MANIPUR UNIVERSITY
SYLLABUS
FOR
FOUR YEAR UNDERGRADUATE PROGRAMME (FYUP) IN GEOGRAPHY
2025

In accordance with the Manipur University Ordinance
For Four Year Undergraduate Programmme (FYUP), 2025 based on NEP-2020
w.e.f. Academic Session 2025-26

DEPARTMENT OF GEOGRAPHY
School of Human and Environment Sciences
Manipur University, Canchipur, Imphal-795003

Manipur University

Academic Level:4.5 and Semester:I

Syllabus for Major – 1 (Theory)

Nature of Course	Major				
Course Code	MJC45GEG101(T) 25				
Course Title	Foundations of Geography				
Course Level	100				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	3	3	--	--	3
Course Audience	Students pursuing First Semester Major in Geography				
Proposed by (for Non-Core Course)					
Pre Requisite (if any)	Basic knowledge of Geography and Astronomy				
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objectives:

1. Understanding the nature of geography.
2. General overview on physical and human dimensions of geography.
3. General overview on applied aspects and trends of geography.

Course Learning Outcomes:

Upon completion of the course the learner will be able to:

1. Understand the nature and scope of geography.
2. Understand the physical and human aspects of geography.
3. Understand the career opportunities of geography.
4. Understand the applied aspects of geography and recent trend in geography.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit
I	Nature of Geography	Meaning, scope, branches, and approaches of geography; Emergence of geography as a subject; Importance of geography; Place	1

		of geography in the classification of science; Geography and other disciplines.	
II	Physical and Human Dimensions of Geography	Physical Dimension of Geography: Universe, galaxies, solar system and Earth; Shape and size of the Earth; Revolution and rotation of the Earth; The seasons; Age of the Earth; Longitudes, latitudes, and time. The Human Dimension in Geography: Man and environment; Society, culture, and civilization.	1
III	Modern Concepts in Geography and Applied Geography	Modern concepts in geography; Study of geography in India; Career opportunities for geographers and recent trends in geography. Applied Geography: Definition, necessity, themes, emerging scope, method, and theoretical bases; Challenges and limitations.	1

Suggested Readings:

1. Adhikari, Sudeepta (2015): Fundamentals of Geographical Thought, Orient Black Swan, New Delhi.
2. Dwivedi, A.K. (2021): Fundamentals of Geography, Vanya Publications, Kanpur.
3. Gregory, Derek et al eds. (2009): The Dictionary of Human Geography, 5th Edition, Wiley Black Well, Chichester.
4. Jain, Ritu (2018): Fundamentals of Geography, Pratyush Publications, Delhi.
5. Kaushik, Dr. S.D. and Rawat, Dr. D.S. (2018): Geographical Thought and Methodology, Rastogi Publications, Meerut.
6. Khullar, D.R. (2019): Physical Geography, Kalyani Publications, Ludhiana.
7. Husain, Majid (2018): Fundamentals of Physical Geography 5th Edition, Rawat Publications, Jaipur.
8. Leong, Goh Cheng (2020): Certificate Physical and Human Geography, Oxford University Press, New Delhi.
9. Maiti, Ramkrishna and Maiti, Moumita Moitra (2021) Development of Geographical Thought – Contextualisation and Synthesis of Philosophies, Nabodaya Publications, Kolkata.
10. Maurya, Dr. S.D. (2016): History of Geographical Thought, Sharda Pustak Bhawan, Allahabad.
11. Maurya, Dr. S.D. (2016): Cultural Geography, Sharda Pustak Bhawan, Allahabad.
12. Singh, R.P. (2005): Teaching of Geography, R. Lall Book Depot, Meerut.

Note: Internet sources may be used for the areas for which books are not available.

Additional Readings:

1. Bunnett, R. B. and Parihar, Seema Bala (2019): Physical Geography in Diagrams, 4th Edition, Pearson Education, Noida.
2. Dasgupta, A.K. and A.N. Kapoor (2004): Principles of Physical Geography, S. Chand and Company, New Delhi.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Presentation through Poster and Power Point

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	2	1	3	0	2	1
CO2	2	1	3	0	2	1
CO3	2	1	3	0	2	1
CO4	2	1	3	0	2	1

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University
Academic Level: 4.5 and Semester: I
Syllabus for Major-1 (Practical)

Name of Course	Major				
Course Code	MJC45GEG101(P)25				
Course Title	Simple Astronomical Calculation and Scale				
Course Level	100				
Credit details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hour/Week
	1	--	--	1	2
Course Audience	Students pursuing First Semester Major in Geography				
Associated Theory Course (topics)	1. Physical Dimensions of Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to learn calculation of physical properties of the earth
2. To facilitate learners to understand how to calculate local time and time of sunrise and sunset.
3. Learner will be able to construct and draw various types of scale.

Course Learning Outcomes:

Upon completion of the course the learner will be able to:

1. Calculate of physical properties of the earth.
2. Calculate local time and time of sunrise and sunset.
3. Construct and draw various types of scale.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Session
1	Measurement of shape and size of the Earth.	1
2	Calculation of radius of the Earth.	1
3	Calculation of altitudes and declination of stars.	2
4	Determination of time and calculation of local time.	2

5	Calculation of time of sunrise and sunset.	2
6	Definition, types and methods of representation of scale.	1
7	Construction and drawing of plain, diagonal, comparative and vernier scales.	6

Suggested Readings:

1. Khullar, D.R. (2016): *Essentials of Practical Geography*, Academic Publishing Co, Jalandhar.
2. Maltiar, K.K. and Maltiar, (Mrs) S.R. (2022): *Concepts of Cartography*, Remote Sensing and GIS, Rajesh Publications, New Delhi.
3. Misra, R.P. et al (2014): *Fundamentals of Cartography*, 2nd Revised Edition, Concept Publishing Company, New Delhi.
4. Robinson, A.H.et al (2010): *Elements of Cartography*, Wiley India, New Delhi.
5. Saha, P. and Basu, P. (2014): *Advanced Practical Geography*, Books and Allied (P) Ltd., Kolkata
6. Sarkar, Ashis (2015): *Practical Geography – A Systematic Approach*, Orient Black Swan, New Delhi.
7. Singh, L.R. (2006): *Fundamentals of Practical Geography*, Sharda Pustak Bhawan, Allahabad.
8. Sinha, M.M.P. and Bala, Seema (2021): *Advanced Cartography and Practical Geography*, Rajesh Publications, New Delhi.

Additional Readings:

1. Singh, Gopal (1998): Map Work and Practical Geography, 4th Edition, Vikash Publishing House, New Delhi.
2. Monkhouse, F.J. and Wilkinson, H.R. (2022): Maps and Diagrammes, Alphanumera Publisher, Delhi.

List of Essential Major Equipment

1. Foot Ruler
2. Diagonal Scale
3. Vernier Scale
4. Set Squares

Major Laboratory Stores/Consumable Required

1.
2.

Essential Software (licensed/open source)

Student Activities

1. Practical Records

Manipur University
Academic Level:4.5 and Semester:I
Syllabus for Minor – 1 (Theory)

Nature of Course	Minor				
Course Code	MNC45GEG101(T) 25				
Course Title	Introduction to Geography				
Course Level	100				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	3	3	--	--	3
Course Audience	Students pursuing First Semester Major in other discipline				
Proposed by (for Non-Core Course)					
Pre Requisite (if any)	Basic knowledge of Geography and Astronomy				
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objectives:

1. Understanding the nature of geography.
2. General overview on physical and human dimensions of geography.
3. General overview on applied aspects and trends of geography.

Course Learning Outcomes:

Upon completion of the course the learner will be able to:

1. Understand the nature and scope of geography.
2. Understand the physical and human aspects of geography.
3. Understand the career opportunities of geography.
4. Understand the applied aspects of geography and recent trend in geography.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit
I	Nature of Geography	Meaning, scope, branches, and approaches of geography; Emergence of geography as a subject; Importance of geography; Place of geography in the classification of science; Geography and other disciplines.	1

II	Physical and Human Dimensions of Geography	Physical Dimension of Geography: Universe, galaxies, solar system and Earth; Shape and size of the Earth; Revolution and rotation of the Earth; The seasons; Age of the Earth; Longitudes, latitudes, and time. The Human Dimension in Geography: Man and Environment; Society, Culture, and Civilization.	1
III	Modern Concepts in Geography and Applied Geography	Modern concepts in geography; Study of geography in India; Career opportunities for geographers and recent trends in geography. Applied Geography: Definition, necessity, themes, emerging scope, method, and theoretical bases; Challenges and limitations.	1

Suggested Readings:

1. Adhikari, Sudeepta (2015): Fundamentals of Geographical Thought, Orient Black Swan, New Delhi.
2. Dwivedi, A.K. (2021): Fundamentals of Geography, Vanya Publications, Kanpur.
3. Gregory, Derek et al eds. (2009): The Dictionary of Human Geography, 5th Edition, Wiley BlackWell, Chichester.
4. Jain, Ritu (2018): Fundamentals of Geography, Pratyush Publications, Delhi.
5. Kaushik, Dr. S.D. and Rawat, Dr. D.S. (2018): Geographical Thought and Methodology, Rastogi Publications, Meerut.
6. Khullar, D.R. (2019): Physical Geography, Kalyani Publications, Ludhiana.
7. Husain, Majid (2018): Fundamentals of Physical Geography 5th Edition, Rawat Publications, Jaipur.
8. Leong, Goh Cheng (2020): Certificate Physical and Human Geography, Oxford University Press, New Delhi.
9. Maiti, Ramkrishna and Maiti, Moumita Moitra (2021) Development of Geographical Thought – Contextualisation and Synthesis of Philosophies, Nabodaya Publications, Kolkata.
10. Maurya, Dr. S.D. (2016): History of Geographical Thought, Sharda Pustak Bhawan, Allahabad.
11. Maurya, Dr. S.D. (2016): Cultural Geography, Sharda Pustak Bhawan, Allahabad.
12. Singh, R.P. (2005): Teaching of Geography, R. Lall Book Depot, Meerut.

