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

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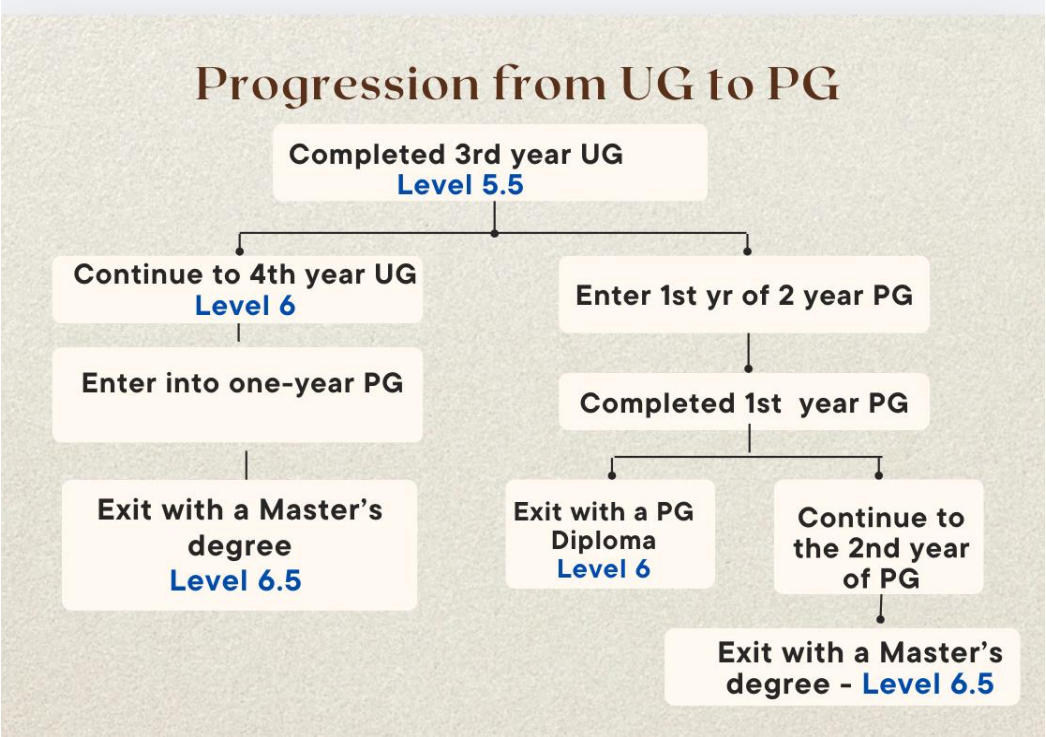
POST GRADUATE (PG) PROGRAMMES FRAMEWORK
AN INTRODUCTION

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

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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"**

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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** **DSC-2** **DSC-3** **(12 credits)**	**DSE-1** **DSE-2** OR **DSE-1** **GE-1** **(8 credits)**	Skill-based course / workshop / Specialised laboratory / Hands on Learning **(2 credits)**	Nil	**22**
Semester II	**DSC-4** **DSC-5** **DSC-6** **(12 credits)**	**DSE-3** **DSE-4** OR **DSE-2** **GE-2** **(8 credits)**	Skill-based course / workshop / Specialised laboratory / Hands on Learning **(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** **DSC-8** **(8 credits)**	**DSE-5** **DSE-6** **DSE-7** OR **DSE-3** **DSE-4** **GE-3** **(12 credits)**	Skill-based course / workshop / Specialised laboratory / Internship/ Apprenticeship / Hands on Learning **(2 credits)**	Nil	**22**
Semester IV	**DSC-9** **DSC-10** **(8 credits)**	**DSE-7** **DSE-8** **DSE-9** OR **DSE-5** **DSE-6** **GE-4** **(12 credits)**	Skill-based course / workshop / Specialised laboratory / Internship/ Apprenticeship / Hands on Learning **(2 credits)**	Nil	**22**

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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** **DSC-8** **(8 credits)**	**DSE-5** **DSE-6** **DSE-7** OR **DSE-3** **DSE-4** **GE-3** **(12 credits)**	Skill-based course / workshop / Specialised laboratory / Internship/ Apprenticeship / Hands on Learning **(2 credits)**	Nil	**22**
Semester IV	**DSC-9** **DSC-10** **(8 credits)**	**DSE-7** **DSE-8** **DSE-9** OR **DSE-5** **DSE-6** **GE-4** **(12 credits)**	Skill-based course / workshop / Specialised laboratory / Internship / Apprenticeship / Hands on Learning **(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).

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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** **DSC -8** **(8 credits)**	**DSE-5** **DSE-6** OR **DSE-3,** **GE-3*** **(8 credits)**	Nil	See detailed outcomes below **(6 credits)**	**22**
Semester IV	**DSC-9** **DSC-10** **(8 credits)**	**DSE-7** **DSE-8** OR **DSE-4** **GE-4*** **(8 credits)**	Nil	See detailed outcomes below **(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.

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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.

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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.

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TABLE 3: 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) (MODULE: COURSEWORK)

MA IN GEOGRAPHY – PART 2 (LEVEL 6.5) – SEMESTER III – LIST OF COURSES

UPC	COURSE CODE	COURSE NAME	CREDITS			
			L	T	P	Total
DISCIPLINE SPECIFIC CORE (DSC) COURSES (ALL Compulsory)						
122901301	GEOG-C301	Modern Geographical Thought	3	1	0	4
122901302	GEOG-C302	Land, Ocean and Atmosphere Dynamics	3	1	0	4
DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any THREE †)						
122902301	GEOG-E301	Cities of Global South	3	1	0	4
122902302	GEOG-E302	Climate Change and Adaptations	3	1	0	4
122902303	GEOG-E303	Contemporary Conflicts and Geographies of Peace	3	1	0	4
122902304	GEOG-E304	Cultural Geography Studio	2	0	2	4
122902305	GEOG-E305	Development Theory and Regional Policy	3	1	0	4
122902306	GEOG-E306	Digital Geographies	3	1	0	4
122902307	GEOG-E307	Digital Image Processing (Practical)	2	0	2	4
122902308	GEOG-E308	Geographies of Life-force and Environment	3	1	0	4
122902309	GEOG-E309	Geoheritage, Geoparks and Geotourism	3	1	0	4
122902310	GEOG-E310	Landslide Risk Analysis	3	1	0	4
122902311	GEOG-E311	Natural Resources Management	3	1	0	4
122902312	GEOG-E312	Regional Development in India	3	1	0	4
SKILL BASED (SB) COURSE (Compulsory)						
122903301	GEOG-S301	Spatial Data Management	1	1	0	2

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

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TABLE 4: 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) (MODULE: COURSEWORK)

MA IN GEOGRAPHY – PART 2 (LEVEL 6.5) – SEMESTER IV – LIST OF COURSES

UPC	COURSE CODE	COURSE NAME	CREDITS			
			L	T	P	Total
DISCIPLINE SPECIFIC CORE (DSC) COURSES (ALL Compulsory)						
122901401	GEOG-C401	New Economic Geographies	3	1	0	4
122901402	GEOG-C402	Towards Viksit Bharat: Geographical Dimensions	3	1	0	4
DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any THREE †)						
122902401	GEOG-E401	Applied Climatology (Practical)	2	0	2	4
122902402	GEOG-E402	Digital Cultures and Landscape	3	1	0	4
122902403	GEOG-E403	Energy Geographies	3	1	0	4
122902404	GEOG-E404	Gender, Space and Society in India	3	1	0	4
122902405	GEOG-E405	Geographies of Social Justice in India	3	1	0	4
122902406	GEOG-E406	Geography of Cryosphere	3	1	0	4
122902407	GEOG-E407	Geography of Health	3	1	0	4
122902408	GEOG-E408	Geography of Himalaya	3	1	0	4
122902409	GEOG-E409	Machine Learning and Advance Geo Computation	3	1	0	4
122902410	GEOG-E410	Regional Geography of India	3	1	0	4
122902411	GEOG-E411	Sacred Landscape and Pilgrimage Geographies in India	3	1	0	4
122902412	GEOG-E412	Terrain Modelling	3	1	0	4
122902413	GEOG-E413	Trans Geographies	3	1	0	4
122902414	GEOG-E414	Urban and Regional Planning	3	1	0	4
SKILL BASED (SB) COURSE (Compulsory)						
122903401	GEOG-S401	Spatial Data Analysis and Report Writing	1	1	0	2

Note: Students will have to complete 22 Credits, comprising 6 Courses – 2 DSC, 3 DSE (or 2 DSE and 1 GE), and 1 SE. † Students will select from those being offered by the department.
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TABLE 5: ONE YEAR PG PROGRAM AFTER COMPLETION OF FOUR-YEAR UG PROGRAM (4+1) (MODULE: COURSEWORK & RESEARCH)

