NEP 2020: Post Graduate Curricular Framework (PGCF) 2024

# UNIVERSITY OF DELHI

## POST GRADUATE PROGRAMS IN GEOGRAPHY

## MASTER OF ARTS
## (GEOGRAPHY)

**TWO YEARS PG PROGRAM AFTER COMPLETION OF THREE-YEAR UG PROGRAM (3+2)**
**ONE YEAR PG PROGRAM AFTER COMPLETION OF FOUR-YEAR UG PROGRAM (4+1)**

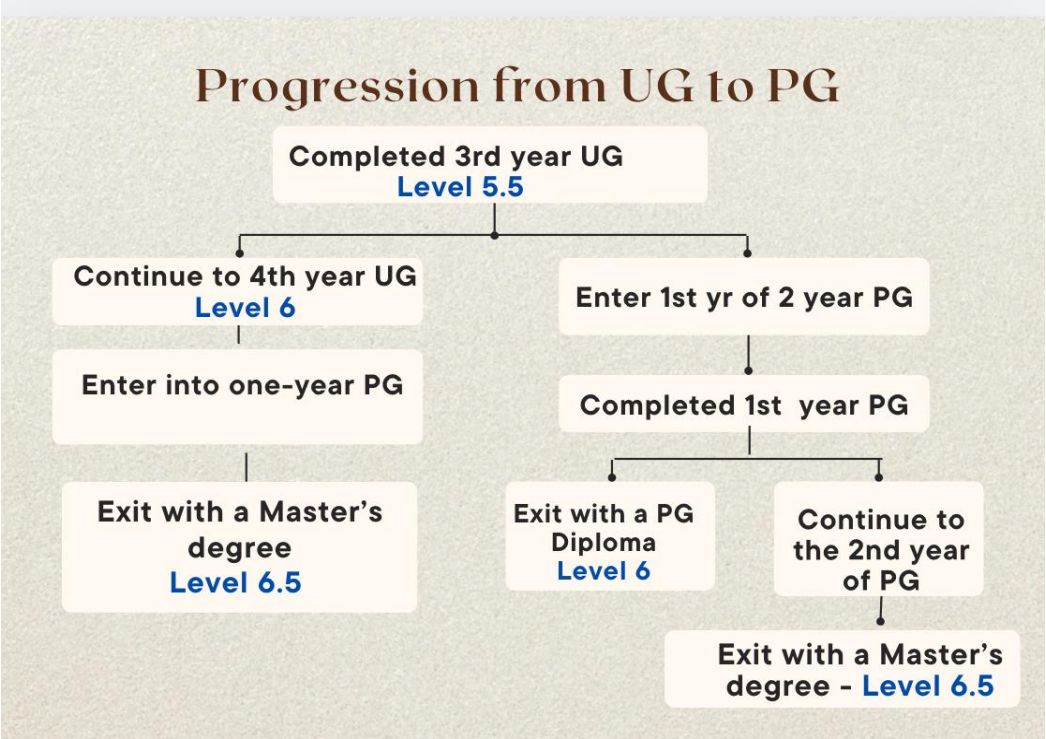
## PROGRAMME STRUCTURE, COURSES AND SYLLABI

(Effective from Academic Year 2025-26)

Revised Syllabus is uploaded as provided by the Faculty of Social Science and approved by Academic Council on dd-mm-2025 and Executive Council on dd-mm-2025

# DEPARTMENT OF GEOGRAPHY
## DELHI SCHOOL OF ECONOMICS
## UNIVERSITY OF DELHI
## POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024
## (Based on New Education Policy (NEP) 2020)
## POST GRADUATE (PG) PROGRAMMES FRAMEWORK
## AN INTRODUCTION

### PROGRESSION FROM UNDER GRADUATE (UG) TO POST GRADUATE (PG) PROGRAMS




### PROGRAMMES OF STUDY WITH EQUIVALENT QUALIFICATION LEVELS

First Year of Four Years UG Programme – Level 4.5
Second Year of Four Years UG Programme – Level 5.0
Third Year of Four Years UG Programme – Level 5.5
Fourth Year of Four Years UG Programme – Level 6.0

First year of Two Years PG Programme (after 3 Year UG) – Level 6.0
Second Year of Two Years PG Programme (after 3 Year UG) – Level 6.5
First year of One Year PG Programme (after 4 Year UG) – Level 6.5

First year of Two Years PG Programme (after 4 Year UG) – Level 6.5
Second year of Two Years PG Programme (after 4 Year UG) – Level 7.0

# DEPARTMENT OF GEOGRAPHY
## DELHI SCHOOL OF ECONOMICS
## UNIVERSITY OF DELHI
## POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024
## (Based on New Education Policy (NEP) 2020)
## POST GRADUATE (PG) PROGRAMMES FRAMEWORK
## AN INTRODUCTION

### POST GRADUATE (PG) PROGRAMMES FRAMEWORK 2024

- **Two years PG Programme after completion of Three-Year UG Programme (3+2)**
- **One year PG Programme after completion of Four-Year UG Programme (4+1)**
  - **Structure 1 (Level 6.5): PG Curricular Structure with only "Course Work"**
  - **Structure 2 (Level 6.5): PG Curricular Structure with "Course work and Research"**
    A. **"Dissertation Writing" track**
    B. **"Academic Projects" track**
    C. **"Entrepreneurship" track**
  - **Structure 3 (Level 6.5): PG Curricular Structure with only "Research"**


**DEPARTMENT OF GEOGRAPHY**
**DELHI SCHOOL OF ECONOMICS**
**UNIVERSITY OF DELHI**
**POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024**
**(Based on New Education Policy (NEP) 2020)**
**POST GRADUATE (PG) PROGRAMMES FRAMEWORK**
**AN INTRODUCTION**


## TWO YEARS PG PROGRAMME AFTER COMPLETION OF THREE-YEAR UG PROGRAMME (3+2)

### 1st Year of PG curricular structure for Two-year PG Programmes (Level 6.0)

| Semester | DSC | DSE | 2 Credit course | Dissertation/ Academic Project/ Entrepreneurship | Total Credits |
|---|---|---|---|---|---|
| **Semester I** | **DSC-1**<br>**DSC-2**<br>**DSC-3**<br>**(12 credits)** | **DSE-1**<br>**DSE-2**<br>OR<br>**DSE-1**<br>**GE-1**<br>**(8 credits)** | Skill-based course / workshop / Specialised laboratory / Hands on Learning<br>**(2 credits)** | Nil | **22** |
| **Semester II** | **DSC-4**<br>**DSC-5**<br>**DSC-6**<br>**(12 credits)** | **DSE-3**<br>**DSE-4**<br>OR<br>**DSE-2**<br>**GE-2**<br>**(8 credits)** | Skill-based course / workshop / Specialised laboratory / Hands on Learning<br>**(2 credits)** | Nil | **22** |

### 2nd Year of PG curricular structure for Two-year PG Programme (Level 6.5)

| Semester | DSC | DSE | 2 Credit course | Dissertation/ Academic Project/ Entrepreneurship | Total Credits |
|---|---|---|---|---|---|
| **Semester III** | **DSC-7**<br>**DSC-8**<br>**(8 credits)** | **DSE-5**<br>**DSE-6**<br>**DSE-7**<br>OR<br>**DSE-3**<br>**DSE-4**<br>**GE-3**<br>**(12 credits)** | Skill-based course / workshop / Specialised laboratory / Internship/ Apprenticeship / Hands on Learning<br>**(2 credits)** | Nil | **22** |
| **Semester IV** | **DSC-9**<br>**DSC-10**<br>**(8 credits)** | **DSE-7**<br>**DSE-8**<br>**DSE-9**<br>OR<br>**DSE-5**<br>**DSE-6**<br>**GE-4**<br>**(12 credits)** | Skill-based course / workshop / Specialised laboratory / Internship/ Apprenticeship / Hands on Learning<br>**(2 credits)** | Nil | **22** |

**DEPARTMENT OF GEOGRAPHY**
**DELHI SCHOOL OF ECONOMICS**
**UNIVERSITY OF DELHI**
**POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024**
**(Based on New Education Policy (NEP) 2020)**
**POST GRADUATE (PG) PROGRAMMES FRAMEWORK**
**AN INTRODUCTION**

## ONE YEAR PG PROGRAMME AFTER COMPLETION OF FOUR-YEAR UG PROGRAMME (4+1)

**Structure 1 (Level 6.5): PG Curricular Structure with only "Course Work"**

| Semester | DSC | DSE | 2 Credit course | Dissertation/ Academic Project/ Entrepreneurship | Total Credits |
|---|---|---|---|---|---|
| **Semester III** | **DSC-7**<br>**DSC-8**<br>**(8 credits)** | **DSE-5**<br>**DSE-6**<br>**DSE-7**<br>OR<br>**DSE-3**<br>**DSE-4**<br>**GE-3**<br>**(12 credits)** | Skill-based course / workshop / Specialised laboratory / Internship/ Apprenticeship / Hands on Learning<br>**(2 credits)** | Nil | **22** |
| **Semester IV** | **DSC-9**<br>**DSC-10**<br>**(8 credits)** | **DSE-7**<br>**DSE-8**<br>**DSE-9**<br>OR<br>**DSE-5**<br>**DSE-6**<br>**GE-4**<br>**(12 credits)** | Skill-based course / workshop / Specialised laboratory / Internship / Apprenticeship / Hands on Learning<br>**(2 credits)** | Nil | **22** |

The Structure 1 (Level 6.5) of the PG Curricular Structure with only "Course Work", is identical to the 2nd Year of PG curricular structure for Two-year PG Programme (Level 6.5).

**DEPARTMENT OF GEOGRAPHY**
**DELHI SCHOOL OF ECONOMICS**
**UNIVERSITY OF DELHI**
**POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024**
**(Based on New Education Policy (NEP) 2020)**
**POST GRADUATE (PG) PROGRAMMES FRAMEWORK**
**AN INTRODUCTION**

## ONE YEAR PG PROGRAMME AFTER COMPLETION OF FOUR-YEAR UG PROGRAMME (4+1)

**Structure 2 (Level 6.5): PG Curricular Structure with "Course work and Research"**

| Semester | DSC | DSE | 2 Credit course | Dissertation/ Academic Project/ Entrepreneurship | Total Credits |
|---|---|---|---|---|---|
| **Semester III** | **DSC- 7**<br>**DSC -8**<br>**(8 credits)** | **DSE-5**<br>**DSE-6**<br>OR<br>**DSE-3,**<br>**GE-3***<br>**(8 credits)** | Nil | See detailed outcomes below<br>**(6 credits)** | **22** |
| **Semester IV** | **DSC-9**<br>**DSC-10**<br>**(8 credits)** | **DSE-7**<br>**DSE-8**<br>OR<br>**DSE-4**<br>**GE-4***<br>**(8 credits)** | Nil | See detailed outcomes below<br>**(6 credits)** | **22** |

The Structure 2 (Level 6.5) of the PG Curricular Structure with "Course work and Research" has following three tracks:

A. "Dissertation Writing" Track
B. "Academic Projects" Track
C. "Entrepreneurship" Track

Those who opt for 'Dissertation Writing' or 'Academic Projects' track, may study only the DSEs or select any GE of their choice, while those opting for 'Entrepreneurship' track, will select one GE related to Entrepreneurship in each of the Semesters III and IV.

*The Dissertation / Project Report / Entrepreneurship Work should be an original work and not a repetition of work done earlier in the 4th Year of the UG programme, though it may be an extension of that work.*

The expected outcomes of each of the three tracks are explained below.

**A. "Dissertation Writing" – the outcomes expected are as follows:**

**Semester III**

The following four outcomes must be achieved by the end of Semester III:

1) Research Problem identification
2) Review of literature
3) Research design formulation
4) Commencement of experimentation, fieldwork, or similar tasks

**Semester IV**

The following three outcomes must be achieved by the end of Semester IV:

1) Completion of experimentation / fieldwork
2) Submission of dissertation
3) Research output in the form of any one of the following –
   - Prototype or product development / patent
   - Any other scholastic work as recommended by the BRS and approved by the Research Council
   - Publication in a reputed Journals such as Scopus indexed journals or other similar quality journals
   - Book or book chapter in a publication by a reputed publisher

**B. "Academic Projects" – the outcomes expected are as follows:**

All academic projects should be application based research, and not an exploratory or descriptive research (except book translation or projects without a research component such as those in Master of Fine Arts)

**Semester III**

The following four outcomes must be achieved by the end of Semester III:

1) Research Problem identification
2) Review of literature
3) Research design formulation
4) Commencement of experimentation, fieldwork, or similar tasks

**Semester IV**

The following three outcomes must be achieved by the end of Semester IV:

1) Completion of the experimentation, fieldwork or similar task.
2) Submission of project report
3) Research output in the form of any one of the following –
   - Prototype or product development or patent
   - Any other scholastic work as recommended by the BRS and approved by the Research Council
   - Publication in a reputed Journals such as Scopus indexed journals or other similar quality journals
   - Draft policy formulation and submission to the concerned Ministry
   - Book or book chapter in a publication by a reputed publisher
   - Book translation (for Language departments)

**C. "Entrepreneurship" – the outcomes expected are as follows:**

**Semester III**

| Week | Topic | Deliverable | Activities | Mentor Checkpoint |
|---|---|---|---|---|
| 1-2 | Idea Generation and Validation | Submission of at least three potential start-up ideas. | Conduct market research to validate the viability of each idea. | Review and feedback on the initial ideas. |
| 3-4 | Finalizing the Business Idea | Selection of the final business idea based on research and mentor feedback. | Develop a preliminary business model canvas. | Approval of the final business idea. |
| 5-6 | Market Research and Customer Discovery | Detailed market research report and customer discovery interviews. | Identify target market, customer segments, and key competitors. | Presentation of market research findings. |
| 7-14 | Prototype Development / Minimum Viable Product (MVP) and Business Model Refinement | Development of a prototype or MVP. Refined business model canvas including value proposition, customer segments, and revenue streams. | Design and build a basic version of the product or service. Test and iterate the business model based on prototype/MVP feedback. | Prototype/MVP review and feedback. |
| 11-12 | Financial and Legal Planning | Initial financial plan including cost structure, pricing strategy, and funding requirements. | Prepare a basic financial plan, including a budget and revenue forecast; review IPR potential | Financial plan and IPR review. |
| 13-14 | Pitch Preparation | Development of a pitch deck summarizing the business idea, market opportunity, prototype, and financials. | Create and refine a presentation for potential investors or stakeholders. | Practice pitch session with feedback. |
| 15-16 | Final Presentation and Review | Final pitch presentation to a panel of mentors, faculty, and possibly industry experts. | Deliver a polished pitch, receive feedback, and make final adjustments. | Final assessment and grading based on the pitch and overall progress throughout the semester. |


**DEPARTMENT OF GEOGRAPHY**
**DELHI SCHOOL OF ECONOMICS**
**UNIVERSITY OF DELHI**
**POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024**
**(Based on New Education Policy (NEP) 2020)**
**POST GRADUATE (PG) PROGRAMMES FRAMEWORK**
**AN INTRODUCTION**


**Semester IV**

| Week | Topic | Deliverable | Activities | Mentor Checkpoint |
|---|---|---|---|---|
| 1-2 | Review and Refinement of Prototype / MVP | Review of the progress made in the 7th semester, including feedback from the final pitch. | Refine the business model, prototype, and financial plan based on mentor feedback and learnings from the 7th semester. | Review and approval of the refined business plan and prototype/MVP |
| 3-12 | Legal and Regulatory Compliance | Documentation of all legal requirements, including business registration, intellectual property rights, and compliance with industry-specific regulations. | Complete the legal registration of the business and ensure all necessary licenses and permits are obtained | Legal compliance review and feedback. |
| 5-8 | Operational Planning | Detailed operational plan, including supply chain management, production schedules, and quality assurance processes. | Finalize partnerships with suppliers, set up production or service delivery processes, and establish quality control measures. | Review and approval of the operational plan. |
| 5-10 | Marketing and Sales Strategy | Comprehensive marketing and sales plan, including market entry strategy, branding, and pricing. | Develop and test marketing campaigns, refine branding and messaging, and establish sales channels. | Marketing and sales strategy review and feedback. |
| 9-14 | Financial Planning and Fundraising | Finalized financial plan, including cash flow projections, break-even analysis, and funding requirements. | Prepare for fundraising by identifying potential investors, preparing financial documents, and practicing pitches. | Financial plan review and practice pitch sessions. |
| 9-14 | Risk Management and Contingency Planning | Risk management plan detailing potential risks and corresponding mitigation strategies. | Identify key risks (e.g., market, operational, financial) and | Risk management plan review and feedback. |

| Week | Topic | Deliverable | Activities | Mentor Checkpoint |
|---|---|---|---|---|
| | | | develop contingency plans. | |
| 13-14 | Final Preparations for Launch | Final preparations for market launch, including any final adjustments to the product/service, operational processes, and marketing efforts. | Conduct a soft launch or beta testing phase to gather final feedback, finalize logistics, and ensure readiness for full market entry. | Review and approval of launch readiness. |
| 15-16 | Final Presentation and Review | Comprehensive final presentation summarizing the entire project, including business model, operations, financials, marketing, and launch plan. | Deliver the final pitch to a panel of mentors, faculty, and industry experts, followed by the official market launch. | Final evaluation and feedback, with an emphasis on the feasibility of the launch and overall project success. |

Note: Additional outcomes of Entrepreneurship may be added / revised by the concerned Faculty / Department Committee to suit the Master's level Programme.

**DEPARTMENT OF GEOGRAPHY**
**DELHI SCHOOL OF ECONOMICS**
**UNIVERSITY OF DELHI**
**POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024**
**(Based on New Education Policy (NEP) 2020)**
**POST GRADUATE (PG) PROGRAMMES FRAMEWORK**
**AN INTRODUCTION**

## ONE YEAR PG PROGRAMME AFTER COMPLETION OF FOUR-YEAR UG PROGRAMME (4+1)

**Structure 3 (Level 6.5): PG Curricular Structure with only "Research"**

| Semester | DSC | DSE (related to identified research field) | Research Methods/ Tools/ Writing (2 courses) | One intensive problem-based research | Total Credits |
|---|---|---|---|---|---|
| **Semester III** | **1 DSC** (course related to the area identified for research) **(4 Credits)** | **1 DSE** (course related or allied to the area identified for research) **(4 Credits)** | (a) **Advanced Research Methodology** of the core discipline **+** (b) **Tools for Research** **(2+2 = 4 credits)** | Outcomes are listed below the table **(10 credits)** | **22** |
| **Semester IV** | - | **1 DSE** (course related or allied to the area identified for research) **(4 Credits)** | **Techniques of research writing** **(2 credits)** | Outcomes are listed below the table **(16 credits)** | **22** |

**The outcomes expected are as follows:**

**Semester III**

The following four outcomes must be achieved by the end of Semester III:
1) Research problem identification
2) Review of literature
3) Research design formulation
4) Phase I – Initial phase of research experimentation, completion of pilot project etc.

**Semester IV**

The following three outcomes must be achieved by the end of Semester IV:
1) Phase II – Final phase of experimentation / fieldwork
2) Dissertation / project report submission
3) Research output in the form of any one of the following –
   a) Developed a patent or prototype of a product which meets the Technology Readiness Level 3/4 (TRL-3 or TRL-4) as defined by CSIR

b) Publication in Scopus indexed journals [#]
c) Publication of a book by a reputed publisher [#] (National/International) as recommended by the BRS and approved by the Research Council.

