Interdisciplinary, Major & Minor

Tripura University

(A Central University)
Suryamaninagar
West Tripura

Syllabus for
Four Years Under Graduate Programme
Under Science Discipline

Subject: Geography (Interdisciplinary Course)

(NEP-2020)

Year-2023

1st Year (Certificate Course)
Semester-I
Contributions in Geography (Theoretical)

ID-GE- 1st Semester

Full marks-100 (Credit – 3)

(Internal Assessment-40; End Sem. Exam.-60)

Unit-1: Introduction to Geography

Definition, Concepts and Evolution of the term Geography; Divisions and Branches of Geography; Nature and Scope of Geography; Inter-relations of Geography with other Physical and Social Sciences

Unit-2: Contributors to Geography

Classical Contribution to Geography (Greeks and Romans); Indian and Chinese Contribution to Geography; Medieval Contribution to Geography by Arabs; Age of Discovery, Voyages and Renaissance in Europe; Modern Contribution to Geography: European and American

Unit-3: Approaches in Geography

Approaches to the study of Geography --- Regional and Systematic; Man-Environment Relationship: Determinism and Possibilism; Recent Trends in Geography; Contemporary Indian Geography

Unit-4: Paradigm Shift and Trends in Geography

Perspectives in Geography (Positivism, Humanism); Quantitative Revolution; Recent Trends in Physical and Human Geography; Contemporary Trends in Indian and International Geography

1st Year (Certificate Course)
Semester-I

Selected References:

1. Adhikari, S. (2006): Fundamentals of Geographical Thought, Chaitanya Publishing House, Allahabad
2. Adhikari, S. (2015): Fundamentals of Geographical Thought, Orient Blackswan Private Limited, New Delhi.
3. Dikshit, R. D. (2018): Geographical Thought: A Contextual History of Ideas, Prentice Hall, New Delhi.
4. Hartshorne, R. (2000): The Nature of Geography, Rawat Publication, New Delhi.
5. Hussain, M. (2014): Evolution of Geographical Thought, Rawat Publication, New Delhi.
6. HarmJ. deBlij (2001): Geography: Realms, Regions, and concepts, John Wiley & Sons.
7. Mandal, R.B & Sinha, VNP. (2016): Recent Trends & Concepts in Geography, Concept Publishing Company Pvt. Ltd., New Delhi.

2nd Year (Diploma Course)
Semester-III
Physical Geography (Theoretical)

ID-GE- 3rd Semester

Full Marks-100 (Credit – 3)
(Internal Assessment-40; End Sem.Exam.-60)

Unit-1: Introduction to Physical Geography

Nature and Scope of Physical Geography; Different Branches of Physical Geography; Geological Time Scale; Origin of the Earth: Big Bang Theory; Origin of the Continents and Oceans; Continental Drift Theory and Plate Tectonic Theory.

Unit-2: Introduction to Lithology and Geomorphology

Internal Structure of the Earth; Types of Rocks: Characteristics and Classification; Folds and Faults; Definition and Classification of Weathering and Mass Movement; Processes and Landforms: Fluvial, Glacial, Arid and Coastal; Slope: Importance, Genetic Classification and Components; Fundamental Concepts in Geomorphology (Concept 1-6 of Thornbury).

Unit-3: Climatology and Oceanography

Climatology: Composition and Structure of the Atmosphere; Atmospheric Pressure Belts and General Wind System; Insolation and Heat Budget; Concept of Humidity, Evaporation and Condensation; Types of Cloud; Precipitation: Causes and Forms, Types of Rainfall.

Oceanography: Surface Configuration of Ocean Floor: Pacific Ocean, Atlantic Ocean and Indian Ocean; Temperature, Salinity and Density of Ocean Water; Oceanic Circulation System: Pacific, Atlantic and Indian Ocean; Coral Reefs and Atoll.

Unit-4: Soil and Biogeography

Soil Geography: Definition; Components of Soil; Factors of Soil formation; Processes in Soil formation; Soil Profile; Physical Properties (Texture, Structure and Moisture) and Chemical Properties (pH and Organic Matter) of Soil; Major Soil Types of the World: Zonal, Azonal and Intra-zonal Soil; Soil Erosion and Conservation.

Biogeography: Concept, Nature and Scope; Concept of Ecology and Basic Ecological Principles; Concept and Components of Ecosystem; Trophic Structure; Food Chain and Food Web; Concept of Biome, Major Biomes of the World: Forest, Grassland and Marine Biome; Biogeochemical Cycles: Hydrological Cycle, Nitrogen Cycle and Carbon Cycle.

2nd Year (Diploma Course)
Semester-III

Selected References:

1. Singh, S.(1997): Physical Geography, Prayag Pustak Bhawan, Allahabad
2. Lal, D.S.(1998):Climatology, Sharada Pustak Bhawan,Allahabad
3. Khullar, D.R. (2003):India–A Comprehensive Geography, Kalyani Publisher, Chennai.
4. Dayal, P. (2011):A textbook of Geomorphology, Rajesh Publication, New Delhi
5. Singh, S. (2009): Geomorphology, Prayag Pustak Bhawan, Allahabad.
6. Ahmed, E. (2001): Geomorphology, Kalyani Publishers, Kolkata.
7. Ahmed, E. (1989): Physical Geography, Kalyani Publishers, New Delhi.
8. Monkhouse, F.J. (1971): Principles of Physical Geography, University of London Press Ltd.
9. Morgan, R.S and Wooldridge, S.W. (1988): An Outline of Geomorphology, Orient Longman.
10. Thornbury, W.D. (1984): Principles of Geomorphology, 2nd Edition Wiley Eastern Ltd., New Delhi.
11. Alan H. Strahler, Arthur Strahler (2005): Introducing Physical Geography, John Wiley and Sons, New York.
12. Singh, S. (2001): Environmental Geography, Prayag Pustak Bhawan, Allahabad.
13. Sahai, V.N. (2011): Fundamentals of Soil, Kalyani Publishers, New Delhi.
14. Gautam, A. (2009): Environmental Geography, Sharda Pustak Bhawan, Allahabad.

2nd Year (Diploma Course)
Semester-IV

Human Geography (Theoretical)

ID-GE- 4th Semester

Full Marks-100(Credit–3)

(Internal Assessment-40; End Sem.Exam.-60)

Unit-1: Introduction to Human Geography and Population Geography

Human Geography: Concept, Nature and Scope; Fundamentals and Branches of Human Geography; Development of Human Geography; Inter-relations of Human Geography with other Social Sciences.

Population Geography: Distribution and Density of World Population; Age-Sex Composition of Population; Concept of Fertility, Mortality, Migration: Immigration and Emigration.

Unit-2: Social and Cultural Geography

Social Geography: Meaning, Nature and Scope; Social Groups; Social Processes; Social Wellbeing; Social Differentiation; Tribes and Castes; Distribution of Religion in India; Distribution of Language in India; Social Problems in India

Cultural Geography: Concept**,** Nature and Scope; Racial Division and World Distribution; Linguistic Distribution in the World; Cultural Diffusion and its Processes; Cultural Hearth and Cultural Realm.

Unit-3: Settlement Geography

Rural Settlement: Types and Patterns; Urban Settlement: Classification of Towns based ontheir Size and Functions; Census Categories of Urban units in India; Concept of City Region; Problems of Towns and Cities in India; Trends of Indian Urbanization.

Unit-4: Contemporary Issues

Ageing of Population; Decline in Sex-Ratio; Rural Development Programmes --- SJSY, MGNREGA, JANDHAN YOJANA and Rural Connectivity; Problems of Housing, Slums, Civic Amenities (Water and Transport); Case Study of Delhi, Mumbai, Kolkata, Chennai and Chandigarh with reference to Land Use and Urban Issues.

2nd Year (Diploma Course)
Semester - IV

Selected References:

1. Chandna, R. C. (2000): Geography of Population: Concept, Determinants and Patterns, Kalyani Publishers, New Delhi.
2. Clark, J.I. (1973): Population Geography, Pergamon Press, Oxford.
3. Hassan, M.I. (2005): Population Geography, Rawat Publication, New Delhi.
4. Mandal, R.B. (2008): Urban Geography: A Textbook, Concept Publishing Company, New Delhi.
5. Mitra, A. (1978): India's Population, Vol.I and II, Abhinav Publisher, Nagpur.
6. Ramachandran, R. (1989): Urbanisation and Urban Systems of India, Oxford University Press, U.K.
7. Siddhartha, K. (2016): Cities, Urbanisation and Urban Systems (Settlement Systems), Kitab Mahal Publishers and Distributors, New Delhi.
8. Zelinsky, W. (1966): A Prologue to Population Geography, Prentice Hall, N.J.
9. Broek Jan, O. M. and Jan Otto, Marius (1978): Geography of Mankind, McGraw Hill Companies.
10. Jordan Terry, G. and Lester, Rowntree (1990): The Human Mosaic: Thematic Introduction to Cultural Geography, Longman.

Tripura University

(A Central University)
Suryamaninagar
West Tripura

Syllabus for

Four Years Under Graduate Programme Under Science Discipline

Subject: Geography (Major Course)

(NEP-2020)

Year-2023

1st Year (Certificate Course)
Semester-I

Fundamentals of Geography and Major Contributions
(Theoretical)

Major-GE-101

Full Marks-100(Credit–4)

(Internal Assessment-40; End Sem.Exam.-60)

Unit-1: Introduction to Geography

Definition, Concept and Evolution of the word 'Geography', Nature and Scope of Geography; Divisions and Branches of Geography; Inter-relation of Geography with other Physical and Social Sciences; Introduction to Physical Geography (Nature & Scope); Introduction to Human Geography (Nature & Scope); Major Geographic Traditions (Earth Science, Man-Environment relationship, Area studies and Spatial Analysis).

Unit-2: Contributors to Geography

Classical Contribution to Geography (Greeks and Romans); Indian and Chinese Contribution to Geography; Medieval Contribution to Geography by Arabs; Age of Discovery, Voyages and Renaissance in Europe; Modern Contribution to Geography: European and American.

Unit-3: Approaches, Dichotomy and Dualism in Geography

Approaches to the study of Geography --- Regional and Systematic; Man-Environment Relationship: Determinism and Possibilism; Dichotomy and Dualism: Physical vs. Human, Qualitative vs. Quantitative, System Approach vs. System Analysis.