MA IN GEOGRAPHY – PART 2 (LEVEL 6.5) – SEMESTER III – LIST OF COURSES

UPC	COURSE CODE	COURSE NAME	CREDITS			
			L	T	P	Total
DISCIPLINE SPECIFIC CORE (DSC) COURSES (ALL Compulsory)						
122901301	GEOG-C301	Modern Geographical Thought	3	1	0	4
122901302	GEOG-C302	Land, Ocean and Atmosphere Dynamics	3	1	0	4
DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any ONE †)						
122902301	GEOG-E301	Cities of Global South	3	1	0	4
122902302	GEOG-E302	Climate Change and Adaptations	3	1	0	4
122902303	GEOG-E303	Contemporary Conflicts and Geographies of Peace	3	1	0	4
122902304	GEOG-E304	Cultural Geography Studio	2	0	2	4
122902305	GEOG-E305	Development Theory and Regional Policy	3	1	0	4
122902306	GEOG-E306	Digital Geographies	3	1	0	4
122902307	GEOG-E307	Digital Image Processing (Practical)	2	0	2	4
122902308	GEOG-E308	Geographies of Life-force and Environment	3	1	0	4
122902309	GEOG-E309	Geoheritage, Geoparks and Geotourism	3	1	0	4
122902310	GEOG-E310	Landslide Risk Analysis	3	1	0	4
122902311	GEOG-E311	Natural Resources Management	3	1	0	4
122902312	GEOG-E312	Regional Development in India	3	1	0	4
RESEARCH METHODS COURSE (Compulsory)						
122903302	GEOG-S302	Advanced Research Methodology and Tools for Research	3	1	0	4
DISSERTATION (Compulsory)						
122903303	GEOG-C303	Dissertation	0	0	6	6

Note: Students will have to complete 22 Credits, comprising 5 Courses – 2 DSC, 1 DSE/GE, 1 RM; and one Dissertation. † Students will select from those being offered by the department.
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TABLE 6: ONE YEAR PG PROGRAM AFTER COMPLETION OF FOUR-YEAR UG PROGRAM (4+1)
(MODULE: COURSEWORK & RESEARCH)

MA IN GEOGRAPHY – PART 2 (LEVEL 6.5) – SEMESTER IV – LIST OF COURSES

UPC	COURSE CODE	COURSE NAME	CREDITS			
			L	T	P	Total
DISCIPLINE SPECIFIC CORE (DSC) COURSES (ALL Compulsory)						
122901401	GEOG-C401	New Economic Geographies	3	1	0	4
122902402	GEOG-C402	Towards Viksit Bharat: Geographical Dimensions	3	1	0	4
DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any TWO †)						
122902401	GEOG-E401	Applied Climatology (Practical)	2	0	2	4
122902402	GEOG-E402	Digital Cultures and Landscape	3	1	0	4
122902403	GEOG-E403	Energy Geographies	3	1	0	4
122902404	GEOG-E404	Gender, Space and Society in India	3	1	0	4
122902405	GEOG-E405	Geographies of Social Justice in India	3	1	0	4
122902406	GEOG-E406	Geography of Cryosphere	3	1	0	4
122902407	GEOG-E407	Geography of Health	3	1	0	4
122902408	GEOG-E408	Geography of Himalaya	3	1	0	4
122902409	GEOG-E409	Machine Learning and Advance Geo Computation	3	1	0	4
122902410	GEOG-E410	Regional Geography of India	3	1	0	4
122902411	GEOG-E411	Sacred Landscape and Pilgrimage Geographies in India	3	1	0	4
122902412	GEOG-E412	Terrain Modelling	3	1	0	4
122902413	GEOG-E413	Trans Geographies	3	1	0	4
122902414	GEOG-E414	Urban and Regional Planning	3	1	0	4
DISSERTATION (Compulsory)						
122903403	GEOG-S403	Dissertation	0	0	6	6

Note: Students will have to complete 22 Credits, comprising 5 Courses – 2 DSC, 2 DSE (or 1 DSE and 1 GE); and one Dissertation. † Students will select from those being offered by the department.
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TABLE 7: ONE YEAR PG PROGRAM AFTER COMPLETION OF FOUR-YEAR UG PROGRAM (4+1) (MODULE: RESEARCH)

MA IN GEOGRAPHY – PART 2 (LEVEL 6.5) – SEMESTER III – LIST OF COURSES

UPC	COURSE CODE	COURSE NAME	CREDITS			
			L	T	P	Total
DISCIPLINE SPECIFIC CORE (DSC) COURSES (ALL Compulsory)						
122901301	GEOG-C301	Modern Geographical Thought	3	1	0	4
DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any ONE †)						
122902301	GEOG-E301	Cities of Global South	3	1	0	4
122902302	GEOG-E302	Climate Change and Adaptations	3	1	0	4
122902303	GEOG-E303	Contemporary Conflicts and Geographies of Peace	3	1	0	4
122902304	GEOG-E304	Cultural Geography Studio	2	0	2	4
122902305	GEOG-E305	Development Theory and Regional Policy	3	1	0	4
122902306	GEOG-E306	Digital Geographies	3	1	0	4
122902307	GEOG-E307	Digital Image Processing (Practical)	2	0	2	4
122902308	GEOG-E308	Geographies of Life-force and Environment	3	1	0	4
122902309	GEOG-E309	Geoheritage, Geoparks and Geotourism	3	1	0	4
122902310	GEOG-E310	Landslide Risk Analysis	3	1	0	4
122902311	GEOG-E311	Natural Resources Management	3	1	0	4
122902312	GEOG-E312	Regional Development in India	3	1	0	4
RESEARCH METHODS COURSE (Compulsory)						
122903302	GEOG-S302	Advanced Research Methodology and Tools for Research	3	1	0	4
DISSERTATION (Compulsory)						
122903304	GEOG-S304	Dissertation	0	0	10	10

Note: Students will have to complete 22 Credits, comprising 4 Courses – 1 DSC, 1 DSE/GE, 1 RM, and one Dissertation. † Students will select from those being offered by the department.
General Elective (GE) Courses are offered to 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 8: ONE YEAR PG PROGRAM AFTER COMPLETION OF FOUR-YEAR UG PROGRAM (4+1) (MODULE: RESEARCH)

MA IN GEOGRAPHY – PART 2 (LEVEL 6.5) – SEMESTER IV – LIST OF COURSES

UPC	COURSE CODE	COURSE NAME	CREDITS			
			L	T	P	Total
DISCIPLINE SPECIFIC ELECTIVE (DSE) / GENERAL ELECTIVE (GE) COURSES (Students will select any ONE †)						
122902401	GEOG-E401	Applied Climatology (Practical)	2	0	2	4
122902402	GEOG-E402	Digital Cultures and Landscape	3	1	0	4
122902403	GEOG-E403	Energy Geographies	3	1	0	4
122902404	GEOG-E404	Gender, Space and Society in India	3	1	0	4
122902405	GEOG-E405	Geographies of Social Justice in India	3	1	0	4
122902406	GEOG-E406	Geography of Cryosphere	3	1	0	4
122902407	GEOG-E407	Geography of Health	3	1	0	4
122902408	GEOG-E408	Geography of Himalaya	3	1	0	4
122902409	GEOG-E409	Machine Learning and Advance Geo Computation	3	1	0	4
122902410	GEOG-E410	Regional Geography of India	3	1	0	4
122902411	GEOG-E411	Sacred Landscape and Pilgrimage Geographies in India	3	1	0	4
122902412	GEOG-E412	Terrain Modelling	3	1	0	4
122902413	GEOG-E413	Trans Geographies	3	1	0	4
122902414	GEOG-E414	Urban and Regional Planning	3	1	0	4
RESEARCH METHODS COURSE (Compulsory)						
122903402	GEOG-S402	Techniques of Research Writing	1	1	0	2
DISSERTATION (Compulsory)						
122903404	GEOG-S404	Dissertation	0	0	16	16

Note: Students will have to complete 22 Credits, comprising 3 Courses – 1 DSE, 1 RM, and one Dissertation. †
Students will select from those being offered by the department.
General Elective (GE) Courses are offered to 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-C301: MODERN GEOGRAPHICAL THOUGHT (UPC 122901301)

Course title & Code	Credits	Duration (Hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-C301: Modern Geographical Thought (UPC 122901301)	**4**	**3**	**1**	**0**	**BA/BSc in Geography**	**Nil**

Learning Objectives:

The learning objectives of this course are:

1) To provide knowledge of disciplinary developments in Geography post 1970.
2) to enable students to contextualize the conceptual traditions within geography along with the major philosophical influences.
3) to promote an understanding of the fluidity, expansion and inclusivity of Modern Geographical Thought as against imperial underpinnings and latent eurocentricity.

Learning Outcomes:

Learning outcomes include the following outcomes: developing a thorough knowledge of the growth, development, philosophical influences and relevance of geography from 1970 to the present time. This includes:

1) A Knowledge of emerging areas and new theorizations within the discipline
2) An appreciation of the discipline's dynamic and inclusive nature.

Course Outline:

Unit 1: Brief Disciplinary History: Early origins, imperial influences and multi paradigmic nature, Four traditions; towards professionalization and institutionalisation; a contested discipline**.**

Readings for Unit 1 (not more than 3)

- Nayak, A. & Jeffery, A.S., (2011) Geographical Thought: An Introduction to Ideas in Human Geography, 1st Edition, Pearson Prentice Hall. USA (Chapter 1: Geographies of empire: the imperial traditions)
- Johnston, R. J. "Paradigms and Revolutions or Evolution?: Observations on Human Geography since the Second World War." Progress in Human Geography 2, no. 2 (June 1978): 189–206. https://doi.org/10.1177/030913257800200201.
- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. The Dictionary of Human Geography. John Wiley & Sons, 2011.