[#] Authors have to be the student and his/her supervisor(s). Additional authors has to be approved by the Chairperson, Research Council. This permission is mandatory prior to commencement of Phase II of the research.

# DEPARTMENT OF GEOGRAPHY
# DELHI SCHOOL OF ECONOMICS
# UNIVERSITY OF DELHI
# NEP 2020: POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024
# POST GRADUATE PROGRAMS IN GEOGRAPHY

## TABLE 1: TWO YEARS PG PROGRAM AFTER COMPLETION OF THREE-YEAR UG PROGRAM (3+2)
## MA IN GEOGRAPHY – PART 1 (LEVEL 6.0) – SEMESTER I – LIST OF COURSES

| UPC | COURSE CODE | COURSE NAME | CREDITS | | | |
|---|---|---|---|---|---|---|
| | | | L | T | P | Total |
| **DISCIPLINE SPECIFIC CORE (DSC) COURSES (ALL Compulsory)** | | | | | | |
| 122901101 | GEOG-C101 | Geomorphological Analysis | 3 | 1 | 0 | 4 |
| 122901102 | GEOG-C102 | Geography of Population and Migration | 3 | 1 | 0 | 4 |
| 122901103 | GEOG-C103 | Geography in Practice: Field Investigation (Practical) | 2 | 0 | 2 | 4 |
| **DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any TWO †)** | | | | | | |
| 122902101 | GEOG-E101 | Cultural Geography | 3 | 1 | 0 | 4 |
| 122902102 | GEOG-E102 | Environmental Impact Assessment | 3 | 0 | 1 | 4 |
| 122902103 | GEOG-E103 | Foundations of Geospatial Science (Practical) | 2 | 0 | 2 | 4 |
| 122902104 | GEOG-E104 | Geographies of Gender and Development in South Asia | 3 | 1 | 0 | 4 |
| 122902105 | GEOG-E105 | Geography of Urban Environment | 3 | 1 | 0 | 4 |
| 122902106 | GEOG-E106 | Hydrology and Water Resources Management | 3 | 1 | 0 | 4 |
| 122902107 | GEOG-E107 | Techniques and Methods of Regional Analysis | 3 | 1 | 0 | 4 |
| 122902108 | GEOG-E108 | Territorial Bases of Politics in India | 3 | 1 | 0 | 4 |
| 122902109 | GEOG-E109 | Urban Geography | 3 | 1 | 0 | 4 |
| **SKILL BASED (SB) COURSE (Compulsory)** | | | | | | |
| 122903101 | GEOG-S101 | Building Geo-database (Practical) | 1 | 0 | 1 | 2 |

Note: Students will have to complete 22 Credits, comprising 6 Courses – 3 DSC, 2 DSE (or 1 DSE and 1 GE), and 1 SE. † Students will select from those being offered by the department.
*General Elective (GE) Courses are offered to post-graduate students of the Faculty of Arts, Faculty of Social Science, and Department of Environment Studies, subject to additional rules, as announced by the department.*

# DEPARTMENT OF GEOGRAPHY
# DELHI SCHOOL OF ECONOMICS
# UNIVERSITY OF DELHI
# NEP 2020: POST GRADUATE CURRICULAR FRAMEWORK (PGCF) 2024
# POST GRADUATE PROGRAMS IN GEOGRAPHY

## TABLE 2: TWO YEARS PG PROGRAM AFTER COMPLETION OF THREE-YEAR UG PROGRAM (3+2)
## MA IN GEOGRAPHY – PART 1 (LEVEL 6.0) – SEMESTER II – LIST OF COURSES

| UPC | COURSE CODE | COURSE NAME | CREDITS | | | |
|---|---|---|---|---|---|---|
| | | | L | T | P | Total |
| **DISCIPLINE SPECIFIC CORE (DSC) COURSES (ALL Compulsory)** | | | | | | |
| 122901201 | GEOG-C201 | Climatology and Biogeography | 3 | 1 | 0 | 4 |
| 122901202 | GEOG-C202 | Contemporary Human Geography | 3 | 1 | 0 | 4 |
| 122901203 | GEOG-C203 | Statistical Methods in Geoscience (Practical) | 3 | 1 | 0 | 4 |
| **DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any TWO †)** | | | | | | |
| 122902201 | GEOG-E201 | Cultural Policy and Heritage Governance | 3 | 1 | 0 | 4 |
| 122902202 | GEOG-E202 | Digital Ethnography (Practical) | 2 | 0 | 2 | 4 |
| 122902203 | GEOG-E203 | Everyday Geographies | 2 | 0 | 2 | 4 |
| 122902204 | GEOG-E204 | Geography of Agricultural Transformation | 3 | 1 | 0 | 4 |
| 122902205 | GEOG-E205 | Geography of Global Capitalism | 3 | 1 | 0 | 4 |
| 122902206 | GEOG-E206 | Integrated Watershed Management | 3 | 1 | 0 | 4 |
| 122902207 | GEOG-E207 | Regional Geography | 3 | 1 | 0 | 4 |
| 122902208 | GEOG-E208 | Social Geography of India | 3 | 1 | 0 | 4 |
| **SKILL BASED (SB) COURSE (Compulsory)** | | | | | | |
| 122903201 | GEOG-S201 | GIS for Decision Support System (Practical) | 1 | 0 | 1 | 2 |

Note: Students will have to complete 22 Credits, comprising 6 Courses – 3 DSC, 2 DSE (or 1 DSE and 1 GE), and 1 SE. † Students will select from those being offered by the department.
*General Elective (GE) Courses are offered to post-graduate students of the Faculty of Arts, Faculty of Social Science, and Department of Environment Studies, subject to additional rules, as announced by the department.*

# DISCIPLINE SPECIFIC CORE (DSC) COURSE – GEOG-C101: GEOMORPHOLOGICAL ANALYSIS (UPC 122901101)

| Course title & Code | Credits | Duration (Hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| **GEOG-C101: GEOMORPHOLOGICAL ANALYSIS (UPC 122901101)** | **4** | **3** | **1** | **0** | **BA/BSc in Geography** | |

## Learning Objectives:

The learning objectives of this course are as follows:

- An understanding of the linkages between landscape form and processes.
- Familiarity and experience applying fundamental concepts in physical systems.
- Practice in using models, data and logical reasoning to critically evaluate and connect information about geomorphic processes.

## Learning Outcomes:

The learning outcomes of this course are as follows:

- The student will be able to explain basic principles for the development of landforms through time.
- The course will impart knowledge about concepts and various approaches of geomorphological analysis.
- They will also be able to do geomorphological analysis using a trio (processes, time and stages) in the development of landforms.

## Course Outline:

**Unit 1: Introduction:** Approaches in analysis of geomorphology, fundamental concepts in geomorphology, scopes of geomorphology; planetary geomorphology; approaches to planetary geomorphology, landforms development

**Readings**


- Bierman, P.R. and Montgomery, D.R. 2014. Key Concepts in Geomorphology, Macmillan Education, New York.
- Haggett, R.J. 2011. Fundamentals of Geomorphology, Routledge, New York.
- Thornbury, W.D. 1969. Principles of Geomorphology, John Wiley and Sons, New York.


**Unit 2: Global morphology and tectonics:** Development of ideas of global tectonics, continental drift, palaeo-magnetic evidence, global seismicity, sea-floor spreading; plate tectonics, mountain building with the Himalaya as an example.

**Readings**

- Condie, K.C. 2003. Plate Tectonic and Crustal Evolution, Butterworth-Heinemann, Oxford, Burlington.
- Singh Savindra. 2014. Prayag Pustak Bhawan, Allahabad.

**Unit 3: Surface processes and landforms:** slope processes and forms, fluvial processes and landforms, aeolian processes and landforms, glacial and periglacial processes and landforms, work of ocean and coastal landforms

**Readings**

- Knighton, A.D. 1984. Fluvial Forms and Processes, Edward Arnold Publishers Ltd., London, U.K.
- Clark, M.J. (ed.) 1988. Advances in Periglacial Geomorphology, John Wiley and Sons Ltd., Chichester, U.K.
- Schumm, S.A. 1977. The Fluvial System, John Wiley and Sons, Inc., New York.

**Unit 4: Endogenetic and Exogenetic Processes Interaction:** rate of uplift, measurement techniques, denudation rates, factors controlling denudation rates, effects of tectonics on drainage development, sea level change

**Readings**

- Kale, V.S. and Gupta, A. 2001. Introduction to Geomorphology, Orient Longman, Hyderabad, India.
- Summerfield, M.A. 1991. Global Geomorphology, Pearson Prentice Hall, U.K.

**Tutorial Exercises**

- Discussion on various approaches to geomorphological analysis.
- Mapping tectonic plate movements and resultant features.
- Deliberations on different processes, time, and stages of landform development?
- Demonstration of different slope processes and forms (field exposure).
- Discussion on factors controlling denudation rates.

**Practical Record**: Not Applicable

**Readings:**

**Essential Readings**:


- Allison, Robert (ed.) 2002. Applied Geomorphology: Theory and Practice, John Wiley and Sons Ltd., Chichester, U.K.
- Anderson, R.S. and Anderson, S.P. 2010. Geomorphology: The Mechanics and Chemistry of Landscapes, Cambridge University Press, Cambridge.
- Bierman, P.R. and Montgomery, D.R. 2014. Key Concepts in Geomorphology, Macmillan Education, New York.
- Bloom, A.L. 2003. Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice Hall of India, New Delhi.
- Bridges, E.M. 1990. World Geomorphology, Cambridge University Press, Cambridge, U.K.
- Clark, M.J. (ed.) 1988. Advances in Periglacial Geomorphology, John Wiley and Sons Ltd.,

Chichester, U.K.
- Condie, K.C. 2003. Plate Tectonic and Crustal Evolution, Butterworth-Heinemann, Oxford, Burlington.
- Haggett, R.J. 2011. Fundamentals of Geomorphology, Routledge, New York.

**Suggested Readings:**

- Kale, V.S. and Gupta, A. 2001. Introduction to Geomorphology, Orient Longman, Hyderabad, India.
- Knighton, A.D. 1984. Fluvial Forms and Processes, Edward Arnold Publishers Ltd., London, U.K.
- Leopold, L.B., Wolman, M.G., and Miller, J.P. 1964. Fluvial Processes in Geomorphology, W.H. Freeman Company, San Francisco.
- Richards, K.S. 1982. Rivers: Form and Processes in Alluvial Channels, Methuen and C., Ltd., London.
- Schumm, S.A. 1977. The Fluvial System, John Wiley and Sons, Inc., New York.
- Singh Savindra. 2014. Prayag Pustak Bhawan, Allahabad.
- Summerfield, M.A. 1991. Global Geomorphology, Pearson Prentice Hall, U.K.
- Thornbury, W.D. 1969. Principles of Geomorphology, John Wiley and Sons, New York.

**Digital materials**

# DISCIPLINE SPECIFIC CORE (DSC) COURSE
# GEOG-C102: GEOGRAPHY OF POPULATION AND MIGRATION
# (UPC: 122901102)

| Course title & Code | Credits | Duration (Hrs per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOG-C102: GEOGRAPHY OF POPULATION AND MIGRATION (UPC 122901102) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- This course intends to orient the students towards interdisciplinary perspectives on population issues at different geographical scales.
- It will acquaint the candidate to appreciate the role of spatial perspectives towards showcasing population changes and its impact on the economy, society, environment and politics at diverse geographical spheres.
- Different forms of human migration, its characteristics and regional patterns shall be highlighted.
- Student shall learn about the demographic transition models, its genesis, process and consequences from spatial perspectives.
- Students shall also understand the various population policies and programs for the sustainable population management.

## Learning Outcomes:

- After taking this course, a candidate should be able to appreciate the active role of population geography as a distinct field of human geography.
- S/he should be conversant with different sources of demographic data, and well versed with debates on population-development linkages.
- Students should be able to examine the different components of population change, its drivers, and their consequences upon contemporary socio-economic, environmental, and political changes.
- Student will become conversant with the different forms of human migration, its characteristics, types, regional patterns, major drivers and consequences across geographical context.
- Students will be confident to visualize the consequences of demographic transition on the economy, society and politics.
- They should be able to have a clear understanding of population policies and its vital role towards managing the population affairs on the path of sustainability.

**Course Outline:**

**Unit 1: Introduction:** nature, scope, development, sources of population data, demographic transition; population projections, policies and planning

Readings

- Hugo, Graeme. "Population geography." Progress in human geography 30, no. 4 (2006): 513-523.
- Lucas, David, and Michael E. Roettger. "The scope of population studies and demography." In Beginning Population Studies 3rd Edition. ANU Press, 2021.
- Hassan, Mohammad Izhar. Population Geography: A Systematic Exposition. Routledge India, 2020.

**Unit 2: Population Composition:** age, sex, literacy, rural-urban; theories of population: Malthus and critique; the demographic transition theory, population composition and theories.

Readings

- Spengler, Joseph J. "History of population theories." In The Economics of Population, pp. 3-16. Routledge, 2018.
- Weir, David R. "Malthus's theory of population." In The New Palgrave Dictionary of Economics, pp. 1-5. Palgrave Macmillan, London, 1987.
- Caldwell, John C., Bruce K. Caldwell, Pat Caldwell, Peter F. McDonald, and Thomas Schindlmayr. Demographic transition theory. Dordrecht: Springer, 2006.

**Unit 3: Mortality, Fertility and Nuptiality:** measurements, theories, regional patterns.

Readings

- Charbit, Yves. "Fertility and Nuptiality." Demographic Dynamics and Development (2022): 65.
- Prskawetz, Alexia, Marija Mamolo, and Henriette Engelhardt. "On the relation between fertility, natality, and nuptiality." European Sociological Review 26, no. 6 (2010): 675-689.
- De Bruijn, Bart J., and Bart J. De Bruijn. Fertility: theories, frameworks, models, concepts. na, 2006.
- Eswaran, Mukesh. "The empowerment of women, fertility, and child mortality: Towards a theoretical analysis." Journal of Population Economics 15 (2002): 433-454.

**Unit 4: Migration:** theories and models, typologies (internal and international), patterns and flows; causes and consequences.

Readings

- Cohen, Robin. Theories of migration. Edward Elgar Publishing, 1996.
- O'reilly, Karen. "Migration theories: A critical overview." Routledge handbook of immigration and refugee studies (2022): 3-12.
- Wickramasinghe, A. A. I. N., and Wijitapure Wimalaratana. "International migration and migration theories." Social Affairs 1, no. 5 (2016): 13-32.

**Tutorial Exercises:**

For Unit 1 : discussion and presentation on changing nature of the subfield and sources of demographic data

For unit 2: Discussion and exercise on Demographic transition and demographic dividend- Asia in

context of ageing West
For unit 3: Exercise on regional patterns of fertility and mortality based on available national level data
For Unit 4: Exercise on IDP, climate refugees

**Practical Record**: *Not Applicable*

**Readings:**

**Essential Readings**


- Birdsell, N., Kelley, A.C., and Sinding, S.W. 2001. *Population Matters: Demographic Change, Economic Growth, and Poverty in Developing World*, Auckland: Oxford University Press.
- Bonar, James. Theories of population from Raleigh to Arthur Young. Routledge, 2014.
- Clarke, J.I. 1972. *Population Geography*. 2nd edition, Oxford: Pergamon Press.
- Dyson, T. 2010. *Population and Development: The Demographic Transition*, London: Zed Books.
- Jeffery, R., and Jeffery, P. 1997. *Population, Gender, and Politics: Demographic Change in Rural North India*, Cambridge, UK: Cambridge University Press.
- May, J.F. 2012. *World Population Policies: Their Origin, Evolution, and Impact*, Washington DC: Springer.
- Newbold, K.B. 2010. *Population Geography: Tools and Issues*, New York: Rowman and Littlefield Publishers Inc.
- Poston, D.L., and Bouvier, L.F. 2010. *Population and Society: An Introduction to Demography*, New York: Cambridge University Press.
- Poston, D.L., and Micklin, M. (eds.) 2005. *Handbook of Population*, New York: Kluwer Academic.
- Preston, S., Heuveline, P., and Guillot, M. 2000. *Demography: Measuring and Modelling Population Processes,* Oxford: Wiley-Blackwell.
- Seigal, J.S., and Swanson, D.A. (eds.) 2004. *The Methods and Materials of Demography*. 2nd edition, San Diego, CA: Elsevier Academic Press.
- Weeks, J.R. 2008. *Population: An Introduction to Concepts and Issues*. 10th edition, Belmont, CA: Thomson Wadsworth.
- Brettell, C. B., and Hollifield, J.F. (eds.) 2014. *Migration Theory: Talking across Disciplines*, 3d ed. New York: Routledge.
- Castles, S., de Haas, H. and Miller, M.J. 2014. *The Age of Migration: International Population Movements in the Modern World*, 5th ed. New York and London: Guilford.
- Li, W., Skop, E., Morken, A. 2017. *Geography of Migration,* London: Oxford University Press.
- Mavroudi, E. and Nagel, C. 2016. *Global migration: patterns, processes, and politics,* New York, NY: Routledge.
- Piguet, E., and Laczko F. (eds.) 2014. *People on the move in a changing climate: the regional impact of environmental change on migration*, New York: Springer.

# DISCIPLINE SPECIFIC CORE (DSC) COURSE
# GEOG-C103: GEOGRAPHY IN PRACTICE: FIELD INVESTIGATION
# (UPC: 122901103)

| Course title & Code | Credits | Duration (Hrs per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOG-C103: GEOGRAPHY IN PRACTICE: FIELD INVESTIGATION (UPC 122901103) | 4 | 2 | 0 | 2 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- The course is designed to introduce students to the fundamentals of geographic field research.
- It aims to cover various aspects of research including ethics, design, and the collection, analysis, interpretation, and presentation of different types of field data.
- The course intends to explore concepts, techniques, and tools relevant to map the interaction of human-environment systems.
- The course aims to develop students' skills in identifying, describing, and explaining spatial patterns and processes and in applying field methods to answer geographic questions

## Learning Outcomes:

The learning outcomes of this course are as follows:

- Students will be able to define and differentiate the core concepts, types, and historical evolution of field geography.
- Students will be able to critically evaluate and apply appropriate quantitative and qualitative methods for collecting, analyzing and interpreting geographic field data with ethical considerations.
- The Course will enhance their skills in landscape observation, description, analysis, and interpretation of spatio-temporal patterns and processes ‘learning by doing’ in the field.
- Students will be able to effectively structure field reports, utilize appropriate tools to represent field data, and communicate their research findings in a final project report.

## Course Outline:

**Unit 1: Introduction to Field Geography (Theory):** Concept, Definitions, Types and significance, Historical Evolution

**Readings**

- Clifford, N., S. French, and G. Valentine. 2010. Key methods in geography. 1st ed. London, UK: SAGE Publications Ltd.

**Unit 2: Data Collection Techniques (Theory):** Qualitative and Quantitative data collection methods, Ethical Considerations, Integration of technology like GPS, RS and GIS and Data Governance

**Readings**

- Kothari, C.R., 2004. Research methodology: Methods and techniques. New Age International.
- Gomez, B., and J. P. Jones III. 2010. Research methods in geography: a critical introduction. 1st ed. Chichester, UK: Wiley-Blackwell.