Note: Internet sources may be used for the areas for which books are not available.

Additional Readings:

1. Bunnett, R. B. and Parihar, Seema Bala (2019): Physical Geography in Diagrams, 4th Edition, Pearson Education, Noida.
2. Dasgupta, A.K. and A.N. Kapoor (2004): Principles of Physical Geography, S. Chand and Company, New Delhi.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Presentation through Poster and Power Point

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	2	1	3	0	2	1
CO2	2	1	3	0	2	1
CO3	2	1	3	0	2	1
CO4	2	1	3	0	2	1

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University
Academic Level: 4.5 and Semester: I
Syllabus for Minor-1 (Practical)

Name of Course	Minor				
Course Code	MNC45GEG101(P)25				
Course Title	Simple Astronomical Calculation and Scale				
Course Level	100				
Credit details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hour/Week
	1	--	--	1	2
Course Audience	Students pursuing First Semester Major in Geography				
Associated Theory Course (topics)	1. Physical Dimensions of Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to learn calculation of physical properties of the Earth
2. To facilitate learners to understand how to calculate local time and time of sun rise and sun set.
3. Learner will be able to construct and draw various types of scale.

Course Learning Outcome:

Upon completion of the course the learner will be able to:

1. Calculate physical properties of the Earth.
2. Calculate local time and time of sun rise and sun set.
3. Construct and draw various types of scale.

Details of Syllabus

Sl. No.	List of Practical	No. of Session
1	Measurement of shape and size of the Earth	1
2	Calculation of radius of the Earth	1
3	Calculation of altitudes and declination of stars	2
4	Determination of time and calculation of local time	2
5	Calculation of time of sunrise and sunset	2
6	Definition, types and methods for representation of scale	1

7	Construction and drawing of plain, diagonal, comparative and vernier scale	6

Suggested Readings:

1. Khullar, D.R. (2016): *Essentials of Practical Geography*, Academic Publishing Co, Jalandhar.
2. Maltiar, K.K. and Maltiar, (Mrs) S.R. (2022): *Concepts of Cartography*, Remote Sensing and GIS, Rajesh Publications, New Delhi.
3. Misra, R.P. et al (2014): *Fundamentals of Cartography*, 2nd Revised Edition, Concept Publishing Company, New Delhi.
4. Robinson, A.H.et al (2010): *Elements of Cartography*, Wiley India, New Delhi.
5. Saha, P. and Basu, P. (2014): *Advanced Practical Geography*, Books and Allied (P) Ltd., Kolkata
6. Sarkar, Ashis (2015): *Practical Geography – A Systematic Approach*, Orient Black Swan, New Delhi.
7. Singh, L.R. (2006): *Fundamentals of Practical Geography*, Sharda Pustak Bhawan, Allahabad.
8. Sinha, M.M.P. and Bala, Seema (2021): *Advanced Cartography and Practical Geography*, Rajesh Publications, New Delhi.

Additional Readings:

1. Singh, Gopal (1998): Map Work and Practical Geography, 4th Edition, Vikash Publishing House, New Delhi.
2. Monkhouse, F.J. and Wilkinson, H.R. (2022): Maps and Diagrammes, Alphanumera Publisher, Delhi.

List of Essential Major Equipment

1. Foot Ruler
2. Diagonal Scale
3. Vernier Scale
4. Set Squares

Major Laboratory Stores/Consumable Required

1.
2.

Essential Software (licensed/open source)

Student Activities

1. Practical Records

Manipur University
Academic Level:4.5 and Semester:I
Syllabus for SEC – 1 (Theory)

Nature of Course	SEC				
Course Code	SEC45GEG101(T) 25				
Course Title	Cartographic Techniques and Computer Application in Geography				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	2	2	--	--	2
Course Audience	Students pursuing First Semester Major in Geography				
Proposed by (for Non-Core Courses					
Pre Requisite (if any)	Students are familiar with map and computer				
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objectives:

1. This course is designed to understand the meaning of cartography and computer.
2. Learners will be able to understand how to prepare maps and diagrams.
3. Learners are expected to have a good knowledge of computer in map making.
4. Further, learners will understand the importance of Information Technology in geographical studies.

Course Learning Outcomes:

Upon completion of the course the learner will be able to:

1. Understand the nature and scope of cartography.
2. Understand the preparation of maps and diagrams.
3. Understand the computer applications in cartography.
4. Understand the knowledge of information technology.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit
I	Cartographic Techniques	Meaning, scope, and development of cartography; Present status of cartography, cartographic use of the sphere, ellipsoid, and geoid; UTM Coordinates and Geographical coordinates. Meaning and types of maps; Map designs and layout; Mechanics of map construction and map reproduction; Digital cartography – Concept, data models for digital cartographic information and map digitizing.	1
II	Computer Application in Geography	Definition of computer; Hardware and software for computer mapping; Applications of computer cartography. Representation of Geographic Data by using Relevant Software: Histogram, bar graph, line graph, scatter diagram, and pie diagram. Importance of Information Technology in Geographical Studies: Advantages of internet, browsing and surfing the geographical sites, web pages, portals, and downloading files.	1

Suggested Readings:

1. International Cartographic Association (1984): Basic Cartography for Students and Technicians, Vol.1.
2. Maltiar, K.K. and Maltiar, (Mrs) S.R. (2022): Concepts of Cartography, Remote Sensing and GIS, Rajesh Publications, New Delhi.
3. Misra, R.P. et al (2014): Fundamentals of Cartography, 2nd Edition, Concept Publishing Company, New Delhi.
4. Robinson, Arthur H. et al (2010): Elements of Cartography, 6th Edition, Wiley India(P) Ltd., New Delhi.
5. Maguire, David J. (1989): Computers in Geography, Longman, London.
6. Mather, Paul M. (1993): Computer Application in Geography, John Wiley & Sons, New York.
7. Monmonier, M.S. (1982): Computer Assisted Cartography, Prentice Hall, Englewood Cliff, New Jersey.
8. Unnwin, D.J. and Dawson, J.A. (1987): Computer Programming for Geographers, Longman, London.

Additional Readings:

1. Internet sources may be used for the areas for which books are not available.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Quizzes

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	2	1	0	3	2	1
CO2	2	1	0	3	2	1
CO3	2	1	0	3	2	1
CO4	2	1	0	3	2	1

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University
Academic Level: 4.5 and Semester: I
Syllabus for SEC-1 (Practical)

Name of Course	SEC				
Course Code	SEC45GEG101(P)25				
Course Title	Cartographic Techniques and Computer Application				
Course Level					
Credit details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hour/ Week
	1	--	--	1	2
Course Audience	Students pursuing First Semester Major in Geography				
Associated Theory Course (Topics)	1. Cartographic Techniques 2. Computer Application in Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to learn manual and digital mapping.
2. Use of information technology in geographical studies.

Course Learning Outcomes:
Upon completion of the course the learners will be able to:

1. Digitize geographical data.
2. Operate cartographic software as well as other software related to geographical studies.
3. Prepare maps and diagrams properly using relevant software.

Detailed Syllabus Content

Sl. No	List of practical	No. of Session
1	Handling of cartographic equipment.	1
2	Preparation of sphere, ellipsoid and geoid surface using computer software.	3
3	Conversion of UTM Coordinates to latitude and longitude manually and software.	3
4	Map digitizing.	2

5	Preparation of maps and diagrams representing geographic data using relevant software.	3
6	Browsing and surfing the geographical sites, webpages, portals and downloading files.	3

Suggest Readings:

1. Mather, Paul M. (1993): Computer Application in Geography, John Wiley and Sons, New York.
2. Misra, R.P etal (2014): Fundamentals of Cartography, 2nd Edition, Concept Publishing Company, New Delhi.
3. Monmonier, M.S (1982): Computer Assisted Cartography, Practice Hall, Englewood Cliff, New Jersey.
4. Breslin, Prat etal (1998): Getting to Know Arcview GIS, Environmental System Research Institute, USA.

Additional Readings:

1. Monkhouse, F.J. and Wilkinson, H.R. (2022): Maps and Diagrammes, Alphanumera Publisher, Delhi.
2. Internet sources may be used for which books are not available.

List of Essential Major Equipment

1. Cartographic instruments such as foot ruler, set squares, protector, ink bow compass, pencil bow compass, technical compass with universal holder and extension bar, divider, mini drafter, technical pen etc.
2. Computer set with latest version.

Major Laboratory Stores/Consumable Required

1. Technical pen ink.
2. Printer cartridge.
3. High quality glossary paper of various sizes.

Essential Software (licensed/open source

1. ArcGIS
2. MapInfo
3. Easy Map Maker

Student Activities:

1. Practical Record

Manipur University
Academic Level:4.5 and Semester:I
Syllabus for MDC – 1 (Theory)

Nature of Course	MDC				
Course Code	MDC45GEG101(T) 25				
Course Title	Geography of Manipur				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	3	2	1	--	3
Course Audience	Students pursuing First Semester				
Proposed by (for Non-Core Course if any)					
Pre Requisite (if any)					
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objectives:

1. Understanding the geographical features of Manipur.
2. General overview on people and demographic dimensions of Manipur.
3. General overview on economic dimensions of Manipur.