Unit-4: Paradigm Shift and Trends in Geography

Perspectives in Geography (Positivism, Humanism); Quantitative Revolution; Applied Geography and Geoinformatics; Recent Trends in Physical and Human Geography; Contemporary Trends in Indian and International Geography

1st Year (Certificate Course)
Semester-I

Selected References:

1. Adhikari, S. (2006): Fundamentals of Geographical Thought, Chaitanya Publishing House, Allahabad.
2. Adhikari, S. (2015): Fundamentals of Geographical Thought, Orient Blackswan Private Limited, New Delhi.
3. Dikshit, R. D. (2018): Geographical Thought: A Contextual History of Ideas, Prentice Hall, New Delhi.
4. Hartshorne, R. (2000): The Nature of Geography, Rawat Publication, New Delhi.
5. Hussain, M. (2014): Evolution of Geographical Thought, Rawat Publication, New Delhi.
6. Harm J. deBlij (2001): Geography: Realms, Regions, and concepts, John Wiley & Sons.
7. Mandal, R.B & Sinha, VNP. (2016): Recent Trends & Concepts in Geography, Concept Publishing Company Pvt. Ltd., New Delhi, India.

1st Year (Certificate Course)
Semester-I

Origin of the Earth
(Theoretical)

Major-GE-102

Full Marks-60(Credit–2)

(Internal Assessment-24; End Sem.Exam.-36)

Unit-1: Concept, Hypotheses and Theories related to origin of the earth

Basic Concept of Solar System and its Structure; Monistic Concept: Gaseous Hypothesis of Kant, The Nebular Hypothesis of Laplace; Dualistic Concept: Hoyle's Supernova Hypothesis; Otto Schmidt's Interstellar Hypothesis; Big Bang Theory; Relevance of Rotation, Revolution and Inclination of the Earth.

Unit-2: Age of Earth, Origin and Evolution of Continents and Oceans

Age of the Earth on the basis of radioactive elements; Geological History of the Earth; Interior Structure of the Earth; Origin of the Continents and Oceans: Tetrahedral Hypothesis; Continental Drift Theory of Alfred Wegener.

1st Year (Certificate Course)
Semester-I

Selected References:

1. Gupte, D. (2022): The Evolution of Earth, Notion Press, Chennai.
2. Monkhouse, F.J (1971): Principles of Physical Geography, University of London Ltd.
3. Singh, S.(1997): Physical Geography, Prayag Pustak Bhawan, Allahabad
4. Strahler A.N. and Strahler A.M. (1992): Modern Physical Geography, John Wiley and Sons, New York.

1st Year (Certificate Course)
Semester-I
(Practical)

Major-GE-102

Full Marks-40(Credit– 2)

(Internal Assessment-16; End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	Scale	08
2.	Introduction to Maps	04
3.	Topographical Map introduction, Principle of Topo. sheet numbering	07
4.	Laboratory Notebook and Viva–voce	03+02
TOTAL		**24**

PRACTICAL: GE-102

1. Scale: Meaning, Definition and Use ; R.F. of Scale
Graphical representation of Linear, Comparative, Vernier and Diagonal Scale

2. Introduction to maps: Definition, Elements, Types and Classification, Principle of map design, Uses and Significance (from small to large scale), Map and Globe --- Similarities and Dissimilarities

3. Introduction to Topographical map (Concept of Contour, Latitude Longitude, Identification of Physical and Cultural features), Principle of Topographical Sheet numbering

4. Laboratory Notebook and Viva-voce

1st Year (Certificate Course)
Semester-I

Selected References:

1. Mitra, K., Ghosh, K. and Das M. (2006): B.A. General Practical Geography, Kalyani Publishers, Kolkata.
2. Monkhouse, F.J. (1971): Maps and Diagrams, Methuen, London.
3. Sarkar, A. (2015) Practical Geography: A systematic approach, Orient BlackSwan Private Ltd., New Delhi.
4. Saha, P. & Basu, P. (2015): Advanced Practical Geography– A Laboratory Manual, Books and Allied (P) Ltd., Kolkata.
5. Singh, R.L., Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
6. Singh, R. and Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.
7. Saikia, R. and Thakuriah, G. (2015): Practical Geography, EBH Publishers (India), Guwahati.

1st Year (Certificate Course)
Semester-II

Geography of Asia and India
(Theoretical)

Major-GE-201 **Full Marks-100(Credit– 4)**

(Internal Assessment-40; End Sem.Exam.-60)

Unit-1: India—Location & Physical

Regional Setting and Regional Divisions; Physical Divisions and Drainage; Climate and Natural Vegetation; Soil types and Agricultural Regions

Unit-2: India—Population and Resources

Population composition (Races, Ethnic and Tribes); Population Density, Distribution and Growth; Minerals (Iron ore, Manganese), Energy Resources (Coal and Petroleum) and Industries (Iron and Steel, Cotton textile and Paper); Transport, Communication and Trade; Economy, Urbanization, Population Problems

Unit-3: Asia—Regional Setting and Physical

Asia in the context of the World (Location and Regional Setting); Physical and Regional Divisions; Major River Systems; Climate; Soil and Natural Vegetation

Unit-4: Asia--Agriculture, Population and Resources

Agriculture (Conditions of growth, Production and Distribution of Rice, Wheat, Jute and Tea); Distribution and Density of Population; Urbanization; Industry (Iron and steel, Electronics and automobile, Food processing industries of South-east and South Asia); Mineral and Energy Resources (Iron Ore, Coal, Petroleum in Middle-east); Regional Cooperation and Issues of South Asia and South-east Asian Countries

1st Year (Certificate Course)
Semester-II

Selected References:

1. Choudhury, N.: Geography of Asia, No.601 (Theory), Distance Education. (Weblink:https://www.distanceeducationju.in/pdf/Geo%20601%20(1)-compressed%20(1).pdf)
2. Husain, M. (2017): Geography of India, McGraw Hill Education, New Delhi.
3. IGNOU, BPSE-144 (2019): Introduction to South Asia, Chakradhar Publication.
4. Khullar, D.R. (2018): India: A Comprehensive Geography, Kalyani Publishers, New Delhi.
5. Nag, P. and Gupta, S.S. (1992): Geography of India, Concept Publishing Company, New Delhi.
6. Sharma, T.C. (2003): India: Economic and Commercial Geography, Vikas Publication, New Delhi.
7. Singh, J. (2003): India: A Comprehensive and Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
8. Tiwari, R.C. (2007): Geography of India, Prayag Pustak Bhawan, Allahabad
9. Tirtha, R. (2001): Geography of Asia, Rawat Publications, Jaipur.

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1st Year (Certificate Course)
Semester-II
Geomorphology
(Theoretical)

Majorr-GE-202 **Full Marks-60(Credit–2)**

(Internal Assessment-24; End Sem. Exam.-36)

Unit-1: Fundamentals of Geomorphology

Nature and Scope of Geomorphology; Fundamental Concepts of W. D. Thornbury; Types of Rocks and associated landforms; Development of Drainage System on Uniclinal and Folded Structure; Mountain Building Theory (Kober and Holmes); Recent Trends in Geomorphology.

Unit-2: Processes and Forms in Geomorphology

Geomorphic agents, their processes and resultant landforms: Fluvial, Glacier,Wind, Groundwater and Sea waves; Weathering and Mass wasting (Meaning and Concept, Classification, Controlling factors, Geomorphic importance); Drainage Systems, Drainage Patterns (Definition, Classification); Slopes: Importance of Slope, Elements of Slope and Theories of Slope Evolution (W. M. Davis and W. Penck); Cycle of Erosion: Contribution of Davis; Interruption in Cycle of Erosion.

1st Year (Certificate Course)
Semester-II

Selected References:

1. Ahmed, E. (2001): Geomorphology, Kalyani Publishers, Kolkata.
2. Ahmed, E. (1989): Physical Geography, Kalyani Publishers, New Delhi.
3. Bloom, A.L. (1998): Geomorphology, Prentice-Hall India, New Delhi.
4. Chorley, R.J., Schumm, S.A. and Sugden D.E. (1984): Geomorphology, Methuenand Company Ltd., London.
5. Dayal, P. (2011): A text Book of Geomorphology, Rajesh Publication, New Delhi
6. Kale, V.S. & Gupta, A. (2001): Introduction to Geomorphology, Orient Longman.
7. Kale, V. & Gupta, A. (2004): Elements of Geomorphology, Oxford University Press, Kolkata.
8. Monkhouse, F.J. (1971): Principles of Physical Geography, University of London Press Ltd.
9. Morgan, R.S and Wooldridge, S.W. (1988): An Outline of Geomorphology, Orient Longman.
10. Singh, S. (1997): Physical Geography, Prayag Pustak Bhawan, Allahabad
11. Singh, S. (2009): Geomorphology, Prayag Pustak Bhawan, Allahabad
12. Strahler, A. (2016): Introducing Physical Geography, Wiley, New York.
13. Sparks, B.W. (1969): Geomorphology. Longman, London.
14. Stoddard, D.R. (1996): Process and Form in Geomorphology, Routledge, London.
15. Thornbury, W.D. (1984): Principles of Geomorphology, 2nd Edition Wiley Eastern Ltd., New Delhi.
16. Worcester, P.C. (1969): Text Book of Geomorphology, East West Press, New Delhi.

1st Year (Certificate Course)
Semester-II
(Practical)

Major-GE-202

Full Marks-40(Credit– 2)

(Internal Assessment-16; End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	Cartograms (Using MS Excel)	09
2.	Topographical map interpretation (Plateau Region)	10
3.	Laboratory Notebook and Viva–voce	03+02
TOTAL		**24**

PRACTICAL: GE-202C

1. Cartograms using MS Excel:

Line Graph, Bar Graph, Pie Chart, Age-Sex pyramid, Scatter diagram with Regression line

2. Topographical map interpretation (Plateau Region):

Broad Physiographic divisions and relief features

Serial Profile, Superimposed Profile, Projected Profile and Composite Profile

Morphometric analyses: Calculation of Relative relief, Dissection index, Average slope and Drainage density and their spatial distribution

Drainage patterns

Vegetation Map

Settlement types and patterns

Communication network Map

Transact Chart

3. Laboratory Notebook and Viva–voce

1st Year (Certificate Course)
Semester-II

Selected References:

1. Saha, P. & Basu, P. (2015): Advanced Practical Geography– A Laboratory Manual, Books and Allied (P)Ltd., Kolkata.
2. Singh, R. L. & Singh, Rana P. B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
3. Sarkar, A. (2015): Practical Geography: A Systematic approach, Orient BlackSwan Private Ltd., New Delhi.
4. Singh, R. & Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.