**Unit 3: Geography in Practice (Practical):** Designing Field Research Projects, Pre-field preparations, Review of field experiences, safety guidelines and limitations, Field Investigation

**Readings**

- Creswell, J.W. and Creswell, J., 2003. Research design. Thousand Oaks, CA: Sage publications.
- Lunsbury J.F. and Aldrich, F.T. 1979. Introduction to Geographic Field Methods and Techniques, Charles E. Mercill Publishing Company, Columbus.

**Unit 4: Reporting Field Observations (Practical):** Debriefing, Structuring field reports, Tools and Techniques to represent field data, Communicating field Findings, Final Project Report Submission

**Readings**

- McSweeney, K. and WinklerPrins, A.M., 2021. Geographical Fieldwork in the 21st Century. Routledge.
- Martin, D., & Flowerdew, R. T. N. (2005). Methods in human geography: a guide for students doing a research project (Second edition). Pearson Education (Prentice Hall).

**Tutorial Exercises:** *Not Applicable*

**Practical Record**: A project report will be prepared based on the field investigation.

**Readings:**

**Essential Readings**

1. Clifford, N., S. French, and G. Valentine. 2010. Key methods in geography. 1st ed. London, UK: SAGE Publications Ltd.
2. Gomez, B., and J. P. Jones III. 2010. Research methods in geography: a critical introduction. 1st ed. Chichester, UK: Wiley-Blackwell.
3. Singh, R.L., Rana, Singh, P.B., प्रयोगात्मक भूगोल के मूल तत्व. Kalyani
4. Sharma, J P, प्रयोगात्मक भूगोल की रूपरेखा. Rastogi Publication
5. Kothari, C.R., 2004. Research methodology: Methods and techniques. New Age International.
6. Creswell, J.W. and Creswell, J., 2003. Research design. Thousand Oaks, CA: Sage publications.

**Suggested Readings:**

1. Neuman, L.W., 2007. Social research methods, 6/E. Pearson Education India.
2. McSweeney, K. and WinklerPrins, A.M., 2021. Geographical Fieldwork in the 21st Century. Routledge.
3. Lunsbury J.F. and Aldrich, F.T. 1979. Introduction to Geographic Field Methods and Techniques, Charles E. Mercill Publishing Company, Columbus.
4. Nicholas, Paul (2009), Social Survey Methods, Oxfam Publishers Delhi.

**Digital materials:** *Not Applicable*

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E101: CULTURAL GEOGRAPHY (UPC 122902101)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E101: CULTURAL GEOGRAPHY (UPC 122902101) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- To enhance the understanding of culture using key concepts of geography
- To develop analytical skills to decode culture
- To provide a critical understanding of the contemporary issues and the politics underlying it

## Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will be able to make sense of culture
- Acquire knowledge of geographic epistemologies for analyzing culture
- Develop analytical capability to read contemporary issues of culture

## Course Outline:

**Unit 1: Approaches to cultural geography**: Morphology of cultural landscape; Representational and More-than-representational critiques

**Readings**

- Anderson, J., 2021. *Understanding Cultural Geography: Places & Traces*. Routledge, London. (Ch. 1-4)
- Lorimer, H., 2005. 'Cultural geography: The busyness of being more-than-representational'. *Progress in Human Geography*, 29(1), 83-94
- Sauer, C. O., 1925. *The Morphology of Landscape*. University of California Publications, 19-54.

**Unit 2: Concepts:** Space, place, landscape; Culture, politics, identity, ideology, hegemony; Spirituality & Sacred landscapes; Everyday landscapes and difference: gender, class, sexuality, race, ability, age.

**Readings**

- Atkinson, D., et al. 2005. *Cultural Geography: A Critical Dictionary of Key Concepts*, I.

B.Tauris, London & New York.
- Cavallaro, D., 2001. Critical and Cultural Theory: Thematic Variations. Athlone Press, London and New Brunswick, NJ.
- Derek, G.et. al 2009. Dictionary of Human Geography. Wiley-Blackwell (Select entries).
- Knott, K., 2009. Geography, space and the sacred. In *The Routledge Companion to Study of Religion* (pp. 490-505), Routledge

**Unit 3: Reading landscapes:** Textuality, iconography, participant observation and interviews, participatory methods.

**Readings**

- Von Benzon, N., Wilkinson, S., Wilkinson, C. and Holton, M., 2021. *Creative Methods for Human Geographers*, Sage.
- Hay, I., 2005. *Qualitative Research in Human Geography*, Oxford University Press.
- Shaw, W.S, DeLyser, D., & Crang, M., 2015. Limited by imagination alone: Research methods in cultural geography, *Cultural Geographies*, 22(2), 211-215.

**Unit 4: Creation of Cultural Spaces:** Body, home, city, nation, and globe & Politics of Difference; Spirituality, cosmological order and sacred spaces

**Readings**

- Mitchell, D., 2000. Cultural Geography: A Critical Introduction. Wiley
- Singh, R. PB., 1994. Sacred Geometry of India's Holy City, Varanasi: Kashi as a Cosmogram, National Geographical Society of India.
- Valentine, G., 2014. *Social geographies: space and society*, Routledge

## Tutorial Exercises

- Unit 1: Discuss Bunnell, T., 2013. Urban landscapes. The Wiley-Blackwell Companion to Cultural Geography, pp.278-289.
- Unit 2: Interpret Space and Place using Maps, Cultural Products and Youtube Videos on Chicago and Delhi
- Unit 2: Discuss the Meaning of Culture using short movie clips circulated on class group: Kung Fu Panda (2008 onwards), PK (2014) (First 45 mins)
- Unit 2: Discuss the notions of Identity using pre-watched suggested movies: Memoirs of a Geisha (2005), Perfume: The Story of a Murderer, Black Swan (2010) for understanding Identity.
- Unit 2: Field Visit Exercise to Delhi University Campus buildings or Raisina Hill to understand Colonial ideologies, built environment & City Planning.
- Unit 2: How are geography, space and sacred related: Exercise Visit Gurudwara Bangla Sahib and record the spiritual basis Sacred sites.
- Unit 3: Can Culture be decoded as a text? Decode Taj Mahal design/ Lutyen's Delhi City plan.
- Unit 3: Employ research methods taught in the class on a field site (any one) Majnu-Ka-Tila/ Lodhi Garden/ Humayun's Tomb/ Khan market/ Dilli Haat .
- Unit 3: Report writing exercise based on field data.
- Unit 4: Skit on Home. Groups depend on number of participants available.
- Unit 4: Group exercise on campus streets to list the characteristics of public space.
- Unit 4: Make a list of global, glocal and Local products used in everyday life.
- Unit 4: Discuss a sacred sites one last visited and analyse the production and composition of

such site.

**Practical Record**: Not Applicable

**Readings:**

**Essential Readings**:


- Anderson, J., 2021. *Understanding Cultural Geography: Places & Traces*. Routledge, London.
- Mitchell, D., 2000. *Cultural Geography: A Critical Introduction.* Wiley.
- Sauer, C. O., 1925. *The Morphology of Landscape*. University of California Publications, 19-54.
- Valentine, G., 2014. *Social geographies: space and society*, Routledge.


**Suggested Readings:**


- Anderson, K., Domosh, M., Pile; Thrift, N. (eds.), 2002. Handbook of Cultural Geography. Sage
- Bharadwaj, S. M., 1983. *Hindu Places of Pilgrimage in India: A study in Cultural Geography*, Univ of California Press.
- Blunt, A., 2005. Cultural geography: cultural geographies of home. *Progress in Human Geography*, 29(4), 505-515.
- Bunnell, T., 2013. Urban landscapes. The Wiley-Blackwell Companion to Cultural Geography, pp.278-289.
- Cosgrove, D. E., 1984. Social Formation and Symbolic Landscape, London: Croom Helm
- Cosgrove, D. E, & Daniels, S. (eds.), 1988. The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments, Cambridge University Press.
- Duncan, J. S., 2005. The city as Text: The Politics of Landscape Interpretation in the Kandyan Kingdom, Cambridge University Press.
- Dutt, A.K and Noble, A. G., 2019 The Cultural Geography of India in Perspective. In *India: Cultural Patterns and Processes* (pp.367-373). Routledge
- Sengupta, R., 2008. *Delhi Metropolitan: The Making of an Unlikely City*, Penguin Books.
- Singh, R. PB., 2000-04 -2012-16. INSA IGC Reports-in Cultural Geography, India.


**Digital materials:** Not Applicable

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E102: ENVIRONMENTAL IMPACT ASSESSMENT (UPC 122902102)

| Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOG-E102: ENVIRONMENTAL IMPACT ASSESSMENT (UPC 122902102) | 4 | 3 | 0 | 1 | BA/ BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- To build a foundational understanding of Environmental Impact Assessment (EIA), its principles, and methodologies.
- To critically examine the socio-economic and ecological implications of development projects through EIA.
- To introduce national and international legal frameworks, policies, and practices related to environmental assessment.
- To equip students with analytical tools to assess, evaluate, and propose mitigation strategies for environmental impacts.

## Learning Outcomes:

The learning objectives of this course are as follows:

- Students will be able to explain key concepts, processes, and different aspects of Environmental Impact Assessment.
- Students will develop the ability to evaluate the environmental consequences of development projects and suggest mitigation strategies.
- Students will be able to critically engage with national and international environmental policies and procedures.

## Course Outline:

**Unit 1: Introduction (Theory):** Definition and principles of EIA, Concepts and approaches, Methods and procedure and currents issues in EIA, POSCO imbroglio.

**Readings**


- Morrison-Saunders, A., 2023. Advanced introduction to environmental impact assessment. Edward Elgar Publishing.
- Hanna, K. (2022). Routledge Handbook of Environmental Impact Assessment. Routledge. https://doi.org/10.4324/9780429282492

**Unit 2: Selected National and International Procedures of EIA (Theory):** Developed and Developing countries EIA Procedures, National Green Tribunal, Environmental Impact Assessment Regulations and Policies in India

**Readings**

- Rathi, A. K. A. (2024). Indian environmental impact assessment practice: Insights and learnings. Cambridge Scholars Publishing.
- Eccleston, C. H., 2017. Environmental Impact Assessment: A Guide to Best Professional Practices, CRC Press, New York.

**Unit 3: Evaluation and Mitigation (Theory/ Practical – xxx hrs):** Cost-benefit analysis of DMRC and Golden Quadrilateral projects and valuation of environmental impacts, public participation.

**Readings**

- Islam, K.M.B. and Nomani, Z.M., 2021. Environment Impact Assessment: Precept & Practice. CRC Press.
- Klemeš, J. J. (2015). Assessing and Measuring Environmental Impact and Sustainability (pp. 1–559). Elsevier Inc. https://doi.org/10.1016/C2013-0-13586-6

**Unit 4: Case Studies of Environmental Impact Assessment (Theory/ Practical – xxx hrs):** Water Impact Assessment; Hydroelectric power Impact Assessment; Ecological Impact assessment; Mining Impact Assessment.

**Readings**

- Goel, R.S. 2000. Environmental Impacts Assessment of water Resources Projects - concerns, Policy Issues Perceptions and Scientific Analysis, Oxford Publishing Co. Pvt. Ltd.
- Ninan, K. N., & Larigauderie, A. (2020). Environmental Assessments: Scenarios, Modelling and Policy (pp. 1–262). Edward Elgar Publishing Ltd. https://doi.org/10.4337/9781788976879

**Tutorial Exercises:** Not Applicable

**Practical Record:**

Four practical exercises to be completed in the Practical file from Unit 3 and 4, this will involve training students to evaluate major developmental projects using Environmental Impact Assessment frameworks. Students will study projects such as the Delhi Metro Rail Corporation (DMRC), Golden Quadrilateral Highway, Tehri Hydroelectric Project, Rampura Agucha Zinc and Lead Mine, wherein they will learn to assess ecological and socio-economic implications, quantify environmental costs in monetary terms, and critique the sufficiency of mitigation strategies.

**Readings:**

**Essential Readings**:

1. Bhateria, R. et al., 2024. Environmental impact assessment: A Journey to Sustainable Development. Springer

2. Fonseca, A. ed., 2022. Handbook of environmental impact assessment. Edward Elgar Publishing.
3. Goudie, A. 2000. The Human Impact on the Natural Environment, Blackwell, Publishers, Oxford.
4. Betty Bowers Marriott, 1997. Environmental Impact Assessment, Mc Graw Hill Professional Bookstore.

**Suggested Readings:**

1. Glasson, J., & Therivel, R. (2019). Introduction to Environmental Impact Assessment (pp. 1–381). Taylor and Francis. https://doi.org/10.4324/9780429470738
2. Momtaz, S., & Kabir, S. M. Z. (2013). Evaluating Environmental and Social Impact Assessment in Developing Countries (pp. 1–199). Elsevier. https://doi.org/10.1016/C2012-0-06543-X
3. Subramanian, V., 2001. Text Book on Environmental Sciences, Narosa Publishing House, N. Delhi.
4. Prasad, K. and Goel, R. S. 2000. Environmental Management in Hydro Electric Projects, Concept Pub., New Delhi.
5. Smith, L.G., 1993. Impact Assessment and Sustainable Resource Management, Longman, Harlow.
6. Richard, K. Morgan, 1999. Environmental Impact Assessment: A Methodological Perspective, Springer.
7. Warhurst, A. (1999). Mining and the Environment: Case Studies from the Americas - International Development Research Centre (Canada)

**Digital materials:** Not Applicable

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E103: FOUNDATIONS OF GEOSPATIAL SCIENCE (PRACTICAL) (UPC 122902103)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E103: FOUNDATIONS OF GEOSPATIAL SCIENCE (PRACTICAL) (UPC 122902103) | 4 | 2 | 0 | 2 | BA/BSc in Geography | |

## Learning Objectives:

- To develop an understanding of remote sensing, GIS, and GPS technologies and their potential applications.
- To develop basic skills to interpret remote sensing images for various applications in geography.
- To develop basic skills to use GIS for various applications in geography.

## Learning Outcomes:

- Overall understanding of the potential of Remote Sensing, GIS, and GPS
- Understanding of image interpretation
- Understanding of GIS analysis workflow and integrated applications in various domains of Geography

## Course Outline:

**Unit 1: Remote Sensing:** principles, historical development, satellite and sensors, concept of resolution, photography vs. image, Electromagnetic radiation principles; interaction mechanism with atmosphere and earth surfaces

**Readings for Unit 1**

- Lillesand, T.M., Kiefer, R.W. and Chipman, J.W. 2022. Remote Sensing and Image Interpretation, 7th Edition, Wiley India.
- Jensen, J.R. 2006. Remote Sensing of the Environment: An Earth Resource Perspective, 2nd Edition, Pearson Education.

**Unit 2: Interpretation:** Principles of aerial photo interpretation; Visual interpretation of satellite images

**Readings for Unit 2**

- Jensen, J.R. 2006. Remote Sensing of the Environment: An Earth Resource Perspective, 2nd Edition, Pearson Education.
- Gupta, R.P. 2018. Remote Sensing Geology, 3rd Edition, Springer.

**Unit 3: GIS:** Definition, Development and Applications: elements of GIS; geographic objects: point, line, and area; coordinate systems and map projections

**Readings for Unit 3** (not more than 3)

- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Burrough, P.A. and McDonnell, R.A. 1998. Principles of Geographic Information Systems, Oxford University Press.


**Unit 4:** Geographic Data, Input, Storage, and Editing: spatial and attribute data, vector and raster-based models, digitization; storage and manipulation of GIS databases, presentation of GIS output, GPS

**Readings for Unit 4** (not more than 3)


- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.


**Practical Record**:

- Comparing images with various resolutions
- Visual Interpretation of Aerial Photographs
- Preparing Colour composites using multispectral images
- Visual Interpretation of Satellite Images
- Map georeferencing
- Digitization of point, line, and polygon features
- Attribute table handling and query analysis
- Geoprocessing and vector overlay
- Hands-on with handheld GPS devices

**Readings:**

**Essential Readings**:


- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Lillesand, T.M., Kiefer, R.W. and Chipman, J.W. 2022. Remote Sensing and Image Interpretation, 7th Edition, Wiley India.


**Suggested Readings:**


- Burrough, P.A. and McDonnell, R.A. 1998. Principles of Geographic Information Systems, Oxford University Press.
- Chang, K-t. 2006. Introduction to Geographic Information Systems, Tata McGraw-Hill.
- DeMers, M. 2009. Fundamentals of Geographic Information Systems, 4th Edition, John Wiley and Sons.
- Gupta, R.P. 2018. Remote Sensing Geology, 3rd Edition, Springer.
- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Jensen, J.R. 2006. Remote Sensing of the Environment: An Earth Resource Perspective, 2nd Edition, Pearson Education.
- Joseph, G. 2005. Fundamentals of Remote Sensing, Orient Blackswan.
- Sabins, F.F. 2007. Remote Sensing: Principles and Interpretation, 3rd Edition, Waveland Press.
- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.

# DISCIPLINE SPECIFIC ELECTIVE COURSE: GEOG-E104 GEOGRAPHIES OF GENDER AND DEVELOPMENT IN SOUTH ASIA (UPC 122902104)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E104 GEOGRAPHIES OF GENDER AND DEVELOPMENT IN SOUTH ASIA (UPC 122902104) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

1. To provide students with understanding of particular gender issues in the S Asian region.
2. To equip students with an understanding of intersections of these gender issues with the process of development.
3. To help students in appreciating the role of gender transformative interventions in addressing both the above

## Learning Outcomes:

After transacting this course, the students will be able to :

1. Develop and understanding of S Asia as a geographic region and particularities of patriarchy within this region.
2. Appreciate the spatial basis of gender disparities in well-being, capabilities and opportunities in the region.
3. Develop a knowledge of key approaches to Gender and Development, measures of GEM and GDI and appreciating gender transformative interventions for change.

## Course Outline:

**Unit 1: Gender Roles and Gender Relations in South Asia:** South Asia as a geographic and cultural region, gender roles, gender relations in South Asia, Patriarchy and Patriarchal Bargains in the South Asian region

Readings for Unit 1


- Ahmad, Aijazuddin. Geography of the South Asian subcontinent: A critical approach. Concept Publishing Company, 2009.
- Kandiyoti, Deniz."Bargaining with patriarchy."*Gender & society* 2, no. 3(1988): 274-290**.**
- Kar, Rabi Narayan, and Kusha Tiwari. "Realms of gender interactions: South Asian perspectives." South Asian Survey 27, no. 2 (2020): 91-97.

**Unit 2: Gender Disparities in Well Being and Human Development in South Asia:** Spatial patterns of sex ratio differentials due to son preference and daughter discrimination, spatial patterns of gender disparities in female literacy, work force participation; gender, health and access to healthcare; land ownership and property rights; Household decision making, patterns of participation in local and national politics.

Readings for Unit 2

- Gupta, Monica Das. "Selective discrimination against female children in rural Punjab, India." Population and development review (1987): 77-100.
- Banu, Ayesha. "Human development, disparity and vulnerability: Women in South Asia." New York: United Nations Development Programme (2016).
- Filmer, Deon, Elizabeth M. King, and Lant Pritchett. Gender disparity in South Asia: comparisons between and within countries. Vol. 1867. World Bank Publications, 1998.