Unit 2: Philosophical Influences and subfields of Modern Geography: Behaviouralism and Behavioural geographies, Realism, Marxism and development of radical geographies and feminist geographies, Structuralism, Post-structuralism and Postmodernism, development of postmodern geographies

Readings for Unit 2 (not more than 3)

- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. The Dictionary of Human Geography. John Wiley & Sons, 2011.
    a. Read entry on Behavioural Geography, Pages 44 - 45
    b. Read entry on Mental Maps/Cognitive Maps, Page 455.
- Gold, J.R. 'Behavioural geography', in A. Kobayashi, ed. International Encyclopedia of Human Geography, second edition, volume 1. Oxford: Elsevier, 2019: 283-292
- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. The Dictionary of Human Geography. John Wiley & Sons, 2011.
    a) Entry on Marxism - Pages 444 – 445.
    b) Entry on Marxist Geography - Pages 446 – 448
- Nayak, Anoop, and Alex Jeffrey. Geographical thought: An introduction to ideas in human geography. Routledge, 2013. (Chapter 4: Marxist Radical Geographies)
- Datta, Anindita, Peter Hopkins, Lynda Johnston, Elizabeth Olson, and Joseli Maria Silva, eds. 2020. Routledge Handbook of Gender and Feminist Geographies. Routledge (Introductory Chapter: Establishing, placing, engaging and doing feminist geographies)
- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. 2009. The Dictionary of Human Geography. John Wiley & Sons, Entry on Feminist Geographies. Pages 244 – 248
- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. The Dictionary of Human Geography. John Wiley & Sons, 2011. Read entry on 'Realism', Pages 621 - 623
- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. The Dictionary of Human Geography. John Wiley & Sons, 2011. (Entry on Post-structuralism pp. 571-573 and Entry on structuralism pp. 725)
- 9) Couper P. (2014) A student's introduction to Geographical Thought. Sage. UK (Chapter 7, Pages 131 - 144)
- Hubbard P. et al.(2002) Thinking Geographically. Reprint 2005. Continuum. London. U.K. (Ch 2, Section 2.4, Pages 41-43 & Ch 3, Section 3.5, Pages 84-93)
- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. 2009. *The Dictionary of Human Geography*. John Wiley & Sons. Read entry on Postmodernism, Pages 566-68

Unit 3: Ontological turns, Fieldwork and New Theories in Geography: New ontologies of space and place; cultural turn, emotional turn, narrative turn; fieldwork and politics of representation; decolonizing geographical research, Grounded Theory, Minor Theory.

Readings for Unit 3 (not more than 3)

- Gregory, Derek, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore, eds. The Dictionary of Human Geography. John Wiley & Sons, 2011. Pages 134 – 135. (readings on cultural turn, emotional turn and Grounded theory and Minor theory)

- Nayak, Anoop, and Alex Jeffrey. Geographical thought: An introduction to ideas in human geography. Routledge, 2013. Pages 115-123. (cultural turn)
- Anderson, Kay, and Susan J. Smith. "Emotional geographies." Transactions of the Institute of British geographers 26, no. 1 (2001): 7-10.
- Goodson, Ivor F., and Scherto R. Gill. "The narrative turn in social research." Counterpoints 386 (2011): 17-33.
- Barusch, Amanda. "Refining the narrative turn: When does story-telling become research." In Referat wygłoszony na konferencji Gerontological Society of America, Listopad, vol. 16, p. 2012.

Unit 4: Future of Geography: Drivers of global relevance, emerging subfields, difference, diversity and greater inclusivity in a globalising world.

Readings for Unit 4 (not more than 3)

- Simandan, Dragos. "The future as an emergent problematic in geographical scholarship." Environment and Planning A: Economy and Space (2025): 0308518X251388768.
- Rose-Redwood, Reuben, CindyAnn Rose-Redwood, Elia Apostolopoulou, Tyler Blackman, Han Cheng, Anindita Datta, Sharon Dias et al. "Re-imagining the futures of geographical thought and praxis." *Dialogues in Human Geography* 14, no. 2 (2024): 177-191.
- Thrift, Nigel. "The future of geography." *Geoforum* 33, no. 3 (2002): 291-298.

Tutorial Exercises

1. Locating oneself in a contested field- Tutorial exercise using the academic wheel of privilege
2. Tracing geographies histories contextually- southern perspectives: anti imperial struggles, establishment of new Chairs, institutionalization of Geography, Indian Geography
3. Whose Geography? On the futures of Geography- many worlds

Readings:

Essential Readings:

Suggested Readings:

1) Pattison, William D. (1964). The Four Traditions of Geography. Journal of Geography 63 (5), pp 211-216
2) Murphy, Alexander B. "Geography's crosscutting themes: Golden anniversary reflections on "the four traditions of geography".
3) Argent, Neil. "Behavioural Geography." In International Encyclopedia of Geography: People, the Earth, Environment and Technology: People, the Earth, Environment and Technology. John Wiley & Sons. (2017): 1-11.
4) Women and Geography Study Group. *Feminist geographies: Explorations in diversity and difference*. Routledge, 2014.
5) Minca, Claudio. Postmodern Geographies. 1989. Edward Soja. In Hubbard, P., Kitchin R. & Valentine G (Eds) "Key Texts in Human Geography". Sage, 2008. pp.135-143
6) Soja, E. W. 2001. Postmodernism in Geography. International Encyclopaedia of the Social & Behavioural Sciences, 11860–11865.

DISCIPLINE SPECIFIC CORE (DSC) COURSE
GEOG-C302: LAND, OCEAN AND ATMOSPHERE INTERACTION
(122901302)

Course title & Code	Credits	Duration (Hrs per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-C302: LAND, OCEAN AND ATMOSPHERE INTERACTION (122901302)	4	3	1	0	BA/ BSc in Geography	Basic Knowledge of Geography

Learning Objectives:

The learning objectives of this course are as follows:

- To understand the fundamental concepts and interdisciplinary nature of Earth system science and the interactions between its five major spheres.
- To comprehend the physical and biogeochemical linkages at the land-ocean interface and their role in global processes.
- To examine ocean-atmosphere coupling phenomena and boundary layer dynamics.
- To ascertain patterns and mechanisms of climate variability, including sea surface warming, teleconnections, and emerging modes of variability.

Learning Outcomes:

On transaction of this course students will be able to

- Analyze interactions between Earth's spheres using systems and geographic perspectives.
- Evaluate coupling processes at land-ocean and ocean-atmosphere interfaces, including boundary layer dynamics and biogeochemical cycles.
- Explain mechanisms and impacts of major climate variability modes and their teleconnections with the Indian monsoon.
- Assess inter-annual and decadal climate variability patterns, including emerging phenomena like Ningaloo Niño and subtropical dipoles.

Course Outline:

Unit 1: Introduction to Earth System Science (Theory): Definition and scope of Earth System Science, Geographic perspective to Earth System Science, interaction between five spheres.

Readings

- Vallis, G.K., 2019. Essentials of Atmospheric and Oceanic Dynamics. Cambridge University Press.doi:10.1017/9781107588431
- Brian, J. S., Barbara, W.M. 2010. The Blue Planet: An Introduction to Earth System Science, 3rd Edition, Wiley.

Unit 2: Land-Ocean Interaction (Theory): Shelf-sea-ocean linkages, Coupling Phenomenon, Land ocean interactions, processes, and issues.

Readings

- Maser, C., 2014. Interactions of Land, Ocean and Humans: A Global Perspective (1st ed.). CRC Press. https://doi.org/10.1201/b17529
- André Monaco, Patrick Prouzet (eds.) 2014. The land-sea interactions, Wiley Press.

Unit 3: Ocean-Atmosphere Interaction (Theory): Significance of ocean-atmosphere interaction, coupling phenomenon, concept of boundary layers, ocean–atmosphere interaction near the tropics.

Readings

- Webster, P., 2020. Dynamics of The Tropical Atmosphere and Oceans, Dynamics of The Tropical Atmosphere and Oceans. Wiley. doi:10.1002/9781118648469
- Eric B Kraus, 2010. Atmosphere Ocean interactions, Oxford University Press

Unit 4: Sea surface warming and Climate variability (Theory): Inter-annual variability and decadal variability, Tele-connections of India summer monsoon with southern oscillation, Indian Ocean Dipole and ENSO Modoki. Global impact of ENSO, IOD and ENSO Modoki, New faces of climate variability; Ningaloo Nino, California Nino, Sub tropical dipoles.

Readings

- Nakano, Y., Morita, O., 2025. Causal Analysis for Climate Study: Theory and Applications, Causal Analysis for Climate Study: Theory and Applications. CRC Press. doi:10.1201/9781003603429
- Behera, S.K., 2020. Tropical and Extratropical Air-Sea Interactions: Modes of Climate Variations, Tropical and Extratropical Air-Sea Interactions: Modes of Climate Variations. Elsevier. doi:10.1016/B978-0-12-818156-0.00016-2

Tutorial Exercises:

- Discussion on the interactions between Earth's five spheres using a systems approach and geographic perspective with real-world examples.
- Identification and analysis of land-ocean coupling processes at the shelf-sea-ocean interface using schematic

diagrams and case studies.

- Discussion on ocean-atmosphere boundary layer dynamics in tropical regions with emphasis on coupling phenomena.
- Analysis of teleconnection patterns between Indian summer monsoon and ENSO, Indian Ocean Dipole, and ENSO Modoki.
- Review and comparison of emerging climate variability modes with traditional patterns, focusing on their global impacts and mechanisms.

Practical Record: Not Applicable

Readings:

Essential Readings:

1. Rohli, R.V., 2024. Atmospheric and Oceanic Circulation. Springer Nature.
2. Sahu N., Behera SK, Yamashiki Y., Takara K and Yamagata T. 2012. IOD and ENSO impacts on the extreme stream-flows of Citarum river in Indonesia, Climate Dynamics, DOI: 10.1007/s00382 011-1158-2. Volume 39, Issue 7-8, pp. 1673-1680.
3. Sahu N., Behera SK, Ratnam JV, Silva RV, Parhi P, Duan W, Takara K, Singh RB and Yamagata T. 2014. El Nino Modoki connection to extremely-low streamflow of the Paranaiba River in Brazil, Climate Dynamics, March, 42,1509-1516, DOI 10.1007/s00382-013-2006-3
4. Swadhin K. Behera and Toshio Yamagata, 2015. Indo-Pacific Climate variability and Predictability, World Scientific Press, Singapore.