2nd Year (Diploma Course)
Semester-III
Population and Settlement Geography (Theoretical)

Major-GE-301

Full Marks-100 (Credit–4)

(Internal Assessment-40;End Sem.Exam.-60)

Unit-1: Population-Concept and Theory

Concept and Scope of Population Geography; Population Geography in India; Malthusian Theory of Population growth; Demographic Transition Theory; Cornucopian Theory of Population; Zero Population growth.

Unit-2: Population Dynamics

Distribution and Density of Population; Population Composition: Age, Sex, Literacy and Occupation; Fertility and Mortality of Population; Factors affecting Population change; Migration: Immigration and Emigration; Pattern of Migration

Unit-3: Settlement- Rural and Urban

Rural Settlement: Evolution and Growth related Concept of Blovet, Roy Burman & Ramachandran and Srivastava; Types and Patterns of Rural Settlement.

Urban Settlement: Social and Cultural factors behind the urban growth; Classification of Towns based on their Size and Functions; Census Categories of Urban units in India.

Unit-4: Settlement-Models and Theories

Classical Models of Urban Morphology: Concentric Zone Theory, Sector Theory, Multiple Nuclei Theory; Hierarchy of Urban Centers: Central Place Theory; August Losch's theory of Market Centers; Concept of City Region; Problems of Towns and Cities in India.

2nd Year (Diploma Course)
Semester-III

Selected References:

1. Bhende, Asha. A. and Kanitkar, T. (1997): Principles of population studies, Hindustan Publishing House, Mumbai.

2. Chandna, R.C. (2013): Geography of Population, Kalyani publishers, New Delhi.

3. Ghosh, S. (1998): Introduction to settlement Geography, Orient Longman Ltd, Kolkata.

4. Mitra, A. (2004): India's Population, Abhinav Publisher, Nagpur.

5. Shrivastava, O.S. (1996): Demography and Population studies, Vikash Publishing House Ltd, Bhopal.

6. Yadav, J.P. (2004): Population Geography, Anmol Publication Pvt. Ltd., New Delhi.

2nd Year (Diploma Course)
Semester-III

Climatology
(Theoretical)

Major-GE-302

Full Marks-60(Credit–2)

(Internal Assessment-24;End Sem.Exam.-36)

Unit-1: Atmospheric Temperature, Pressure and Wind System

Composition and Structure of the Atmosphere; Atmospheric Temperature: Insolation and Heat Budget, Horizontal and Vertical Distribution of Temperature, Heating and Cooling of the Atmosphere; Range of Temperature: Diurnal, Seasonal and Annual; Inversion of Temperature: Types and Significance.

Atmospheric Pressure: Vertical and Horizontal Distribution, Shifting of Pressure Belts, Pressure Gradient. Wind: Definition, Types, Wind Direction and related Laws; Factors affecting Wind Motion, Planetary, Periodic and Local Winds. Jet stream: Meaning, Significance, Properties, Types, Index Cycle of Jet Streams; Monsoon: Origin, Concept, Mechanism and relation with Jet Stream.

Unit-2: World Climatic Classification and Atmospheric Disturbances

Atmospheric Moisture: Humidity, Evaporation, Condensation, Fog, Cloud and Precipitation; Forms of Precipitation; Processes and Types of Rainfall; World Climatic Classification after Koppen and Thornthwaite.

Atmospheric Disturbances: Cyclone--Definition, Types, Characteristics; Anticyclone--Definition, Types, Characteristics; Thunderstorm--Definition, types, Characteristics, Conditions for Thunderstorm Development.

2nd Year (Diploma Course)
Semester-III

Selected References:

1. Barry and Chorley (1998) : Atmosphere, Weather and Climate, ELBS
2. Menon, P.A. (1989): Our weather, NBT, India.
3. Critchfield, H.J. (1990): General Climatology, Printice Hall of India Pvt. Ltd,
4. Lal, D.S. (Latest edition): Climatology, Sharada Pustak Bhawan, Allahabad.
5. Singh, S. Physical Geography, Prayag Pustak Bhawan, Allahabad.

2nd Year (Diploma Course)
Semester-III
(Practical)

Major-GE-302

Full Marks-40 (Credit–2)

(Internal Assessment-16;End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	Climatological instrument reading	4
2.	Drawing and Interpretation of Temperature–Rainfall Graph	4
3.	Climograph (After G. Taylor) and Hythergraph	4
4.	Analysis and Interpretation of Weather map	7
5.	Laboratory Notebook and Viva–voce	03+02
TOTAL		**24**

PRACTICAL: GE-302

1. Climatological instrument reading:

Fortin's Barometer

Six's Maximum and Minimum Thermometer

Dry and Wet Bulb Thermometer

2. Drawing and Interpretation of Temperature-Rainfall Graph

3. Climograph (After G. Taylor) and Hythergraph.

4. Analysis and Interpretation of Indian Weather

Map Summer case

Winter case

5. Laboratory Notebook and Viva–voce

2nd Year (Diploma Course)
Semester-III

Selected References:

1. Mitra, K., Ghosh, K.and Das M. (2006): B.A. General Practical Geography, Kalyani Publishers, Kolkata.
2. Monkhouse, F.J. (1971): Maps and Diagrams, Methuen, London.
3. Sarkar, A. (2015): Practical Geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi.
4. Saha, P. & Basu, P. (2015): Advanced Practical Geography–A Laboratory Manual, Books and Allied (P)Ltd., Kolkata.
5. Singh, R.L., Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
6. Singh, R. and Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.
7. Saikia, R. and Thakuriah, G. (2015): Practical Geography, EBH Publishers (India), Guwahati.

2nd Year (Diploma Course)
Semester-IV

Geography of North-East India and Tripura
(Theoretical)

Major-GE-401

Full Marks-100(Credit– 4)

(InternalAssessment-40;End Sem. Exam.-60)

Unit-1: North-East India-Physical

Physiography and Drainage; Climate; Soil; Natural Vegetation; Forest Resources; Utilization, Distribution and Conservation of Forests; Natural Hazards

Unit-2: North-East India-Economic

Agriculture: Characteristics, Problems and Mitigation; Agricultural Resources: Food Crops, Plantation Crops (With Special Reference to Tea and Rubber), Horticulture; Minerals and Power Resources: Utilization and Distribution; Major Industries; Human Resource: Population Growth, Distribution and Density, Composition, Population explosion and its impact on Socio–Economic Environment; Transport and Communication

Unit-3: Tripura-Physical

Physiography and Drainage; Climate; Soil; Natural Vegetation; Forest Resources; Natural Hazards: Earthquake, Flood, River Bank Erosion, Landslide and Cyclone

Unit-4: Tripura-Economic

Agriculture: Characteristics and Problems: Food Crops, Plantation Crops, Horticultural Crops; Mineral and Power Resources; Human Resource: Population Growth, Distribution and Density of Population; Sex Ratio; Transport and Communication; Tourism Industry

2nd Year (Diploma Course)
Semester-IV

Selected References:

1. Khullar, D.R. (2018): India: A Comprehensive Geography, Kalyani Publication, New Delhi.
2. Husain, M. (2017): Geography of India, McGraw Hill Education, New Delhi.
3. Bhattacharya, N. (2009): North-east India: A Systematic Geography, New Delhi.
4. Taher, M. and Ahmed, P. (2002): Geography of North-east India, Sage Publications, New Delhi.
5. Bhowmik, I. and Chakraborti, D. (2011): Resources and Economy of Tripura, Eastern Book House Publishers (India), Guwahati.
6. Disaster Management (Soft Skill Course) Study Material prepared by BUGS of Geography, TU, 2017.

2nd Year (Diploma Course)
Semester-IV

Soil and Biogeography (Theoretical)

Full Marks-60(Credit–2)

Major-GE-402

(Internal Assessment-24;End Sem.Exam. -36)

Unit-1: Soil Geography

Definition and Components of Soil; Factors of Soil Formation; Processes in Soil formation; Soil Profile, Profile Development of Podzol, Chernozem and Laterite Soil; Physical Properties (Texture, Structure and Moisture) and Chemical Properties (pH and Organic Matter) of Soil; Major Soil Types of the World: Zonal, Azonal and Intra-zonal Soil; Soil Erosion and Conservation.

Unit-2: Biogeography

Concept, Nature and Scope of Biogeography; Concept of Ecology and Basic Ecological Principles; World Distribution of Plants and Animals; Concept and Components of Ecosystem; Trophic Structure; Food Chain and Food Web; Concept of Biome and Major Biomes of the World: Forest, Grassland and Marine Biome; Biogeochemical Cycles: Hydrological Cycle, Nitrogen Cycle and Carbon Cycle.

2nd Year (Diploma Course)
Semester-IV

Selected References:

1. Singh, S. (2001): Environmental Geography, Prayag Pustak Bhawan, Allahabad.
2. Sahai, V.N. (2011): Fundamentals of Soil, Kalyani Publishers, New Delhi.
3. Gautam, A. (2009): Environmental Geography, Sharda Pustak Bhawan, Allahabad.
4. Dash, M.C. (2001): Fundamental of Ecology, 2nd edition, Tata McGraw Hill, New Delhi
5. Dey, N.K., and Ghosh, P. (1993): India-A Study in Soil Geography, Sribhumi Publishing Company.
6. Morgan, R.P.C. (1995): Soil Erosion and Conservation, 2nd edition, Longman.
7. Chapman J.L. and Reiz, M.J. (1993): Ecology-Principle and Applications, Cambridge University Press.
8. Daji, J.A., Kadam, J.R., and Patil, N.D. (1996): A Textbook of Soil Science, Media Promoters and Publishers.
9. Barry, C. (1977): Biogeography- An Ecological and Evolutionary Approach, Cox Blackwell, Oxford.
10. Hagget, R. J. (1988): Fundamentals of Biogeography, Routledge, London.
11. Hagget, R. J. (1995): Geoecology: An Evolutionary Approach, Routledge, London.
12. Jorge V.Crisci, Liliana Katinas, and Paula Posadas (2003): Historical Biogeography: An Introduction, Harvard Univ. Press, Massachusetts
13. Joy, T. (1993): Biogeography: A Study of Plants in the Ecosphere, Longman Sci & Tech., U.K.
14. Mac Donald, G. (2001): Biogeography-Introduction to Space, Time, and Life, Wiley

2nd Year (Diploma Course)
Semester-IV
(Practical)

Major-GE-402

Full Marks-40(Credit–2)

(Internal assessment-16;End Sem.Exam.--24)

Sl. No.	Practical	Marks
1.	Soil Testing with the help of Field Kit	5
2.	Topographical map interpretation (Plain Region)	10
3.	Trends in Population growth	04
4.	Laboratory Notebook and Viva–voce	03+02
TOTAL		**24**

PRACTICAL: GE-402C

1. Soil Testing with the help of Field Kit (pH, NPK and Organic matter)
2. Topographical Map Interpretation (Plain Region):Broad physiographic features, Drainage characteristics, Fluvial features, Natural vegetation , Types of Settlement and Settlement Density, Transport and Communication , Road Density, Transact Chart
3. Trends in Population growth in Tripura, North-East India and India (Population growth rate and Decadal growth rate)
4. Laboratory Notebook and Viva–voce

Selected References:

1. Saha, P. & Basu, P. (2015): Advanced Practical Geography–A Laboratory Manual, Books and Allied (P) Ltd., Kolkata.
2. Singh, R.L. & Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
3. Sarkar, A. (2015): Practical Geography: A Systematic approach, Orient Black Swan Private Ltd., New Delhi.
4. Singh, R. & Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.