**Unit 3: Gendered Approaches and Measures of Development:** Gender Empowerment Measure (GEM), Gender Development Index (GDI), 'position', 'condition' and 'status' of women, strategic and practical needs, comparison and critique of WID, WAD and GAD approaches to gender and development.

Readings for Unit 3

- Miller, Carol, and Shahra Razavi. From WID to GAD: Conceptual shifts in the women and development discourse. No. 1. UNRISD Occasional Paper, 1995.
- Visvanthan, Nalini, Lynn Duggan, Laurie Nisonoff and Nan Wiegersma, (eds.) 1997. The Women, Gender and Development Reader'. Zed Books
- Parpart, Jane, Patricia Connelly and Eudine Barriteau, 2000. Theoretical Perspectives on Gender and Development' International Development Research Centre

**Unit 4: Gender and Development in South Asia:** Defining empowerment; empowerment , access and agency; characteristics of gender blind, gender neutral and gender transformative Interventions and policymaking; selected case studies [SEWA and Grameen Bank]

Readings for Unit 4

- Baruah, Bipasha. "Gender and development in South Asia: Can practice keep up with theory?." Canadian Journal of Development Studies/Revue canadienne d'études du development 26, no. sup1 (2005): 677-688.
- Moser, Caroline, 1993. Gender Planning and Development: Theory, Practice and Training, Routledge**.**
- March, C., Smyth, I. and Mukhopadyay, M. 1999. A Guide to Gender Analysis Frameworks', Oxfam, Great Britain.

**Tutorial Exercises**

Tutorial exercises for unit 1 and Unit 2 will involve discussion on readings, problematizing SA region as distinct and locating gender disparities in the same.
Tutorial exercises for unit 3 and 4 will involve evaluation of data from UNDP and world Bank to construct and evaluate GDI, GEM for the constituent countries of S Asian region

**Practical Record**: Not Applicable

**Readings:**

**Essential Readings**:


- Banu Ayesha, 2016. Human Development, Disparity And Vulnerability: Women In South Asia, Human Development Report Background Paper, UNDP.
- Beneria, Lourdes, 2003. Gender, Development and Globalization: Economics as if All People Mattered, New York and London: Routledge.
- Datta, Anindita. "Gender, space and agency in India: Exploring regional genderscapes." In Gender, space and agency in India, pp. 1-14. Routledge India, 2020.
- Dube, Leela. 1997. “Women and kinship: Comparative perspectives on gender in South and South-East Asia."
- Kapadia, Karin, 2002. The Violence of Development: The Politics of Gender, Identity and Social Inequalities in India, Delhi, Kali for Women.
- Louise Edwards and Mina Roces, Eds. 2000. Women in Asia: Tradition, Modernity and Globalization’, Ann Arbor, MI: University of Michigan Press.
- March, C., Smyth, I. and Mukhopadyay, M. 1999. A Guide to Gender Analysis Frameworks’, Oxfam, Great Britain.
- Moser, Caroline, 1993. Gender Planning and Development: Theory, Practice and Training, Routledge.
- Nussbaum, Martha C. 2001. Women and Human Development: the Capabilities Approach, Cambridge University Press.
- Parpart, Jane, Patricia Connelly and Eudine Barriteau, 2000. Theoretical Perspectives on Gender and Development’ International Development Research Centre.
- Rustagi, Preet. Situation of women in south asia: some dimensions. No. id: 10949. 2016.
- Visvanthan, Nalini, Lynn Duggan, Laurie Nisonoff and Nan Wiegersma, (eds.) 1997. The Women, Gender and Development Reader’. Zed Books.
- World Bank, 2001. Engendering Development: Through Gender Equality in Rights, Resources, and Voice, Oxford University Press, 2001


**Suggested Readings:**


Rustagi, Preet, Dev Nathan, Amrita Datta, and Ann George. "Women and work in South Asia: Changes and challenges." Institute for Human Development, Working Paper 01 (2013).

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E105: GEOGRAPHY OF URBAN ENVIRONMENT (UPC - 122902105)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E105: GEOGRAPHY OF URBAN ENVIRONMENT (UPC-122902105) | 4 | 3 | 1 | 0 | BA/ BSc in Geography | |

**Learning Objectives:**

The learning objectives of this course are as follows:

- To develop a comprehensive understanding of urban environment and ecosystems dynamics, and to analyze global trends and patterns of urbanization.
- To identify and examine the major urban geo-environmental challenges and evaluate sustainable strategies for effective urban management.
- To critically assess the necessity of futuristic cities, and to asses relevant government policies, programmes, and initiatives pertaining to urban management and sustainability.

**Learning Outcomes:**

The learning outcomes of this courses are as follows:

- **Developing an understanding of foundational concepts and components of urban environment, examining their dynamics and its significance from local to global levels.**
- **Analysing the urban trends, and relationship between urbanization & geoenvironmental challenges and their ecological and health-related consequences through case studies.**
- Critically evaluating and assessing the urban environmental management strategies and institutional arrangements for sustainable urban future, focusing on Indian cities.

**Course Outline:**

**Unit 1: Understanding Urban Environment**

Nature, Scope, Concept, Component, Approaches; Relevance at local, regional and global level; Dynamics of urban environment.

**Readings:**


- Berkowitz, A.R., Nilon, C.H. and Hollweg, K.S. (eds.) (2003). *Understanding urban ecosystems: a new frontier for science and education*. Springer Science & Business Media.
- Francis, R. A., & Chadwick, M. A. (2013). *Urban ecosystems: understanding the human environment*. Routledge.

- Sinha, B. R. K. (2024). *Urban dynamics, environment and health: An international perspective*. Springer Singapore.


**Unit 2: Urbanization Trends and City System**

Trends and Patterns of urbanization in developed and developing countries; Physical expansion of cities; Slums; World Cities.

**Readings**


- Angel, S., Parent, J., Civco, D. L., & Blei, A. M. (2012). *Atlas of urban expansion*. Cambridge: Lincoln Institute of Land Policy.
- Ramachandran, R. (1989). *Urbanization and Urban Systems in India.* India: OUP India.
- Roberts, P., Ravetz, J., & George, C. (2009). *Environment and the city.* Routledge, London.


**Unit 3: Geoenvironmental Urban Issues**

Water, Air pollution, Solid & E-waste, Disaster and Microclimate; Ecological and Health Consequences; Indian Case Studies.

**Readings**


- Kateja, A., & Jain, R. (Eds.). (2022). *Urban growth and environmental issues in India*. Springer Nature, Singapore.
- Newman, P. (2006). The environmental impact of cities. *Environment and Urbanization,* SAGE Publications, *18*(2), 275-295.
- Singh, R. B. (Ed.). (2015). *Urban development challenges, risks and resilience in Asian mega cities.* Springer, Japan.


**Unit 4: Urban Management and Sustainable Future**

Blue-Green infrastructure; Sustainable water, waste and disaster management; Futuristic Cities, Government programmes, polices and initiatives; Case Studies.

**Readings**


- Anand, S., Bhattacharyya, R., Das, M., Das, T. K., & Pradhan, P. K. (Eds.). (2025). *Sustainability in South Asian cities* (Advances in Geographical and Environmental Sciences). Springer Nature, Singapore.
- Dixon, T. J., & Tewdwr-Jones, M. (2021). *Urban futures: Planning for city foresight and city visions*. Policy Press, Birstol University Press.
- van Bueren, E. M., van Bohemen, H., Visscher, H., & Itard, L. (Eds.). (2011). *Sustainable urban environments: An ecosystem approach*. Springer Nature, Netherlands.


## Tutorial Exercises

- Engage in debates and discussions on the changing components of urban environments and their broader implications.
- Identify a specific environmental issue (e.g., air, water, or solid waste etc.) in your city, analyse its causes, and prepare a concise analytical report.
- Design a scaled model (physical or digital) of a neighbourhood that incorporates blue-green

infrastructure to demonstrate sustainable urban planning.

- Participate in a role-play exercise where students assume the roles of urban planners, citizens, bureaucrats, and technical experts to collaboratively design a sustainable city.
- A field visit based on observation to a nearby location or slum and prepare a record on waste management, air quality, or drainage infrastructure.
- Thought-provoking discussion on the development of futuristic cities in the Indian context.
- Prepare an assignment and presentation on urban environmental issues using firsthand data and information collected through observation or research.
- Formulate strategies aimed at promoting sustainable cities within the Indian urban development framework.

**Practical Record**: NA

**Readings:**

**Essential Readings**:


- Anand, S., Bhattacharyya, R., Das, M., Das, T. K., & Pradhan, P. K. (Eds.). (2025). *Sustainability in South Asian cities* (Advances in Geographical and Environmental Sciences). Springer Nature, Singapore.
- Kateja, A., & Jain, R. (Eds.). (2022). *Urban growth and environmental issues in India*. Springer Nature Singapore.
- van Bueren, E. M., van Bohemen, H., Visscher, H., & Itard, L. (Eds.). (2011). *Sustainable urban environments: An ecosystem approach.* Springer Netherlands.


**Suggested Readings:**


- Berkowitz, A.R., Nilon, C.H. and Hollweg, K.S. (Eds.). 2003. *Understanding urban ecosystems: a new frontier for science and education.* Springer Science & Business Media.
- Bigio, A. G., & Dahiya, B. (2004). *Urban environment and infrastructure: Toward livable cities*. World Bank.
- Chatterjee, U., Bandyopadhyay, N., Setiawati, M. D., & Sarkar, S. (Eds.). (2023). *Urban commons, future smart cities and sustainability*. Springer Nature. Netherlands
- Joshi, P. K., Rao, K. S., Bhadouria, R., Tripathi, S., & Singh, R. (Eds.). (2024). *Blue-green infrastructure for sustainable urban settlements: Implications for developing countries under climate change*. Springer.
- Lye, L. F., & Chen, G. (Eds.) (2010). *Towards a Liveable and Sustainable Urban Environment: Eco-cities in East Asia*. World Scientific.
- Sinha, B. R. K. (2024). *Urban dynamics, environment and health: An international perspective*. Springer Singapore.


**Digital materials:** Not Applicable

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E106: HYDROLOGY AND WATER RESOURCES MANAGEMENT (122902106)

| Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOG-E106: HYDROLOGY AND WATER RESOURCES MANAGEMENT (UPC 122902106) | 4 | 3 | 1 | 0 | BA/ BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- To develop an in-depth understanding of the hydrologic cycle and its components within natural and anthropogenic contexts.
- To analyze the principles of groundwater hydrology, aquifer dynamics, and subsurface water flow.
- To examine critical water-related challenges such as droughts, floods, and water quality degradation.
- To understand frameworks and policies for water resource planning and management at multiple governance levels.

## Learning Outcomes:

On transaction of this course students will be able to

- Explain the functioning of the hydrologic system and evaluate the role of human activities in altering its components.
- Assess groundwater conditions using aquifer types, geological formations, and monitoring methods.
- Critically analyze contemporary issues like water scarcity, pollution, and inter-sectoral water conflicts.
- Evaluate and interpret water policy frameworks and propose strategies for sustainable and participatory water governance.

## Course Outline:

**Unit 1: Introduction (Theory):** The history of hydrology, System Concept in hydrology, hydrologic cycle, Elements of hydrologic cycle, Human impact on the hydrologic cycle, Water balance.

**Readings**


- Andrew, D. W. and Trimble, S. 2004. Environmental Hydrology, 2nd Edition, Lewis Publishers, CRC Press.

- Singh, V.P. 1995. Environmental Hydrology, Kluwar Academic Publications, The Netherlands.

**Unit 2: Groundwater Hydrology (Theory):** Groundwater Hydrology: Divisions of subsurface water, formations according to their water-bearing properties, types of aquifer and aquifer properties, Darcy's law and elementary groundwater flow equation, geological formations as aquifers, groundwater monitoring, groundwater resource estimation.

**Readings**

- Todd, D.K. 1980. Groundwater Hydrology, John Wiley, New York.
- Mukherjee, A. (Ed.). (2018). Groundwater of South Asia. Springer Singapore. https://doi.org/10.1007/978-981-10-3889-1

**Unit 3: Contemporary Issues and Challenges (Theory):** Drought, flood, water use conflicts, water quality and major water pollutants (points and non-point source), water quality criteria for different uses.

**Readings**

- Jain, S. K., Agarwal, P. K., & Singh, V. P. (2007). Hydrology and water resources of India. Springer Dordrecht. https://doi.org/10.1007/1-4020-5180-8
- Mays, L. W. (2007). Water resources sustainability (1st ed.). McGraw-Hill Education.

**Unit 4: Water Resource Planning (Theory):** Concepts and objectives of water resource planning, Institutional frameworks and planning bodies in India, Multi-level governance and stakeholder participation, Water governance and policies

**Readings**

- Rai, P. K. (Ed.). (2023). Advances in water resource planning and sustainability. Springer Singapore. https://doi.org/10.1007/978-981-99-3660-1
- Beek, E., Loucks, P.D. 2005. Water Resource Systems Planning and Management: An Introduction to Methods, Models and Applications, UNESCO, Paris.

**Tutorial Exercises**

- Discussion on the hydrologic cycle as a dynamic system, focusing on anthropogenic impacts and feedbacks in the context of climate change
- Identification and classification of aquifers using schematic cross-sections and real-world examples
- Discussion on contemporary water issues such as drought, pollution and inter-state water conflicts
- Analysis of point and non-point source pollution in Indian rivers with emphasis on public health impacts
- Review of India's National Water Policy with focus on stakeholder participation and governance

**Practical Record**: Not Applicable

**Readings:**

**Essential Readings**

1. Beach, Tim and Jonathan, M.F. 2017. Wetland Hydrology: The International Encyclopedia of Geography, Wiley Online Library.
2. Chow, V.T., Maidment, D.R. and Mays, W.L. 1988. Applied Hydrology, McGraw-Hill International Editions, McGraw-Hill Book Company, New York.
3. Karanth, K.R. 1988. Groundwater: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.

**Suggested Readings**

1. Subramanya, K. 2010. Engineering Hydrology, Tata McGraw Hill Education Pvt. Ltd. New Delhi.
2. Abbas, B.M. 1982. The Ganges Water Dispute, Vikas Publishing House Pvt. Ltd., New Delhi.
3. Aggarwal, A. 1991. Floods, Floodplains and Environmental Myths, Centre for Science and Environment, New Delhi.
4. Rai, S.C. 2017. Hydrology and Water Resources: A Geographical Perspective, Ane Book Pvt. Ltd., New Delhi.
5. Kumar, M. D. (Ed.). (2021). Politics and policies for water resources management in India. Routledge.
6. Thornthwaite, C.W. and Mather, J.R. 1957. Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance, Drexel Institute of Technology, Centerton, New Jersey.
7. Bhattacharya, S.K. 1988. Urban Domestic Water Supply in Developing Countries, CBS Publishers, CR Distributors, Delhi.
8. Mahajan G. 1989. Evaluation and Development of Groundwater, Ashish Publishing House, New Delhi.

**Digital materials:** Not Applicable

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E107: TECHNIQUES AND METHODS OF REGIONAL ANALYSIS (UPC 122902107)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E107: TECHNIQUES AND METHODS OF REGIONAL ANALYSIS (UPC 122902107) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives

The learning objectives of this course are as follows:

- Regional Science is a field of the social sciences concerned with analytical approaches to problems that are specifically regional in nature.
- In the broadest sense, any social science analysis that has a spatial dimension is embraced by regional scientists.
- The students will be exposed to a wide variety of techniques and methods used in regional analysis.

## Learning Outcomes

The learning outcomes of this course are as follows:

- The students will be able to project population of a spatial unit, and estimate its component of migration.
- The students will be able to estimate income (GDP) of a spatial unit.

## Course Outline

**Unit 1: Introduction:** Origin, Growth, Scope and Nature of Regional Science.

**Readings**

- Isard Walter, 1975. *Introduction to Regional Science*, Prentice-Hall.
- Isard Walter, 1990. *Location Analysis and General Theory – Economic, Political, Regional and Dynamic*, Macmillian.
- Isard Walter, 2003. *History of Regional Science and the Regional Science Association International – The Beginnings and Early History*, Springer, Berlin Heidelberg.

**Unit 2: Regional Demographic Analysis:** Census Data, Population Projection and Migration Estimation.

**Readings**

- Bendavid, A. 1991. *Regional and Local Economic Analysis for Practitioners*, Praeger, New York.
- Davis H. Craig, 1990. *Regional Economic Analysis and Project Evaluation*, UBC Press.

- Isard Walter, 1960. *Methods of Regional Analysis: An Introduction to Regional Science*, MIT and John Wiley & Sons, Inc.

**Unit 3: Regional Economic Analysis – I:** Regional Income Estimation and Social Accounting; Interregional Flow Analysis and Balance of Payment Statements; Regional Cycle and Multiplier Analysis.

**Readings**

- Bendavid, A. 1991. *Regional and Local Economic Analysis for Practitioners*, Praeger, New York.
- Isard Walter, 1960. *Methods of Regional Analysis: An Introduction to Regional Science*, MIT and John Wiley & Sons, Inc.
- Maki, Wilbur and Lichty Richard, 2000. *Urban Regional Economics: Concepts, Tools, Applications*, Iowa State Univ. Press.

**Unit 4: Regional Economic Analysis – II:** Regional Industrial Location and Complex Analysis; Interregional and Regional Input-Output Techniques.

**Readings**

- Bendavid, A. 1991. *Regional and Local Economic Analysis for Practitioners*, Praeger, New York.
- Isard Walter, 1960. *Methods of Regional Analysis: An Introduction to Regional Science*, MIT and John Wiley & Sons, Inc.
- Treyz George I. 1993. *Regional Economic Modelling: A Systematic Approach to Economic Forecasting and Policy Analysis*, Academic Publishers, Boston.

**Tutorial Exercises**

- Select a Census of India 2011 series table and briefly explain its data structures.
- Select a district (preferably your home district), and project the population for 2021, 2031, 2041 and 2051, using any three of the four techniques. Compare and interpret the results.
- Present a perceptive and descriptive (no data) migration profile of the same district (preferably your home district), for which you had projected the population.
- Explain the relevance of social accounting in the contemporary World. Give real life examples that you may have encountered and observed in your home district.
- Give real life examples, where you may have encountered and observed the working of commodity and money flow, and the maintenance of balance of payment statements, at a micro-level, in your home district.
- Did you ever witness a multiplier working around you? Illustrate with possible live examples you may have experienced in your home-district.
- "A certain activity (ABC) is localized in a spatial unit (XYZ), which also happens to be its specialization". Analyze the above statement by distinguishing between localization and specialization, and supporting it with a few possible cases from your home district.
- Did you ever witness or imagine the working of the input-output model around you? Illustrate with a product or service, describing its input and output.

**Practical Record**: *Not Applicable*

## Readings

**Essential Readings**:


- Bendavid, A. 1991. *Regional and Local Economic Analysis for Practitioners*, Praeger, New York.
- Isard Walter, 1960. *Methods of Regional Analysis: An Introduction to Regional Science*, MIT and John Wiley & Sons, Inc.