Course Learning Outcomes:

Upon completion of the course the learner will be able to:

1. Understand the physical aspects of Manipur.
2. Understand the population dynamics of Manipur.
3. Understand the economic dimensions of Manipur.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit
I	Land	Introduction, Physical Features, Drainage, Climate, Soil, Natural Vegetation	1
II	People and Economy	People of Manipur, Population, Settlement, Agriculture, Industries, Transport and Communication, Trade and Commerce	1
III	Tutorial	--	1

Suggested Readings:

1. Bhattacharyya, N. N. (2006): Manipur - Land, People and Economy. New Delhi: Rajesh Publications.
2. Laiba, Dr. M.T. (2018): Geography of Manipur, Imphal.
3. Singh, R. P. 1982. Geography of Manipur. New Delhi: National Book Trust.
4. Singh, Th. Nabakumar (2011): Geography of Manipur, New Delhi: Rajesh Publications.

Note: Internet sources may be used for the areas for which books are not available.

Additional Readings:

1. Johnstone, S.J. (1971): Manipur and the Naga Hills. Delhi: Vivek Publishing House.
2. Gopalkrishnan, R. (1996): The North-East India: Land, Economy and People. New Delhi: Har Anand Publications.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Quizzes

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	3	2	1	2	2	0
CO2	3	2	1	2	2	0
CO3	3	2	1	2	2	0

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University
Academic Level: 4.5 and Semester: II
Syllabus for Major - 2 (Theory)
FYUP 2nd Semester Geography

Nature of Course	Major				
Course Code	MJC45GEG102 (T) 25				
Course Title	Fundamentals of Physical Geography				
Course Level	100				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	3	3	--	--	3
Course Audience	Students pursuing Second Semester Major in Geography				
Proposed by (for Non-Core courses)					
Pre Requisites (if any)	Basic knowledge of Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Objective:

1. Understanding the nature of physical geography.
2. General overview on geomorphology, climatology, oceanography, hydrology and biogeography.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1.	Understand the nature and scope of physical geography.
2.	Understand the physical aspects of geography.
3.	Understand the relationship between the physical geography and other disciplines.
4.	Understand the applications of the principles of physical geography to practical real-world situation
5.	Develop a depth understanding of the processes that drive physical geography

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Nature of Physical Geography	Meaning, scope, and components of physical geography; Physical geography and other disciplines; Geological Time Scale.	9 hrs
II	Geotectonics	Origin and interior of the Earth; Origin of continents and oceans; Isostasy; Earthquakes and volcanoes; Earth movements; Faults, folds, domes, and joints; Continental Drift and Plate Tectonic Theories.	9 hrs
III	Geomorphology	Minerals and rocks; Weathering and mass wasting; Types of streams; Drainage systems and patterns; Slope elements; Landforms made by river, wind, glacier, underground water, and sea waves.	9 hrs
IV	Climatology	Elements of weather and climate; Composition and structure of the atmosphere; Insolation; Planetary wind; Rainfall; Tropical cyclones; Hydrological cycle.	9 hrs
V	Oceanography and Biogeography	Ocean bottom; Temperature, density and salinity of ocean water; Ocean current and deposits; Concept of ecosystem, food chain, carbon cycle and oxygen cycle.	9 hrs

Suggested Readings

1. Billings, Marland P. (2016): Structural Geology, 3rd Edition, Pearson Education, India, Noida.
2. Holden, Joseph ed. (2017): An Introduction to Physical Geography and the Environment, Pearson Education Ltd., Harlow, UK.
3. Husain, Majid (2018): Fundamentals of Physical Geography, 5th Edition, Rawat Publications, Jaipur.
4. Khullar, D.R. (2019): Physical Geography, Kalyani Publishers, Ludhiana.
5. Lal, D.S. (2014): Physical Geography, Sharda Pustak Bhawan, Allahabad.
6. Siddhartha, K. (2017): Physical Geography, Kitab Mahal, Allahabad.
7. Singh, Savindra (2020): Physical Geography, Prayag Pustak Bhawan, Allahabad.
8. Strahler, Alan (2016): Introducing Physical Geography, Wiley, New York.
9. Tarbuck, Edward J. et al (2016): Earth – An Introduction to Physical Geology, 11th Edition, Pearson Education India, Noida.

Additional Readings:

1. Chaudhuri, Sandipkumar (2018): Fundamentals of Geotectonics, NCBA, Kolkata.
2. Huddart, David and Timstott (2019): Earth Environments, 2nd Edition, Wiley Blakwel, Chichester.
3. Patwardhan, A.M. (2020): The Dynamic Earth System, 4th Edition, PHI Learning Ltd., New Delhi.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing

- Presentation and assignments
- Quizzes

Linkage between Programme Learning Outcomes (POs) and Course Learning Outcomes (COs)

	PLO1	PLO2	PLO3	PLO4	PLO4	PLO5	PLO6		
CO1	2	1	3	1	2	1	1		
CO2	2	1	3	1	2	1	1		
CO3	2	1	3	2	2	1	1		
CO4	2	1	3	1	2	1	1		
CO5,	2	2	1	2	3	2	1		

3: High, 2: Medium, 1: Low, 0: No corelation

Assessment Methods

- Written examination
- Seminar and presentation
- Interaction and group discussion
- Quizzes
- Problem solving exercise
- Individual and group project
- Unit Test
- Demonstration

Manipur University
Academic Level: 4.5 and Semester: II
Syllabus for Major - 2 (Practical)

Nature of Course	Major				
Course Code	MJC45GEG102 (P) 25				
Course Title	Relief Mapping, Mineral and Rock Identification and Geological Map Interpretation and Field visit				
Course Level	100				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	1	--	--	1	2
Course Audience	Students pursuing Second Semester Major in Geography				
Associated Theory Courses (Topics)	1. Physical dimensions of Geography 2. 3.				
Skill Training Required (if any)	1. 2.				
Pre-Requisite Course Required (if any)	1. 2.				
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to learn various methods of showing relief features.
2. To understand the geological structures through geological maps.
3. Learners will have field experiences.

Course Learning Outcomes:

Upon completion of the course the learner will be able to:

1. Draw various methods of showing relief features.
2. Draw geological structures from the geological maps.
3. Identify rocks and geological structures in the field.
4. Measure the attitude of the beds in the field.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Sessions
1.	Drawing of hachure, hill shading, contour, formline, and layer tints;	1
2.	Drawing of contours and their cross section of slope elements, and fluvial, wind, karst, glacial, and coastal landforms.	2
3.	Identification of drainage pattern from the 1:50,000 toposheets.	1
4.	Identification of minerals and rocks in hand specimen.	1

5.	Identification of various geological structures from the geological maps.	1
6.	Drawing of strike lines and determination of direction, amount of dip, and thickness of beds.	1
7.	Drawing of geological sections of horizontal, inclined, folded, faulted, unconformity, and complex structures and interpretation of each section.	4
8.	Visit to the hilly area of Manipur with concerned teachers and identify the rocks and structures. Measurement of direction of strike lines, and direction and amount of true dips of folds by using Brunton Compass.	3
9.	Preparation of field report.	1

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Suggested Readings

1. Basu, Partha (2021): Advanced Practical Geography, 4th Edition, Books and Allied (P) Ltd., Kolkata.
2. Bennison, George M., Oliver, Paul A. and Moseley, Keith A. (2018): An Introduction to Geological Structures and Maps, 8th Edition, Taylor and Francis Books India Pvt. Ltd., New Delhi.
3. Chadha, S.K. (2020): Elements of Geological Maps for Geology, Geography and Civil Engg., CBS Publishers and Distributors, New Delhi.
4. Gokhale, N.W. (2009): A Guide to Field Geology, CBS Publishers and Distributor, New Delhi.
5. Gokhale, N.W.(2017): Manual of Geological Maps, CBS Publishers and Distributor, New Delhi.
6. Khan, Md. Zulfequar Ahmad (1998): Textbook of Practical Geography, Concept Publishing Company, New Delhi.
7. Khullar, D.R. (2018): Essentials of Practical Geography, New Academic Publishing Co., Jalandhar.
8. Maltman, Alex (2012): Geological Map – An Introduction, Springer, New York.
9. Mathur, S.M. (2001): Guide to Field Geology, Prentice Hall India Learning Pvt. Ltd., New Delhi.
10. Sarkar, Ashis (2015): Practical Geography – A Systematic Approach, Orient Black Swan, New Delhi.
11. Sen, Ajoy Kumar (2005): Laboratory Manual of Geology, Modern Book Agency Private Ltd., Calcutta.
12. Singh,L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
13. Singh R.L. and Singh Rana P.B. (2012): Elements of Practical Geography, Kalyani Publishers, Ludhiana.

Additional Readings:

1. Kannan, Monika and Yadav, Shilpi (2022): Practical Geography, Rawat Publications, Jaipur.
2. Robinson, Arthur H. et al (2010): Elements of Cartography, 6thEdition, Wiley India, New Delhi.
3. Sen, Ajoy Kumar (2005): Laboratory Manual of Geology, Modern Book Agency Private Ltd., Calcutta.

