources, Interactions with Atmosphere, Sensing Systems, Data Products,
- 5.3.2 Principles of preparing Standard False Colour Composites
- 5.3.3 Principles of image interpretation and feature extraction
- 5.3.4 Preparation of inventories of land use land cover (LULC) features from satellite images.

#### Reference Books

- ▶ Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press.
- ▶ Jensen J. R., 2004: Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall.
- ▶ Joseph, G. 2005: Fundamentals of Remote Sensing, United Press India.
- ▶ Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition).
- ▶ Nag P. and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi.
- ▶ Rees W. G., 2001: Physical Principles of Remote Sensing, Cambridge University Press.
- ▶ Singh R. B. and Murai S., 1998: Space-informatics for Sustainable



Bankura University Geography (Programme) Syllabus CBCS w.e.f 2022-23  
Development, Oxford and IBH Pub.

- ▶ Wolf P. R. and Dewitt B. A., 2000: Elements of Photogrammetry: With Applications in GIS, McGraw- Hill.
- ▶ Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi



## 5.4 SPGEO/604/SEC-4: Geographic Information System

**Geographic Information System**

**2 Credits**

**Total Marks: 50 (IA-10 Marks + ESE-40 Marks)**

<b>Question Pattern:</b>	<b>Question-1</b>	<b>(1x10=10)</b>
	<b>Question-2</b>	<b>(1x10=10)</b>
	<b>Question-3</b>	<b>(1x10=10)</b>
	<b>Lab Note Book &amp; Viva-Voce</b>	<b>(5+5=10)</b>

- 1 G.I.S: Basic Concepts, Components,
- 2 GIS Data structure: Raster and vector.
- 3 Georeferencing, Digitization
- 4 Map Composition and Layout

### **Instruction for Laboratory Note Book**

- **Practical works are to be completed in the classroom.**
- **Works are to be done in pen/pencil and neatly hand written/computer typed and signed by class teachers.**
- **Laboratory Note Books have to be submitted in the examination.**

### **References**

- Jatin Pandey and Darshana Pathak, 2013, Geographic Information System, TERI Publishing House.
- Chor Pang Lo, 2009, Concepts and Techniques of Geographic Information System, Prentice Hall.
- Michael N. Demers, 2012, Fundamentals of Geographic Information Systems, Willy.
- Chairsman, N. 1992. Exploring Geographical Information Systems, John
- Willey and Sons Inc., new York, 198p

**1. Semesterwise Structure in General Programme****SEMESTER – I**

COURS E ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
11908 11918	SP/GEO101/C-1A	Physical Basis of Earth	6	10	40	0	50	5	1	-
	SP/102/C-2A	Discipline-2	6	10	40		50			
	SP/103/ C-3A	Discipline-3	6	10	40		50			
11800 11810	ACSHP/ 104/ AECC-1	Environmental Studies	4	10	40		50			
<b>Total in Semester – I</b>			<b>22</b>	<b>40</b>	<b>160</b>	<b>0</b>	<b>200</b>	<b>5</b>	<b>1</b>	<b>-</b>

**SEMESTER –II**

COURS E ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
21908 21918	SP/GEO201/C-1B	Human Geography	6	10	40	0	50	5	1	-
	SP/202/ C-2B	Discipline - 2	6	10	40	0	50			
	SP/ 203/C-3B	Discipline - 3	6	10	40	0	50			
	ACSHP/204/ AECC-2	English/MIL	2	10	40	0	50			
<b>Total in Semester - II</b>			<b>20</b>	<b>40</b>	<b>160</b>	<b>0</b>	<b>200</b>	<b>5</b>	<b>1</b>	<b>-</b>

**SEMESTER – III**

COURS E ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
31908 31928	SP/GEO301/C-1C	Cartographic Techniques	6	10	0	40	50	4	-	4
	SP/302/C-2C	Discipline - 2	6	10	40	0	50			
	SP/ 303/ C-3	Discipline - 3	6	10	40	0	50			
31900 31910	SP/GEO/304/SEC-1	Statistical Methods in Geography	2	10	40	0	50	-	-	4
<b>Total in Semester - III</b>			<b>20</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>	<b>4</b>		<b>8</b>