Tripura University

(A Central University)
Suryamaninagar
West Tripura

Syllabus for
Four Years Under Graduate Programme
Under Science Discipline

Subject: Geography (Minor Course)

(NEP-2020)

Year-2023

1st Year (Certificate Course)
Semester-I

Contributions in Geography (Theoretical)

Minor-GE-101

FullMarks-60 (Credit–3)

(Internal Assessment-24;End Sem.Exam.-36)

Unit-1: Introduction to Geography

Definition, Concept and Evolution of the word 'Geography'; Divisions and Branches of Geography; Nature and Scope of Geography; Inter-relations of Geography with other Physical and Social Sciences; Major Geographic Traditions (Earth Science, Man-Environment relationship, Area Studies and Spatial Analysis).

Unit-2: Contributors to Geography

Classical Contribution to Geography (Greeks and Romans); Indian and Chinese Contribution to Geography; Medieval Contribution to Geography by Arabs; Age of Discovery, Voyages and Renaissance in Europe; Modern Contribution to Geography: European and American.

Unit-3: Approaches, Dichotomy and Dualism in Geography

Approaches to the study of Geography -- Regional and Systematic; Man-Environment Relationship: Determinism and Possibilism; Dichotomy and Dualism: Physical vs. Human, Qualitative vs. Quantitative, System Approach vs. System Analysis); Recent trends in Geography; Contemporary Indian Geography.

Unit-4: Paradigm Shift and Trends in Geography

Perspectives in Geography (Positivism, Humanism); Quantitative Revolution; Recent Trends in Physical and Human Geography; Contemporary Trends in Indian and International Geography

1st Year (Certificate Course)
Semester-I

Selected References:

1. Adhikari, S. (2006): Fundamentals of Geographical Thought, Chaitanya Publishing House, Allahabad
2. Adhikari, S. (2015): Fundamentals of Geographical Thought, Orient Blackswan Private Limited, New Delhi.
3. Dikshit, R. D. (2018): Geographical Thought: A Contextual History of Ideas, Prentice Hall, New Delhi.
4. Hartshorne, R. (2000): The Nature of Geography, Rawat Publication, New Delhi.
5. Hussain, M. (2014): Evolution of Geographical Thought, Rawat Publication, New Delhi.
6. HarmJ. deBlij (2001): Geography: Realms, Regions, and Concepts, John Wiley & Sons.
7. Mandal, R.B and Sinha, VNP. (2016): Recent Trends and Concepts in Geography, Concept Publishing Company Pvt. Ltd., New Delhi, India.

1st Year (Certificate Course)
Semester-I
(Practical)

Minor-GE-101 (Practical)

Full Marks-40(Credit–1)

(Internal Assessment-16;End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	Scale	10
2.	Introduction to Maps, Topographical Map introduction, Principle of Topographical Sheet numbering	06
4.	Laboratory Notebook and Viva–voce	5+3
TOTAL		**24**

PRACTICAL: GE-101M

1. Scale: Meaning, Definition and its Uses; Calculation of R.F.

Graphical representation of Linear,Vernier and Diagonal Scale.

2. Introduction to maps: Definition, Elements, Types, Principle of map Design, Uses and Significance (from small to large scale), Map and Globe -- Similarities and Dissimilarities

Topographical Map introduction (Concept of Contour, Latitude & Longitude, Identification of Physical and cultural features), Principle of Topographical Sheet numbering

3. Laboratory Notebook and Viva–voce

1st Year (Certificate Course)
Semester-I

Selected References:

1. Mitra, K., Ghosh, K. and Das M. (2006): B.A. General Practical Geography, Kalyani Publishers, Kolkata.
2. Monkhouse, F.J. (1971): Maps and Diagrams, Methuen, London.
3. Sarkar, A. (2015): Practical Geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi.
4. Saha, P. & Basu, P. (2015): Advanced Practical Geography–A Laboratory Manual, Books and Allied (P) Ltd., Kolkata.
5. Singh, R. L. & Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
6. Singh, R. & Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.
7. Saikia, R. & Thakuriah, G. (2015): Practical Geography, EBH Publishers (India), Guwahati.

1st Year (Certificate Course)
Semester-II

Geography of India, North-East India and Tripura
(Theoretical)

Minor-GE-201

Full marks-60(Credit–3)

(Internal Assessment-24;End Sem.Exam.-36)

Unit-1: India—Location and Physical

Regional Setting and Regional Divisions; Physical Divisions and Drainage; Climate and Natural Vegetation; Soil types and Agricultural Regions

Unit-2: India–Population and Resources

Population Composition (Race, Ethnic and Tribe); Population Density, Distribution and Growth; Minerals and Energy Resources (Iron Ore, Manganese, Coal and Petroleum) and Industries (Iron and Steel and Aluminium); Transport, Communication and Trade; Economy, Urbanization, Population Problems.

Unit-3: North-East India

Physical Divisions and Drainage; Climate and Natural Vegetation; Soils and Types of Agricultural Practices; Population Composition (Race, Ethnic and Tribe); Population Density, Distribution and Growth; Resources: Power and Minerals; Industries; Transport and Tourism

Unit-4: Tripura

General Geology and Physical Divisions; Physiography and Drainage; Climate and Natural Vegetation; Soils and Types of Agricultural Practices; Population Composition (Tribes and Communities); Resources, Minerals and Industries; Historical Sites and Tourism

1st Year (Certificate Course)
Semester-II

Selected References:

1. Bhowmik, I. & Chakraborti, D. (ed.) (2011): Resources and Economy of Tripura, Eastern Book House Publishers (India), Guwahati.
2. Bhattacharya, N.N. (2005): North East India: A Systematic Geography, Rajesh Publications, New Delhi.
3. Husain, M. (2017): Geography of India, McGraw Hill Education, New Delhi.
4. Khullar, D. R. (2018): India: A Comprehensive Geography, Kalyani Publishers, New Delhi.
5. Majumder, T. & Dev Verma, J. (2018):Geography of Tripura, Naya Pustakmahal, Agartala, India
6. Nag, P. & Gupta, S.S. (1992): Geography of India, Concept Publishing Company, New Delhi.
7. Singh, J. (2003): India: A Comprehensive and Systematic Geography, Gyanodaya Prakashan, Gorakhpur
8. Tirtha, R. (2002): Geography of India, Rawat Publications, Jaipur.
9. Tiwari, R.C. (2007): Geography of India, Prayag Pustak Bhawan, Allahabad.
10. Taher, M. and Ahmed, P. (2014): Geography of North-East India, Mani Manik Prakash, Guwahati

1st Year (Certificate Course)
Semester-II
(Practical)

Minor-GE-201 (Practical)

Full marks-40(Credit–1)

(Internal Assessment-16;End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	Interpretation of Topographical Map (Plateau region)	10
2.	Cartograms (Using MS Excel)	06
3.	Laboratory Notebook and Viva –voce	05+3
TOTAL		**24**

PRACTICAL: GE-201M

1. Interpretation of Topographical Map (Plateau region):

Broad Physiographic divisions and Relief features

Serial Profiles (Superimposed, Composite, Projected)

Morphometric analyses (Relative relief, Dissection index, Average slope map, Drainage density map)

Vegetation Map

Settlement types and patterns

Communication network Map

Transact Chart

2. Cartograms (Using MS Excel):

Line Graph, Bar Graph, Pie Chart

3. Laboratory Notebook and Viva–voce

1st Year (Certificate Course)
Semester-II

Selected References:

1. Saha, P. & Basu, P. (2015): Advanced Practical Geography –A Laboratory Manual, Books and Allied (P) Ltd., Kolkata.
2. Singh, R. L. & Singh, Rana P. B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
3. Sarkar, A. (2015): Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
4. Singh, R. &Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.

2nd Year (Diploma Course)
Semester-III

Physical Geography (Theoretical)

Minor-GE-301

Full Marks-60(Credit–3)

(Internal Assessment-24; End Sem. Exam.-36)

Unit-1: Introduction to Physical Geography

Nature and Scope of Physical Geography; Different Branches of Physical Geography; Geological Time Scale; Origin of the Earth: Big Bang Theory; Origin of the Continents and Oceans, Continental Drift Theory and Plate Tectonic Theory

Unit-2: Introduction to Lithology and Geomorphology

Internal structure of the Earth; Types of Rocks: Characteristics and Classifications; Folds and Faults; Definition and Classification of Weathering and Mass movement; Processes and Landforms: Fluvial, Glacial, Arid and Coastal; Slope: Importance, Genetic Classification and Components of Slope; Fundamental Concepts in Geomorphology (Concept 1-6 of Thornbury).

Unit-3: Climatology and Oceanography

Climatology: Composition and Structure of the Atmosphere; Atmospheric Pressure Belts and General Wind System; Insolation and Heat Budget; Concept of Humidity, Evaporation and Condensation; Types of Cloud; Precipitation: Causes and Forms, Types of Rainfall.

Oceanography: Surface Configuration of Ocean Floor: Pacific Ocean, Atlantic Ocean and Indian Ocean; Temperature, Salinity and Density of Ocean Water; Oceanic Circulation System: Pacific Ocean, Atlantic Ocean and Indian Ocean; Coral Reefs and Atoll.

Unit-4: Soil and Biogeography

Soil Geography: Definition; Components of Soil; Factors of Soil Formation; Processes in Soil formation; Soil Profile; Physical Properties (Texture, Structure and Moisture) and Chemical Properties (pH and Organic Matter) of Soil; Major Soil types of the World: Zonal, Azonal and Intra-zonal Soils; Soil Erosion and Conservation.