List of Essential Major Equipment

1. Set squares

2. Brunton Compass

Major Laboratory Stores/Consumables Required

1. Trace paper

2. Arithmetic graph paper (inch)

Essential Software (Licensed/Open-Source)

1. QGIS

2. Mapmaker

3. Arc GIS

Student Activities

1. Practical Record

2. Project Report

Manipur University
Academic Level: 4.5 and Semester: II
Syllabus for Minor - 2 (Theory)

Nature of Course	Minor				
Course Code	MNC45GEG102 (T) 25				
Course Title	Introduction to Physical Geography				
Course Level	100				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	3	3	--	--	3
Course Audience	Students pursuing Second Semester Major other than Geography				
Proposed by (for Non-Core courses)					
Pre Requisites (if any)	Basic knowledge of Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Objective:

3. Understanding the nature of physical geography.
4. General overview on geomorphology, climatology, oceanography, hydrology and biogeography.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1.	Understand the nature and scope of physical geography.
2.	Understand the physical aspects of geography.
3.	Understand the relationship between the physical geography and other disciplines.
4.	Understand the applications of the principles of physical geography to practical real world situation
5.	Develop a depth understanding of the processes that drive physical geography

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Nature of Physical Geography	Meaning, scope, and components of physical geography; Physical geography and other disciplines; Geological Time Scale.	9 hrs
II	Geotectonics	Origin and interior of the Earth; Origin of continents and oceans; Isostasy; Earthquakes and volcanoes; Earth movements; Faults, folds, domes, and joints; Continental Drift and Plate Tectonic Theories.	9 hrs
III	Geomorphology	Minerals and rocks; Weathering and mass wasting; Types of streams; Drainage systems and patterns; Slope elements; Landforms made by river, wind, glacier, underground water, and sea waves.	9 hrs
IV	Climatology	Elements of weather and climate; Composition and structure of the atmosphere; Insolation; Planetary wind; Rainfall; Tropical cyclones; Hydrological cycle.	9 hrs
V	Oceanography and Biogeography	Ocean bottom; Temperature, density and salinity of ocean water; Ocean current and deposits; Concept of ecosystem, food chain, carbon cycle and oxygen cycle.	9 hrs

Suggested Readings

10. Billings, Marland P. (2016): Structural Geology, 3rd Edition, Pearson Education, India, Noida.
11. Holden, Joseph ed. (2017): An Introduction to Physical Geography and the Environment, Pearson Education Ltd., Harlow, UK.
12. Husain, Majid (2018): Fundamentals of Physical Geography, 5th Edition, Rawat Publications, Jaipur.
13. Khullar, D.R. (2019): Physical Geography, Kalyani Publishers, Ludhiana.
14. Lal, D.S. (2014): Physical Geography, Sharda Pustak Bhawan, Allahabad.
15. Siddhartha, K. (2017): Physical Geography, Kitab Mahal, Allahabad.
16. Singh, Savindra (2020): Physical Geography, Prayag Pustak Bhawan, Allahabad.
17. Strahler, Alan (2016): Introducing Physical Geography, Wiley, New York.
18. Tarbuck, Edward J. et al (2016): Earth – An Introduction to Physical Geology, 11th Edition, Pearson Education India, Noida.

Additional Readings:

4. Chaudhuri, Sandipkumar (2018): Fundamentals of Geotectonics, NCBA, Kolkata.
5. Huddart, David and Timstott (2019): Earth Environments, 2nd Edition, Wiley Blakwel, Chichester.
6. Patwardhan, A.M. (2020): The Dynamic Earth System, 4th Edition, PHI Learning Ltd., New Delhi.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Presentation and assignments

- Quizzes

Linkage between Programme Learning Outcomes (POs) and Course Learning Outcomes (COs)

	PLO1	PLO2	PLO3	PLO4	PLO4	PLO5	PLO6		
CO1	2	1	3	1	2	1	1		
CO2	2	1	3	1	2	1	1		
CO3	2	1	3	2	2	1	1		
CO4	2	1	3	1	2	1	1		
CO5,	2	2	1	2	3	2	1		

3: High, 2: Medium, 1: Low, 0: No correlation

Assessment Methods

- Written examination
- Seminar and presentation
- Interaction and group discussion
- Quizzes
- Problem solving exercise
- Individual and group project
- Unit Test
- Demonstration

Manipur University
Academic Level: 4.5 and Semester: II
Syllabus for Minor – 2 (Practical)

Nature of Course	Minor				
Course Code	MNC45GEG102 (P) 25				
Course Title	Relief Mapping, Mineral and Rock Identification and Geological Map Interpretation and Field visit				
Course Level	100				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	1	--	--	1	2
Course Audience	Students pursing Second Semester Major other than Geography				
Associated Theory Courses (Topics)	1. Physical dimensions of Geography 2. 3.				
Skill Training Required (if any)	1. 2.				
Pre-Requisite Course Required (if any)	1. 2.				
Faculty Eligibility and Specialization (if any)					

Course Description:

4. This course is designed to learn various methods of showing relief features.
5. To understand the geological structures through geological maps.
6. Learners will have field experiences.

Course Learning Outcomes:

Upon completion of the course the learner will be able to:

5. Draw various methods of showing relief features.
6. Draw geological structures from the geological maps.
7. Identify rocks and geological structures in the field.
8. Measure the attitude of the beds in the field.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Sessions
1.	Drawing of hachure, hill shading, contour, formline, and layer tints;	1
2.	Drawing of contours and their cross section of slope elements, and fluvial, wind, karst, glacial, and coastal landforms.	2
3.	Identification of drainage pattern from the 1:50,000 toposheets.	1
4.	Identification of minerals and rocks in hand specimen.	1

5.	Identification of various geological structures from the geological maps.	1
6.	Drawing of strike lines and determination of direction, amount of dip, and thickness of beds.	1
7.	Drawing of geological sections of horizontal, inclined, folded, faulted, unconformity, and complex structures and interpretation of each section.	4
8.	Visit to the hilly area of Manipur with concerned teachers and identify the rocks and structures. Measurement of direction of strike lines, and direction and amount of true dips of folds by using Brunton Compass.	3
9.	Preparation of field report.	1

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Suggested Readings

14. Basu, Partha (2021): Advanced Practical Geography, 4th Edition, Books and Allied (P) Ltd., Kolkata.
15. Bennison, George M., Oliver, Paul A. and Moseley, Keith A. (2018): An Introduction to Geological Structures and Maps, 8th Edition, Taylor and Francis Books India Pvt. Ltd., New Delhi.
16. Chadha, S.K. (2020): Elements of Geological Maps for Geology, Geography and Civil Engg., CBS Publishers and Distributors, New Delhi.
17. Gokhale, N.W. (2009): A Guide to Field Geology, CBS Publishers and Distributor, New Delhi.
18. Gokhale, N.W.(2017): Manual of Geological Maps, CBS Publishers and Distributor, New Delhi.
19. Khan, Md. Zulfequar Ahmad (1998): Textbook of Practical Geography, Concept Publishing Company, New Delhi.
20. Khullar, D.R. (2018): Essentials of Practical Geography, New Academic Publishing Co., Jalandhar.
21. Maltman, Alex (2012): Geological Map – An Introduction, Springer, New York.
22. Mathur, S.M. (2001): Guide to Field Geology, Prentice Hall India Learning Pvt. Ltd., New Delhi.
23. Sarkar, Ashis (2015): Practical Geography – A Systematic Approach, Orient Black Swan, New Delhi.
24. Sen, Ajoy Kumar (2005): Laboratory Manual of Geology, Modern Book Agency Private Ltd., Calcutta.
25. Singh,L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
26. Singh R.L. and Singh Rana P.B. (2012): Elements of Practical Geography, Kalyani Publishers, Ludhiana.

Additional Readings:

4. Kannan, Monika and Yadav, Shilpi (2022): Practical Geography, Rawat Publications, Jaipur.
5. Robinson, Arthur H. et al (2010): Elements of Cartography, 6thEdition, Wiley India, New Delhi.
6. Sen, Ajoy Kumar (2005): Laboratory Manual of Geology, Modern Book Agency Private Ltd., Calcutta.

List of Essential Major Equipment

1. Set squares

2. Brunton Compass

Major Laboratory Stores/Consumables Required

1. Trace paper

2. Arithmetic graph paper (inch)

Essential Software (Licensed/Open-Source)

1. QGIS

2. Mapmaker

3. ArsGIS

Student Activities

1. Practical Record

2. Project Report

Manipur University

Academic Level:4.5 and Semester: II

Syllabus for MDC – 2 (T)

Nature of Course	MDC				
Course Code	MDC45GEG102 (T) 25				
Course Title	Geography of India				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	3	2	1	--	3
Course Audience	Students pursuing Second Semester				
Proposed by (for Non-Core Course if any)					
Pre Requisite (if any)					
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objective:

5. Understanding the geographical features of India.
6. General overview on people and demographic dimensions of India.
7. General overview on economic dimensions of India.

Course Learning Outcome:

Upon completion of the course the learner will be able to:

1. Understand the physical aspects of India.
2. Understand the population dynamics of India.
3. Understand the economic dimensions of India.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Physical Setting	Location, Physiographic Divisions, Drainage, Climate, Soil, and Natural vegetation.	9 hrs
II	Population	Distribution, Density, Growth; Composition (Race, Caste, Religion, Language, and Tribes).	9 hrs
III	Mineral Resources	Metallic (Iron, Manganese, Copper, Bauxite, Lead, Zinc, Tungsten, Gold and Silver) and Non-Metallic (Mica, Limestone, Gypsum, Diamond and Atomic Minerals).	9 hrs
IV	Agriculture	Production and Distribution of Rice, Wheat, Maize, Millets, Cotton, Jute, Sugarcane, Tea, Coffee and Rubber.	9 hrs
V	Industry and Transport	Iron and Steel, Textiles, Automobile,	9 hrs

		Information Technology; Transport system (Railways, Roadways, Air Transport, Inland Waterways) and Major Ports.	

Suggested Readings:

1. Chatterjee, Rupali (2018): Geography of India, 2nd Edition, Global Vision Publishers House, New Delhi.
2. Khullar, D.R. (2018): India – A Comprehensive Geography, Kalyani Publishers, Ludhiana.
3. Gautam, Alka (2015): Advanced Geography of India, Sharda Pustak Bhawan, Allahabad.
4. Saxena, Pallavi (2025): Majid Husain's Geography of India, Mc Graw Hill, New Delhi.
5. Sharma, T.C. (2013): Economic Geography of India, Rawat Publications, Jaipur.
6. Singh, Jagdish (2003): India – A Comprehensive & Systematic Geography, Gyanadaya Prakashan, Gorakhpur.
7. Singh, R.L. (ed.) (1971) India: A Regional Geography, National Geographical Society of India, Varanasi.
8. Tiwari R.C. (2019): Geography of India, Pravalika Publications, Allahabad.