Suggested Readings:

1. Nakamura, H., Isobe, A., ... Suga, T., 2016. “Hot spots” in the Climate System: New Developments in the Extratropical Ocean-Atmosphere Interaction Research. Springer Japan. doi:10.1007/978-4-431-56053-1
2. Global Environmental Changes in South Asia., 2010. Global Environmental Changes in South Asia. Springer Netherlands. https://doi.org/10.1007/978-1-4020-9913-7
3. S. Diop, J. Fabres, R. Pravettoni, J.-P. Barusseau, C.D., Ducrotoy, and J.-P., 2014. The Land/Ocean Interactions in the Coastal Zone of West and Central Africa, Estuaries of the World, Springer International Publishing Switzerland.
4. Garatt, J.R. 1992. The Atmospheric Boundary Layer, Cambridge University Press.
5. Swadhin Behera and Toshio Yamagata, 2011. Dynamics of the Indian and Pacific Oceans, Chapter 4, (eds.) Moffatt H.K., and Shuckburgh E., Environmental Hazards: The Fluid Dynamics and Geophysics of Extreme Events, vol.21, Lecture note series, IMS, NUS, Singapore.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E301: CITIES OF GLOBAL SOUTH (UPC 122902301)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E301: CITIES OF GLOBAL SOUTH (UPC 122902301)	4	3	1	0	BA/BSc in Geography	

Learning Objectives:

- To critically examine the diverse and complex processes shaping urbanization in the Global South.
- To engage with comparative and grounded analysis of urban issues beyond Eurocentric frameworks.
- To develop comparative, historically informed, and place-specific understandings of southern urbanism.

Learning Outcomes:

- To develop an understanding of how colonial legacies, postcolonial state-building, global economic shifts, and local socio-spatial dynamics intersect to shape cities of Global South
- Evaluate urban issues within specific regional and local contexts in the Global South to assess the efficacy, inclusivity, and sustainability of planning and policy interventions.
- Apply theoretical frameworks and empirical knowledge to assess urban development, planning initiatives and policy interventions, particularly within the context of cities in the Global South

Course Outline:

Unit 1: Conceptualizing Global Cities of the South: Defining the City; Theoretical Approaches and Key debates - global and local urbanisms, Southern urban theory and Postcolonial critiques of urban theory

Readings

- Robinson, J. (2016). Comparative Urbanism: New Geographies and Cultures of Theorizing the Urban. *International Journal of Urban and Regional Research*, *40*(1), 187–199.

- Roy, A. (2009). The 21st-Century Metropolis: New Geographies of Theory. *Regional Studies*, *43*(6), 819–830.
- Faranak Miraftab, & Neema Kudva. (2014). *Cities of the Global South Reader*. Routledge. (Chapter 1)

Unit 2: Cities in the Global Economy: Urban restructuring under neoliberal globalization; Emerging Urban Economies – Informality and urban economic dualism in cities of global south; Social exclusion, inequality, and new forms of urban marginalization.
Readings for Unit 2

- Sassen, S. (2016). *Global Networks, Linked Cities*. Routledge. (Chapters **9, 11**)
- McFarlane, C. (2012). Rethinking Informality: Politics, Crisis, and the City. *Planning Theory & Practice*, *13*(1), 89–108.

Unit 3: Politics and Governance in Cities of the South: Urban Governance and Local Politics; Community Development and Empowerment – right to the city and social justice.
Readings

- Parnell, S., & Oldfield, S. (Eds.). (2014). *The Routledge handbook on cities of the global south* (Vol. 2014). London: Routledge. (Part 4: chapters **22, 23,27**)
- Watson, V. (2014). Co-production and collaboration in planning – The difference. *Planning Theory & Practice*, *15*(1), 62–76.

Unit 4: Futures of Urbanism in the Global South: Sustainable Urban Futures – climate resilience, adaptation and planning; Smart Cities and Technological Futures.
Readings

- Datta, A. (2018). Postcolonial urban futures: Imagining and governing India's smart urban age. *Environment and Planning D: Society and Space*, *37*(3), 393–410.
- Aurigi, A., & Odendaal, N. (2020). From "Smart in the Box" to "Smart in the City": Rethinking the Socially Sustainable Smart City in Context. *Journal of Urban Technology*, 1–16.

Tutorial Exercises

- Group discussion on the conceptual evolution of from "Third World Cities" to "Global South Cities."
- Based on a case study the students will reflect on any city (e.g., Delhi) and how does it challenge classical urban theory?
- Based on news stories students will present on "Informality as Survival Strategy" of particular cases — eg. Dharavi (Mumbai), Kibera (Nairobi), or Rocinha (Rio)

- Group discussion on - How do “everyday politics” shape governance in your city?
- Class debate on Compare Smart City Missions (e.g., Delhi, Nairobi) through inclusivity and equity lens.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Miraftab, F and Kudva, N. (2015) Cities of Global South. Routledge: London and New York.Adams, P. C (2009) Geographies of Media and Communication: A Critical Introduction. London: Wiley-Blackwell.
- Datta, A. And Shaban, A. (eds)(2017) Mega-Urbanisation in Global South: Fast Cities and New Urban Utopias of the Post-colonial State. Routledge: London and New York.

Suggested Readings:

- Castells, Manuel (2009) The Information Age: Economy, Society and Culture (v. 1-3) The Rise of Network Society; The Power of Identity, End of Millennium. (Second edition) Oxford: Blackwell Publishing.
- Castells, Manuel, Gustavo Cardoso (2006) The Network Society: From Knowledge to Policy. Washington, DC, Center for Transatlantic Relations.
- Hall, P. (2001) Cities in Civilization : Culture, Innovation and Urban Order, Phoenix.
- Hall, P. (2002) Cities in Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century, 3rd Edition, Oxford: Blackwell.
- Nandy, A (2001) An Ambiguous Journey to the City: The Village and Other Odd Ruins of the Self in the Indian Imagination, New Delhi: OUP.
- Sassen, S (ed.) (2002) Global Network, Linked Cities, New York: Routledge.
- Scott, A.J. (2002) Global City-Regions: Trends, Theory, Policy, Oxford: OUP.
- Southhall, A. (1998) The City in Time and space, Cambridge: Cambridge University Press.
- Parnell, S. and Oldfield, S. (2014)The Routledge Handbook on Cities of Global. Routledge: London and New York.
- Chattopadhyay S. 2012. *Unlearning the City: Infrastructure in a New Optical Field* Minneapolis: Univ. Minn. Press
- Comaroff J, Comaroff JL. 2011. *Theory from the South: Or, How Euro-America Is Evolving Toward Africa* London: Routledge
- De Boeck F, Baloji S 2016. *Suturing the City: Living Together in Congo's Urban Worlds* London: Autograph
- de Sousa Santos B. 2014. *Epistemologies of the South: Justice Against Epistemicide* Boulder, CO: Paradigm

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E302: CLIMATE CHANGE AND ADAPTATIONS (UPC 122902302)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E302: CLIMATE CHANGE AND ADAPTATIONS (UPC 122902302)	4	3	1	0	BA/BSc in Geography	NA

Learning Objectives:

The learning objectives of this course are as follows:

- Providing in depth knowledge of Climate Change.
- Assessment of Climate Change impacts on fragile ecosystems.
- Adaptation strategy and governance.

Learning Outcomes:

The learning outcomes of this course are as follows:

- Understanding of various dimensions of Climate Change.
- Significance of adaptation strategies.
- Evaluation of role of Local and global organizations.

Course Outline:

Unit 1: Science of Climate Change: Meaning, Concept and Linkages

Readings for Unit 1

1. Adger, W. N., (2006). Vulnerability, Global Environmental Change 16 (3), 268-281
2. Agrawala, S. and Fankhauser, S. (Eds.), (2008). Economic Aspects of Adaptation to Climate Change: Costs, Benefits and Policy Instruments. OECD, Paris

Unit 2: Measuring Climate Change: Stress, exposure, risk and vulnerability related to climatic hazards and disasters.

Readings for Unit 2

1. Barros, Vicente R. (eds.), (2014). Climate Change 2014 – Impacts, Adaptation and Vulnerability: Global and Sectoral Aspects. Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Part B; Regional Aspect). Cambridge University Press, New York.
2. Reid, Hannah. (2014). Climate change and human development. London, UK : Zed Books

Unit 3: Empirical Assessment of Climate Change Adaptation: Assessment in fragile ecosystems; Mountain, Desert and Coastal.

Readings for Unit 3

1. Bergkamp, G., Orlando, B. and Burton, I. (2003). Change: Adaptation of Water Resources Management to Climate Change. IUCN, Gland.
2. **IPCC**, 2012: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation.* A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

Unit 4: Policy Framework for Climate Change Adaptation: Role of Indigenous Traditional Knowledge (ITK), International Climate Change Agreements and Local Governance.

Readings for Unit 4

1. IPCC, (2013). Climate Change 2013: The Physical Science Basis, the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.
2. Mukherji Shormila, (2004). Fragile environment, Manak Publication Pvt. Ltd.