**Suggested Readings:**


- Brian Field and MacGregor Bryan, 1987. *Forecasting Techniques for Urban and Regional Planning*, Univ. College London.
- Davis H. Craig, 1990. *Regional Economic Analysis and Project Evaluation*, UBC Press.
- Isard Walter, 1975. *Introduction to Regional Science*, Prentice-Hall.
- Isard Walter, 1990. *Location Analysis and General Theory – Economic, Political, Regional and Dynamic*, Macmillian.
- Isard Walter, 2003. *History of Regional Science and the Regional Science Association International – The Beginnings and Early History*, Springer, Berlin Heidelberg.
- Klosterman, R. E. 1990. *Community Analysis and Planning Techniques*, Rowman & Littlefield Savage, Maryland.
- Krueckeberg, Donald A. and Silvers Arthur L. 1974. *Urban Planning Analysis: Methods and Models*, John Wiley, NY.
- Maki, Wilbur and Lichty Richard, 2000. *Urban Regional Economics: Concepts, Tools, Applications*, Iowa State Univ. Press.
- Oppenheim, Norbet, 1980, *Applied Models in Urban and Regional Analysis*, Prentice-Hall, New Jersey.
- Rondinelli, D. 1983. *Applied Methods of Regional Planning: The Urban Functions In Rural Development Approach*, Clark University.
- Treyz George I. 1993. *Regional Economic Modelling: A Systematic Approach to Economic Forecasting and Policy Analysis*, Academic Publishers, Boston.


**Digital Materials:** *Not Applicable*

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E108: TERRITORIAL BASES OF POLITICS IN INDIA (UPC 122902108)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E108: TERRITORIAL BASES OF POLITICS IN INDIA (UPC 122902108) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

**Learning Objectives:**

The learning objectives of this course are as follows:

- To provide students with an understanding of the territorial bases of the state and role of geographic factors in shaping political history.
- To provide an overview of constituencies and their evolution as well as politico electoral regions of India.
- To provide an understanding of India's role and position in regional blocs and among Indian Ocean and SAARC countries.

**Learning Outcomes:**

The learning outcomes of this course are as follows:

- To appreciate the role of terrain and other geographical factors in India's political history.
- To understand the process of evolution of constituencies and politico electoral regions of India
- An understanding of India's position in regional power blocs, bilateral relations with SAARC countries and the geopolitics of the Indian Ocean region.

- **Course Outline:**

**Unit 1: Geographical Bases of the Indian State**: India as a federal state-Territoriality, Location and size; Population: Distribution, social composition; Geopolitics of the Indian Ocean and India's position in the region.

Readings for Unit 1


- Chatterjee, Shiba Prasad. "Evolution of political history of India as influenced by geographical factors." Geographical Review of India 44, no. 1 (1982): 1-18.
- Nag, Prithvish, and Smita Sengupta. Geography of India. Concept Publishing Company, 1992.
- Sanyal, Sanjeev. Land of seven rivers: History of India's Geography. Random House India, 2012.
- Sidaway, James D. "The geography of political geography." The SAGE handbook of political geography (2008): 41e55.


**Unit 2: Territorial Factors in India's Political History**: Role of terrain, rivers and sea coasts in shaping India's political history, forces of integration; role of geographical factors on the continuity of political and social boundaries, coexistence of regional diversities within pan Indian unity.

Readings for Unit 2


- Baru, S. (2019). Indian Ocean Perspectives: From Sea Power to Ocean Prosperity. Strategic Analysis, 43(5), 435–440.
- Edney, Matthew H. Mapping an empire: The geographical construction of British India, 1765-1843. University of Chicago Press, 1997.
- K.M. Pannikar, (1951) India and the Indian Ocean: An Essay on the Influence of Sea Power on Indian History, George Allen & Unwin, London, 1945, 2nd Edition, 1951
- Gottlob, Michael. "India's unity in diversity as a question of historical perspective." Economic and Political Weekly (2007): 779-789.


**Unit 3: Diversity, Federalism and Nation Building**: Geographic perspectives on Socio cultural diversities, Federal mechanisms, Environmental movements, issues of rehabilitation and livelihoods, river water disputes, inclusion in nation building.

Readings for Unit 3


- Adhikari, Sudeepta. "Kautilya's Political Geography—Concepts and Ideas: An Example of Ancient Indian Geographical Thinking." In Practising Cultural Geographies: Essays in Honour of Rana PB Singh, pp. 257-297. Singapore: Springer Nature Singapore, 2022.
- Akbar, Mobashar Jawed. India: The siege within. Roli Books Private Limited, 2018.
- Padmanabhan, Sudarsan. "Unity in diversity: The Indian cosmopolitan idea." In *Routledge Handbook of Cosmopolitanism Studies*, pp. 476-489. Routledge, 2012
- Adeney, Katharine. "Does ethnofederalism explain the success of Indian federalism?." In Understanding Contemporary Indian Federalism, pp. 125-148. Routledge, 2018.


**Unit 4: Electoral support and Territorial Representation**: Constituencies and their evolution, Redistricting: Issues and concerns; Regional and National parties, the politics of coalition, Patterns of electoral support and representation; reading the emerging politico electoral regions of India.

Readings for Unit 4


- Dikshit, Ramesh D. "Geography and federalism." Annals of the Association of American Geographers 61, no. 1 (1971): 97-115.
- Singh, Chandra Pal. "A century of constituency delimitation in India." Political Geography 19, no. 4 (2000): 517-532.
- Raiyan, Pori Sayema. "Regional Political Parties in India: Origin, Past and Future." Journal of Namibian Studies 36 (2023).


**Tutorial Exercises**

For Unit 1: Group discussion on readings by Chatterjee, Nag
For Unit 2: Map superimposition to understand historical role of terrain factors in shaping political boundaries
For Unit 3: Case study of Kaveri water dispute and Narmada Bachao Movement
For Unit 4: Regional Analysis of Assembly Elections

**Practical Record**: Not Applicable

**Readings:**

**Essential/ Suggested Readings**:

- Adhikari, S. 1997. *Political Geography*, Rawat publications, Jaipur and Delhi.
- Bandhopadhya, J. 1991. *The Making of India's Foreign Policy*, Allied Pub, Delhi.
- Bhambri, C.P. 1991. *Political Process in India*, Vikas, New Delhi.
- Brass, P.R. 1990. *The Political Economy of India since Independence*, Cambridge University Press, New Delhi.
- Brass, P.R. 1983. *Caste, Faction and Party in Indian Politics*, Vol. I and II, Chanakya Pub, Delhi.
- Chakrabarty, Dilip K. The geopolitical orbits of ancient India: The geographical frames of the ancient Indian dynasties. Oxford University Press, 2010.
- Dikshit, Ramesh Dutta. The political geography of federalism: an inquiry into origins and stability. The Australian National University (Australia), 1971.
- Weiner M and J Osgoodfield (eds.), 1975. *Electoral Politics in the Indian States,* Centre for International Studies, MIT.
- Pannikar, K.N. 1955. *Geographical Factors in India's History*, Bharatiya Vidya Bhavan, Bombay.

## DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E109: URBAN GEOGRAPHY (UPC 122902109)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E109: URBAN GEOGRAPHY (UPC 122902109) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

### Learning Objectives:

The learning objectives of this course are as follows:

- To critically examine the multifaceted nature of urban settlements and the diverse lived experiences of individuals and communities within contemporary cities.
- To develop an understanding of the dynamic relationship between urban spaces and the broader societal, economic, political, and cultural forces that shape.
- To foster critical thinking about urban policy and planning interventions, and their implications for social justice and equitable development.

### Learning Outcomes:

The learning outcomes of this course are as follows:

- To critically understand key theoretical frameworks in urban geography and apply them to real-world case studies.
- To develop an understanding of the dynamic relationship between urban spaces and the broader societal, economic, political, and cultural forces that shape them
- To apply geographical insights to evaluate and engage with planning and policy responses to urban issues, with attention to context-specific and scalable solutions

### Course Outline:

**Unit 1: Introduction:** Conceptualizing the Urban: Defining urban; Conceptual differences and interrelations between Urbanism and urbanization; Theoretical approaches to studying urban

**Readings**


- Latham, A., McCormick, D., McNamara, K., and McNeil, D. (2009) Key Concepts in Urban Geography. Sage: London, California, New Delhi, Singapore
- Wirth, L. (1938). Urbanism as a Way of Life. *American Journal of Sociology*, *44*(1), 1–24.
- Saberwal, S. (1977). Indian urbanism: a sociohistorical perspective. *Contributions to Indian sociology*, *11*(1), 1-19.

- Storper, M., & Scott, A. J. (2016). Current debates in urban theory: A critical assessment. *Urban Studies*, *53*(6), 1114-1136.

**Unit 2: Historical and Global Transformations of Cities**: Urban evolution in historical perspective - ancient cities to Industrialization and the rise of modern cities; Colonial and post-colonial urbanism; Global cities and the world system

**Readings**

- Childe, V. Gordon (1950). The Urban Revolution. *The Town Planning Review*, 21(1), 3- 17.
- Smith Michael E. (2002). The Earliest Cities. In *Urban Life: Readings in Urban Anthropology*, edited by George Gmelch and Walter Zenner, 4 th ed., pp. 3-19. Waveland Press, Prospect Heights, Illinois.
- Hall, P. (2003). The end of the city? "The report of my death was an exaggeration" *City*, *7*(2), 141–152.
- King, A.D. (1989) Colonialism, Urbanism and Capitalist World Economy, IJURR, 13(1), 1-18

**Unit 3: Urban Society, Economy, and Culture**: The social organization of urban space - Segregation, gentrification, and spatial justice; Urban Subcultures, countercultures; Urban economy – informal and formal economies and emerging new economies.

**Readings**

- Paddison, R. (2001) Handook of Urban Studies, Part III – The City as People, Sage. London Thosand Oaks, New Delhi.
- Daniels, P. W. (2004). Urban challenges: the formal and informal economies in mega-cities. *Cities*, *21*(6), 501-511.

**Unit 4: Governing and Planning the City:** Urban governance and the role of the state; Urban citizenship and participation; Smart cities, sustainability, and future urban imaginaries.

**Readings**

- Da Cruz, N. F., Rode, P., & McQuarrie, M. (2019). New urban governance: A review of current themes and future priorities. *Journal of Urban Affairs*, *41*(1), 1-19.
- Ahluwalia, I. J. (2019). Urban governance in India. *Journal of Urban Affairs*, *41*(1), 83-102.
- Halegoua, G. (2020). *Smart cities*. MIT press.
- Pathak, C. R. (2020). *Challenges of smart cities in India* (pp. 261-269). Springer International Publishing.

**Tutorial Exercises**

- Group discussion on the advantages and limitations of various definitions of the city and which definition resonates most with student's understanding and why?
- Case study on the different phases of historical transformation of the city and their impact on urban forms
- Urban ethnography on a neighborhood students will document visible signs of socio-cultural diversity, inclusion/exclusion, gentrification, or community identity and present findings to peers.
- Students will evaluate an urban development policy or planning intervention in a city of their choice and critically assess its outcomes in terms of equity, accessibility, and inclusiveness.

- **Practical Record: Not Applicable**

## Readings:

**Essential Readings**:

- LeGates T.R.,Stout F., Caves, R.W (ed.) (2020) The City Reader (7th edition). Routledge: London and New York.
- Bridge, G Watson, S. (eds.) (2010)The Blackwell City Reader (2nd Edition), Wiley-Blackwell, UK.

**Suggested Readings:**

- Andrew, E.G.J, McCann, E and Thomas, M (2015) Urban Geography: A Critical Introduction, Wiley, Blackwell, UK.
- Gilbert, A and Gugler, J (eds.) (1992) Cities, Poverty, and Development: Urbanization the Third World, Oxford University Press, Oxford.
- Fainstein, S. S and Campbell, S (eds) (2011) Readings in Urban Theory (3rd Edition), Wiley-Blackwell, UK.
- Hall, T (2002) Urban Geography (2nd Edition). Routledge: London and New York.
- Brunn, S.D., Hays-Mitchell, M., Ziegler, D.J. (2012) Cities of the World: World Regional Urban Development (5th edition). Rowman and Littlefield Publishers: England
- Anderson,D (2017) Imaginary cities : a tour of dream cities, nightmare cities, and everywhere in between Chicago and London Chicago University Press
- Garcia, M et al (2023) Urban Policy in the framework of 2030 Agenda, Switzerland Springer
- Knox, P and Pinch, S (2010)Urban Social Geography (6th edition) Pearson: England
- Ren, X and Kiel, R (2018) The Globalizing Cities Reader (2nd edition) Routledge: London and New York.
- Davidson, M. Martin, D. (2013) Urban Politics. Critical Approaches. Sage: London, California, New Delhi, Singapore.

**Digital materials:** Not Applicable

# SKILL BASED (SB) COURSE:
# GEOG-S101: BUILDING GEO-DATABASE (PRACTICAL)
# (UPC 122903101)

| Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-S101: BUILDING GEO-DATABASE (PRACTICAL) (UPC 122903101) | 2 | 1 | 0 | 1 | BA/BSc in Geography | Nil |

## Learning Objectives:

The learning objectives of this course are as follows:

- To enable students to deal with the complexity of geospatial data handling in GIS
- To build a versatile geo-database to handle complex geographical problems

## Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will be able to manage a complex geospatial database.
- The students will be able to analyze complex geospatial problems.

## Course Outline:

**Unit 1: GIS Data Management:** GIS Data Structure, Topology, R-DBMS; Structure, concepts, and components of Geo-database

**Readings for Unit 1:**

- Kresse, W. and Danko, D.M. (Eds.) 2012. Springer Handbook of Geographic Information
- Zeiler, M. 1999. Modelling Our World: The ESRI Guide to Geodatabase Design

**Unit 2: Geo-database layers:** Interpolation, Krigging; terrain derivatives; vector and raster-based layers and conversions; hotspot analysis

**Readings for Unit 2:**

- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.
- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.

**Practical Record**:

- Handling Spatial and Attribute data using GIS Software
- Building R-DBMS, Query Analysis
- Building a Geo-database using point, line, and polygon features

- Geospatial analysis using a geo-database approach

**Readings:**

**Essential Readings**:


- Kresse, W. and Danko, D.M. (Eds.) 2012. Springer Handbook of Geographic Information
- Zeiler, M. 1999. Modelling Our World: The ESRI Guide to Geodatabase Design


**Suggested Readings:**


- Chang, K-t. 2006. Introduction to Geographic Information Systems, Tata McGraw-Hill.
- DeMers, M. 2009. Fundamentals of Geographic Information Systems, 4th Edition, John Wiley and Sons.
- Fisher, P. and Unwin, D.J. 1995. Re-presenting GIS, John Wiley.
- Graser, A. 2016. Learning QGIS, 3rd Edition, Packt.
- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Law, M. and Collins, A. 2018. Getting to Know ArcGlS Desktop, 5th Edition, ESRI Press.
- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.
- Shekar, S. and Xiong, H. (eds.), 2008. Encyclopedia of GIS, Springer.

# DISCIPLINE SPECIFIC CORE (DSC) COURSE – GEOG-C201: CLIMATOLOGY AND BIOGEOGRAPHY (UPC 122901201)

| Course title & Code | Credits | Duration (Hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-C201: CLIMATOLOGY AND BIOGEOGRAPHY (UPC 122901201) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

1. Providing a comprehensive understanding of climatic systems of the Earth and their influence on the spatial distribution of flora and fauna.
2. Examine atmospheric processes, climate variability, and biogeographic regions through theoretical and applied frameworks.
3. Develop critical thinking on the dynamic interactions between climate, landforms, biodiversity, and human interventions.
4. Introduce global and regional environmental issues such as climate change, biodiversity loss, biome shifts, and conservation challenges.
5. Encourage interdisciplinary approaches in analyzing ecosystem processes, climatic drivers, and spatial distribution patterns.

## Learning Outcomes:

The learning outcomes of this course are as follows:

1. Demonstrate an in-depth understanding of climatic systems, atmospheric processes, and biogeographic principles influencing the distribution of life on Earth.
2. Evaluate the interrelationship between climate variability, ecosystem dynamics, and species distribution with reference to global and regional case studies.
3. Apply theoretical concepts to assess biogeographic patterns and climatic influences across diverse landscapes, including forests, mountains, deserts, and aquatic systems.
4. Critically assess environmental issues such as climate change, biodiversity loss, and habitat degradation, and propose sustainable adaptation or mitigation strategies.
5. Communicate scientific observations and research findings effectively through academic writing, presentations, and spatial visualizations.

## Course Outline:

**Unit 1: Energy in the Earth-Atmosphere System:** Distribution of Insolation and Energy in the Earth and its Atmosphere, Factors affecting the Insolation and Energy and their impact on

Earth and its Atmosphere.

**Readings**

1. Trewartha G. T., 1980. *An Introduction to Climate*, McGraw Hill Company, New York.
2. Lal, D. S. 2003. *Climatology*, Allahabad: Sharda Pustak Bhawan.

**Unit 2: Circulations within the Atmosphere:** Tri-Cellular Wind System, Movement of Air Masses and Influences of Jet Streams; **World Climatic Patterns:** Koppen, Components of the Climatic Classifications, Criteria of the Climatic Classifications and Latitudinal Extent of various Climates of the world.

**Readings**

1. Trewartha G. T., 1980. *An Introduction to Climate*, McGraw Hill Company, New York.
2. Lal, D. S. 2003. *Climatology*, Allahabad: Sharda Pustak Bhawan.

**Unit 3: Extent and Distribution of major Biomes of the Earth:** Mapping, Key Features of each Biome, Characteristics of various Floral and Faunal Species and their Continental Locations, Factors affecting their distribution and their inter relationships including the Latitudinal and Altitudinal Biomes, Dominating species and related Contemporary Issues.

**Readings**

1. Haggett, R.J. 1998. *Fundamentals of Biogeography*, Routeldge, U.S.A.
2. Clarke, G. L. 1967. *Elements of ecology*, New York: John Wiley Pub.
3. Mathur, H.S. 1998. *Essentials of Biogeography,* Anuj Printers, Jaipur.

**Unit 4:** Ecological successions: Nature and Types of Ecological Succession, its Impact and Importance, Stages and Climax.

**Readings**

1. Parmesan, C., Yohe, G. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature,* 421 (6918), 37–42.
2. Hoyt, J.B. 1992. *Man, and the Earth*, Prentice Hall, U.S.A.

**Tutorial Exercises**

1. Discussion on current aspects, reports of International and national agencies and case studies related to climate
2. Group discussions and report submission on contemporary topics
3. **Case Study Review and** analyzing recent climate change events (e.g., heatwaves, cyclones)
4. Microclimate study within campus or nearby urban areas as **Field-Based Assignment and writing a** biogeographic impact report
5. **Biodiversity Hotspot Debate for** students to argue conservation priorities between hotspots.
6. **Species Mapping** and interpretation of local biodiversity patterns.

**Practical Record**: Not Applicable

**Readings:**

**Essential Readings**:

1. Trewartha G. T., 1980. *An Introduction to Climate*, McGraw Hill Company, New York.
2. Lal, D. S. 2003. *Climatology*, Allahabad: Sharda Pustak Bhawan.
3. Haggett, R.J. 1998. *Fundamentals of Biogeography*, Routeldge, U.S.A.
4. Clarke, G. L. 1967. *Elements of ecolog*y, New York: John Wiley Pub.
5. Mathur, H.S. 1998. *Essentials of Biogeography,* Anuj Printers, Jaipur.
6. Parmesan, C., Yohe, G. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature,* 421 (6918), 37–42.
7. Hoyt, J.B. 1992. *Man, and the Earth*, Prentice Hall, U.S.A.