Biogeography: Concept, Nature and Scope; Concept of Ecology and Basic Ecological Principles; Concept and Components of Ecosystem; Trophic Structure; Food Chain and Food Web; Concept of Biome and Major Biomes of the World: Forest, Grassland and Marine Biomes; Biogeochemical Cycle: Hydrological Cycle, Nitrogen Cycle and Carbon Cycle.

2nd Year (Diploma Course)
Semester-III

Selected References:

1. Singh, S.(1997): Physical Geography, Prayag Pustak Bhawan, Allahabad
2. Lal, D.S (1998): Climatology, Sharada Pustak Bhawan, Allahabad
3. Khullar, D.R. (2003): India–A Comprehensive Geography, Kalyani Publisher Chennai.
4. Dayal, P. (2011): A textbook of Geomorphology, Rajesh Publication, New Delhi
5. Singh, S. (2009): Geomorphology, Prayag Pustak Bhawan, Allahabad.
6. Ahmed, E. (2001): Geomorphology, Kalyani Publishers, Kolkata.
7. Ahmed, E. (1989): Physical Geography, Kalyani Publishers, New Delhi.
8. Monkhouse, F.J. (1971): Principles of Physical Geography, University of London Press Ltd.
9. Morgan, R. S and Wooldridge, S.W. (1988): An Outline of Geomorphology, Orient Longman.
10. Thornbury, W.D. (1984): Principles of Geomorphology, 2nd Edition Wiley Eastern Ltd., New Delhi.
11. Alan H. Strahler, Arthur Strahler (2005): Introducing Physical Geography, John Wiley and Sons, New York
12. Singh, S. (2001): Environmental Geography, Prayag Pustak Bhawan, Allahabad
13. Sahai, V.N. (2011): Fundamentals of Soil, Kalyani Publishers, New Delhi.
14. Gautam, A. (2009): Environmental Geography, Sharda Pustak Bhawan, Allahabad

2nd Year (Diploma Course)
Semester-III

(Practical)

Minor- GE-301 (Practical) **Full Marks-40(Credit–1)**

(Internal assessment-16; End Sem.Exam. -24)

Sl. No.	Practical	Marks
1.	Identification of Rocks and Minerals	04
2.	Climatological Instrument reading	04
3.	Analysis and Interpretation of Weather Map	08
4.	Laboratory Notebook and Viva–voce	5+3
TOTAL		**24**

PRACTICAL: GE-301M

1. Identification of Rocks and Minerals

2. Climatological Instrument reading:

Fortin's Barometer

Six's Maximum and Minimum Thermometer

Dry and Wet Bulb Thermometer

3. Analysis and Interpretation of Indian Weather Map

Summer case

Winter case

4. Laboratory Notebook and Viva–voce

2nd Year (Diploma Course)
Semester-III

Selected References:

1. Mitra, K., Ghosh, K. and Das M. (2006): B.A. General Practical Geography, Kalyani Publishers, Kolkata.
2. Monkhouse, F.J. (1971): Maps and Diagrams, Methuen, London.
3. Sarkar, A. (2015): Practical Geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi.
4. Saha, P. & Basu, P. (2015): Advanced Practical Geography–A Laboratory Manual, Books and Allied (P) Ltd., Kolkata.
5. Singh, R.L. & Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
6. Singh, R. & Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.
7. Saikia, R. & Thakuriah, G. (2015): Practical Geography, EBH Publishers (India), Guwahati.

2nd Year (Diploma Course)
Semester-IV

Human Geography (Theoretical)

Minor-GE-401

Full Marks-60 (Credit – 3)

(Internal Assessment-24;End Sem.Exam.-36)

Unit-1: Introduction to Human Geography and Population Geography

Human Geography: Concept, Nature and Scope of Human Geography; Fundamentals and Branches of Human Geography; Development of Human Geography; Inter-relations of Human Geography with other Social Sciences.

Population Geography: Distribution and Density of World Population, Age-Sex Composition of Population, Concept of Fertility, Mortality; Migration: Immigration and Emigration.

Unit-2: Social and Cultural Geography

Social Geography: Meaning, Nature and Scope; Social Groups; Social Processes; Social Wellbeing; Social Differentiation: Tribes and Castes; Religion: Distribution in India; Language: Distribution in India; Social Problems in India.

Cultural Geography: Concept, Nature and Scope; Racial Division and Distribution; Linguistic Distribution of the World; Cultural Diffusion and its Processes; Cultural Hearth and Cultural Realm.

Unit-3: Settlement Geography

Rural Settlement: Types and Patterns; Urban Settlement: Classification of Towns based on their Size and Functions; Census Categories of Urban units in India; The Concept of City Region; Problems of Towns and Cities in India; Trends of Indian urbanization.

Unit-4: Contemporary Issues

Ageing of Population; Decline in Sex-ratio. Rural Development Programmes --- SJSY, MGNREGA, JANDHAN YOJANA and Rural Connectivity; Problems of Housing, Slums, Civic Amenities (Water and Transport); Case Study of Delhi, Mumbai, Kolkata, Chennai and Chandigarh with reference to Land Use and Urban Issues.

2nd Year (Diploma Course)
Semester-IV

Selected References:

1. Chandna, R. C.(2000): Geography of Population: Concept, Determinants and Patterns, Kalyani Publishers, New Delhi.
2. Clark, J.I. (1973): Population Geography, Pergamon Press, Oxford.
3. Hassan, M.I. (2005): Population Geography, Rawat Publication, New Delhi.
4. Mandal, R.B. (2008): Urban Geography: A Textbook, Concept Publishing Company, New Delhi.
5. Mitra, A. (1978): India's Population, Vol.I and II, Abhinav Publisher, Nagpur.
6. Ramachandran, R. (1989): Urbanisation and Urban Systems of India, Oxford University Press, U.K.
7. Siddhartha, K. (2016): Cities, Urbanisation and Urban Systems (Settlement Systems), Kitab Mahal Publishers and Distributors, New Delhi.
8. Zelinsky, W. (1966): A Prologue to Population Geography, Prentice Hall, N. J
9. BroekJan, O.M. and JanOtto, Marius (1978): Geography of Mankind, McGraw Hill Companies
10. Jordan Terry, G. and Lester, Rowntree (1990): The Human Mosaic: Thematic Introduction to Cultural Geography, Longman.

2nd Year (Diploma Course)
Semester-IV

Full Marks-40(Credit –1)

Minor-GE-401 (Practical)

(Internal assessment-16; End Sem.Exam. -24)

Sl. No.	Practical	Marks
1.	Interpretation of Topographical Map (Plain region)	12
2.	Trends in Population Growth	04
3.	Laboratory Notebook and Viva–voce	05+3
TOTAL		**24**

PRACTICAL: GE-401M

1. Interpretation of Topographical Map (Plain region): Broad physiographic features, Drainage characteristics, Fluvial features, Settlement types and Settlement Density, Communication Network, Transact Chart

2. Trends in Population Growth in Tripura, North-East India and India (Population Growth Rate and Decadal Growth)

3. Laboratory Notebook and Viva–voce

2nd Year (Diploma Course)
Semester-IV

Selected References:

1. Saha, P. & Basu, P. (2015): Advanced Practical Geography –A Laboratory Manual, Books and Allied (P) Ltd., Kolkata.
2. Singh, R. L. &Singh, Rana P. B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
3. Sarkar, A. (2015): Practical Geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
4. Singh, R. &Singh, K.: Map Work and Practical Geography, Central Book Depot, Allahabad.

Syllabi

for

Four Years Under Graduate Programme

B.Sc., in Geography (Major Course)

as per NEP - 2020

Tripura University

(A Central University)

Suryamaninagar – 799022,

West Tripura

Tripura University

(A Central University)

Structure of Geography (UG Programme) as per NEP-2020 under Tripura University

Year	Sem	Major Discipline Specific Course (Core)	Theory	Practical
1st(Certificate Course)	I	Course-1 GE-101C	Fundamentals of Geography and major Contributions	---
		Course-2 GE-102C	Origin of the Earth	Scale, Introduction to Maps,Principle of topo. sheet Numbering
	II	Course-3 GE-201C	Geography of Asia and India	---
		Course-4 GE-202C	Geomorphology	Cartograms (Using MS Excel),Topographical map interpretation (Plateau region)
2nd(Diploma Course)	III	Course-5 GE-301C	Population and Settlement Geography	---
		Course-6 GE-302C	Climatology	Climatological instrument reading, Analysis and Interpretation of Weather map
	IV	Course-7 GE-401C	Geography of North East India and Tripura	---
		Course-8 GE-402C	Soil and Biogeography	Soil testing kit, Topographical map interpretation(Plain region)
3rd (Degree Course)	V	Course-9 GE-501C	Economic Geography	---
		Course-10 GE-502C	Oceanography and Tectonic Geography	Projection, Identification of Rocks and minerals
		Course-11 GE-503C	Environmental Geography	---
		Course-12 GE-504C	Agricultural Geography	Agriculture based Practical, Instrument Survey
	VI	Course-13 GE-601C	Social and Cultural Geography	---
		Course-14 GE-602C	Statistical Methods in Geography	Statistics,

				Interpretation of Geological Map
		Course-15 GE-603C	Fundamentals of Remote Sensing and GIS	---
		Course-16 GE-604C	Political Geography	Field Survey
4th(Degree with Honours and Research)	VII	Course-17 GE-701C	Research Methodology	---
		Course-18 GE-702C	Natural Resource Management	---
		Course-19 GE-703C	Geography of Tourism	---
		Course-20 GE-704C	Remote Sensing	Remote Sensing Practical
	VIII	Course-21 GE-801C	Advanced Geomorphology	---
		Course-22 GE-802C	Hazards and Disaster Management	---
		Course-23 GE-803C	Urban Geography	---
		Course-24 GE-804C	GIS	GIS Practical

Tripura University
(A Central University)

Semester-wise Marks Distribution for Geography
(UG Programme)
As Per NEP-2020 under Tripura University