Tutorial Exercises

- Prepare a short note comparing different scientific approaches to understanding climate change.
- Identify and map one climatic hazard in India and outline its stress–exposure–risk–vulnerability chain.
- Write a brief assessment of climate change impacts on either a mountain, desert, or coastal ecosystem.
- Review a recent IPCC report section and summarize its key findings on adaptation.
- Examine one local example of Indigenous Traditional Knowledge (ITK) used for climate resilience.
- Prepare a flowchart explaining the link between SDGs and climate change adaptation.
- Compare two major international climate agreements and highlight their adaptation-related provisions.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Adger, W. N., (2006). Vulnerability, Global Environmental Change 16 (3), 268-281

- Agrawala, S. and Fankhauser, S. (Eds.), (2008). Economic Aspects of Adaptation to Climate Change: Costs, Benefits and Policy Instruments. OECD, Paris
- Barros, Vicente R. (eds.), (2014). Climate Change 2014 – Impacts, Adaptation and Vulnerability: Global and Sectoral Aspects. Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Part B; Regional Aspect). Cambridge University Press, New York.
- Reid, Hannah. (2014). Climate change and human development. London, UK : Zed Books

Suggested Readings:

- IPCC, (2013). Climate Change 2013: The Physical Science Basis, the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.
- Mukherji Shormila, (2004). Fragile environment, Manak Publication Pvt. Ltd.
- NDMA, (2009). National Disaster Management Guidelines—Management of Landslides and Snow Avalanches. Publication of National Disaster Management Authority, Government of India. New Delhi
- Pandey, R, Jha S., (2011). Climate vulnerability index –measure of climate change vulnerability to communities: a case of rural Lower Himalayas, India, Mitigation and Adaptation Strategies Global Change, Published online December 2011
- Brewster, E. N. (2010). Climate change adaptation: Steps for a vulnerable planet. New York: Nova Science.
- Singh, Savindra, (2015). Paryavaran Bhoogol, Prayag Pushtak Bhavan Allahabad (Hindi).

Digital materials: Not Applicable

Course Name	CONTEMPORARY CONFLICTS AND GEOGRAPHIES OF PEACE				
Course Type	DSE	Part	2	Semester	III
UPC	122902303	Course Code	GEOG-E303	Credits	4
Duration (Hours/week)	4	Lecture	3	Tutorial	1
				Practical	0

Course Objectives	
1.	To introduce students to the spatial dimensions of conflict and peace through critical theoretical and empirical frameworks
2.	To examine conflict-prone geographies, actors, institutions, and impacts with reference to India and the global context
3.	To explore peacebuilding strategies and policy approaches through spatial justice, reconciliation, and sustainable peace

Course Learning Outcome	
1.	Understand and interpret the spatiality and diversity of contemporary conflicts.
2.	Analyze India-specific and global conflict patterns and their geographic drivers.
3.	Evaluate institutional, grassroots, and policy-based responses to conflict and peace. Apply spatial concepts and critical tools in mapping conflict zones and assessing peace strategies.

Course Outline / Content	
Unit 1	**Geographies of Conflict and Peace – Concepts and Frameworks** : Typologies of conflict: geopolitical, territorial, identity-based, resource and environmental; theoretical approaches – critical geopolitics, political ecology, peace geography; spatial dimensions of violence and insecurity; Borderscapes and mapping of conflict zones.
Unit 2	**Conflict and Peace in India – Regions, Resources, and Institutions :** Regional patterns of conflict: Northeast, Kashmir, tribal belts, and urban spaces; communal, caste-based, and ethnic tensions; resource-driven conflicts and displacement; roles of Indian institutions – Election Commission, NHRC, NSA, and peace-building mechanisms
Unit 3	**Global Conflicts – Causes, Spaces, and Responses:** Geopolitical and resource conflicts: Israel-Palestine, Ukraine, Rohingya, South China Sea, Horn of Africa; refugee flows, displacement corridors, and militarized borders; spatial impacts of war economies; roles of global institutions – UN, ICJ, ICRC, NATO, and peacekeeping missions.
Unit 4	**Peacebuilding, Recovery, and Spatial Justice:** Post-conflict reconstruction and spatial justice; territorial reconciliation and place-based healing; peace parks, urban safe zones, and memorial landscapes; grassroots, indigenous, and civil society initiatives; gender and education in peace processes; key organizations – UN Peacebuilding Commission, SAARC, UNESCO.
Unit 5	**Emerging Threats and Future Peace Challenges:** Future conflict zones: climate-stressed regions, cyber and urban warfare spaces, contested borders; emerging hotspots – Arctic, Indo-Pacific, Sahel, sub-Himalayan India; digital extremism, misinformation, and AI-driven insecurity; early warning systems, risk mapping, and strategic peace advisories

Suggested / Recommended Readings	
1.	Autesserre, S. (2021). The Frontlines of Peace: An Insider's Guide to Changing the World. Oxford University Press
2.	Flint, C. (2021). Introduction to Geopolitics (3rd ed.). Routledge.
3.	Galtung, J. (1996). Peace by Peaceful Means: Peace and Conflict, Development and Civilization. Sage
4.	Gregory, D., & Pred, A. (Eds.). (2007). Violent Geographies: Fear, Terror, and Political Violence. Routledge.
5.	Ide, T. (2021). The Impact of Climate Change on Armed Conflict: Empirical Evidence and Future Research Directions. Political Geography.
6.	Kaldor, M. (2020). Global Security Cultures. Polity Press.
7.	Megoran, N., McConnell, F., & Williams, P. (Eds.). (2014). Geographies of Peace. I.B. Tauris.
8.	Richmond, O. P. (2011). A Post-Liberal Peace. Routledge
9.	Springer, S. (2015). Violence and Space: Critical Geographies. Routledge
10.	Wallensteen, P. (2015). Understanding Conflict Resolution (4th ed.). Sage
11.	Waltz, K. (2001). Man, the State, and War: A Theoretical Analysis. Columbia University Press.
12.	Le Billon, P. (2005). Fuelling War: Natural Resources and Armed Conflicts. Routledge.
13.	Behera, N. C. (2006). Demystifying Kashmir. Pearson Education India
14.	Samaddar, R. (2004). Peace Studies: An Introduction to the Concept, Scope and Themes. South Asia Forum for Human Rights
15.	Muni, S. D. (2003). Conflicts in South Asia: Causes, Consequences and Solutions. South Asian Publishers.

Facilitating Course Learning Outcomes	
Unit 1	Understand spatial foundations of conflict and peace
Unit 2	Analyze India-specific conflict spaces and institutions
Unit 3	Evaluate global conflicts and institutional responses
Unit 4	Examine peacebuilding strategies and spatial justice
Unit 5	Assess future threats and policy options

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E304: CULTURAL GEOGRAPHY STUDIO (UPC 122902304)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E304: Cultural Geography Studio (UPC 122902304)	4	2	0	2	BA/BSc in Geography	NA

Learning Objectives:

The learning objectives of this course are as follows:

- To introduce advanced theoretical frameworks for analyzing urban spatial dynamics and infrastructural systems
- To develop methodological skills for investigating socio-political dimensions and lived experiences in urban spaces.
- To foster interdisciplinary approaches to urban cultural research through multimodal investigative techniques

Learning Outcomes:

The learning outcomes of this course are as follows:

- Apply advanced theoretical concepts and methodological tools to analyze urban spatial configurations and transformations.
- Critically evaluate the relationships between urban infrastructures, social practices, and political processes.
- Produce focused research narratives that effectively communicate urban complexities

Course Outline:

Unit 1: Theoretical Foundations and Methodological Approaches: Frameworks for urban cultural research; methods in urban research; city as a method, ethnography and Participant Observation, positionality, ethics and collaborative knowledge

Readings for Unit 1

- Robinson, J. (2016). Thinking cities through elsewhere: Comparative tactics for a more global urban studies. *Progress in human geography*, *40*(1), 3-29.
- Lees, L. (2003). Urban geography:'New'urban geography and the ethnographic void. *Progress in Human Geography*, *27*(1), 107-113.
- Leszczynski, A. (2025). On method, and the present and future of "doing" urban geography. *Urban Geography*, 1-12.

Unit 2: Infrastructures and Materialities: Formal and informal; material politics, urban resources and services; digital infrastructure, platform urbanism; Participatory mapping and infrastructure tracking

Readings for Unit 2

- Simone, A. M. (2004). "People as Infrastructure: Intersecting Fragments in Johannesburg." *Public Culture*, 16(3), 407-429.
- Burchardt, M. (2016). The infrastructures of diversity: Materiality and culture in urban space–an introduction. *New Diversities*, *17*(2), 1-13.
- Anand, N. (2017). *Hydraulic city: Water and the infrastructures of citizenship in Mumbai*. Duke University Press.

Unit 3: Urban Socialities and Spatial Practices: Social infrastructures and public space dynamics: leisure, consumption, and cultural practices; embodied experiences, urban rhythms, temporal patterns; resistance in everyday spatial tactics; Sensory ethnography and rhythmanalysis

Readings for Unit 3

- Lancione, M. (2019). The politics of embodied urban precarity: Roma people and the fight for housing in Bucharest, Romania. *Geoforum*, *101*, 182-191.
- Latham, A., & Layton, J. (2019). Social infrastructure and the public life of cities: Studying urban sociality and public spaces. *Geography compass*, *13*(7), e12444.
- Middleton, J. (2018). The socialities of everyday urban walking and the 'right to the city'. *Urban studies*, *55*(2), 296-315.

Unit 4: Urban Politics and Transformative Practices: right to the city and spatial justice, governance, power; digital activism, technological assemblages; urban imaginaries, alternative spatial practices; spatial ethnography, visual methods, tactical urbanism

Readings for Unit 4 (not more than 3)

- Fernandes, L. (2004). The politics of forgetting: Class politics, state power and the restructuring of urban space in India. *Urban studies*, *41*(12), 2415-2430
- Beveridge, R., & Koch, P. (2019). Urban everyday politics: Politicising practices and the transformation of the here and now. *Environment and Planning D: Society and Space*, *37*(1), 142-157.
- Palat Narayanan, N. (2025). Ontological locationalities: Moving beyond North–South binary and interrogating what gets studied. *Dialogues in Urban Research*, 27541258251329304.