**Suggested Readings:**

1. Haden-Guest, S., Wright, J. K. and Teclaff, E. M. 1956. *World Geography of Forest Resources*, New York: Ronald Press Co.
2. Lapedes, D.N. 1974. *Encyclopedia of Environmental Science* (eds.), McGraw Hill.
3. *Mountain and Tree cover in Mountain Regions Report. 2002*, UNEP-WCMC.
4. Singh Savindra 2015. *Paryawaran Bhoogol, Prayag Pushtak Bhawan*, Allahabad (Hindi).
5. Sivaperuman, Chandrakasan et al. 2018. *Biodiversity and Climate Change Adaptation in Tropical Islands*. Academic Press, London.

**Digital materials:** Not Applicable

# DISCIPLINE SPECIFIC CORE (DSC) COURSE – GEOG-C202: CONTEMPORARY HUMAN GEOGRAPHY (UPC 122901202)

| Course title & Code | Credits | Duration (Hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-C202 CONTEMPORARY HUMAN GEOGRAPHY UPC (122901202) | 4 | 3 | 1 | 0 | BA/BSc in Geography | NIL |

## Learning Objectives:

The learning objectives of this course are as follows:

- To introduce the current debates within the field of human geography and to cultivate an understanding of the historical, theoretical, and empirical contexts from which these debates have emerged.
- To critically examine a wide range of contemporary socio-spatial issues, with an emphasis on understanding how spatial processes shape and are shaped by social, political, cultural, and economic forces.
- To provide foundational knowledge of social, cultural, political, and economic dimensions of human geography, enabling students to analyze contemporary issues from both global and local perspectives.

## Learning Outcomes:

- To understand the interdisciplinary role and theoretical contributions of geography within the social sciences.
- To apply geographical concepts and frameworks to case studies and field-based scenarios.
- To evaluate contemporary social issues using spatial analysis and critical geographical perspectives.

## Course Outline:

**Unit 1:** Introduction to key concepts: Foundational and Contemporary issues and debates; Defining Space and Place; Understanding different approaches in conceptualizing space and place

**Readings**

- Tuan, YF. (1979). Space and Place: Humanistic Perspective. In: Gale, S., Olsson, G. (eds) Philosophy in Geography. Theory and Decision Library, vol 20. Springer, Dordrecht.
- Cresswell, T. (2019). Maxwell Street: Writing and thinking place. In *Maxwell Street*.

University of Chicago Press.

- Soja, E. W. (2008). Thirdspace: Toward a new consciousness of space and spatiality. In *Communicating in the third space*(pp. 63-75). Routledge.
- Datta, A., & De, A. (2008). Reimagining impossible worlds: Beyond circumcized geographical imaginations: A play in many acts. *Progress in Human Geography*, *32*(5), 603-612.

**Unit 2:** Socio-spatial interconnections: Conceptualizing place-making; Processes of Place making in everyday lives; Place making and spatializing of identities, difference and exclusion.

**Readings**

- Cresswell, T. (2022). Writing (new) worlds: Poetry and place in a time of emergency. *Geografiska Annaler: Series B, Human Geography*, *104*(4), 374-389.
- Gupta, A., & Ferguson, J. (2008). Beyond 'culture': space, identity, and the politics of difference. In *The cultural geography reader* (pp. 72-79). Routledge.
- Yeoh, B. S., & Kong, L. (1994). Reading landscape meanings: state constructions and lived experiences in Singapore's Chinatown. *Habitat International*, *18*(4), 17-35.

**Unit 3:** Critical geopolitics: Understanding the relationship between territoriality and power, nationalism, citizenship and conflicts; Spatial dimensions and strategies of conflict resolution.

**Readings**

- Sebastien, L. (2020). The power of place in understanding place attachments and meanings. *Geoforum*, *108*, 204-216.
- Storey, D. (2024). *Territories: The claiming of space*. Routledge. McConnell, F., Megoran, N., & Williams, P. (2014). (Chs 6 and 8)
- McConnell, F., Megoran, N., & Williams, P. (2014). *Geographies of peace: New approaches to boundaries, diplomacy and conflict resolution*. Bloomsbury Publishing. (Ch 1and 10)

**Unit 4:** Development Geographies: Understanding theories of development; Re-thinking development; Development in the global south with particular focus on sustainable development goals.

**Readings**

- Willis, K. (2011). *Theories and practices of development*. Routledge. (Ch 1)
- Chant, S. H., & McIlwaine, C. (2009). *Geographies of development in the 21st century: an introduction to the global South*. Edward Elgar Publishing. (Ch 2)
- Khalid, A. M., Sharma, S., & Dubey, A. K. (2021). Concerns of developing countries and the sustainable development goals: Case for India. *International Journal of Sustainable Development & World Ecology*, *28*(4), 303-315.

**Tutorial Exercises**

- Using Creswell's concept of my place students will write their own understanding of their place – their homes, home towns, school, etc.
- Students will do a photo documentation of places like local markets, park, street corners and tea stores and analyze how different people 'make place' there.
- Students will draw mental maps of a familiar space and mark "zones of comfort and safety' and analyse the spatial articulation of concepts of safety and comfort
- Choosing news stories about on any conflict or displacement students will

deconstruct the geographical assumptions implicit in the coverage.
- Students will conduct a "development audit" of their homes village/city locality and assess infrastructure, education, health, and sustainability.

**Practical Record**: Not Applicable

**Readings:**

**Essential Readings**:
- Agnew, J.A. and Duncan, J.S. (2016) The Wiley Companion to Human Geography, Wiley, UK.
- Cloke, P., Philo, C., Sadler, D. (2003) Approaching Human Geography. An Introduction to Contemporary Theoretical Debates. Sage: London.
- Cresswell, T. (2014). *Place: an introduction (2nd edition)*. John Wiley & Sons.

**Suggested Readings:**
- Agnew, J.A. and Duncan, J.S. (2016) The Wiley Companion to Human Geography, Wiley, UK.
- Kitchin, B and Thrift N (eds) (2009) International Encyclopedia of Human Geography, Elsevier
- Benko, G and Strohmayer, U (eds) (2004) Human Geography. A History for the 21st Century, Routledge, London and New York.
- Kobayashi, A and Mackenzie, S (1989) Remaking Human Geography, Routledge, London New York.
- Daniels, S and Lee, R. (eds) (1996) Exploring Human Geography: A Reader, Routledge, London and New York.
- Hubbard P, Kitchin B and Valentine G (2008) Key Texts in Human Geography, Sage, London.
- Hubbard, P., Kitchin, R., Bartley, B., Fuller, D. (2005) Thinking Geographically. Space, Theory and Contemporary Human Geography. Continuum: London.
- Aitken, S.C, Valentine, G. (2015) Approaches to Human Geography. Philosophies, Theories, People and Practices. Sage: London, California, Delhi, Singapore.
- Marshall, Tim. (2025) Prisoners of Geography. London, England: Elliott & Thompson.
- Marshall, Tim. (2025) Power of Geography: Ten Maps that reveal the future of our World. London, England: Elliott & Thompson.

**Digital materials:** None

# DISCIPLINE SPECIFIC CORE (DSC) COURSE
## GEOG-C103: STATISTICAL METHODS IN GEOSCIENCE (PRACTICAL)
## (UPC 122901103)

| Course title & Code | Credits | Duration (Hrs per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOG-C103: STATISTICAL METHODS IN GEOSCIENCE (PRACTICAL) (UPC 122901103) | 4 | 3 | 0 | 1 | BA/ BSc in Geography | |

**Learning Objectives:**

The learning objectives of this course are as follows:

- To introduce students to the application of statistical methods in geoscientific investigations.
- To develop the ability to process, analyze and interpret geographical data using statistical tools.
- To enable students to identify patterns and regional disparities using statistical techniques.
- To build competence in applying statistical outputs for spatial interpretation and planning.

**Learning Outcomes:**

On transaction of this course students will be able to

- Apply probability distributions and variance analysis to evaluate geographical datasets.
- Employ non-parametric statistical tests for interpreting spatial patterns in non-normal data.
- Conduct correlation and regression analysis to examine spatial relationships between geographic variables.
- Integrate statistical techniques to draw meaningful insights for geoscientific spatial analysis

**Course Outline:**

**Unit 1: Introduction (Theory/ Practical – xxx hrs):**

Indices of inequality and disparity, Probability Theory: Normal, Binomial and Poisson distributions.

**Readings**


- Eldon, D. (1983). Statistics in Geography: A Practical Approach. Blackwell.
- Mukhopadhyay, P. (2011). An Introduction to the Theory of Probability (pp. 1–474). World Scientific Publishing Co. https://doi.org/10.1142/7802


**Unit 2: Hypothesis testing (Theory/ Practical – xxx hrs):**

F-Distributions, Analysis of Variance, One-way and Two-way classification.

**Readings**

- Gregory, S. (1978). Statistical Methods and the Geographer. Longman.
- Santhakumaran, A. (2001). Fundamentals of Testing Statistical Hypotheses. Atlantic Publishers & Distributors Pvt Ltd.

**Unit 3: Non-parametric Tests (Theory/ Practical – xxx hrs):**

Chi-Square, Kolmogorov-Smirnov, Mann-Whitney and Kruskal Wallis tests.

**Readings**

- Veeraraghavan, V., & Shetgovekar, S. (2016). Textbook of Parametric and Non-parametric Statistics. Sage Publications India Pvt Ltd.
- Ewens, W. J., & Brumberg, K. (2023). Introductory Statistics for Data Analysis (pp. 1–273). Springer Nature. https://doi.org/10.1007/978-3-031-28189-1

**Unit 4: Correlation and Regression Analysis (Theory/ Practical – xxx hrs):**

Rank order and product moment correlation; Linear regression, multi-linear regression.

**Readings**

- Johnston, R. J. (1978). Multivariate Statistical Analysis in Geography. Longman.
- Sharma, A. K. (2005). Text Book of Correlations and Regression. Discovery Publishing House, New Delhi.

**Tutorial Exercises:** Not Applicable

**Practical Record**: Five practical exercises are to be completed in the Practical file from Units 1, 2, 3 and 4. These will involve hands-on practice with calculating indices of inequality and disparity, and solving numerical problems using Normal, Binomial, and Poisson distributions. Students will apply F-distributions and perform analysis of variance through one-way and two-way classification techniques to assess patterns in geospatial data. The exercises will also include application of non-parametric tests such as Chi-Square, Kolmogorov-Smirnov, Mann-Whitney, and Kruskal-Wallis for spatial data interpretation. Correlation and regression analyses using rank order, Pearson's, and multi-linear methods will be conducted to evaluate inter-variable relationship.

**Readings:**

**Essential Readings**:

1. Pal, S. K. (1998). Statistics for Geoscientists: Techniques and Applications. Concept Publishing.
2. Mahmood, A. (1977). Statistical Methods in Geographical Studies. Rajesh Publications.

3. Mandal, R. B. (2014). Statistics for Geographers and Social Scientists. Concept Publishing Company, New Delhi.

**Suggested Readings:**

1. King, L. J. (1969). Statistical Analysis in Geography. Prentice Hall.
2. Yeates, M. (1974). An Introduction to Quantitative Analysis in Human Geography. McGraw-Hill.
3. Chorley, R. J. & Haggett, P. (1970). Models in Geography. Methuen.
4. Davis, J. C. (2002). Statistics and Data Analysis in Geology (3rd ed.). John Wiley & Sons.
5. Sahu, S. K. (2024). Introduction to Probability, Statistics & R. Springer International Publishing. https://doi.org/10.1007/978-3-031-37865-2
6. Rogel-Salazar, J. (2023). Statistics and Data Visualisation with Python (1st ed.). Chapman and Hall/CRC. https://doi.org/10.1201/9781003160359

**Digital materials:** Not Applicable

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E201: CULTURAL POLICY AND HERITAGE GOVERNANCE (UPC 122902201)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E201: CULTURAL POLICY AND HERITAGE GOVERNANCE (UPC- 122902201) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

- To comprehend key theoretical frameworks and concepts in cultural policy and heritage conservation
- To analyze national and international cultural policy frameworks and their impact on heritage governance
- To evaluate ethical, political, and economic issues surrounding cultural heritage and its conservation and management.

## Learning Outcomes:

- Evaluating and assessing the various models of cultural policy and their historical development and its application in real world contexts.
- Assessing the implications of cultural and heritage policies on identity, development, and social justice
- Engaging with real-world case studies, applying theoretical insights to policy evaluation and design

## Course Outline:

**Unit 1:** Introduction to Cultural Policy and Heritage governance: Definitions, key concepts and debates: culture, heritage, policy, governance; Historical evolution of cultural policy and heritage conservation.

**Readings**


- Durrer, V., Miller, T., & O'Brien, D. (Eds.). (2017). The Routledge Handbook of Global Cultural Policy (1st ed.). Routledge. (Ch1)
- Pendlebury, J. (2015). Heritage and Policy. In: Waterton, E., Watson, S. (eds) The Palgrave Handbook of Contemporary Heritage Research. Palgrave Macmillan, London.
- Schmitt, T. M. (2009). Global cultural governance. decision-making concerning World Heritage between politics and science. *Erdkunde*, 103-121.

**Unit 2:** Heritage Theories and Conservation Principles: Concepts of authenticity, integrity, and significance; The Venice Charter, Burra Charter, UNESCO conventions; Public value theory and cultural rights; Cultural citizenship and access.

**Readings**

- Billore, S. (2021). Cultural Consumption and Citizen Engagement—Strategies for Built Heritage Conservation and Sustainable Development. A Case Study of Indore City, India. *Sustainability*, *13*(5), 2878. https://doi.org/10.3390/su13052878
- Jones, S., & Yarrow, T. (2013). Crafting authenticity: An ethnography of conservation practice. *Journal of Material Culture*, *18*(1), 3-26.
- Liu, R., Gao, W., & Yang, F. (2025). Authenticity, Integrity, and Cultural–Ecological Adaptability in Heritage Conservation: A Practical Framework for Historic Urban Areas—A Case Study of Yicheng Ancient City, China. *Buildings*, *15*(8), 1304.

**Unit 3:** Community Participation and Policy Ethics: Participatory heritage governance; Rights-based approaches and community custodianship; Economic valuation of cultural assets, cultural industries and economic development.

**Readings**

- Bose, L. (2022). A call for a community-driven participatory approach in restoring the heritage in the city of Chandannagar, West Bengal. *Journal of Community Archaeology & Heritage*, *10*(1), 24–32.
- Chitty, G. (Ed.). (2017). *Heritage, conservation and communities: Engagement, participation and capacity building*. Routledge. (Part 1)
- Nijkamp, P. (2012). Economic valuation of cultural heritage. *The economics of uniqueness: Investing in historic city cores and cultural heritage assets for sustainable development*, *75*, 75-103.

**Unit 4:** Heritage Tourism and Sustainable Policy Design: Tourism as policy driver: benefits and challenges; Models of sustainable tourism policy; Digitization of cultural heritage.

**Readings**

- Andriotis, K., Stylidis, D., & Weidenfeld, A. (Eds.). (2020). *Tourism policy and planning implementation: Issues and challenges*. Routledge.
- King, L., Stark, J. F., & Cooke, P. (2016). Experiencing the Digital World: The Cultural Value of Digital Engagement with Heritage. *Heritage & Society*, *9*(1), 76–101. https://doi.org/10.1080/2159032X.2016.1246156
- Zaimes, G.N., Iakovoglou, V., Maclaren, F.T., Manchanda, P. (2022). Adopting Digital Tools & Technology to Evolve Sustainable Tourism at World Heritage Sites: Case Studies from India and Greece

**Tutorial Exercises**

- Group discussion on interconnections between the terms: *culture*, *heritage*, *policy*, and *governance*.
- Students select a local heritage site and evaluate it through the lens of *authenticity*, *integrity*, and *cultural rights* and submit a report.
- Students assume roles (heritage officer, local community member, urban planner, economist) and debate a mock proposal to redevelop a heritage neighborhood.

- Write a policy brief recommending sustainable tourism strategies for a selected heritage town (e.g., Hampi, Varanasi, Madurai) that addresses the most pressing issues.
- In small teams, students will co-design a *sustainable heritage tourism* strategy for any site of their choice.

**Practical Record**: Not applicable

**Readings:**

**Essential Readings**:


- Trumpp, T. (2019). Urban cultural heritage governance: Understanding the interlinkages of imagination, regulation and implementation in Delhi, India. Franz Steiner Verlag Wiesbaden GmbH.
- Young, G. (Ed.). (2013). The Routledge Research Companion to Planning and Culture (1st ed.). Routledge.


**Suggested Readings:**


- Bennett, T. (1995). The birth of the museum: history, theory, politics. Routledge.
- Boym, S (2002) The Future of Nostalgia. New York: Basic Books. Casey.
- Craik, J. (2007). Re-Visioning Arts and Cultural Policy: Current Impasses and Future Directions. ANU Press
- Harold Kalman, Heritage Planning: Principles and Process (New York: Routledge,2014)
- Laurajane Smith, Uses of heritage, (London: Routledge, 2006).
- Lowenthal, D. (2003) The past is a foreign country. Cambridge University Press: UK
- Miles Glendinning, (2013) The Conservation Movement: A History of Architectural Preservation. Routledge: London and New York.
- Rodney Harrison, Heritage: Critical Approaches, (London: Routledge, 2013).
- Silva, K.D., and Chapagain, N.K. (eds) (2013) Asian Heritage Management. Contexts, Concerns, Prospects. Routledge: London and New York.
- UNESCO Intangible Heritage Convention (2003)
- UNESCO World Heritage Convention (1972)


**Digital materials:**

Venice Charter: https://www.icomos.org/charters-and-doctrinal-texts/
Burra Charter: https://australia.icomos.org/publications/burra-charter-practice-notes/

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG- E202: DIGITAL ETHNOGRAPHY (PRACTICAL) (UPC 122902202)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E202: DIGTIAL ETHNOGRPAPHY (PRATICAL) (UPC 122902202) | 4 | 2 | 0 | 2 | BA/BSc in Geography | |

## Learning Objectives:

- Develop a comprehensive understanding of digital ethnography as a qualitative research methodology
- Apply advanced methods of data collection, analysis tailored for digital environments
- Acquire practical proficiency with advanced AI-assisted qualitative analysis software and tools

## Learning Outcomes:

- Critically evaluate the foundational assumptions, theories, and methodologies underpinning digital ethnography
- Demonstrate proficiency in defining, conceptualizing, and designing research projects
- Apply robust qualitative data collection methods tailored to digital environments

## Course Outline:

**Unit 1:** Introduction to Digital ethnography: Understanding ethnography (L), Methodological assumptions, tools and approaches (L); Defining the field in digital spaces (L); Designing Digital Ethnographic Research (L)

**Readings**


- Markham, A. (2017). Ethnography in the Digital Internet Era: from fields to flows, descriptions
  to interventions, In N. K. Denzin, & Y. S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (5 ed., pp. 650-668). SAGE Publications.
- Sloan, L., Quan-Haase, A., McCay-Peet, L., & Quan-Haase, A. (2016). What is social media and what questions can social media research help us answer? In *What is social media and what questions can social media research help us answer?* (pp. 13-26). SAGE Publications Ltd.
- Varis, P. (2020). Ethnography. In *The Routledge Handbook of English Language and Digital Humanities* (1st ed.). Routledge.