Additional Readings:

1. Gopal Krishan (2017) The Vitality of India: A Regional Perspective, Rawat Publication, Jaipur.
2. Singh, Gopal (2010) Geography of India, Atma Ram and Sons.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Quizzes

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	3	2	1	2	2	0
CO2	3	2	1	2	2	0
CO3	3	2	1	2	2	0

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University

Academic Level:4.5 and Semester: II

Syllabus for SEC – 2 (Theory)

Nature of Course	SEC				
Course Code	SEC45GEG102 (T) 25				
Course Title	Geographical Information System				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	2	2	--	--	2
Course Audience	Students pursuing Second Semester Major in Geography				
Proposed by (for Non-Core Courses					
Pre Requisite (if any)	Students familiar with computer				
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objective:

8. This course is designed to understand the basic concept of GIS.
9. Analysis and application of geographical data, resource management, land use study through GIS.
10. It seeks to develop new insights among students on the relevant of geographical studies within the field of geography.

Course Learning Outcome:

Upon completion of the course the learner will be able to:

4. Understand the nature and scope of GIS.
5. Understand the repreparation of geographical data through GIS.
6. Understand the GIS data structure.
7. Understand the GIS data analysis.
8. Understand the application of GIS in various field.
9. Understand the future of GIS.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Nature of GIS	Geographical Information System (GIS): Definition, components, Function and historical development; Definition and need of Land Information System. (LIS), Future of GIS; GIS in India.	6 hrs
II	Merits, Demerits and Representation of GIS Data	Advantages and disadvantages of GIS; Representation of geographical data; Converting the geospatial data.	6 hrs
III	GIS Data Structure	GIS Data Structure: Types (spatial and non-spatial), raster and vector data structure.	6 hrs
IV	GIS Data Analysis	GIS Data Analysis: Input; Geo-referencing; Editing, output, and query; Overlays.	6 hrs
V	GIS Application	Application of GIS: Landuse mapping, urban sprawl analysis, forest monitoring, thematic map, DEM and natural disasters.	6 hrs

Suggested Readings:

1. Bhatta, B. (2010): Analysis of Urban Growth and Sprawl from Remote Sensing, Springer, Berlin.
2. Bolstad, Paul (2022): GIS Fundamentals – A First Text on Geographic Information Sysytem, 7th Edition, Eider Press, MN.
3. Burrough, P.A. and McDonnell, R.A. (2000): Principles of Geographical Information System – Spatial Information System and Geo-statistics, Oxford University Press, Oxford.
4. Chang, Kang-tsung (2015): Introduction to Geographic Information System, 8thEdition, McGraw Hill, New York.
5. Demers, Michael N. (2012): Fundamentals of Geographic Information System, 4th Edition, Wiley India, New Delhi.
6. Fazal, Shahab (2023): GIS Basics, 2nd Edition, New Age International Publishers, New Delhi.
7. Garg, P.K. (2019): Principles and Theory of Geoinformatics, Khanna Book Publishing Co. (P) Ltd., New Delhi.
8. Gomarasca, M. A. (2009); Basics of Geomatic, Springer Science, New York.
9. Heywoods, I, Cornelius, Sand Carver, S. (2011): An Introduction to Geographical Information System, Prentice Hall, Upper Saddle River, NJ.
10. Nag, P. (2008): Introduction to GIS, Concept Publishing Company Pvt. Ltd., New Delhi.

Additional Readings:

1. Das, Chandan Surabhi and Mallick, Debojyoti (2020): Geospatial Techniques and Research in Geography, Enova Publications, Kolkata
2. Maltiar, K.K and Maltiar (Mrs) S.R. (2022): Concepts of Cartography, Remote Sensing and GIS, Rajesh Publications, New Delhi.

3. Misra R.P. et al (2014): Fundamentals of Cartography, 2nd Edition, Concept Publishing Company Pvt. Ltd., New Delhi.
4. Sarkar, A (2015): Practical Geography – A Systematic Approach, 3rd Edition, Orient Black Swan Pvt. Ltd., New Delhi.
5. Internet sources may be used for the areas for which books are not available.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Quizzes

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	2	1	0	3	2	1
CO2	2	1	0	3	2	1
CO3	2	1	0	3	2	1
CO4	2	1	0	3	2	1
CO5	2	1	0	3	2	1
CO6	2	1	0	3	2	1

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University

Academic Level: 4.5 and Semester: II

Syllabus for SEC – 2 (Practical)

Nature of Course	SEC				
Course Code	SEC45GEG102(P)25				
Course Title	GIS Practical				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	1	--	--	1	2
Course Audience	Students pursuing Second Semester Major in Geography				
Associated Theory Courses (Topics)	Geographic Information System				
Skill Training Required (if any)	Computer Knowledge				
Pre-Requisite Course Required (if any)	Students familiar with computer				
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to learn handling of GIS software.
2. To facilitate learners to understand how to make maps through GIS software.
3. Learners will be able to create various Geo-information through GIS.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1.	Understand the basic of GIS software.
2.	Learn the process of adding supported raster and vector data sets into GIS software.
3.	Acquire the knowledge and skills necessary to apply georeferencing to topographic sheets and satellite imagery.
4.	Generating digital data base using GIS tools through the process of digitizing.
5.	Prepare maps and models through GIS software.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Sessions
1.	Introduction to GIS Software – Arc GIS, ERDAS, QGIS, Arc Map.	1
2.	Add Data (Toposheet and satellite imagery into GIS software).	1
3.	Georeferencing Maps and Images, Projections and Datum.	1
4.	Digitization and Modifications: Point, Line and Polygon.	1
5.	Attribute Data: Attribute Tables, Editing, Joining and Calculating Fields	2
6.	Basic Data Processing and Management: Subset/Clipping, Mosaic, Converting Raster Data to Vector Data.	1
7.	Preparation of thematic maps	2
8.	Land use mapping	2
9.	Developing DEM	1
10.	Overlaying	1
11.	Landslide hazard zonation	2

Suggested Readings

1. Appiah Adjei, E.K. (2021): GIS Applications, Kwame Nkrumah University of Science and Technology.
2. Boro, Dr.Anil (2021): Handbook of Practical Remote Sensing, GIS and GPS, EBH Publishers Guwahati.
3. Kalika, Nilotpal and Ashok Kumar Bora (2025): Geoinformatics – Theory and Practice, EBH Publishers Guwahati.
4. Nair Sreeja S.(2012): Geoinformatics Applications in Disaster Management, National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India, New Delhi.
5. Shridhar, Parupalli et al (2025): A Practitioners Approach to Geographical Information System, BS Publications, Hyderabad.

Additional Readings:

1. Basu, Partha (2021): Advanced Practical Geography, 4th Edition, Books and Allied (P) Ltd., Kolkata.
2. Das, Chandan Surabhi and Debajyoti Mallick (2024): Geospatial Techniques and Research in Geography, Spellbound Publishers & Distributors, Kolkata.
3. Manugula, Dr. S.S. and Dr. Veeranna Bommakanti (2017): Phototgrammetry, GIS and Remote Sensing, Educreation Publishing, Bilaspur.
4. Internet sources may be used for the areas for which books are not available.

List of Essential Major Equipment

1. Compute Sets

Major Laboratory Stores/Consumables Required

1. High quality paper

Essential Software (Licensed/Open-Source)

1. Arc GIS,

2. QGIS,

3. Arc Map,

4. ERDAS.

Student Activities

1. Practical Record Book

Manipur University
Academic Level: 5.0 and Semester: III
Syllabus for Major - 3 (Theory)

Nature of Course	Major				
Course Code	MJC50GEG203 (T) 25				
Course Title	Fundamentals of Human Geography				
Course Level	200				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	3	3	--	--	3
Course Audience	Students pursuing Third Semester Major in Geography				
Proposed by (for Non Core courses)					
Pre Requisites (if any)	Basic knowledge of Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Objective:

1. Understanding various dimensions of human geography and cultural landscape.
2. General overview on population distribution and settlement.
3. Understanding economic structure of mankind.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1.	Understand the nature of human geography.
2.	Understand the relationship between space and society.
3.	Comprehend the adaptation of human being to the environment.
4.	Understand the population distribution and the idea of settlement.
5.	Develop a depth understanding of the economic structure of mankind.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Nature of Human Geography	Meaning, scope, and branches of human geography; Approaches to the study of human geography.	9 hrs
II	Space and Society	Races, languages, religions, and cultural regions.	9 hrs
III	Human Adaptation	Human Adaptation to Environment: Cold region – Eskimos, Hot region – Bushman, Plateau region – Gonds, Mountain region – Gujjars.	9 hrs
IV	Population and Settlement	Population distribution; Origin, function, and classification of rural and urban settlement.	9 hrs
V	Economic Structures	Economic Structures of Mankind: Production, Consumption and exchange; Types of agriculture; Human development.	9 hrs

Suggested Readings

1. Goswami, Asutosh et al (2024): Introduction to Human and Population Geography, Balaka Publishing House Kolkata.
2. Husain, Majid (2021): Human Geography, Rawat Publications, New Delhi.
3. Maurya, S.D.(2018): Human Geography, Pravalika Publications, Allahabad.
4. Maurya, S.D.(2016): Cultural Geography, Sardha Pustak Bhawan, Allahabad.
5. Patra, Punyatoya et al (2020): Perspectives in Human Geography, Concept Publishing Company, Ltd., New Delhi.
6. Rubenstein, James M. (2012): Contemporary Human Geography, Prentice Hall of India, New Delhi.
7. Saxena, H.M. (2018): Economic Geography, 2nd Edition, Rawat Publications, New Delhi.
8. Singh, Dr. L.R. (2018): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad.
9. Singh, Surendra and Jitendra Saroha (2021): Human and Economic Geography, Pearson India, Noida.