Tutorial Exercises: NA

Practical Record: Any Four to be conducted

- **Positionality Mapping and Reflexive Practice**
  Developing self-awareness of researcher's social location, power dynamics, and ethical considerations in urban fieldwork through collaborative reflection.
- **Participatory Infrastructure Mapping**
  Collaborative documentation of formal and informal urban infrastructures through transect walks, interviews, and digital mapping tools.
- **Urban Space Walks and Discussion**
  Pre-designed walking tours through Delhi urban spaces with focused observation on spatial arrangements,

social interactions, and everyday infrastructures and materiality.

- **Sensory Ethnography and Rhythmanalysis**
  Multi-sensory observation of public spaces across different times, documenting urban rhythms through creative audio-visual and textual methods.
- **Everyday Spatial Tactics Documentation**
  Identifying and analyzing informal spatial practices, appropriations, and resistance in urban life through visual documentation and interviews.
- **Digital Activism and Platform Urbanism Analysis**
  Examining urban digital activism cases by mapping digital-physical assemblages and analyzing how platforms mediate spatial claims and voices.
- **Right to the City and Tactical Intervention Proposal**
  Group-based identification of spatial injustices and design of tactical urbanism interventions grounded in spatial justice theory and fieldwork.

Readings:

Essential Readings:

- Lefebvre, H. (1991). The Production of Space. Blackwell.
  Essential for: Units 1, 3, 4
  Key chapters: Introduction, Chapters 1-2
- De Certeau, M. (1984). The Practice of Everyday Life. University of California Press.
  Essential for: Units 1, 3, 4
  Key chapters: Chapters 1-3, Chapter 7 ("Walking in the City")
- Roy, A. (2009). "The 21st-Century Metropolis: New Geographies of Theory." Regional Studies, 43(6), 819-830.
  Essential for: Units 1, 4
- Harvey, D. (2012). Rebel Cities: From the Right to the City to the Urban Revolution. Verso.
  Essential for: Unit 4
  Key chapters: Chapters 1-2, Chapter 4
- McFarlane, C. (2011). Learning the City: Knowledge and Translocal Assemblage. Wiley-Blackwell.
  Essential for: Units 1, 2
  Key chapters: Chapters 1-3
- Pink, S. (2015). Doing Sensory Ethnography (2nd ed.). Sage.
  Essential for: Units 1, 3
  Key chapters: Chapters 1, 3, 6, 8

Suggested Readings:

- Roy, A., & AlSayyad, N. (Eds.). (2004). Urban informality: Transnational perspectives from the middle East, latin America, and south Asia. Lexington Books.
- Massey, D. (2005). For Space. Sage.
- Butler, J. (2015). Notes Toward a Performative Theory of Assembly. Harvard University Press.
- McFarlane, C. (2021). *Fragments of the city: Making and remaking urban worlds*. Univ of California Press.
- Amin, A., & Thrift, N. (2002). *Cities: Reimagining the Urban*. Polity Press.
- Kitchin, R., & Dodge, M. (2011). *Code/Space: Software and Everyday Life*. MIT Press.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E305: DEVELOPMENT THEORY AND REGIONAL POLICY (UPC 122902305)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E305: DEVELOPMENT THEORY AND REGIONAL POLICY (UPC 122902305)	4	3	1	0	BA/BSc in Geography	Basic Knowledge of Economics

Learning Objectives:

The learning objectives of this course are as follows:

- This course studies the conception of space in Anglo-American traditions of regional development theory.
- It lays the theoretical foundation for the various development concepts and models, which originated post 1950s.
- It also critically evaluates the numerous regional policies originating from the above theories.

Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will be aware of Anglo-American academic traditions, and overlapping disciplinary roots of the regional development theories.
- The students will know how the development theories evolved over four very dissimilar phases, with substantial variation in emphasis and character:
  a) Urban-Industrial Growth Pole Strategies (1950-70)
  b) Neo-Populist Regional Development Strategies (1970-90)
  c) Liberalization, Privatization and Globalization (1990-2010)
  d) Sustainable Human Development (2010 onwards)
- The students will learn about the regional policies emanating out of these development theories.

Course Outline:

Unit 1: Introduction: Origin and Context, Concept of Space and Region, Rationalization of Regional Planning and Spatial Policy.

Readings

- Gore C. 1984. *Regions in Question: Space, Development Theory and Regional Policy*, London, Methuen.

Unit 2: Common Regional Policy Objectives: Regional Imbalance as a Policy Problem; Growth, Income Distribution and Spatial Inequality.

Readings

- Friedmann J. 1966. *Regional Development Policy: A Case Study of Venezuela*, Cambridge, Mass., MIT.
- Hirschman A. O. 1958. *The Strategy of Economic Development*, New Haven, Yale University Press.
- Myrdal G. 1957. *Economic Theory and Underdeveloped Regions*, London, Duckworth.

Unit 3: Rival Regional Planning Strategies: Urban-Industrial Growth Pole Strategies; Polarization and the Development of Underdevelopment; Neo-Populist Regional Development Strategies; Territorial Regional Planning, State, Development and Regional Planning.

Readings

- Friedmann J. 1973. *Urbanization, Planning and National Development*, Sage Pub., London.
- Stohr W. B. and Taylor D. R. F. 1981. *Development from Above or Below? The Dialectics of Regional Planning in Developing Countries*, John Wiley, Chichester.
- Lo Fu-chen and Salih K. 1978. *Growth Pole Strategy and Regional Development Policy: Asian Experiences and Alternative Approaches*, Pergamon, Oxford.

Unit 4: Globalization of Development Policy: Liberalization, Privatization and Globalization; Sustainable Human Development.

Readings

- Gore C., Köhler G., Reich U-P. and Ziesemer T. 1996. *Questioning Development: Essays on the Theory, Policies and Practice of Development Intervention*, Metropolis-Verlag, Marburg.
- Peet R. 1999. *Theories of Development*, Guilford Press, New York.
- Gore C. 2000. 'The Rise and Fall of the Washington Consensus as a Paradigm for Developing Countries', *World Development*, 28 (5), 789-804, Elsevier Science Ltd.

Tutorial Exercises

- How is the conceptualization of space in regional development different from other disciplines?
- Debate on efficiency and equity.
- Describe incidents of urban bias.
- Explain Problem in large city vis-à-vis Problems of large city
- How the concept of growth pole transformed into a regional theory?
- What are the reasons for failure of growth-pole strategies?
- What are the essential ingredients of a national development strategy?
- How did the development policy globalize?
- Critically evaluation normative vs. explanatory frameworks
- Critical evaluation of regional planning practices and strategies.

Practical Record: Not Applicable

Teaching Hours:

Unit 1: 15 Hours
Unit 2: 15 Hours
Unit 3: 15 Hours

Unit 4: 15 Hours
Total: 60 Hours

Readings:

Essential Readings:

- Gore C. 1984. *Regions in Question: Space, Development Theory and Regional Policy*, London, Methuen.
- Gore C. 2000. 'The Rise and Fall of the Washington Consensus as a Paradigm for Developing Countries', *World Development*, 28 (5), 789-804, Elsevier Science Ltd.

Suggested Readings:

- Friedmann J. 1966. *Regional Development Policy: A Case Study of Venezuela*, Cambridge, Mass., MIT.
- Friedmann J. 1973. *Urbanization, Planning and National Development*, Sage Pub., London.
- Gore C., Köhler G., Reich U-P. and Ziesemer T. 1996. *Questioning Development: Essays on the Theory, Policies and Practice of Development Intervention*, Metropolis-Verlag, Marburg.
- Hirschman A. O. 1958. *The Strategy of Economic Development*, New Haven, Yale University Press.
- Lo Fu-chen and Salih K. 1978. *Growth Pole Strategy and Regional Development Policy: Asian Experiences and Alternative Approaches*, Pergamon, Oxford.
- Myrdal G. 1957. *Economic Theory and Underdeveloped Regions*, London, Duckworth.
- Peet R. 1999. *Theories of Development*, Guilford Press, New York.
- Stohr W. B. and Taylor D. R. F. 1981. *Development from Above or Below? The Dialectics of Regional Planning in Developing Countries*, John Wiley, Chichester.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E306: DIGITAL GEOGRAPHIES (UPC 122902306)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E306: DIGITAL GEOGRAPHIES (UPC 122902306)	4	3	1	0	BA/BSc in Geography	

Learning Objectives:

- To critically examine the intersections between geography, digital media, and communication technologies
- To analyze the role of digital media in constructing and mediating geographical imaginaries and how they evolve, and shape spatial perceptions, experiences, and practices.
- To evaluate the impacts of digital media on social, cultural, political, and economic geographies.

Learning Outcomes:

- Critically assess the roles digital media play in expanding and diversifying geographical knowledge
- Examine how digital media platforms, narratives, and technologies challenge conventional spatial epistemologies and geographic imaginaries.
- Apply insights from digital geography to assess real-world contexts, addressing critical issues such as spatial justice, digital divides, place-making, and mediated experiences

Course Outline:

Unit 1: Introduction to Digital Geographies: Conceptualizing Digital Media, Space, and Place; Cultural and technological approaches in digital geography;

Readings

- Adams, P. C. (2009). *Geographies of media and communication*. John Wiley & Sons. (Chapter 1)
- Leszczynski, A. (2014). Spatial media/tion. *Progress in Human Geography*, *39*(6), 729–751.
- Ash, J., Kitchin, R., & Leszczynski, A. (2018). Digital turn, digital geographies?. *Progress in*

Human Geography, *42*(1), 25-43.