Year	Semester	Theory			Practical		
		Internal Assessment	End Sem. Exam.	Total	Internal Assessment	End Sem. Exam	Total
1st(Certificate)	I	40	60	100	---	---	---
		24	36	60	16	24	40
	II	40	60	100	---	---	---
		24	36	60	16	24	40
2nd(Diploma)	III	40	60	100	---	---	--
		24	36	60	16	24	40
	IV	40	60	100	---	---	---
		24	36	60	16	24	40
3rd(Degree)	V	40	60	100	---	---	--
		24	36	60	16	24	40
		40	60	100	---	---	--
		24	36	60	16	24	40
	VI	40	60	100	---	---	----
		24	36	60	16	24	40
		40	60	100	----	---	---
		24	36	60	16	24	40
4th(Degree with Honours)	VII	40	60	100	---	---	---
		40	60	100			
		40	60	100			
		24	36	60	16	24	40
	VIII	40	60	100	---	---	---
		40	60	100			
		40	60	100			
		24	36	60	16	24	40
		Total Theory=2000			Total Practical=400		
	Grand Total(Theory+Practical)=2000+400=2400						

Tripura University

(A Central University)

Semester-wise Credit Distribution for Geography (UG Programme)As perNEP-2020

Year	Semester	Paper	Theory/Practical	Marks	Credits	Total Credit/Sem.
1	I	GE-101C	Theory	100	4	8
		GE-102C	Theory	60	2	
			Practical	40	2	
	II	GE-201C	Theory	100	4	8
		GE-202C	Theory	60	2	
			Practical	40	2	
2	III	GE-301C	Theory	100	4	8
		GE-302C	Theory	60	2	
			Practical	40	2	
	IV	GE-401C	Theory	100	4	8
		GE-402C	Theory	60	2	
			Practical	40	2	
3	V	GE-501C	Theory	100	4	16
		GE-502C	Theory	60	2	
			Practical	40	2	
		GE-503C	Theory	100	4	
		GE-504C	Theory	60	2	
			Practical	40	2	
	VI	GE-601C	Theory	100	4	16
		GE-602C	Theory	60	2	
			Practical	40	2	
		GE-603C	Theory	100	4	
		GE-604C	Theory	60	2	
			Practical	40	2	
4	VII	GE-701C	Theory	100	4	16
		GE-702C	Theory	100	4	
		GE-703C	Theory	100	4	
		GE-704C	Theory	60	2	
			Practical	40	2	
	VIII	GE-801C	Theory	100	4	16
		GE-802C	Theory	100	4	
		GE-803C	Theory	100	4	
		GE-804C	Theory	60	2	
			Practical	40	2	
TOTAL				2400	96	

3RD YEAR (DEGREE COURSE)

SEMESTER -V

Economic Geography (Theoretical)

Paper- GE-501C

Full Marks-100(Credit–4)
(Internal Assessment-40;End Sem.Exam.-60)

Unit-1: Introduction to Economic Geography

Definition, Concept, scope and development; Resource: Meaning and concept, Classification (according to use of resources and Dasmann's classification of natural resources), significance; Classification and types of economic activities; Factors affecting location of economic activities with spatial reference to agriculture(Von Thunen Theory); industry (Weber's Theory).

Unit-2: Primary Economic Activities

Intensive Subsistence Agriculture; Extensive Commercial Agriculture; Plantation Agriculture; Mixed Farming; Forestry: Lumbering-Tropical and Temperate; Fishing: Temperate and Tropical fishing ground; Mining: Definition, examples and types.

Unit-3: Secondary Economic Activities

Manufacturing: Meaning, types and determinants of location of industries; Industry: Iron and steel, Cotton Textile, Aluminium, Petroleum refining and Paper; Industrial Regions: Definition, Characteristics and delimitation; Industrial regions of India: (a)Hooghly region (b) Mumbai- Pune region (c) Madurai- Coimbatore region (d) Chhotanagpur region; Special Economic zones; Technology Parks.

Unit-4: Tertiary Economic Activities

Transport and trade: Major transport system of the world–Trans-Siberian Railway; Canadian Pacific Railway, Panama Canal Route, Suez Canal Route; Concept of World Trade Organization (WTO); Multinational Corporation (MNC) and International Trade; International Trade system of India; Recent status of Indian Economy.

Selected References:

1. Jones, C.F. and Darkenwald, G.G. (1954) — Economic Geography, Me Milan, New York.
2. Smith, D.N. (1971) — Industrial Location – An Economical Geographical Analysis, John Wiley, New York.
3. Morgan, W.B.and Munton ,R.J.C .(1971) : Agricultural Geography ,Methuen, London .
4. Leong, G.C.(2000), Human and Economic Geography ,Oxford University Press, New Delhi , Kolkata.
5. Roy , Prithwish ,Economic Geography, (Latest Edition),New Central Book Agency (p) Ltd., Kolkata.
6. Hartshorn ,T.A .Alexander,J.W, Economic Geography (Latest Edition) ,Printice Hall of India Pv5. Ltd.
7. Chattaraj , Guha (Latest Edition), Economic Resources, John Wiley publication ,New Delhi, Kolkata.
8. Gautam ,Alka ,Advanced Economic Geography, Sharada Pustak Bhawan, University Road ,Allahabad .
9. Saxena, H.M., Economic Geography, Rawat Publications ,Jaipur New Delhi,

3RD YEAR (DEGREE COURSE)

SEMESTER -V

Oceanography and Tectonic Geography

(Theoretical)

Paper-GE-502C

Full Marks-60(Credit–2)
(Internal Assessment-24;End Sem.Exam.-36)

Unit-1: Introduction to Oceanography, Physical and Biological Ocean Properties and Ocean Management

Meaning, Scope and significance; Ocean Bottom Topography – Relief of Ocean Floor (Pacific, Indian and Atlantic), Origin of ocean basins, the origin of ocean waves, tides and ocean currents, Properties of Ocean Water: Salinity and Temperature (Horizontal and Vertical Distribution); Marine Ecosystems: Coral Reef, Mangrove; Marine Challenges and Management, Marine Policy: Integrated Coastal Zone Management (ICZM) with reference to India and SDG 14

Unit-2: Tectonic Geography and Structural Geology

Sea floor spreading and mid oceanic ridges; Isostasy: Models of Airy and Pratt; Plate Tectonics as a unified theory of global tectonics: Processes and landforms at plate margins, boundaries and hotspots, Plate movement mechanisms; Earthquake and earthquake belts; Volcanoes- types, distribution; Earth Movements: classifications and significance; Folding mechanisms, Fold morphology; Geometric classification of folds; associated landforms of folding; Faulting mechanisms, classifications and associated landforms

Selected References:

1. *Siddhartha, K. (2018): Oceanography, A brief Introduction, Kitab Mahal.*
2. *D. S. Lal: Oceanography, Sharda pustak bhawan.*
3. *Savindra Singh:Oceanography, Pravalika Pustak Publications*
4. *R.C.Sarma & M Vatal:Oceanography for Geographers,* ***Surjeet Publications***
5. *Mark Denny:An Introduction to Oceanography How Ocean works,Overseas Press*
6. *Pinet, P. R., (2008): Invitation to Oceanography (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada*
7. *Condie, K.C. (2003). Plate Tectonics and Crustal Evolution, Butterworth-Heinemann, Oxford, Burlington.*
8. *Duff, D., (1993). Holmes' Principles of Physical Geology, Stanley Thornes, Cheltenham.*
9. *Erickson, J., (2001). Plate Tectonics: Unravelling the Mysteries of the Earth, Checkmark Books, New York.*
10. *Goudie, A.S. and Viles, H., (2010). Landscapes and Geomorphology: A Very Short Introduction, Oxford University Press, Oxford.*
11. *Holmes, A., (1978). Principles of Physical Geology, Van Nostr and Rheinhold, New York.*
12. *Huggett, R.J., (2011). Fundamentals of Geomorphology, Routledge, New York.*
13. *Kale, V.S. and Gupta, A., (2001). Introduction to Geomorphology, Orient Longman, Kolkata .*
14. *Keary, P. and Vine, M., (1997). Global Tectonics, Blackwell Scientific Publications, Oxford.*
15. *Ollier, C.D., (1981). Tectonics and Landforms, Longman Group Ltd., London.*
16. *Selby, M.J., (1985). Earth's Changing Surface: An Introduction to Geomorphology, Clarendon Press, Oxford .*
17. *Siddhartha, K., (2001). The Earth's Dynamic Surface, Kisalaya Publications, New Delhi • Singh, S., (2000). Geomorphology, Prayag Pustak Bhavan, Allahabad.*
18. *Strahler, A.H. and Strahler A.N., (1992). Modern Physical Geography, John Wiley & Sons, New York.*
19. *Summerfield, M.A., (1991). Global Geomorphology: An Introduction to the Study of Landforms, Longman, London*
20. *Summerfield, M.A., (ed.) (2000). Geomorphology and Global Tectonics, Wiley, Chichester .*
21. *Thorn, C., (1988). Introduction to Theoretical Geomorphology, Unwin Hyman, Boston .*
22. *Thornbury, W. D., (I960). Principles of Geomorphology, John Wiley & Sons, New York*

3RD YEAR (DEGREE COURSE)

SEMESTER -V

(Practical)

Paper-GE-502 C **Full Marks – 40 (Credit -2)**

(Internal Assessment-16; End Sem. Exam.-24)

Sl. No.	Practical	Marks
1.	Introduction of map Projection: Definition and classification and importance of map projections. Construction, characteristics and applications of followings projections. a. Cylindrical equal area projection. b. Simple conical projection with one standard parallel. c. Bonne's Projection. d. Polar Gnomonic Zenithal Projection e .Polar Stereographic Zenithal Projection f. Sinusoidal Projection	14
2.	Identification of rocks and minerals by Streak test and eye observation.	05
3.	Laboratory Notebook and Viva–voce	03+02
TOTAL		**24**

Selected References:

1. Mitra,K., Ghosh K. and Das, M.(2006):B.A. General Practical Geography, Kalyani Publishers, Kolkata.
2. Monkhouse,F.J. (1971): Maps and Diagrams, Methuen, London.
3. Sarkar,A. (2015): Practical Geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi.
4. Saha, P.& Basu, P.(2015):Advanced Practical Geography– A Laboratory Manual, Books and Allied (P)Ltd., Kolkata.
5. Singh, R.L.,Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
6. Singh,R. and Singh,K.: Map Work and Practical Geography, Central Book Depot, Allahabad.
7. Saikia, R. and Thakuriah,G.(2015):Practical Geography, EBH Publishers (India),Guwahati.
8. Singh, Gopal., (1998): Map Work and Practical Geography (4th Edition), Vikas Publishing House, Ahmedabad.
9. Gupta, K.K. and Tyagi V.C.,(1992): Working with Map, Survey of India, DST, New Delhi.
10. Misra, R.P.,(2014): Fundamentals of Cartography (Second Revised and Enlarged Edition), Concept Publishing, New Delhi.
11. Monkhouse, F. J. and Wilkinson, H. R.,(1973): Maps and Diagrams, Methuen, London.