Additional Readings

1. Leong, Goh Cheng and Gillian C. Morgan (2017): Human and Economic Geography, Oxford University Press, New Delhi.
2. Singh, Th. Nabakumar (2019): Human Geography, Reliable Book Center, Imphal.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Presentation and assignments
- Quizzes

Linkage between Programme Learning Outcomes (POs) and Course Learning Outcomes (COs)

	PLO1	PLO2	PLO3	PLO4	PLO4	PLO5	PLO6
CO1	3	2	3	1	2	2	1
CO2	2	1	3	1	2	1	1
CO3	2	1	3	2	2	1	1
CO4	2	1	3	1	2	1	1
CO5	3	2	2	2	3	2	1

3: High, 2: Medium, 1: Low, 0: No corelation

Assessment Methods

- Written examination
- Seminar and presentation
- Interaction and group discussion
- Quizzes
- Problem solving exercise
- Individual and group project
- Unit Test
- Demonstration

Manipur University
Academic Level: 5.0 and Semester: III
Syllabus for Major – 3 (Practical)

Nature of Course	Major				
Course Code	MJC50GEG203 (P) 25				
Course Title	Distribution Mapping, Human Development and Field Visit				
Course Level	200				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	1			1	2
Course Audience	Students pursuing Third Semester Major in Geography				
Associated Theory Courses (Topics)	1. Fundamentals of Human Geography				
Skill Training Required (if any)	1. Basic Cartographic Skill				
Pre-Requisite Course Required (if any)	1. 2.				
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to learn various population distribution maps.
2. Designed to understand various graphs and diagrams.
3. Designed to understand various calculation of indices.
4. Learners will have field experiences.

Course Learning Outcomes:

Upon completion of the course the learners will be able to:

1. Draw various maps showing population distribution.
2. Draw various graphs and diagrams.
3. Understand various calculations of indices.
4. Experience different socio-economic activities in the field.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Sessions
1.	Preparation of Distribution Maps: Naming method showing races, languages, and religions of India or Manipur State.	2
2.	Meaning and types of graphs and diagrams.	1
3.	Preparation of simple bar diagram and pie diagram showing economic data.	2
4.	Measurement and Calculation of cephalic index.	2
5.	Calculation of human poverty index.	2

6.	Calculation of human development index.	1
7.	Visit a nearby village or town for studying human activities.	3
8.	Preparation of report.	2

Suggested Readings

1. Basu, Partha (2022): Advanced Practical Geography, 4th Edition, Books & Allied (P) Ltd., Kolkata.
2. Khullar, D.R. (2018): Essentials of Practical Geography, New Academic Publishing Co., Jalandhar.
3. Sarkar, Ashis (2015): Practical Geography – A Systematic Approach, Orient Black Swan, New Delhi.
4. Singh, Dr. L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
5. Singh, Dr. L.R. (2018): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad.

Additional Readings

1. Singh, Gopal (1998): Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
2. Monkhouse, F. J. and H.R. Wilkinson (2022): Maps and diagrams, Alphanumera Publisher, Delhi.

List of Essential Major Equipment

1. Set squares
2. Ruler
3. Protector
4. Compass
5. Eraser
6. Mechanical/technical Pencil
7. Technical Pen
8. Colour Pencil
9. Spreading Caliper

Major Laboratory Stores/Consumables Required

1. Trace paper
2. Arithmetic graph paper (inch)

Essential Software (Licensed/Open-Source)

1. QGIS
2. Mapmaker
3. ArcGIS

Student Activities

1. Practical Record
2. Project Report

Manipur University
Academic Level: 5.0 and Semester: III
Syllabus for Major - 4 (Theory)

Nature of Course	Major				
Course Code	MJC50GEG204(T) 25				
Course Title	Fundamentals of Remote Sensing, Photogrammetry, GPS and Drone				
Course Level	200				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	3	3	--	--	3
Course Audience	Students pursuing Third Semester Major in Geography				
Proposed by (for Non-Core courses)					
Pre Requisites (if any)	Basic knowledge of Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Objective:

1. Understanding the nature of Remote Sensing, Photogrammetry, GPS and Drone.
2. General overview on Image Processing and Analysis.
3. Overview on Image Interpretation and Applications of Remote Sensing.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1.	Understand basic knowledge of Remote Sensing.
2.	Understand the Image processing and analysis.
3.	Understand the processes of Interpretation and Applications of Remote Sensing
4.	Understand the details of Photogrammetry.
5.	Develop a depth understanding of the GPS and Drone.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Introducing Remote Sensing	Definition and development; Principles of remote sensing; Sensors, platforms and types of remote sensing; Advantages and limitations of remote sensing. Major Satellites (LANDSAT, IRS, SPOT and Sentinel)	9 hrs
II	Image Processing and Analysis	Pre-processing (Radiometric and Geometric Correction), Enhancement (Filtering); Classification (Supervised and Un-supervised). AI in remote sensing.	9 hrs
III	Interpretation and Applications of Remote Sensing	Principles of Image Interpretation: Remote sensing in land use and land cover, forest monitoring, water resources and natural hazards (Flood and Landslide).	9 hrs
IV	Photogrammetry	Concept, development, advantages and disadvantages of photogrammetry; Types, elements and geometry of aerial photograph; Scale factor, distortion and relief displacement, tool and equipment, resolution, flight direction, time and season, and stereoscopic coverage of aerial photograph; Parallax; Interpretation of Aerial Photograph – Land use, land cover, and environmental assessment.	9 hrs
V	GPS and Drone	Concept, history, advantage, and disadvantage of GPS; Segments of GPS: Types of GPS receivers; GPS surveying techniques; Error in GPS and correction; Application of GPS. Capturing and processing of drone image.	9 hrs

Suggested Readings

1. Bhatta, Basudeb (2021): Remote Sensing and GIS, 3rd Edition, Oxford University Press, New Delhi.
2. Chandra, A.M. (2016): Geoinformatics, New Age International Publishers, New Delhi.
3. Chandra, AM and Gosh, S.K. (2018): Remote Sensing and Geographic Information System, 2nd Edition, Narosa, New Delhi.
4. David, Dr. Anthonysamy and Dr. Mahadeo S. Jadhav (2024): Artificial Intelligence in GIS & Remote Sensing, Notion Press Platform, Bhilyagan.
5. Fazal, Shahab (2023): Remote Sensing Basic, Kalyani, Publishers, Ludhiana.
6. Frazier, Amy E. and Singh, Kunwar K. eds. (2021): Fundamentals of Capturing and Processing of Drone Imagery and Data, CRC Press, New York.
7. Garg, PK (2019): Principles and Theory of Geoinformatics, Khanna Book Publishing Co. (P) Ltd., New Delhi.
8. Jensen, John R. (2013): Remote Sensing of the Environment – An Earth Resource Perspectives, Pearson Education India, Noida.
9. Joseph George and Jeganathan C, (2018): Fundamentals of Remote Sensing, 3rd Edition, University Press, Hyderabad.
10. Lillesand, Thomas M. et al (2022): Remote Sensing and Image Interpretation – An Indian Adaptation, 7th Edition, Wiley India, New Delhi.
11. Mikhail, Edward M. et al (2012): Introduction to Modern Photogrammetry, Wiley India Pvt. Ltd., New Delhi.
12. Panda, Dr. B.C. (2009): Remote Sensing – Principle and Application, Viva Books Private Ltd., New Delhi.

13. Patel, A.N. (2018): Remote Sensing – Principles and Applications, Scientific Publishers, Jodhpur.
14. Prasad, Dr. Dilkeshwar (2026): Texbook of Remote Sensing, GIS and GPS, Rajesh Publication, New Delhi.
15. Rahman, Atiqur and Fazal, Shahab (2017): Global Positioning System – Concept, Technique and Application, New Age International Publishers, New Delhi.
16. Reddy, M. Anji (2012): Textbook of Remote Sensing and Geographical Information System, 4th Edition, BS Publications, Hyderabad.
17. Rampal, K.K. (1999): Handbook of Aerial Photography and Interpretation, Concept Publishing Company, New Delhi.

Additional Readings

1. Gupta, R.K. and Chander, Subhash (2008): Principles of Geoinformation, Jain Brothers, New Delhi.
2. Kumar, Dr. S (2017): Basics of Remote Sensing and GIS, University Science Press
3. Pandey, Shivam and Prof. Shashikant Tripathi (2020): Basic Concept of Remote Sensing GPS and GIS, Sankalp Publications, Bilaspur.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Presentation and assignments
- Quizzes

Linkage between Programme Learning Outcomes (POs) and Course Learning Outcomes (COs)

	PLO1	PLO2	PLO3	PLO4	PLO4	PLO5	PLO6
CO1	2	1	3	1	2	1	1
CO2	2	1	3	1	2	1	1
CO3	3	2	3	2	2	1	1
CO4	2	1	3	1	2	1	1
CO5,	3	2	2	2	3	2	1

3: High, 2: Medium, 1: Low, 0: No corelation

Assessment Methods

- Written examination
- Seminar and presentation
- Interaction and group discussion
- Quizzes
- Problem solving exercise
- Individual and group project
- Unit Test
- Demonstration

Manipur University
Academic Level: 5.0 and Semester: III
Syllabus for Major – 4 (Practical)

Nature of Course	Major				
Course Code	MJC50GEG204 (P) 25				
Course Title	Remote Sensing, Photogrammetry, GPS and Drone Practical				
Course Level	200				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	1			1	2
Course Audience	Students pursuing Third Semester Major in Geography				
Associated Theory Courses (Topics)	1. Fundamentals of Remote Sensing, Photogrammetry, GPS and Drone 2.				
Skill Training Required (if any)	1. Computer Knowledge 2.				
Pre-Requisite Course Required (if any)	1. 2.				
Faculty Eligibility and Specialization (if any)					