Unit 2: Digital Infrastructures: Forms of digital media and practices; Geography of data centers and spatial clustering; Urban informatics and city infrastructure; Infrastructure Governance and Policy

Readings

- Plantin, J.-C., Lagoze, C., Edwards, P. N., & Sandvig, C. (2016). Infrastructure studies meet platform studies in the age of Google and Facebook. *New Media & Society*, *20*(1), 293–310.
- Graham, M., & Dutton, W. H. (Eds.). (2019). *Society and the internet: How networks of information and communication are changing our lives*. Oxford University Press. (Chapters **15, 19**)
- Travis, C., & Von Lünen, A. (Eds.). (2016). *The digital arts and humanities: neogeography, social media and big data integrations and applications*. Springer. (Chapter 11)

Unit 3: Digital lives: Platformisation of economy and produser economy;
digital and spatial narratives of everyday lives; digital activism and social mobilisations;

Readings

- Graham, M., & Dutton, W. H. (Eds.). (2019). *Society and the internet: How networks of information and communication are changing our lives*. Oxford University Press. (Part 1 Chapters **1,3**, **11, 13**)
- Travis, C., & Von Lünen, A. (Eds.). (2016). *The digital arts and humanities: neogeography, social media and big data integrations and applications*. Springer. (Chapter **4, 9,**)
- Morsello, B. (2017). The datafied society, studying culture through data. *Information, Communication & Society*, *20*(12), 1824–1826.

Unit 4: Emerging Issues and Future Directions: Speculative digital geographies and their potential societal impacts; Critical Challenges and contemporary debates - Digital divides, spatial justice, and inclusive digital practices.

Readings

- Markham, A. (2020). The limits of the imaginary: Challenges to intervening in future speculations of memory, data, and algorithms. *New Media & Society*, *23*(2), 146144482092932.
- Couldry, N., & Mejias, U. A. (2019). The costs of connection: How data is colonizing human life and appropriating it for capitalism. In *The costs of connection*. Stanford University Press.

Tutorial Exercises

- Students collaboratively create a digital concept map linking *space, place, and media* using Miro or Google Jamboard.
- Class Debate: “Are digital spaces real spaces?” — using readings from Adams (2009) and Ash et al. (2018).
- Students will conduct a case study analysis: Identify and map India’s major data centers

(e.g., Hyderabad, Mumbai, Noida) — analyze locational factors, governance, and energy use.
- Students will conduct digital ethnography and document their daily digital interactions for 48 hours and spatialize them on a map (using Google My Maps or ArcGIS StoryMap).
- Group discussion on "Futures of Digital Cities 2035" — emphasizing inclusivity and ecological sustainability.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Adams, P. C (2009) Geographies of Media and Communication: A Critical Introduction. London: Wiley-Blackwell.
- Adams, PC, Craine, J, Dittmer, J (eds) (2014) The Ashgate Research Companion to Media Geography. Aldershot: Ashgate Press.

Suggested Readings:

- Ash, J., Kitchin, R., & Leszczynski, A. (2018). *Digital Geographies*. SAGE.
- Jenkins, H. *Convergence Culture: Where Old and New Media Collide*. New York: New York University Press, 2006.
- Travis, C. And von Lunen. A. (eds)(2016) The Digital Arts and Humanities. Neogeography, Social Media, Big Data Integrations and applications. Springer: Switzerland.
- Chung, W.H.K. and Keenan, T. (eds)(2006)New Media, Old Media: A History and Theory Reader. Routledge: London and New York.
- Ash, J., Kitchin, R., & Leszczynski, A. (2024). *Researching Digital Life*. SAGE Publications Limited.
- Graham, M., & Dutton, W. H. (2019). *Society and the Internet : how networks of information and communication are changing our lives*. Oxford University Press.
- Graham, M. (2024, June 18). *Digital Economies at Global Margins*. MIT Press. https://mitpress.mit.edu/9780262535892/digital-economies-at-global-margins/
- Vale, M. (2024). *Geographies of the Platform Economy*. Springer Nature.
- Kitchin, R. (2024). *Critical Data Studies*. John Wiley & Sons.
- Kitchin, R. (2021). *Data Lives*. Policy Press.

Digital materials: Not Applicable

Course Name	DIGITAL IMAGE PROCESSING (PRACTICAL)				
Course Type	DSE	Part	2	Semester	III
UPC	122902307	Course Code	GEOG-E307	Credits	4
Duration (Hours/week)	4	Lecture	1	Tutorial	0
				Practical	6

Course Objectives

1.	To make students acquainted with standard digital image processing techniques through hands-on practical exercise
2.	To enable students to extract land-use/land-cover and other valuable information from the digital remote sensing images for different geographical applications

Course Learning Outcome

1.	Overview of Digital Image processing and image enhancement techniques for better interpretation
2.	Understanding of multi-resolution data fusion and visualization
3.	Understanding of Image Classification and Change detection techniques

Course Outline / Content

Unit 1	Digital image, supply and storage of digital data, radiometric and geometric correction, image registration
Unit 2	Colour Composite, image enhancement, filtering, transformation, indices
Unit 3	Colour enhancement, image fusion, perspective visualization
Unit 4	Digital image classification: supervised and unsupervised classification; accuracy assessment
Unit 5	Digital change detection

Suggested / Recommended Readings

1.	Canty, M.J. 2014. Image Analysis, Classification and Change Detection in Remote Sensing, 3rd Edition, CRC Press.
2.	Gibson, P.J., Power, C.H., Rudahl, K.T. and Goldin, S.E. 2000. Introductory Remote Sensing: Digital Image Processing and Applications, Routledge.
3.	Gonzalez, R.C. and Woods, R.E. 2007. Digital Image Processing, 3rd Edition, Pearson.
4.	Jensen, J.R. 2015. Introductory Digital Image Processing: A Remote Sensing Perspective, 4th Edition, Pearson.
5.	Lavender, S. and Lavender, A. 2015. Practical Handbook of Remote Sensing, CRC Press.
6.	Liang, S. 2004. Quantitative Remote Sensing of Land Surfaces, Wiley.
7.	Mather, P. M. and Koch, M. 2011. Computer Processing of Remotely Sensed Images: An Introduction, 4th Edition, Wiley-Blackwell.
8.	Navulur, K. 2007. Multispectral Image Analysis using the Object-Oriented Paradigm, CRC Press.
9.	Richards, J.A. 2013. Remote Sensing Digital Image Analysis: An Introduction, Springer.
10.	Tso, B. and Mather, P.M. 2009. Classification Methods for Remotely Sensed Data, 2 nd Edition, CRC Press.

Facilitating Course Learning Outcomes

Unit 1	Overview of Digital Image processing and Pre-processing of images
Unit 2	Understanding of image enhancement techniques for better interpretation
Unit 3	Understanding of multi-resolution data fusion and visualization
Unit 4	Understanding of Image Classification
Unit 5	Understanding of Change detection techniques

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E308: GEOGRAPHIES OF LIFE-FORCE AND ENVIRONMENT (UPC 122902308)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E308: GEOGRAPHIES OF LIFE-FORCE AND ENVIROMNENT (UPC 122902308)	4	3	1	0	BA/BSc in Geography	NIL

Learning Objectives:

The learning objectives of this course are as follows:

- To understand the contribution of Indian knowledge systems to understanding human-environment relationship
- Student will learn how life-force energy mediates our existence in the universe
- The students will be exposed to Indian knowledge systems, techniques and methods of developing and integrating the self and environment.

Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will acquire Indian traditional knowledge to make sense of self, space and environment
- The students will be able to have deeper knowledge on well-being, environment and healthy life
- Use geographical concepts to understanding life-force

Course Outline:

Unit 1: Introduction: Life-force- Prana, Ojas, Vitality, Consciousness; the Energy Body & the Universe; the Shiva-Shakti principle

Readings for Unit 1

1. Urban, H (2025) The Paths of the Serpent: Kuṇḍalinī as Subtle Energy, from Tantra to Neo-Tantra
2. Samuel, G. and Johnston, J., 2015. Religion and the Subtle Body in Asia and the West. New York and London: Routledge.

Unit 2: Limits to Life-force & Vitality: Social Space, Public Space, Cyberspace and their effects on Life-force energy

Readings for Unit 3

1. Pile, S., 2013. The body and the city: psychoanalysis, space and subjectivity. Routledge.
2. Zhang, P., 2021. The energic economy of cyberchronotopia. Explorations in Media Ecology, 20(4), pp.479-496.

Unit 3: Systems of Vitality: Yoga, Tantra, Tai Chi; Spatial Systems: Vaastu, Feng Shui

Readings for Unit 2

1. Woodyard, C., 2011. Exploring the therapeutic effects of yoga and its ability to increase quality of life. *International journal of yoga*, *4*(2), pp.49-54.
2. Kulshrestha, A, and Caplikaite, S. 2024. Tantra Philosophy and it's Yogic Approach for Self –Transformation : A Descriptive Study. http://dx.doi.org/10.2139/ssrn.4828586
3. Sinha, A., 1998. Design of settlements in the Vaastu Shastras. *Journal of Cultural Geography*, 17(2), pp.27-41.

Unit 4: Spaces of Vitality: The Body: Breathe and associated Practices; Physical Environments; Cultural Environments; Globalisation and the Vitality economy

Readings for Unit 4

1. Urban H, B. 2022 Subtle Bodies: Cartographies of the Soul, from India to "the West" **[**Ciała subtelne. Kartografie duszy od Indii di po Zachód] *Hermaoin* 6.
2. Shrestha, S.K., Adhikari, S., Karky, J.R. and Timsina, S.K., 2024. Emerging Trends and Geographical Influences on Yoga: A Study of Yogic Practices. *AMC Journal*, 5(1), pp.53-68.
3. Thomas, T. and Jena, B. B., 2024. Intersections of New Age Spirituality and Urban Planning in India: Cultivating Well- Being and harmony in City Landscapes. In *Interstices of Space and Memory* (pp 266-271). Routledge.