3RD YEAR (DEGREE COURSE)

SEMESTER -V

Environmental Geography (Theoretical)

Paper- GE-503C

Full Marks-100(Credit– 4)

(Internal Assessment-40; End Sem.Exam.-60)

Unit-1: Introduction to Environmental Geography

Concept, Meaning, development, nature and scope of Environmental Geography, Recent Dimensions of Environmental studies in Geography; Major physical and cultural elements of environment; Functioning of environmental systems – role of biotic and abiotic elements.

Unit-2: Ecosystem Approach in Environmental Studies

Ecosystem Structure and function, terrestrial and aquatic ecosystems; Principle of ecology; human ecological adaptation; influence of man on ecology and environment; bio-geo- chemical cycles. Energy flow in an ecosystem; food chain, food web and Ecological pyramids.

Unit-3: Environmental Degradation and Hazards:

Water, Air, Noise and Solid waste problems in urban-industrial Environment, Water and soil pollution in rural landscape (with reference to India), Major pollutants: types, sources and effects. Global issues- Climatic Hazards and Management, Social Response to Climatic Hazard, Human response to Flood, Drought, Landslide, Earthquake and Cyclone, Forest Fires. Impact of Green revolution

Unit-4: Conservation and management of environment:

Environmental Perception, Environment Conservation and challenges in developing countries, Environmental Movements in India*: Bisnoi*, *Chipko*, Silent valley and Narmada. Environmental issues, policies and efforts in India, Concept of sustainable development, Significance of environmental laws, EIA (Environmental Impact Assessment).

Selected References:

1. Singh,S.(2001): Environmental Geography, Prayag Pustak Bhawan, Allahabad.
2. Gautam,A. (2009): Environmental Geography, Sharda Pustak Bhawan, Allahabad.
3. Dash, M.C. (2001):Fundamental of Ecology, 2nd edition,Tata Mc Graw Hill, New Delhi
4. ChapmanJ.L.and Reiz,M.J.(1993):Ecology-Principle and Applications, Cambridge University Press.
5. Hagget,R.J.(1995):Geoecology: An Evolutionary Approach, Routledge, London.
6. Agarwal, D.P. (1992): *Man and Environment in India through Ages*, Books & Books, New Delhi.
7. Arthur N. Strahler and Alan H. Strahler (1973 1st Ed): *"Environmental Geoscience – Interaction between natural systems and man",* Wiley International Ed.
8. Bala Krishnan, M., 1998: *Environmental Problems and Prospects in India*, Oxford & IBH Pub., New Delhi.
9. Barrow, C. J. (2003): *Environmental Change and Human Development*. Arnold Publication.
10. Blowers, Andrews, (1993): *"Planning for a sustainable Environment,"* Earth scan Publication, London.
11. Botkin, D.B., and Keller,E.A.(2013): *Environmental Science*, Wiley, New Delhi
12. Gole, P., (2001): *Nature Conservation and Sustainable Development in India*, Rawat Pub., Jaipur
13. Goudie, A. (1986): *The Human Impact on the Natural Environment*, 2nd edition, Blackwell Pub. Co., London
14. Lohani, B. N. (1997). *Environmental impact assessment for developing countries in Asia (Vol 1).* Manila: ADB.
15. Smith,K.(2001):*EnvironmentalHazards:AssessingRiskandReducingDisaster*, Routledge

3RD YEAR (DEGREE COURSE)

SEMESTER -V

Paper-GE-504C

Agricultural Geography (Theoretical)

FullMarks-60(Credit–2)
(Internal Assessment-24; End Sem. Exam.-36)

Unit-1: Fundamentals of Agricultural Geography

Meaning, Scope and Importance of Agricultural Geography; Factors Influencing Agriculture: Physical-Climate, Soil, Relief, Water Resources, Economic-Landholding, Technology, Market, Transport, Social & Political-Land Reforms, Government Policies; Cropping Patterns and Agricultural Productivity; Concept of Agricultural Region; Agricultural Regions of India: Agro- Climatic Regions (Planning Commission); Agro-ecological and Crop Combination Regions

Unit-2: Agricultural Development and Challenges:

Types of Farming: Subsistence Farming, Commercial Farming, Mixed Farming, Shifting Agriculture; Challenges in Agriculture: Soil Erosion, Water Scarcity, Pests and Diseases, Deforestation, Impact of Climate Change on Agriculture; Introduction to Sustainable Practices: Organic Farming, Agroforestry, Crop Rotation, Importance of Technology in Agriculture: Farm Mechanization, Irrigation Systems, Biotechnology

Selected References:

1. Alka Gautam(2012): *"Agricultural Geography "*Sharda Pustak Bhawan, Allahabad.
2. Bryant,C.R., Johnston,T.R.(1992),"*Agriculture in the City Country side*",Belhaven Press, London.
3. Burch,D.,Gross,J.and Lawrence,G.(eds.)(1999),"*Restructuring Global and Regional Agriculture*", Ashgate Publishing Company, Burlington.
4. Cakmak,I.and Welch,R.M.(eds)(2009),"*Impacts of agriculture on Human Health and Nutrition*", EOLSS Publications, UK.
5. Ferroni, Marco (2013):"*Transforming Indian agriculture-India2040:Productivity, Markets and Institutions*" , Sage Publications, New Delhi.
6. Grigg David (1995): *"An introduction to agricultural geography",*(secondedition), Routledge, London and New York.
7. Illbery,B.W.(1985):"*Agricultural Geography, Social & Economi cAnalysis*", Oxford University Press.
8. Mohammad,N.(1992):"*New Dimension in Agriculture Geography*",Vol. I to VIII, Concept Publishing Company, New Delhi.
9. Mohammad,N.and Rai,S.C.(2014):"*Agricultural Diversification and Food Security in the Mountain Ecosystem*", Concept Publishing Company, New Delhi.
10. Randhawa,M.S.(1980):"*An History of Agriculture in India*",Vols.I,II, III,IVICAR, New Delhi
11. Roling, N.G.,and Wageruters,M.A.E.(eds.)(1998):"*Facilitating Sustainable Agriculture*",Cambridge University Press, Cambridge.
12. Shafi,M.(2006):"*Agricultural Geography*",Pearson Education,Delhi.
13. SingJasbir and Dhillon,S.S.(1994): *"Agricultural Geography"*Tata Mc Graw Hill,New Delhi.
14. Shrivastava,Sahay,Vidyarti and Singh(2010): *"Second Green Revolution Vs.Rainbow Revolution".*
15. Tiwari,R.andSingh,B.(1994):"*Krishi Bhoogol*",Prayag Pustak Bhandar,Allahabad. (Hindi). 15. White P. (2007) :" *Emergence of agriculture:A global view*",Routledge, London.
16. WrightJ.(2009):"*Sustainable agriculture and food security in ane raof oilscarcity*", Earthscan, London.
17. Young,A.(1998):"*Landuse Resources: Now and for the Future*",Cambridge University Press, Cambridge.

3RD YEAR (DEGREE COURSE)

SEMESTER -V

PRACTICAL

Paper-GE-504C **FullMarks-40(Credit– 2)**

(Internal Assessment-16; End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	• Survey and mapping of agricultural land use and cropping patterns (observational study, using toposheets and satellite images (Google Earth interpretation) • Agricultural Density • Crop combination method Rafiullah's method	09
2.	Surveying with instruments (Selection of any one by Lottery during Examination) a. Prismatic Compass Survey for Closed Traversing of a Quadrangular area b. Survey with Dumpy Level along a road c. Triangular measurements of height and distance by Transit Theodolite with accessible base	10
4.	Laboratory Notebook and Viva–voce	3+2=5
TOTAL		**24**

Selected References:

1. Saha, P.& Basu, P.(2015):Advanced Practical Geography– A Laboratory Manual, Books and Allied (P)Ltd., Kolkata.
2. Singh, R.L.&Singh, RanaP.B.(2003):Elements of Practical Geography, Kalyani Publishers, New Delhi.
3. Sarkar,A.(2015):Practical Geography:A Systematic approach, Orient Black Swan Private Ltd.,New Delhi.
4. Singh, R. & Singh,K.: Map Work and Practical Geography, Central Book Depot, Allahabad.

3rd Year (Degree Course)
Semester-VI

Social and Cultural Geography
(Theoretical)

Paper-GE-601C

Full Marks-100(Credit–4)
(Internal Assessment-40;End Sem.Exam.-60)

Unit-1: Introduction to Social Geography

Meaning, Concept, Nature and Scope; Society and Environment: Influence of Environment on Society and Society on Environment; Social Categories: Tribe, Caste, Language and Religion; Space in Social Geography: Concept and Types

Unit-2: Human Settlement

Origin and Growth of Human Settlement: Rural and Urban; Factors influencing Rural Settlement with special reference to India; Socio-Cultural characteristics of Urban Settlement with special reference to India; Rural-Urban Dichotomy and Rural-Urban Continuum.

Unit-3: Introduction to Cultural Geography

Meaning, Nature and Scope of Cultural Geography; Themes in Cultural Geography: Cultural Region, Cultural Diffusion, Cultural Ecology, Cultural Integration and Cultural Landscape; Cultural Hearth and Cultural Realms; Concept of Race, Language and Religion their divisions and distribution.

Unit-4: Ecoonomy towns and cities

Forms of Economy: Food gathering and Agriculture in Tribal Societies; Land use in Traditional and Modern Societies; Towns and Cities: Site and Situation, Cities in Modern Era, Facets of Contemporary Cities; Distribution of large Metropolises

Selected References:

1. *Ahmad, A. (2006): Social Geography, Rawat Publications, New Delhi.*
2. *Broek, J. O. M. and Webb, J. W. (1978): A Geography of Mankind, McGraw Hill International Book Company, London.*
3. *Johnston, R. J., Gregory, D., Pratt, G. and Watts, M. (edited) (2000): The Dictionary of HumanGeography, Blackwell Publishing, Oxford, UK.*
4. *Jordan Terry, G. and Rowntree, L. (1990): The Human Mosaic: A Thematic Introduction to Cultural Geography, Harper Collins Publishers, New York.*
5. *Smith, S. J., Pain, R., Martson, S. A. and Jones, J. P. (2009): The SAGE Handbook of Social Geographies.*
6. *Sopher, D. (1980): An Exploration of India, Cornell University Press, Ithasa.*
7. *Taher, M. (2005): An Introduction to Social Geography, North East India Geographical Society, Gauhati University, Guwahati*

3rd year (Degree Course)

Semester -VI

Statistical Methods in Geography

(Theoretical)

Paper-GE-602C

Full Marks-60(Credit–2)

(InternalAssessment-24;EndSem.Exam.-36)

Unit-1: Basics of Statistics and Statistical Measurement and assessment:

Definition, Importance, use and applications of statistical techniques in geography, Sources of statistical data in geography; Scales of measurement: Nominal, Ordinal, Interval and Ratio; Frequency Distribution, Typical Patterns of Frequency Distribution; Measurement of Central Tendencies; Measurement of Dispersion-Variance, Standard deviation, Mean deviation, Quartiles; Computation of Index of Skewness and Kurtosis, Concept of probability assessment, Probability assessment of discrete and continuous random variable.