**Unit 2**: Data Collection Methods in Digital Ethnography: Immersive research and observational practices online (P); Adapting interview techniques for digital platforms (P); Capturing online content, digital media archives (P); Challenges of Digital Fieldwork and ethical concerns (L)

**Readings**

- Ugoretz, Kaitlyn. 2017. A Guide to Unobtrusive Methods in Digital Ethnography.
- Sloan, Luke, Anabel Quan-Haase, Philipp Mayr, and Katrin Weller. (2016). Think Before You Collect: Setting Up a Data Collection Approach for Social Media Studies, In *The SAGE Handbook of Social Media Research Methods*, 107-24. 55 City Road, London: SAGE Publications Ltd.
- Ulmer, G. L., & Cohen, J. H. (2016). Ethnographic Inquiry in the "Digitized" Fields of Madre de Dios, Peru and Oaxaca, Mexico: Methodological and Ethical Issues. *Anthropological Quarterly*, *89*(2), 539–560.

**Unit 3:** Analyzing Digital Ethnographic Data: Qualitative Analysis Approaches (L); Content analysis, discourse analysis, thematic coding, narrative approaches (P); Analysing Digital Interactions and Practices; Interpreting online behaviours, identities, and interactions (P)

**Readings**

- Creswell, John. (2007). Qualitative Inquiry and Research Design: Choosing Among Five Approaches. London: Sage.
- Caliandro, Alessandro. (2017). Digital Methods for Ethnography: Analytical Concepts for Ethnographers Exploring Social Media Environments. *Journal of Contemporary Ethnography*, 1–28
- Mahmod, J. (2019). New Online Communities and New Identity Making: The Curious Case of the Kurdish Diaspora. *Journal of Ethnic and Cultural Studies*, *6*(2), 34–43.

**Unit 4:** AI tools and software for Digital Ethnographic Analysis: Software based data analysis, and qualitative coding tools (P)

**Readings**

- Radford, M. L., Kitzie, V., Floegel, D., Connaway, L. S., Bossaller, J., & Burns, S. (2019). InVivo inspiration: Investigating computer assisted qualitative data analysis software (CAQDAS). Workshop presented at the iConference 2019, March 31, 2019, Washington, DC.
- Astrupgaard, S. L., Lohse, A., Gregersen, E. M., Salka, J. H., Albris, K., & Pedersen, M. A. (2023). Fixing Fieldnotes: Developing and Testing a Digital Tool for the Collection, Processing, and Analysis of Ethnographic Data. *Social Science Computer Review*, *42*(5), 1223-1243.
- Li, Zhuofan, and Corey M. Abramson. (2023). Ethnography and Machine Learning: Synergies and New Directions In Christian Borch, and Juan Pablo Pardo-Guerra (eds). In *The Oxford Handbook of the Sociology of Machine Learning*, Oxford Handbooks.

**Tutorial Exercises: Not Applicable**

**Practical Record**: A project report will be prepared based on digital ethnography

**Readings:**

**Essential Readings**:

- Sloan, L., & Quan-Haase, A. (2016). *The SAGE Handbook of social media research methods*. SAGE Publications Ltd
- Hjorth, L., & Khoo, O. (Eds.). (2015). Routledge Handbook of New Media in Asia (1st ed.). Routledge.
- Grbich, C. (2013). Design methodologies, data management and analytical approaches. In *Design methodologies, data management and analytical approaches* (pp. 15-24). SAGE Publications Ltd.

**Suggested Readings:**

- Pink, S., Horst, H., Postill, J., Hjorth, L., Lewis, T., & Tacchi, J. (2015). Digital Ethnography. SAGE.
- Hine, C. (2020). Ethnography for the Internet. Routledge.
- Boellstorff, T., Nardi, B., Pearce, C., & Taylor, T. L. (2024). Ethnography and Virtual Worlds. Princeton University Press.
- Kozinets, R. V., & Gambetti, R. (2021). Netnography unlimited: understanding technoculture using qualitative social media research. Routledge.
- Kozinets, R. V. (2019). Netnography: The Essential Guide to Qualitative Social Media Research. SAGE.
- Van, H., Puppis, M., Donders, K., Leo Van Audenhove, & Springerlink (Online Service. (2019). The Palgrave Handbook of Methods for Media Policy Research. Springer International Publishing.
- Dicks, B., Mason, B., Coffey, A., & Atkinson, P. (2006). Qualitative research and hypermedia: ethnography for the digital age. Sage Publications.
- Gubrium, A., & Harper, K. (2016). Participatory Visual and Digital Methods. Routledge.
- Boyka Simeonova, & Galliers, R. D. (2023). Cambridge Handbook of Qualitative Digital Research. Cambridge University Press.
- Whiting, R., & Pritchard, K. (2021). Collecting qualitative data using digital methods: for business and management students. Sage.

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E203: EVERYDAY GEOGRAPHIES (UPC 122902203)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E203: EVERYDAY GEOGRAPHIES (UPC 122902203) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives

The learning objectives of this course are as follows:

- To engage students to unpack everyday spaces and processes
- To study the dynamics of 'everyday' in production of spaces
- To make sense of 'everyday' context as a field and source of data

## Learning Outcomes

The learning outcomes of this course are as follows:

- Appreciate the Everyday as an important context for knowledge making
- Engage with contemporary theories and empirical evidences to make sense of production of space
- Devise innovative ways of building theory from the bottom-up.

## Course Outline

**Unit 1: Introduction:** Ontology and epistemology of Everyday Geographies; Scope & Relevance of the Everyday; The ordinary city framework and the Everyday. Field work and Field Journal.

**Readings**

- Holloway, L. and Hubbard, P., 2014. *People and place: the extraordinary geographies of everyday life*. Routledge
- Robinson, J. 2013. *Ordinary cities: Between modernity and development*. Routledge.
- Rigg, J., 2007. *An everyday geography of the global south*. Routledge.

**Unit 2: Settling and Residing**: Meaning of home and belonging; public space and street: Negotiations and spatial practices of Settling; urban informality: appropriation and contestation

**Readings**

- Askins, K., 2015. Being together: Everyday geographies and the quiet politics of belonging. *ACME: An International Journal for Critical Geographies*, 14(2), pp.470-478.

- Bhandari, P., 2023. Lived reality of elite neighbourhoods: geographies of inequality in Delhi. *Contemporary South Asia*, 31(1), 36-50.
- Caldeira, T. P., 2017. Peripheral urbanization: Auto-construction, transversal logics, and politics in cities of the global south. *Environment and Planning D: Society & Space*, 35(1), 3-20.
- Marx, C., & Kelling, E., 2019. Knowing urban informalities. *Urban Studies*, 56(3), 494-509.


**Unit 3: Aspirational Lives and Encounters:** People and Everyday identities; Urban individual biographies, Spatial Imagination: hopes and aspirations

**Readings**


- Palat Narayanan, N., & Véron, R. (2018). Informal production of the city: Momos, migrants, and an urban village in Delhi. *Environment and Planning D: Society and Space*, 36(6), 1026-1044.
- Ramakrishnan, K., 2013. City futures: aspirations and urban imaginaries in Delhi. *Kaleidoscope*, 5(1), pp.100-108.


**Unit 4:** Moral geographies of participation and leisure: spirituality, health and wellness; practices of consumption: eating and drinking, shopping, watching; urban nightlife and hedonism

**Readings**


- Bunnell, T., Yea, S., Peake, L., Skelton, T. and Smith, M., 2012. Geographies of friendships, *Progress in Human Geography*, 36(4), 490-507.
- Hinchliffe, S. and Whatmore, S., 2006. Living cities: towards a politics of conviviality, *Science as culture*, 15(2), 123-138.
- Jupp, E., 2008. The feeling of participation: Everyday spaces and urban change. *Geoforum*, 39(1), pp.331-343
- Lakshyayog., 2023. Production of Fit City: Physical (In) Activity, Body and Everyday Space in Delhi. *Social Change*, 53(2), 226-239.


## Tutorial Exercises

- Differentiate between Spectacular and Everyday events around us.
- Class discussion on Everyday life concept by Henri Lefebvre and Michel de Certeau.
- Photo essay on practices of settling in the city of a community of your choice.
- Discussion on pre-suggested walks around residential neighbourhoods in Delhi.
- Tutorial discussion on how to collate an urban individual biography
- Tutorial discussion on how to present an urban individual biography
- Group assignment on aspirations and everyday life on Delhi University campus
- Group assignment presentation on aspirations and everyday life.
- Make sense of people's spiritual engagements in Delhi (may Include Yoga classes, place of worship visits etc)
- A visit to Open Gyms in Public park and discussion around it.
- Discussion on young people, nightlife practices and hedonism.

**Practical Record**: *Not Applicable*

## Readings

**Essential Readings**:


- Chakravarty, S., & Negi, R., (Eds.). 2016. *Space, planning and everyday contestations in Delhi.* Springer India: New Delhi.
- Holloway, L. and Hubbard, P., 2014. *People and place: the extraordinary geographies of everyday life*. Routledge
- Robinson, J. 2013. *Ordinary cities: Between modernity and development*. Routledge.
- Rigg, J., 2007. *An everyday geography of the global south*. Routledge.
- Srivastava, S. 2014. *Entangled urbanism: Slum, gated community, and shopping mall in Delhi and Gurgaon*. Oxford University Press.


**Suggested Readings:**


- Anjaria, J. S., & McFarlane, C. (Eds.). 2013. *Urban navigations: politics, space and the city in South Asia*. Routledge: London, New York and Delhi.
- Chatterton, P. and Hollands, R., 2003. *Urban nightscapes: Youth cultures, pleasure spaces and corporate power*. Routledge.
- Datta, A. 2016. *The illegal city: Space, law and gender in a Delhi squatter settlemen*t. Routledge: London.
- Finnegan, R., 1998. *Tales of the city: a study of narrative and urban life*. Cambridge University Press.
- Parnell, S. and Oldfield, S. (eds.). 2014. *The Routledge handbook on cities of the global South*, Routledge
- Phillips, R. and Johns, J. 2012. *Fieldwork for Human Geography*, Sage
- Roy, A. 2005. Urban informality: toward an epistemology of planning*, Journal of the American planning association*, 71(2), 147-158.


**Digital Materials:** *Not Applicable*

# DISCIPLINE SPECIFIC ELECTIVE COURSE: GEOG-E204: GEOGRAPHY OF AGRICULTURAL TRANSFORMATION (UPC: 122902204)

| Course title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOG-E204: GEOGRAPHY OF AGRICULTURAL TRANSFORMATION (UPC: 122902204) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- This course seeks to familiarize students with the theoretical foundations and historical evolution of agriculture, emphasizing the diverse agricultural systems.
- It critically engages with key questions surrounding agricultural transformation, including challenges related to productivity, regional disparities, tenancy and agricultural developmental policies, focusing on India's agrarian landscape.
- The course also aims to analyse the multifaceted socio-economic, environmental, and public health implications of agricultural practices, while examining emerging trends, technological innovations and strategies for sustainable agriculture.

## Learning Outcomes:

The Learning outcomes of this course are as follows:

- Students will be able to critically analyze the historical development of farming systems, with particular attention to their spatial distribution, growth patterns, and regional disparities, within the broader context of agricultural transformation.
- Students will develop the capacity to evaluate the socio-economic, ecological, and policy-driven implications of agricultural practices and reforms, drawing on comparative case studies.
- Students will gain a comprehensive understanding of sustainable, climate-resilient, and technology-enabled approaches focusing on food security, and long-term sustainability in a transforming agricultural landscape.

## Course Outline:

**Unit 1: Introduction to Agriculture**

Introduction to Agriculture Geography; Origin and dispersal of agriculture: Theories and gene-centres of agriculture; Farming System: Organic, Urban Agriculture, Hydroponics, Precision.

**Readings:**


- Grigg, D. (2003). An Introduction to Agricultural Geography. United Kingdom: Taylor & Francis.
- Mohammad, N. (Ed.) (1992). Historical Dimensions of Agriculture. New Dimension in Agriculture Geography, Vol. I, Concept Publishing Company. New Delhi.

- Vavilov, N. I., Dorofeev, V. F. (1992). Origin and geography of cultivated plants. United Kingdom: Cambridge University Press.


**Unit 2: Agricultural Development and Productivity**

Concept, Spatial pattern of agricultural development; Green to evergreen revolution; Agricultural productivity: determinants and regional imbalances; Agricultural Regions of India**.**

**Readings:**


- Fuglie, K. O., Morgan, S., & Jelliffe, J. (2024). World agricultural production, resource use, and productivity, 1961–2020. U.S. Department of Agriculture.
- Gollin, D. (2010). Agricultural productivity and economic growth. Handbook of agricultural economics, 4, 3825-3866. Elsevier.
- Swaminathan, M. S., & Kesavan, P. C. (2017). The transition from green to evergreen revolution. In Sustainable Development of Organic Agriculture (pp. 91-100). Apple Academic Press.


**Unit 3: Socio-Economic Problems and Implications**

Agriculture development induced problems: Agrarian distress, Inequality, Tenancy, Socio-economic and human health consequences; Social and policy reforms; Case Studies.

**Readings:**


- Berardi, G. M., & Geisler, C. C. (Eds.). (2019). The social consequences and challenges of new agricultural technologies. Taylor & Francis.
- Cakmak, I., & Welch, R. M. (Eds.) (2009). Impacts of Agriculture on Human Health and Nutrition. EOLSS Publications.
- Mohammad, N. (Ed.) (1992). Socio-Economic Dimensions of Agriculture. New Dimension in Agriculture Geography, Vol. III, Concept Publishing Company. New Delhi.


**Unit 4: Ecological Consequences and Agriculture Sustainability**

Concept, process, and impacts on land, soil, water and forest; Food security and Nutrition; Sustainable Agriculture; Agro- cities; Case Studies.

**Readings:**


- Hester, R. E., & Harrison, R. M. (Eds.). (2012). Environmental impacts of modern agriculture (Vol. 34). Royal Society of Chemistry.
- Nelson, C. J. (2007). Sustainability of agriculture: Issues, observations and outlook. Journal of Crop Improvement, 19(1-2), 1-24. Taylor and Francis.
- Singh, R. B. (2000). Environmental Consequences of Agricultural Development: A Case Study from the Green Revolution state of Haryana, India, Agriculture, Ecosystems and Environment 82, 97–103. Elsevier.


**Tutorial Exercises**

- Debates on the specific topics like traditional vs contemporary agriculture, sustainable agriculture, hydroponics etc.
- Discussion on urban and peri-urban agriculture and emerging agro-cities.
- Recent data analysis exercises based on various case studies and its presentation.
- Select any district for evaluating its agricultural productivity and making comparison.
- Knowing ground realities about impact of agriculture development on natural resources and human health.
- Activities on emerging issues and sustainability through presentation, group discussion, assignments, etc.

- An individual/group pilot survey to assess the impact of agriculture development on different stakeholders.
- Prepare a group project based on the urban agriculture issues and sustainability.
- Brainstorming sessions to discuss comprehensively on agricultural challenges and their solutions.

**Readings:**

**Essential Readings**:


- Berardi, G. M., & Geisler, C. C. (Eds.). (2019). The social consequences and challenges of new agricultural technologies. Taylor & Francis.
- Hester, R. E., & Harrison, R. M. (Eds.). (2012). Environmental impacts of modern agriculture (Vol. 34). Royal Society of Chemistry.
- Mohammad, N. (Ed.) (1992). New Dimensions in Agricultural Geography (Vol I to VIII). Concept Publishing Company. New Delhi.


**Suggested Readings:**


- Alam, A., & Rukhsana. (Eds.). (2021). Agriculture, food and nutrition security: A study of availability and sustainability in India. Springer.
- Cakmak, I., & Welch, R. M. (Eds.) (2009). Impacts of Agriculture on Human Health and Nutrition. EOLSS Publications.
- Kumar, P., Kumar, S., & Joshi, L. (2015). Socioeconomic and environmental implications of agricultural residue burning: A case study of Punjab, India. Springer Nature.
- Paroda, R. S. (Ed.). (2018). Reorienting Indian agriculture: challenges and opportunities. CAB International.
- Sillmann, J. et al. (2021). Combined impacts of climate and air pollution on human health and agricultural productivity. Environmental Research Letters, 16(9), 093004.
- Vavilov, N. I., Dorofeev, V. F. (1992). Origin and geography of cultivated plants. United Kingdom: Cambridge University Press.


**Digital materials: Not Applicable**

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E205: GEOGRAPHY OF GLOBAL CAPITALISM (UPC 122902205)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E205: GEOGRAPHY OF GLOBAL CAPITALISM (UPC 122902205) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- Taking perspectives from Geography, Economics, History and Political science, the paper tends to address key issues and developments in the global economic landscape
- To introduce the student to basic concepts of global economy
- To provide a critical understanding of the contemporary issues and the politics underlying it

## Learning Outcomes:

The learning outcomes of this course are as follows:

- Know basic concepts and characteristics of different types of Economies
- Understand basic concepts of the Global economy
- Make sense of the political economic forces that have shaped the world

## Course Outline:

**Unit 1:** Economic systems: capitalist, socialist and mixed economies, the geography of world economy

**Readings**

- Rosefielde, S., 2002. Comparative Economic Systems: Culture, Wealth, and Power in the 21st Century, John Wiley & Sons.
- Rosser, J. B. and Rosser, M. V., 2018. Comparative Economics in a Transforming World Economy, Mit Press.

**Unit 2:** Geospatial paradigms: Historical materialism, Productive forces, relations of production, types of economic systems.

**Readings**

- Derek, G.et. al 2009. Dictionary of Human Geography [Select entries]. Wiley-Blackwell.
- Peet, R. J. and Hartwick, E., 2015. Theories of Development: Contentions, Arguments, Alternatives, Third Edition, Guilford Press

- Peet, R. J. and Lyons, J. V., 2014. Marxism: dialectical materialism, social formation and the geographic relations. In Themes in geographic Thought (Routledge Revivals) (pp 187-205). Routledge.

**Unit 3: Socio-economic spatial relations:** Territorial division of labour, location of productive forces, economic-geographic links and flows.

**Readings**

- D'Costa, A. P. 2004. The Indian software industry in the global division of labour. In India in the global software industry (pp. 1-26), Palgrave Macmillan, London.
- Friedman, T. L. 2006. The world is flat: The globalized world in the twenty-first century, Penguin Books.
- Murray, W. E. and Overton, J. 2014. Geographies of Globalization, Routledge.

**Unit 4: Changing geographies of capitalism:** Colonial expansion, Development, Post-colonial states, Neo liberalism, Globalisation and Regionalism, Resistance movements and alternative imaginations.

**Readings**

- Beaud, M. 2004. A history of capitalism, 1500-2000, Aakar Books.
- Gwynne, R., Shaw, D. and Klak, T. 2014. Alternative capitalisms: Geographies of emerging regions, Routledge.
- Murray, W. E. and Overton, J., 2014. Geographies of Globalization, Routledge.
- Peet, R. J. and Hartwick, E., 2015. Theories of Development: Contentions, Arguments, Alternatives, Third Edition, Guilford Press.