**SEMESTER – IV**

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
41908 41918	SP/GEO401/C-1D	Economic Geography	6	10	40		50	5	1	-
	SP/ 402/ C-2D	Discipline-2	6	10	40		50			
	SP/ 403/ C-3D	Discipline-3	6	10	40		50			
41900 41920	SP/GEO/404/SEC-2	Computer Basics and Applications	2	10	0	40	50	-	-	4
<b>Total in Semester - IV</b>			<b>20</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>	<b>5</b>	<b>1</b>	<b>4</b>

**SEMESTER – V**

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
51908 51918	SP/GEO501/DSE-1A	Hydrology and Oceanography or Urban Geography	6	10	40	0	50	5	1	-
	SP/502/DSE-2A	Discipline - 2	6	10	40	0	50			
	SP/503/DSE-3A	Discipline - 3	6	10	40	0	50			
51900 51920	SP/GEO504/SEC-3	Remote Sensing Techniques	2	10	0	40	50			4
<b>Total in Semester – V</b>			<b>20</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>	<b>5</b>	<b>1</b>	<b>4</b>

**SEMESTER – VI**

COURSE ID	Course Code	Course Title	Credit	Marks				No. of Hours		
				I.A.	T	P	Total	Lec.	Tu.	Pr.
61908 61918	SP/GEO601/DSE-1B	Soil and Biogeography or Population Geography	6	10	40	0	50	5	1	-
	SP/602/DSE-2B	Discipline - 2	6	10	40	0	50			
	SP/603/DSE-3B	Discipline - 3	6	10	40	0	50			
61900 61920	SP/GEO604/SEC-4	Geographic Information System	2	10	0	40	50			4
<b>Total in Semester – VI</b>			<b>20</b>	<b>40</b>	<b>120</b>	<b>40</b>	<b>200</b>	<b>5</b>	<b>1</b>	<b>4</b>

SP= Science programme/Pass, GEO.= Geography, ACSHP= Arts Commerce Science Honours Pass, C= Core Course, MIL= Modern Indian Language, AECC = Ability Enhancement Compulsory Course, SEC= Skill Enhancement Course, DSE= Discipline Specific Elective IA= Internal Assessment, ESE= End- Semester Examination, Lec.= Lecture, Tu.= Tutorial, and Pr.=Practical



## 2. Programme Objectives

The principal objective of Geography Programme is to impart knowledge on geography- its different skills and techniques with special emphasis on modern geospatial techniques of Remote Sensing (RS), Geographical Information System (GIS) and Global Navigation Satellite System (GNSS). This curriculum is also intended to impart training on these new fields to make them suitable for further higher studies and job market.

## 3. Programme Outcome

The Geography Programme students will be given training in understanding the diverse nature and techniques of the subject. They will develop skills in studying man-environment interrelations through field excursions. The study of geography as a programme also enables students in understanding the threats that endanger earth's natural systems as well as it helps to develop skills in finding out the relevance of anthropogenic factors in changing the face of the earth. The students will also gather knowledge about the fundamental concepts of geography and will have a general understanding about different natural processes and factors such as geology, tectonics, climate, soil, vegetation, ocean resources etc. and human society and culture. Training in practical geography with special emphasis on geospatial techniques will help students to understand maps- the geographers' basic tool and how these maps can be prepared.

## 4. Programme Specific Outcome

Geography is widely accepted as the most emerging science in recent years due to its versatile character to include contents of both science and humanities. Therefore, students from both the streams can choose the subject at their undergraduate level. Bankura University offers B.Sc, degree in Geography keeping in view the demand of the students as well as towards making it more suitable for higher education where stiff competition is prevailed from other science students. Since its inception, the university follows CBCS curriculum based on UGC guidelines with slight modification in view of the local aspects. Geography basically deals with space. The spatial aspects of the earth, their guiding laws and theories, nature and evolution are recorded and represented through a number of instrumental and mechanical ways. A holistic view of the Earth as an entity and the features within the earth are taught to students. The evolution of natural landscape to cultural landscape is illustrated. The mapping techniques are guides to represent all the physical, social, cultural features through proper scaling and elaborative description. The project based studies and analysis are very helpful in building up a research outlook among the students. They learn about the sample drawing procedures and detailed idea about the important issues around them. The course is intersected into several small sections and put under expert faculties of that field to provide the students the desired benefit of the course. The course outcome/learning outcome along with the broad divisions of the syllabus are represented as under:



Course Code	Course Title	Course Outcome/Learning Outcome
<b>Semester I</b>		
SPGEO/101/C-1T	Physical Basis of Earth	<ol style="list-style-type: none"> <li>1. Understanding origin and evolution of Earth with special reference to cross-cutting approach like Big Bang Model</li> <li>2. To have an idea of our dynamic earth and its geological make up.</li> <li>3. Understanding major processes that are responsible for its surface features.</li> </ol>
<b>Semester II</b>		
SPGEO/201/C-2T	Human Geography	<ol style="list-style-type: none"> <li>1. Understanding the nature and principles of human geography with special emphasis on cultural aspects of man.</li> <li>2. Developing concepts on the evolution of mankind and spatial population characters</li> <li>3. Students will learn to analyse man-environment interrelations.</li> </ol>
<b>Semester III</b>		
SPGEO/301/C-3P	Maps and Diagrams	<ol style="list-style-type: none"> <li>1. Students would learn graphical representation of statistical data.</li> <li>2. Develop skills of map making and basics of cartography.</li> <li>3. Understanding topographical map (OSM)- its nomenclature and develop practical skills of interpreting man-environment interrelations.</li> </ol>
SP/GEO/304/SEC-1	Computer Basics	<ol style="list-style-type: none"> <li>1. Students will learn basics of computer architecture- hardware and software components, operating systems, input and output devices etc.</li> </ol>
<b>Semester IV</b>		
SPGEO/401/C-1D	Economic Geography	<ol style="list-style-type: none"> <li>1. Would learn theoretical background of agriculture which is very pertinent to the country like India where nearly two-thirds of population is dependent on agriculture in the country.</li> <li>2. It also aims to develop students' knowledge on the tourism as an alternative means of economic development.</li> </ol>
SP/GEO/404/ SEC-2	Computer Applications	<ol style="list-style-type: none"> <li>1. They will be made capable of handling MS-EXCEL particularly statistical calculations, formula making and graphical representation of data which has immense application in higher studies.</li> </ol>
<b>Semester V</b>		





SP/GEO501/DSE-1A	Hydrology and Oceanography	<ol style="list-style-type: none"> <li>1. Have an understanding of the controlling factors and flow pattern of surface runoff as well as underground water- its recharge and discharge.</li> <li>2. Students will be able to understand various air-sea interaction processes by studying oceanography.</li> </ol>
SP/GEO501/DSE-1A	Urban Geography	<ol style="list-style-type: none"> <li>1. During recent phase of unprecedented urbanization, students will learn concepts and theories of urbanization.</li> <li>2. They will also learn different aspects and problems of urbanization with special reference to India.</li> </ol>
SP/GEO504/SEC-3	Remote Sensing Techniques	<ol style="list-style-type: none"> <li>1. Students will learn to understand basic concepts of remote sensing as a modern data acquisition tool.</li> <li>2. It will give practical idea of data downloading, classification and further analysis of georeferenced earth data which they can further use in various research endeavours.</li> </ol>
<b>Semester VI</b>		
SP/GEO601/DSE-1B	Soil and Biogeography	<ol style="list-style-type: none"> <li>1. Students will learn the factors and processes of soil formation and their physical and chemical properties. Have an understanding on the role of man in changing the face of the earth particularly the biosphere.</li> </ol>
SP/GEO601/DSE-1B	Population Geography	<ol style="list-style-type: none"> <li>1. Have an idea on the concepts of different aspects of population and students will be able to understand the reasons behind population problems in different regions of the country.</li> <li>2. They will also build concepts on population policies and different contemporary issues on population geography.</li> </ol>
SP/GEO604/SEC-4	Geographic Information System Lab	<ol style="list-style-type: none"> <li>1. Students will have practical experience on handling GIS softwares and its theoretical background.</li> <li>2. At the UG level, students will also be able to make their own maps in GIS software and they will have hands on experience on Digital Cartography.</li> </ol>

**Dr. Swapna Ghorai**  
Internal Member

**Dr. Shyamal Santra**  
Internal Member

**Dr. Jaidul Islam**  
Internal Member

**Dr. Subrata Pan**  
Convenor

**Prof. N.C. Jana**  
External Member

**Prof. R.N. Chattopadhyay**  
External Member

**Prof. P. Chakraborty**  
External Expert

**Prof. P. Chouhan**  
External Expert