Course Description: This course is designed to understand

1. The concepts of Remote Sensing, Photogrammetry, GPS and Drone Practical
2. General overview on Image Processing and Analysis.
3. The basic skills of Image Interpretation and Applications of Remote Sensing.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1. Download images from various online platforms.
2. Understand the classification and analysis of the different images.
3. Overview on the basic skills of handling aerial photograph.
4. Determine location and height of a point by using GPS.
5. Take images, mapping and analysis by using drone.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Sessions
1.	Downloading of remote sensing images from online platforms (like Bhuvan, USGS, ASF, Copernicus etc.).	2
2.	Land use classification (Supervised and Un-supervised) using downloaded images.	2
3.	Mapping from satellite imagery – land use and land cover.	1
4.	Determination of scale of aerial photographs.	1
5.	Determination of height of objects from aerial photograph using parallax bar under a mirror stereoscope.	2

6.	Identification and mapping of physical and cultural features from aerial photograph using mirror stereoscope.	2
7.	Image interpretation of the aerial photographs on a computer platform.	1
8.	Creating digital elevation models (DEMS) and ortho – photos from aerial photograph.	2
9.	Identification of latitude, longitude and height of important points or objects in your college campus or nearby area using GPS.	1
10.	Taking images using drones, and mapping and analysis.	1

Suggested Readings

1. Basu, Partha (2022): Advanced Practical Geography, 4th Edition, Books and Allied (P) Ltd., Kolkata.
2. Boro, Dr. Anil (2021): Handbook of Practicals in Remote Sensing, GIS and GPS, EBH Publishers (India), Guwahati.
3. Casagrande, Gianluca et al eds. (2018): Small Flying Drones – Application for Geographic Observation, Springer, Gewerbestrasse, Switzerland.
4. Das, Chandan Surabhi and Mallick, Debajyoti (2024): Geospatial Technique and Research in Geography, Spellbound Publisher and Distributors, Kolkata.
5. Frazier, Amy and Singh Kunwar (2021): Fundamentals of Capturing and Processing Drone Imagery and Data, CRC Press, New York.
6. Gopi, Satheesh et al (2025): Advanced Surveying, Pearson India Noida.
7. Kalita, Nilotpal and Ashok Kumar Bora (2025): Geoinformatics – Theory and Practices, EBH Publishers Guwahati.
8. Lillesand, Thomas M. et al (2022): Remote Sensing and Image Interpretation – An Indian Adaptation, 7th Edition, Wiley India, New Delhi.
9. Maltiar, K.K. and Maltiar, (Mrs)) S.R. (2022): Concepts of Cartography, Remote Sensing and GIS, Rajesh Publications, New Delhi.
10. Misra, R.P. et al (2014): Fundamentals of Cartography, 2nd Edition, Concept Publishing Company, New Delhi.
11. Prasad, Dr. Dilkeshwar (2026): Textbook of Remote Sensing, GIS and GPS, Rajesh Publication, New Delhi.
12. Rahman, Atiqur and Fazal, Shahab (2017): Global Positioning System – Concept, Technique and Application, New Age International Publishers, New Delhi.
13. Sarkar, Ashis (2015): Practical Geography – A Systematic Approach, 3rd Edition, Orient Black Swan, New Delhi.
14. Sugdel, Jake (2020): Drone Photography – Art and Techniques, The Crowood Press Ltd., Ramsbury.

Additional Readings

1. Garg, P.K (2019): Principles and Theory of Geoinformatics, Khanna Book Publishing Co. (P) Ltd., New Delhi.
2. Manugula, Dr. S. H. and Dr. Veeranna Bonnakanta (2027): Photogrammetry, GIS and Remote Sensing, Educreation Publisher, Bilashpur.
3. Saikia, Ranjan and Thakuriah, Gitika (2015): Practical Geography, EBH Publishers (India), Guwahati.

List of Essential Major Equipment

1. Parallax Bar
2. Mirror Stereoscope
3. Aerial Photographs
4. Satellite Imagery
5. GPS
6. Drone
7. Computer Set

Major Laboratory Stores/Consumables Required

1. Glossy Paper
2. Printer Ink
3. Trace Paper

Essential Software (Licensed/Open-Source)

1. QGIS
2. Mapmaker
3. ArcGIS

Student Activities

1. Practical Record

Manipur University
Academic Level: 5.0 and Semester: III
Syllabus for Minor - 3 (Theory)

Nature of Course	Minor				
Course Code	MNC50GEG203 (T) 25				
Course Title	Introduction to Human Geography				
Course Level	200				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	3	3	--	--	3
Course Audience	Students pursuing Third Semester Minor in Geography				
Proposed by (for Non Core courses)					
Pre Requisites (if any)	Basic knowledge of Geography				
Skill Training Required (if any)					
Pre-Requisite Course Required (if any)					
Faculty Eligibility and Specialization (if any)					

Course Objective:

1. Understanding various dimensions of human geography and cultural landscape.
2. General overview on population distribution and settlement.
3. Understanding economic structure of mankind.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1.	Understand the nature of human geography.
2.	Understand the relationship between space and society.
3.	Comprehend the adaptation of human being to the environment.
4.	Understand the population distribution and the idea of settlement.
5.	Develop a depth understanding of the economic structure of mankind.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Nature of Human Geography	Meaning, scope, and branches of human geography; Approaches to the study of human geography.	9 hrs
II	Space and Society	Races, languages, religions, and cultural regions.	9 hrs
III	Human Adaptation	Human Adaptation to Environment: Cold region – Eskimos, Hot region – Bushman, Plateau region – Gonds, Mountain region – Gujjars.	9 hrs
IV	Population and Settlement	Population distribution; Origin, function, and classification of rural and urban settlement.	9 hrs
V	Economic Structures	Economic Structures of Mankind: Production, Consumption and exchange; Types of agriculture; Human development.	9 hrs

Suggested Readings

1. Goswami, Asutosh et al (2024): Introduction to Human and Population Geography, Balaka Publishing House Kolkata.
2. Husain, Majid (2021): Human Geography, Rawat Publications, New Delhi.
3. Maurya, S.D.(2018): Human Geography, Pravalika Publications, Allahabad.
4. Maurya, S.D.(2016): Cultural Geography, Sardha Pustak Bhawan, Allahabad.
5. Patra, Punyatoya et al (2020): Perspectives in Human Geography, Concept Publishing Company, Ltd., New Delhi.
6. Rubenstein, James M. (2012): Contemporary Human Geography, Prentice Hall of India, New Delhi.
7. Saxena, H.M. (2018): Economic Geography, 2nd Edition, Rawat Publications, New Delhi.
8. Singh, Dr. L.R. (2018): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad.
9. Singh, Surendra and Jitendra Saroha (2021): Human and Economic Geography, Pearson India, Noida.

Additional Readings

1. Leong, Goh Cheng and Gillian C. Morgan (2017): Human and Economic Geography, Oxford University Press, New Delhi.
2. Singh, Th. Nabakumar (2019): Human Geography, Reliable Book Center, Imphal.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Presentation and assignments
- Quizzes

Linkage between Programme Learning Outcomes (POs) and Course Learning Outcomes (COs)

	PLO1	PLO2	PLO3	PLO4	PLO4	PLO5	PLO6
CO1	3	2	3	1	2	2	1
CO2	2	1	3	1	2	1	1
CO3	2	1	3	2	2	1	1
CO4	2	1	3	1	2	1	1
CO5	3	2	2	2	3	2	1

3: High, 2: Medium, 1: Low, 0: No corelation

Assessment Methods

- Written examination
- Seminar and presentation
- Interaction and group discussion
- Quizzes
- Problem solving exercise
- Individual and group project
- Unit Test
- Demonstration

Manipur University
Academic Level: 5.0 and Semester: III
Syllabus for Minor – 3 (Practical)

Nature of Course	Minor				
Course Code	MNC50GEG203 (P) 25				
Course Title	Distribution Mapping, Human Development and Field Visit				
Course Level	200				
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	1			1	2
Course Audience	Students pursuing Third Semester Minor in Geography				
Associated Theory Courses (Topics)	1. Introduction to Human Geography				
Skill Training Required (if any)	1. Basic Cartographic Skill				
Pre-Requisite Course Required (if any)	1. 2.				
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to learn various population distribution maps.
2. Designed to understand various graphs and diagrams.
3. Designed to understand various calculation of indices.
4. Learners will have field experiences.

Course Learning Outcomes:

Upon completion of the course the learners will be able to:

1. Draw various maps showing population distribution.
2. Draw various graphs and diagrams.
3. Understand various calculations of indices.
4. Experience different socio-economic activities in the field.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Sessions
1.	Preparation of Distribution Maps: Naming method showing races, languages, and religions of India or Manipur State.	2
2.	Meaning and types of graphs and diagrams.	1
3.	Preparation of simple bar diagram and pie diagram showing economic data.	2
4.	Measurement and Calculation of cephalic index.	2
5.	Calculation of human poverty index.	2
6.	Calculation of human development index.	1

7.	Visit a nearby village or town for studying human activities.	3
8.	Preparation of report.	2

Suggested Readings

1. Basu, Partha (2022): Advanced Practical Geography, 4th Edition, Books & Allied (P) Ltd., Kolkata.
2. Khullar, D.R. (2018): Essentials of Practical Geography, New Academic Publishing Co., Jalandhar.
3. Sarkar, Ashis (2015): Practical Geography – A Systematic Approach, Orient Black Swan, New Delhi.
4. Singh, Dr. L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
5. Singh, Dr. L.R. (2018): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad.

Additional Readings

1. Singh, Gopal (1998): Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
2. Monkhouse, F. J. and H.R. Wilkinson (2022): Maps and diagrams, Alphanumera Publisher, Delhi.