**Tutorial Exercises**

- QUIZ: Countries and Economic systems
- Group Discussion on Merits of Different economic systems
- Group countries of the world based on UN, World Bank, WTO and IMF
- Extempore on Key concepts of Economics
- Find out sources of world Economic data
- Analyse Trade flows from UNCTAD data
- Analyse Investment flows based on UNCTAD data
- Map investment flows in India
- Map the growth of Global cities
- Examine the relation World Economic Forum and World Social Forum
- Doubts clearing sessions

**Practical Record**: Not Applicable

**Readings:**

**Essential Readings**:

- Beaud, M. 2004. A history of capitalism, 1500-2000, Aakar Books
- Murray, W. E. and Overton, J., 2014. Geographies of Globalization, Routledge
- Peet, R. J. and Hartwick, E., 2015. Theories of Development: Contentions, Arguments, Alternatives, Third Edition, Guilford Press
- Rosefielde, S., 2002. Comparative Economic Systems: Culture, Wealth, and Power in the 21st

Century, John Wiley & Sons.
- Rosser, J. B. and Rosser, M. V., 2018. Comparative Economics in a Transforming World Economy, Mit Press.

**Suggested Readings:**

- Bery, B.J.L., Conkling, E.C. and Ray, D.M., 1993. The Global Economy: Resource Use, Locational Choice and International Trade, Englewood Cliffs, N.J.: Prentice Hall.
- Cox, K. R., (eds.) 1997. Spaces of Globalisation- reasserting the Power of the Local, Guilford Press, New York and London.
- Gilpin, R., 2011. Global political economy: Understanding the international economic order, Princeton University Press.
- Gwynne, R., Shaw, D. and Klak, T., 2014. Alternative capitalisms: Geographies of emerging regions, Routledge.
- Harvey, D., 2006. Spaces of Global capitalism, Verso.

**Digital materials: NA**

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E206: INTEGRATED WATERSHED MANAGEMENT (UPC 122902206)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOG-E206: INTEGRATED WATERSHED MANAGEMENT (UPC 122902206) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives

The learning objectives of this course are as follows:

- To develop a comprehensive understanding of integrated watershed management.
- To identify the health of the watershed based on its Morphometric and hydrological characteristics.
- To appreciate the role of Earth Observation (EO) and Open Data in Watershed Management
- To understand the role of sustainable watershed management policies in changing climate

## Learning Outcomes

The learning outcomes of this course are as follows:

- The course will help students, in building conceptual understanding of integrated watershed management.
- Students will also learn about the factors affecting watershed management, Flood and Drought Assessment, and mitigation measures.
- Students will learn the use of Earth Observation and GIS for watershed analysis, management and modeling.
- During their follow up field visit students will analyze the changing climate response to sustainability in a watershed.

## Course Outline

**Unit 1: Introduction:** Concepts, Definition, Principles and Objectives of Integrated Watershed Management

**Readings**


- Gregersen H.M, Folliott P.F and Brooks K.N. 1983. Integrated Watershed Management: Connecting People to their Land and Water, CAB International, London.
- Rahaman, M.M. and Varis, O. 2005. Integrated water resources management: evolution, prospects and future challenges, sustainability, Sci. Pract. Policy, 1, 15–21.
- Gurjar, R. K. and Jat, B.C. 2005. जल संसाधन भूगोल. Rawat Publications

**Unit 2: Characteristics of Watershed:** Morphometric and hydrological characteristics, Identification of critical sub-watershed

**Readings**

- Murthy, J. V S. 1994. Watershed Management in India. Wiley Eastern Ltd. and New Age. International Ltd., New Delhi.
- Randhir O. Timothy, 2007. Watershed Management-Issues and Approaches, IWA Publishing.
- वर्षा जन-सहभागिता (2000) Guidelines for National Watershed Development Project for Rainfed Areas (NWDPRA). Ministry of Agriculture, Dept. of Agriculture and Cooperation, Rainfed Farming Systems Division, New Delhi, Govt. of India

**Unit 3: Flood and Drought Assessment:** Types, Characteristics, Challenges and mitigation and management strategies, SWAT Model, Case Studies.

**Readings**

- Debarry Paul A. 2004. Watershed: Processes, Assessment and Management, John Wiley and Sons, New Jersey.
- Morgan R.P. 2009. Soil Erosion and Conservation, John Wiley and Sons.
- Brooks, KN., Ftollott, P.E, Gregersen, H.M. and De Bano, L.E. 1998. Hydrology and the Management of Watersheds. Panima Publishing Corporation, New Delhi.

**Unit 4: Watershed and Changing Climate:** Changing Climate response to sustainable Watershed, Watershed Policies in India. Follow-up field visit and Case study demonstration.

**Readings**

- Dhruva N.V.V., Sastry G. and Patnaik U.S. 1990. Watershed Management, Indian Council of Agricultural Research, New Delhi.
- Tideman E.M. 1999. Watershed Management–Guidelines for Indian Conditions, Omega Scientific Publishers, New Delhi.
- वाटरशेड विकास परियोजनाओं के लिए समान मार्गदर्शी सिद्धांत. 2008. भारत सरकार

**Tutorial Exercises**

- Introduction to Open-Source Satellite data and Tools
- Acquisition of the required satellite data
- Watershed Delineation
- Morphometric Analysis
- Identification of critical sub-watershed
- Discussion on the possible solution for sustainable watershed management

**Practical Record**: *Not Applicable*

**Readings**

**Essential Readings**:

1. Rahaman, M.M. and Varis, O. 2005. Integrated water resources management: evolution, prospects and future challenges, sustainability, Sci. Pract. Policy, 1, 15–21.

2. Murthy, J. V S. 1994. Watershed Management in India. Wiley Eastern Ltd. and New Age. International Ltd., New Delhi.
3. Debarry Paul A. 2004. Watershed: Processes, Assessment and Management, John Wiley and Sons, New Jersey.
4. Brooks, KN., Ftollott, P.E, Gregersen, H.M. and De Bano, L.E. 1998. Hydrology and the Management of Watersheds. Panima Publishing Corporation, New Delhi.

**Suggested Readings:**

1. Gregersen H.M, Folliott P.F and Brooks K.N. 1983. Integrated Watershed Management: Connecting People to their Land and Water, CAB International, London.
2. Gurjar, R. K. and Jat, B.C. 2005. जल संसाधन भूगोल. Rawat Publications
3. Dhruva N.V.V., Sastry G. and Patnaik U.S. 1990. Watershed Management, Indian Council of Agricultural Research, New Delhi.
4. Randhir O. Timothy, 2007. Watershed Management-Issues and Approaches, IWA Publishing.
5. Iyer K. G. and Roy U.N., (ed.), 2005. Watershed Management and Sustainable Development, Kanishka Publishers, New Delhi.

**Digital Materials:** *Not Applicable*

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E207: REGIONAL GEOGRAPHY (UPC 122902207)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E207: REGIONAL GEOGRAPHY (UPC 122902207) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives

The learning objectives of this course are as follows:

- The students will be exposed to 'regional' approach in studying geography.
- The students will be conscious of the various facets of regional geography – foundations and dimensions, regional consciousness and identity, and forms and evolution.
- The students will be aware of the hierarchy of regional divisions of India.

## Learning Outcomes

The learning outcomes of this course are as follows:

- The students will be able to understand and analyze the principal issues confronting the regions today.
- The students will get an insight into 'how regions work', through case-study from India.
- The students will be able to understand and analyze the principal issues confronting the different regions of India.

## Course Outline

**Unit 1: Introduction:** Regional Studies and Approach, Concept of Region, Methods of Regionalization, Regional Consciousness, Regionalism, Regional Planning.

**Readings**

- Claval Paul, 1998. *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
- De Blij H. J. 1971. *Geography: Regions and Concepts*, John Wiley and Sons.
- Whittlesey D. 1952. *The Regional Concept and the Regional Method* in P. James and C. F. Jones (eds.), *American Geography – Inventory and Prospect*, AAAG.

**Unit 2: Foundations and Dimensions of Regional Geography:** Ecological and Economic Foundations, Social and Cultural dimensions.

**Readings**

- Abler R., Adams J. S., and Gould P. R., 1971. *Spatial Organization: A Geographer's View of the World*, Englewood Cliffs, Prentice-Hall.
- Claval Paul, 1998. *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
- Minshull Roger, 2007. *Regional Geography: Theory and Practice*, Transaction Publishers.

**Unit 3: Forms and Evolution of Regional Organization:** Societies without Space, Regional Organization of Traditional and Industrial Societies, Globalization and New Territorial Order.

**Readings**

- Claval Paul, 1998. *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
- Johnston R. J. And Hauer J. 1990. *Regional Geography: Current Developments and Future Prospects*, Taylor and Francis.
- Johnston R. J. and Sidaway J. D. 2004. *Geography and Geographers: Anglo-American Human Geography since 1945*, Arnold, London.

**Unit 4: Regionalization of India:** Basis of Division, Regional Divisions, Schemes of Regionalizations by Spate and Learmonth, and R. L. Singh.

**Readings**

- Deshpande C. D. 1992. *India: A Regional Interpretation*, ICSSR, New Delhi.
- Singh R. L. 1971. *India: A Regional Geography*, National Geographical Society of India.
- Spate O. H. K. and Learmonth A. T. A. 1954. *India and Pakistan – A General and Regional Geography*, Methuen.

**Tutorial Exercises**

- Select a state (preferably your home state), and divide this into 3-6 macro regions. Explain the basis of the regional divisions.
- Select a region in the state (preferably your home region), and present its detailed physical profile (structure and relief, drainage, climate, soil and biotic life).
- For the same selected region (as above), present its social and economic profile, on the basis of the latest data collected from the Census of India, and the National Statistical Organization.

**Practical Record**: Not Applicable

**Readings**

**Essential Readings**:

- Claval Paul, 1998. *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
- Singh R. L. 1971. *India: A Regional Geography*, National Geographical Society of India.

**Suggested Readings:**


- Abler R., Adams J. S., and Gould P. R., 1971. *Spatial Organization: A Geographer's View of the World*, Englewood Cliffs, Prentice-Hall.
- De Blij H. J. 1971. *Geography: Regions and Concepts*, John Wiley and Sons.
- Deshpande C. D. 1992. *India: A Regional Interpretation*, ICSSR, New Delhi.
- Johnston R. J. And Hauer J. 1990. *Regional Geography: Current Developments and Future Prospects*, Taylor and Francis.
- Johnston R. J. and Sidaway J. D. 2004. *Geography and Geographers: Anglo-American Human Geography since 1945*, Arnold, London.
- Minshull Roger, 2007. *Regional Geography: Theory and Practice*, Transaction Publishers.
- Spate O. H. K. and Learmonth A. T. A. 1954. *India and Pakistan – A General and Regional Geography*, Methuen.
- Whittlesey D. 1952. *The Regional Concept and the Regional Method* in P. James and C. F. Jones (eds.), *American Geography – Inventory and Prospect*, AAAG.


**Digital Materials:** Not Applicable

# DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E208: SOCIAL GEOGRAPHY OF INDIA (UPC122902208)

| Course Title & Code | Credits | Duration (hours per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-E208: SOCIAL GEOGRAPHY OF INDIA (UPC 122902208) | 4 | 3 | 1 | 0 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- To acquaint the students to the unique social geography of India.
- To allow students to appreciate the roles of geographic factors in socio-cultural regionalization.
- To provide an understanding of the socio-geographical elements within a framework of pan Indian unity and regional specificity.

## Learning Outcomes:

The learning outcomes of this course are as follows:

- To acquire a knowledge of the geographic basis of socio-cultural regionalization in India and continuity and correspondence of socio- political and geographic boundaries.
- To understand and appreciate the role of geographic factors in the diffusion of Indiic and extra Indic religions as well as appreciate spatial patterning of languages.
- To acquire an understanding of the social geography of India through the lens of pan Indian elements and regional specificity

## Course Outline:

**Unit 1: Introduction:** Nature and Scope, pan Indian elements and regional specificity; Centripetal and centrifugal forces, Aryavarta, Dakshinpatha, socio- geographical significance of Narmada Chota-Nagpur axis

Readings for Unit 1


- Dutt, Ashok K., and Allen G. Noble. "The culture of India in spatial perspective: An introduction." In India: Cultural patterns and processes, pp. 1-28. Routledge, 2019.
- Fox, Richard Gabriel. "Realm and region in traditional India." 1977.
- Lodrick, Deryck O. "An Exploration of India: Geographical Perspectives on Society and Culture." (1981): 295-297.
- SubbaRao Bendupudi. The Personality of India, MS University Press, 1958


**Unit 2: Historical Bases of Socio-cultural regionalization of India:** Elements in the development of socio-cultural regions; continuity and change in the historically evolved regional structure-correspondence between solasa mahajanpadas and mughal subahs, inversion of regional structure in colonial period, implications of emerging regional structure since independence.

Readings for Unit 2

- Chatterjee, Shiba Prasad. "Evolution of political history of India as influenced by geographical factors." Geographical Review of India 44, no. 1 (1982): 1-18.
- Sopher, David E. "Place and location: notes on the spatial patterning of culture." Social Science Quarterly (1972): 321-337.
- Richards, F. J. "Cultural regions in India." Geography (1929): 20-29.
- Nag, Prithvish. "Cultural And Physiographic Basis for Regionalization of India." SCIREA Journal of Geosciences 7, no. 2 (2023): 60-77

**Unit 3: Spatial patterning of Religion and Language:** Religious diversity and regional identity, Geographical factors explaining the distribution of the tribal religions, indic and extra indic religions; Language and dialects, Major Language families and their speech areas, linguistic diversity, the stability and fluidity of language returns; language loss, language retention and language shift.

Readings for Unit 3

- Dutt Akron, A. K., and S. Davgun Kent. "Religious pattern of India with a factoral regionalization." GeoJournal 3 (1979): 201-214.
- Motiram, Sripad, and Vamsi Vakulabharanam. "Mapping religion, space and economic outcomes in Indian cities." Urban Studies 62, no. 1 (2025): 69-91**.**
- Khubchandani, Lachman M. "India as a sociolinguistic area." Language sciences 13, no. 2 (1991): 265-288.
- Dutt, Ashok K., Chandrakanta C. Khan, and Chandralekha Sangwan. "Spatial pattern of languages in India: A culture-historical analysis." *GeoJournal* 10 (1985): 51-74.

**Unit 4: Geographic analysis of caste and tribe*:*** pan Indian structure and regional specificity *:Varna* and *jati;* settlement morphology, village groupings, rural urban distribution and concentrations, Tribes in India, dominance and dispersion of Tribal population, penetration of tribal regions, tribal habitats.

Readings for Unit 4

- Schwartzberg, Joseph E. "The distribution of selected castes in the north Indian plain." Geographical Review 55, no. 4 (1965): 477-495.
- Schwartzberg, Joseph E. "Caste regions of the North Indian plain." In Structure and change in Indian society, pp. 81-114. Routledge, 2017.
- von Fürer-Haimendorf, Christoph, and Furer-Haimendorf Christoph Von. Tribes of India: The struggle for survival. Univ of California Press, 1982.
- Xaxa, Virginius. "Tribes and Indian national identity: Location of exclusion and marginality." The Brown Journal of World Affairs 23, no. 1 (2016): 223-237**.**

## Tutorial Exercises

For Unit 1- Geo physical attribute mapping of Aryavarta, Dakshinpata and discussion on the socio geographical importance of the Narmada Chotanagpur axis
Unit 2 – group discussion and map comparision based on unit's readings
Unit 3 -Mapping of linguistic diversity, morphology of rural settlements
Unit 4- Exercise on central Indian and NE Indian tribal regions

**Practical Record**: Not Applicable

## Readings:

**Essential Readings:**

- Ahmed, A. 1999. *Social Geography*, Rawat publications, Jaipur.

- Ahmed, A. 1993. (ed.) *Social Structure and Regional Development: A Social Geography Perspective*, Rawat Publications, Jaipur.
- Singh, K.S. 1993. *People of India* Vol. I to XI, Oxford University Press, New Delhi.
- Raza, M. and Ahmed, A. 1990. *An Atlas of Tribal India*, Concept Publishing Co, Delhi.
- Sopher, D. (ed.) 1980. *An Exploration of India: Geographical Perspectives on Society and Culture*, Cornell Press, New York.
- Schwartzberg, J. 1978. *A Historical Atlas of South Asia*, University of Chicago Press, Chicago.
- Crane Robert, I. 1973. *Regions and Regionalism in South Asian Studies: An Exploratory Study*, Duke University Durham.
- Registrar General of India, 1972. *Economic and Socio-cultural Dimensions of Regionalization of India*, Census Centenary Monograph No 7, New Delhi.
- Pannikar, K.M. 1959. *Geographical Factors in Indian History*, Bharatiya Vidya Bhavan, Bombay.
- Subba Rao, B. 1958. *Personality of India*, MS University Press, Baroda.


## Suggested Readings


- Chaudhuri, Samhita. *Social and cultural geography*. PHI Learning Pvt. Ltd., 2023.
- Karna, M. N. "Language, region and national identity." Sociological bulletin 48, no. 1-2 (1999): 75-96
- Shah, Arvindbhai M. The structure of Indian society: Then and now. Routledge India, 2019.
- Singh, Kumar Suresh. People of India. Vol. 1. Anthropological Survey of India, 1992.
- Sopher, David E. "A Historical Atlas of South Asia." (1980): 288-291.
- Sopher, David E. "Place and location: notes on the spatial patterning of culture." Social Science Quarterly (1972): 321-337.

# SKILL BASED (SB) COURSE:
# GEOG-S201: GIS FOR DECISION SUPPORT SYSTEM (PRACTICAL)
# (UPC 122903201)

| Course Title & Code | Credits | Duration (per week) | | | Eligibility Criteria | Prerequisite |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| GEOG-S201: GIS FOR DECISION SUPPORT SYSTEM (PRACTICAL) (UPC 122903201) | 2 | 1 | 0 | 1 | BA/BSc in Geography | |

## Learning Objectives:

The learning objectives of this course are as follows:

- To enable students to understand the concept of analytical modelling
- To enable students to use GIS for geospatial decision-making analyses

## Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will be able to build suitable GIS-based models.
- The students will be able to use GIS for geospatial decision-making.

## Course Outline:

**Unit 1: Analytical modelling in GIS:** multi-criteria evaluation, analytical hierarchy process, statistical modelling

**Readings for Unit 1:**

- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.
- DeMers, M. 2009. Fundamentals of Geographic Information Systems, 4th Edition, John Wiley and Sons.

**Unit 2: GIS-Aided Decision Support System:** Spatial Analysis functions, overlay analysis

**Readings for Unit 2:**

- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.
- DeMers, M. 2009. Fundamentals of Geographic Information Systems, 4th Edition, John Wiley and Sons.

**Practical Record**:

- Computations of weights of thematic layers using AHP.
- Computations of weights of thematic layers using bivariate/multivariate analysis.
- Overlay analysis
- Application exercises: viz., landslide hazard zonation, land suitability assessment, EIA

**Readings:**

**Essential Readings**:


- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.


**Suggested Readings:**


- Chang, K-t. 2006. Introduction to Geographic Information Systems, Tata McGraw-Hill.
- DeMers, M. 2009. Fundamentals of Geographic Information Systems, 4th Edition, John Wiley and Sons.
- Fisher, P. and Unwin, D.J. 1995. Re-presenting GIS, John Wiley.
- Graser, A. 2016. Learning QGIS, 3rd Edition, Packt.
- Heywood, L., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
- Law, M. and Collins, A. 2018. Getting to Know ArcGlS Desktop, 5th Edition, ESRI Press.
- Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. Geographic Information Systems and Science, 3rd Edition, Wiley.
- Shekar, S. and Xiong, H. (eds.), 2008. Encyclopedia of GIS, Springer.