Unit-2: Hypothesis Testing and Techniques of Bivariate Analysis:

Concept of Population and sample, Sampling Methods, Testing of hypothesis, Hypothesis-Null hypothesis and Alternative hypothesis, Parametric and Non-parametric Tests, Student's t‟ test and Chi square test ; Concept of covariance and correlation, Pearson‟s Product moment Correlation Coefficient, Spearman‟s Rank Correlation Coefficient, Straight line regression equation.

Selected References:

1. Alvi, Z.(1995):"*Statistical Geography: Methods and Applications*", Rawat Publications, Jaipur
2. David Ebdon (1989):"*Statistics in Geography-A Practical Approach*",2nd Edn.,Blackwell Publishing.
3. Gupta,C.B.(1978):"*An Introduction to Statistical Methods*",Vikas Pub.House,New Delhi.
4. John Matthews,(1981):"*Quantitative & Statistical Approaches to Geography:A Practical Manual*", Pergamon Press.
5. Karlekar Shrikant (2007):"*Statistical Methods in Geography*", Diamond Publication, Pune.
6. Karlekar, Shrikant and Kale, Mohan (2006):"*Statistical Analysis of Geographical Data*", Diamond Publication, Pune.
7. King,L.J.(1991): "*Statistical Analysis in Geography*",Prentice Hall, Englewood.
8. Mahmood,A.(1977):"*Statistical Methods in Geographical Studies*",Rajesh Publications, New Delhi.
9. Mandal,R.B.(1981):"*Statistics for Geographers & Social Scientists*",Rawat Publication.
10. Pal,Saroj K(1982):"*Statistical Techniques, A Basic Approach to Geography*",Tata McGraw Hill Publishing Comp. Ltd. New Delhi.
11. Peter Rogerson:"*Statistical Methods for Geography*",3rd Edn. Sage Publishing New Delhi.
12. Rogerson P.A.(2001) :"*Statistical for Geography*",SAGE publication, New Delhi.
13. Shaw G. & Wheller D. (1985) : "*Statistical Techniques in Geographical Analysis*", John Wiley & Sons, New York.

3rd Year (Degree Course)
Semester -VI

(Practical)

Paper-GE-602 C **FullMarks-40 (Credit–2)**

(Internal Assessment-16;End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	Diagrammatic representation of Frequency distribution (Histogram, Frequency Polygon, Normal and Skewed Distribution, Ogive) Calculation and Diagrammatic representation of Measures of central Tendency Calculation and Diagrammatic representation of Measures of Partition Values	10
2.	Construction of cross section and Interpretation of Geological maps a) Simple Folded maps b) Simple Uniclinal maps c) Folded maps with unconformity	9
4.	Laboratory Notebook and Viva–voce	03+02
TOTAL		**24**

Selected References:

1. Mitra,K., Ghosh,K.and Das M.(2006): B.A. General Practical Geography, Kalyani Publishers, Kolkata.
2. Monkhouse,F.J. (1971): Maps and Diagrams, Methuen, London.
3. Sarkar,A.(2015):Practical Geography: A systematic approach, Orient Black Swan Private Ltd.,New Delhi.
4. Saha, P.& Basu,P.(2015):Advanced Practical Geography–A Laboratory Manual, Books and Allied (P)Ltd., Kolkata.
5. Singh, R.L.,Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
6. Singh,R. and Singh,K.: Map Work and Practical Geography, Central Book Depot, Allahabad.
7. Saikia,R.and Thakuriah,G.(2015):Practical Geography, EBH Publishers (India),Guwahati.
8. Singh, Gopal., (1998): Map Work and Practical Geography (4th Edition), Vikas Publishing House, Ahmedabad.
9. Gupta, K.K. and Tyagi V.C.,(1992): Working with Map, Survey of India, DST, New Delhi.
10. Misra, R.P.,(2014): Fundamentals of Cartography (Second Revised and Enlarged Edition), Concept Publishing, New Delhi.

3rd Year (Degree Course)

Semester-VI

Paper-GE-603C

Fundamentals of Remote Sensing and GIS (Theoretical)

Full Marks-100 (Credit-4)

(Internal Assessment-40;End Sem.Exam.-60)

Unit-1: Introduction to Remote Sensing

Definition of Remote Sensing, developmental stages, electromagnetic waves, spectrum, regions, wavelength, frequencies and applications. Types-Satellites, Sensors, Energy Interaction in the Atmosphere (Scattering, Absorption, Refraction and Reflection);Remote Sensing Platforms and Types; Process of remote sensing, interaction of radiation with atmosphere and targets, resolutions of remote sensing, visible region of the spectrum

Unit-2: Geographic Information System (GIS):

Concept of Geographic Information System (GIS); Components of GIS; Origin of GIS; Functions of GIS; Advantages of GIS, Basic Concepts about Spatial Information, Spatial vs. Non-spatial data ; Spatial data models – Raster and Vector ; Data Conversions ; Comparison between Raster and Vector Data, advantages and disadvantages of raster and vector data Advantages of GIS

Unit-3: Image Classification and Interpretation

Satellite products and its spectral characteristics, composite images, band ratios; Land use land cover classification schemes- Visual image interpretation, elements, stages of interpretation and interpretation keys. Image classification- supervised, unsupervised, and principal component analysis (PCA) and accuracy assessment

Unit-4: Applications of Remote Sensing and GIS:

Disaster Management, Meteorological Studies, Agricultural and Irrigation Studies, Forestry Studies, Hydrological Studies, Natural Resource, Oceanic and Coastal mapping, Soil resource mapping, Urban and Rural Mapping and Management Visual Interpretation using Satellite Data: Forest monitoring, Water resources and Urban Sprawl analysis (Change detection)

Selected References:

1. *Bhatia, B. (2008): Remote Sensing and GIS, Oxford University Press, New Delhi.*
2. *Lillesand, T., Ralph, M., Kiefer,W. and Chipman, J. W. (2016): Remote Sensing and Image Interpretation, Wiley, New Delhi*
3. *Reddy, M. A. (2010): Textbook of Remote Sensing & Geographical Information System, B. S. Publications, Hyderabad.*
4. Campbell, J.B.(2002): Introduction to Remote Sensing. Taylor Publications
5. Drury, S.A., (1987): Image Interpretation in Geology, Allen and Unwin
6. Gupta, R.P.(1990): Remote Sensing Geology. Springer Verlag
7. Jensen, J.R.(2000): Remote Sensing of the Environment: An Earth Resource Perspective. Prentice Hall.
8. Joseph George, (2003): Fundamentals of Remote Sensing. Universities Press
9. Lillesand, T.M., and Kieffer, R.M., (1987): Remote Sensing and Image Interpretation, John Wiley.
10. Sabbins, F.F., (1985): Remote Sensing Principles and interpretation. W.H. Freeman and company

3rd Year (Degree Course)

Semester-VI

Political Geography (Theoretical) **FullMarks-60(Credit–2)**

Paper-GE-604C **(Internal Assessment-24;End Sem.Exam.-36)**

Unit-1: Introduction and themes in Political Geography

Definition, Nature and Scope; Elements of Political Geography, location, Size and shape in Political Geography; Trends in Development in Political Geography; Concept of State, Centrifugal and Centripetal Forces in the State, Factor affecting the State; Concept of Nation, Difference between State and Nation; Territorial, Federalism and other forms of Government, Neo-colonialism.

Unit-2: Geopolitics and Frontiers and Boundaries:

Origin and Concept; Geo-strategic theories: Mackinder's Heartland Theory, Spykman Rim land Theory & Mahan's Sea power; Geostrategic importance of Indian Ocean, Neopolitics of World Natural Resources; Definition and Difference between Frontiers and Boundaries, Classification of International Boundaries, Maritime Boundaries; Boundaries of India ; Characteristics and Problems; Regional Organisations of Cooperation (SAARC, ASEAN, OPEC, EU).

Selected References:

1. Adhikari S., 1997: Political Geography, Rawat Pub. Jaipur.
2. Cohen S.B., 1973: Geography and Politics in divided world. Oxford, New York.
3. Dixit R.D., 1982: Political Geography. Tata McGraw Hill, New Delhi.
4. Dwivedi R.L., 1996: Political Geography. Chaitanya Prakashan , Allahabad.
5. Moor R., 1981: Modern Political Geography. McMillan, London.
6. Pounds N.G., 1972: Political Geography. McGraw Hill, London.
7. Taylor P., 1998: Political Geography, Prentice Hall.

3rd Year (Degree Course)

Semester-VI

(Practical)

Paper-GE-604C

Full Marks-40 (Credit–2)

(Internal assessment-16;End Sem.Exam.-24)

Sl. No.	Practical	Marks
1.	Field Survey The Department is required to perform a field tour (Outside state/within State). • Objective and Methodology in relation to Physical and Cultural landscape of either a Rural or Urban area. • The Field will include Preparation of questionnaire for Household Survey. • The page limit of the field report should be 30-32 pages inclusive of text, maps, diagrams and photographs. **Note:** The Department shall undertake field tours solely as a team or, if desired, will collaborate with other Colleges to organise field tours most conveniently. Field Report and Viva–voce	14+10
TOTAL		**24**

Selected References:

1. Saha, P.& Basu, P.(2015): Advanced Practical Geography–A Laboratory Manual, Books and Allied
2. (P)Ltd., Kolkata.
3. Singh, R.L. & Singh, Rana P.B. (2003): Elements of Practical Geography, Kalyani Publishers, New Delhi.
4. Sarkar,A.(2015):Practical Geography: A Systematic approach, Orient Black Swan Private Ltd., New Delhi.
5. Singh, R.& Singh,K.: Map Work and Practical Geography, Central Book Depot, Allahabad.

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