List of Essential Major Equipment

1. Set squares
2. Ruler
3. Protector
4. Compass
5. Eraser
6. Mechanical/technical Pencil
7. Technical Pen
8. Colour Pencil
9. Spreading Caliper

Major Laboratory Stores/Consumables Required

1. Trace paper
2. Arithmetic graph paper (inch)

Essential Software (Licensed/Open-Source)

1. QGIS
2. Mapmaker
3. ArcGIS

Student Activities

1. Practical Record
2. Project Report

Manipur University
Academic Level:5.0 and Semester: III
Syllabus for MDC – 3 (Theory)

Nature of Course	MDC				
Course Code	MDC50GEG203(T) 25				
Course Title	Disaster Management				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	3	2	1	--	3
Course Audience	Students pursuing Third Semester other than geography				
Proposed by (for Non-Core Course if any)					
Pre Requisite (if any)					
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objective:

1. Understanding the nature of disaster.
2. Understanding the concept and management of disaster.
3. Understanding preparedness and management of disasters in India.

Course Learning Outcome:

Upon completion of the course the learner will be able to:

1.	Know the concept of disasters.
2.	Understand the idea of Disaster Management.
3.	Overview different types of Disasters.
4.	Understand do's and don't during disasters.
5.	Understand the disaster management framework in India.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Nature of Disaster	Definition, concept, risk, vulnerability, and classification of disaster; Disaster and hazard.	9 hrs
II	Concept of Disaster Management	Meaning, concept, methods and approaches of disaster management.	9 hrs
III	Disaster Management	Natural Disaster – flood, landslide, hailstorm, earthquake, and cyclone disaster with reference to India. Man Made Disasters.	9 hrs
IV	Disaster Preparedness	Mitigation, response and preparedness of disaster; Do's and Don'ts during and post-disaster.	9 hrs
V	Disaster Management in India	Laws, NDMA, SDMA, NIDM and NDRF; Indigenous knowledge and community-based disaster management.	9 hrs

Suggested Readings

1. Arulsamy, Dr S. and J. Jeyadevi (2016): Disaster Management, Neelkamal.
2. Government of India (2011): Disaster Management in India, Ministry of Home Affairs, New Delhi.
3. Pandey. Dr. Mrinalini (2014): Disaster Management, Wiley India, New Delhi.
4. Pandey, Rajendra Kumar (2020): Disaster Management in India, Sage Publications India Pvt. Ltd., New Delhi.
5. Srivastava, A.K. (2021): Text Book of Disaster Management, Scientific Publishers, New Delhi.
6. Singh, Savindra and Singh, Jeetendra (2013): Disaster Management, Pravalika Publications, Allahabad.
7. Subramanian, R. (2018): Disaster Management, Vikas Publishing House, New Delhi.
8. Sylphey, M.M. and Safeer, M.M. (2017): Introduction to Disaster Management, Prentice Hall of India, New Delhi.
9. Vaidyanathan, S. (2020): Introduction to Disaster Management – Natural Disaster and Man Made Hazards, CBS Publishers, New Delhi.

Note: Internet sources may be used for the areas for which books are not available.

Additional Readings

1. Kumar. P. (2021): Disaster Management, Oak Bridge Publications, New Delhi.
2. Sharma, S.C.(2025): Disaster Management, Khanna Book Publishing Co (P) Ltd., New Delhi.
3. Vashistha, Venod Kumar and Das, Dipak Kumar (2018): Disaster Management, Nath Ram Publications, Varanasi

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Quizzes

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	3	2	1	2	2	1
CO2	3	2	1	2	2	1
CO3	3	2	1	2	2	1
CO4	3	2	1	2	2	1
CO5	3	2	2	2	2	1

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University
Academic Level:5.0 and Semester: III
Syllabus for SEC – 3 (Theory)

Nature of Course	SEC				
Course Code	SEC50GEG203(T) 25				
Course Title	Statistical Methods in Geography				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/ Week	Total Hours/ Week
	2	2	--	--	2
Course Audience	Students pursuing Third Semester Major in Geography				
Proposed by (for Non-Core Courses					
Pre Requisite (if any)					
Skill Training Required (if any)					
Pre Requisite Course Required (if any)					
Faculty Eligibility and Specialisation (if any)					

Course Objective:

1. This course is designed to understand the use of data in geography.
2. Learners will be able to understand how to tabulate the statistical data.
3. Learners are expected to have a good knowledge of sampling.
4. Further, learners will be understanding the knowledge of distribution, association and correlations of data.

Course Learning Outcome:

Upon completion of the course the learner will be able to:

1.	Understand the significance and use of data in geography.
2.	Understand the statistical parameters.
3.	Have a good knowledge of sampling techniques.
4.	Overview of Theoretical Distributions.
5.	Understand the concepts of Association and Correlation.

Detailed Syllabus Content

Unit	Unit Name	Detailed Syllabus	Credit/Hour
I	Statistics and Geography	Use of data in geography; Significance of statistical methods in geography; Sources of and scale of measurement (nominal, ordinal, interval, and ratio).	6 hrs
II	Tabulation and Descriptive Statistics	Partition values (deciles and quartiles); Cross tabulation; Central tendency (mean, median and mode and cartographic technique); Dispersion (standard deviation, variance and coefficient of variation).	6 hrs
III	Sampling	Purposive, random, systematic, and stratified.	6 hrs
IV	Theoretical Distribution	Probability and normal distribution.	6 hrs
V	Association and Correlation	Rank correlation, product moment correlation, and regression and testing the significance.	6 hrs

Suggested Readings

1. Alvi, Zamir (2008): Statistical Geography – Methods & Applications, Rawat Publications, Jaipur.
2. Burt, James E., Barber, Gerald M. and Rigby, David L. (2009): Elementary Statistics for Geography, The Guilford Press, New York.
3. Jha, Shiva Nand (2020): Statistical Methods in Geography, Raghav Publications, New Delhi.
4. Mc Carroll, Danny (2017): Simple Statistical Test for Geography, CRC, Press, Boca Raton.
5. Mahmood, Aslam (2008): Statistical Method in Geographical Studies, Rajesh Publications, New Delhi.
6. Mandal, R.B. (2014): Statistics for Geographers and Social Scientists, Concept Publishing House, New Delhi.
7. Methew, John A.(1981): Quantitative and Statistical Approaches to Geography – A Practical Manual, Pergamon Press, Oxford.
8. Pal, S.K. (1998): Statistics for Geoscientists, Concept Publishing Company, New Delhi.
9. William, G.B.G. (1984): Introduction to Statistics for Geographers and Earth Scientists, Mac Millan, London.

Additional Readings

1. Mckillup, Steve and Dyar, Melinda Darby (2010): Geostatistics Explained: An Introductory Guide for Earth Scientists, Cambridge University Press, Cambridge.
2. Sarkar, Ashis (2013): Quantitative Geography – Techniques and Presentation, Orient Black Swan, New Delhi.
3. Walford, Negel (2011): Practical Statistics for Geographers and Earth Scientists, Wiley - BlackWell Chichester.
4. Weiss, Neil A. (1997): Introductory Statistics, 4th Edition, Addison - Wesley, Publishing Co. Inc., Reading.

Course Teaching-Learning Process

The important relevant teaching and learning processes involved in this course are –

- Class lectures
- Seminar
- Group discussion and workshop
- Question Framing
- Quizzes

Linkage between Programme Learning Outcome (POs) and Course Learning Outcome (COs)

L	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	2	1	1	1	2	1
CO2	3	2	1	1	2	1
CO3	2	1	1	1	2	1
CO4	2	1	1	1	2	1
CO5	3	2	2	2	1	1

3: High, 2: Medium, 1: Low, O: No Correlation

Assessment Methods

- Written examination
- Close-book and open-book test
- Problem solving exercise
- Individual and group project
- Seminar and presentation
- Interaction session

Manipur University
Academic Level: 5.0 and Semester: III
Syllabus for SEC – 3 (Practical)

Nature of Course	SEC				
Course Code	SEC50GEG203(P)25				
Course Title	Statistical Exercises in Geography				
Course Level					
Credit Details	Total Credit	Lecture/ Week	Tutorial/ Week	Practical/Week	Total Hours/ Week
	1	--	--	1	2
Course Audience	Students pursuing Third Semester Major in Geography				
Associated Theory Courses (Topics)	1. Statistical Methods in Geography 2.				
Skill Training Required (if any)	1. 2.				
Pre-Requisite Course Required (if any)	1. 2.				
Faculty Eligibility and Specialization (if any)					

Course Description:

1. This course is designed to understand the use of data in geography.
2. Learners will be able to understand how to tabulate and calculate the statistical data.
3. Learners are expected to have a good knowledge of sampling.
4. Further, learners will be understanding the knowledge of distribution, association and correlations of data.

Course Learning Outcomes: Upon completion of the course the learners will be able to

1. Understand the significance and use of data in geography.
2. Calculate the Statistical parameters.
3. Exercise various Sampling techniques.
4. Calculate of Theoretical Distributions.
5. Calculate the Correlation, Regression and level of significance.

Detailed Syllabus Content

Sl. No.	List of Practical	No. of Sessions
1.	Tabulation of geographical data and graphical representation.	2
2.	Calculation of mean, median and mode with diagrammatic representation.	2
3.	Calculation of deciles and quartiles.	2
4.	Calculation of standard deviation, variance, and co-efficient of variation.	2
5.	Exercises related to purposive, random, systematic and stratified sampling.	2
6.	Exercises on the topics of anxioms of probability, probability of compound events, binomial distribution, poisson distribution and normal distribution.	2
7.	Calculation of rank corelation, product moment corelation and regression with testing the significance.	3

Suggested Readings

1. Alvi, Zamir (2008): Statistical Geography – Methods & Applications, Rawat Publications, Jaipur.
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List of Essential Major Equipment

1. Ruller
2. Pencil
3. Mechanical Pen

Major Laboratory Stores/Consumables Required

1. Graph Paper
2. Drawing Paper

Essential Software (Licensed/Open-Source)

1. SPSS
2. Jamovi/JASP

Student Activities

1. Record Book