Tutorial Exercises

- Difference between Physical Body & Energy Body
- Identifying linkages between Yogasanas, Tantra Principles and Universal Consciousness
- Differentiate between Shiva & Shakti Principle in Individual & Earth Environments
- Prepare a map of Vastu-purush (vaastu-grid) and identify energy points in a given space
- Case study of a settlement based on vaastu principle
- Energy walk on campus to identify life-force limiting and enhancing spaces (Gardens, Tea-stalls, Street side-walks, class-rooms)
- Effects of internet addiction on life-force and how to manage it
- Discussion on different type of pranayamas and effects on life-force energy
- Field visit to Lodhi garden/ Sundar Nursery/ Place of worship

Practical Record: Not Applicable

Readings:

Essential Readings:

- Joo, Swami Lakshman, 2015. Vijnana Bhairava: The Practice of centering Awareness. Indica Books, Varanasi.
- Sinha, A., 1998. Design of settlements in the Vaastu Shastras. Journal of Cultural Geography, 17(2), pp.27-41.
- Odier, D. 2001. Desire: The Tantric Path to Awakening, Inner Traditions International, Vermont.

Suggested Readings:

- Abhinavgupta, 2013. Sri Tantraloka [Trans: Gautam Chaterjee], Indica Books, Varanasi
- Woodroff, J. 2019. Introduction to Tantra Sastra. Jyoti Press, New Delhi.
- Odier, D. 1997. Tantric Quest: An encounter with Absolute Love, Inner Traditions International, Vermont.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE COURSE – GEOG-E309: GEOHERITAGE, GEOTOURISM AND GEOPARKS (UPC: 122902309)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-E309: GEOHERITAGE, GEOTOURISM AND GEOPARKS (UPC 122902309)	4	3	1	0	BA/ BSc in Geography	

Learning Objectives:

The learning objectives of this course are as follows:

- To develop foundational knowledge on the significance, scope, and relationship of geoheritage, geotourism, and geoparks along with geoconservation and sustainability.
- To enable students to identify, assess and document geoheritage resources using globally recognised methodologies while integrating community participation and responsible geotourism practices.
- To critically examine the institutional frameworks, policies and legal instruments regulating the geoheritage protection and geopark management at national and international levels through comparative case-based learning.

Learning Outcomes:

The learning outcomes of this course are as follows:

- To identify, classify and evaluate geoheritage sites using assessment models with special reference to India, recognising threats and proposing viable conservation strategies.
- Designing and promoting techniques for developing geotourism initiatives, incorporating sustainable practices and local economic development, while learning geoconservation principles.
- Students will be able to demonstrate critical understanding of geopark governance structures, institutional and policy frameworks at national and global scales for effective sustainable planning.

Course Outline:

Unit 1: Understanding Geoheritage, Geotourism and Geoparks:

Concept, Components, Scope and Significance of Geoheritage, Geotourism and Geoparks; Relationship between Geodiversity, Biodiversity; Cultural Geodiversity; Principles of Geoconservation.

Readings:

- Gray, M. (2013). Geodiversity: Valuing and Conserving Abiotic Nature (2nd ed.). Wiley-Blackwell, United Kingdom.
- Sadry, B. N. (2020). The Geotourism Industry in the 21st Century: The Origin, Principles, and Futuristic Approach. CRC Press, Taylor & Francis Group, USA.
- Singh, R. B., Wei, D., & Anand, S. (Eds.). (2020). Global Geographical Heritage, Geoparks and Geotourism: Geoconservation and Development. Springer, Singapore.

Unit 2: Geoheritage Assessment and Practices:

Geoheritage and Geodiversity: Conceptualization, Characteristics, Types and Assessment Methods of Geological Heritage; IUGS Geoheritage Sites; Geoheritage sites in India; Geoethics; Case Studies.

Readings:

- Bobrowsky, P., Cronin, V. S., Capua, G. D., Kieffer, S. W., & Peppoloni, S. (2017). The Emerging Field of Geoethics. In Gundersen, L.C. (Ed.), Scientific Integrity and Ethics in the Geosciences (pp. 175–212). John Wiley & Sons.
- Brilha, J. (2016). Inventory and Quantitative Assessment of Geosites and Geodiversity Sites: A Review. Geoheritage, 8, 119–134.
- Reynard, E., & Brilha, J. (Eds.). (2025). Geoheritage: Assessment, Protection, and Management (2nd ed.). Elsevier.

Unit 3: Geotourism Promotion and Development:

Geotourism: Concept, Role, Dimensions, Trends; Geoproduct & Geomarketing; Geotourism based Local Community and Economic Development; Sustainable Geotourism in India.

Readings:

- Newsome, D., & Dowling, R. K. (Eds.). (2010). Geotourism: The Tourism of Geology and Landscape. Goodfellow Publishers, Oxford.
- Rodrigues, J., Carvalho, C. N. D., Ramos, M., Ramos, R., Vinagre, A., & Vinagre, H. (2020). Geoproducts-Innovative development strategies in UNESCO Geoparks: Concept, implementation methodology, and case studies from Naturtejo Global Geopark, Portugal. International Journal of Geoheritage and Parks, 9(1), 108–128.
- Sadry, B. N. (Ed.). (2021). The Geotoursim Industry in the 21st Century: The Origin, Principles and Futuristic Approach. CRC Press, Taylor & Francis Group, USA.
- Tripathi, S. C., Pant, N. C., & Rajora, S. (Eds.). (2025). Geoconservation and Geotourism Potential of India. Springer Nature, Switzerland**.**

Unit 4: Geoparks Development, Management, and Policy Frameworks:

Objectives, Characterization and Criteria for UNESCO Global Geoparks; Geopark Network; Management

and Potential of Geoparks in India with Case Studies; Institutional Policy Framework and Legal Aspects.

Readings:

- Coelho, C., & Farsani, N. T. (Eds.). (2012). Geoparks and Geotourism: New Approaches to Sustainability for the 21st Century. Brown Walker Press, USA.
- Global Network of National Geoparks. (n.d.). Articles & Publication. Retrieved from http://www.globalgeopark.org/Articles/index.htm
- Gordon, J. E. (2019). Geoconservation principles and Protected Area Management. International Journal of Geoheritage and Parks, 7(4), 199–210.

Tutorial Exercises:

- Group discussion on interconnections between geoheritage, geodiversity, and geotourism.
- Presentations or documentary creations on potential Indian geoheritage sites.
- Team exercises in groups where students represent as local planner/ activist/ policymaker/ local community that is responding to a geoheritage site's threat.
- Identify and describe a geoheritage site based on its geological significance and potential for geotourism near your home district.
- Select one geoheritage assessment method from the readings and apply it to evaluate a geological site in your home district.
- Discuss any indigenous or traditional practices that contribute to the conservation of geological or natural heritage.
- Identify any existing policy (national, state, or local) that relates to geoheritage or geotourism and its effectiveness using a case study.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Gordon, J. E. (2019). Geoconservation Principles and Protected Area Management. International Journal of Geoheritage and Parks, 7(4), 199–210.
- Reynard, E., & Brilha, J. (Eds.). (2025). Geoheritage: Assessment, Protection, and Management (2nd ed.). Elsevier.
- Singh, R. B., Wei, D., & Anand, S. (Eds.). (2020). Global Geographical Heritage, Geoparks and Geotourism: Geoconservation and Development. Springer Singapore.

Suggested Readings:

- Ameta, D. L. N. (2023). Prakritik Aapda Evam Paryavaran Prabandhan. Princeps Publishing. (Hindi)
- Brilha, J. (2016). Inventory and Quantitative Assessment of Geosites and Geodiversity Sites: A Review. Geoheritage, 8, 119–134.
- Coelho, C., & Farsani, N. T. (Eds.). (2012). Geoparks and Geotourism: New Approaches to Sustainability for the 21st Century. BrownWalker Press, USA.
- Gordon, J. E. (2019). Geoconservation Principles and Protected Area Management. International Journal of Geoheritage and Parks, 7(4), 199–210.
- Newsome, D., & Dowling, R. K. (Eds.). (2010). Geotourism: The Tourism of Geology and Landscape. Goodfellow Publishers, Oxford.
- Sadry, B. N. (Ed.). (2021). The Geotoursim Industry in the 21st Century: The Origin, Principles and Futuristic Approach. CRC Press, Taylor & Francis Group, USA.
- Shekhar, S., Kumar, P., Chauhan, G., & Thakkar, M. G. (2019). Conservation and Sustainable Development of Geoheritage, Geopark, and Geotourism: A Case Study of Cenozoic Successions of Western Kutch, India. Geoheritage, 11, 1475–1488.
- Tripathi, S. C., Pant, N. C., & Rajora, S. (Eds.). (2025). Geoconservation and Geotourism Potential of India. Springer Nature, Switzerland.

Digital materials: Not Applicable

Course Name	LANDSLIDE RISK ANALYSIS				
Course Type	DSE	Part	2	Semester	III
UPC	122902310	Course Code	GEOG-E310	Credits	4
Duration (Hours/week)	4	Lecture	3	Tutorial	1
				Practical	0

Course Objectives	
1.	To provide a holistic understanding of landslide risk analysis.
2.	To enable students to efficiently address the issues related to landslide management.

Course Learning Outcome	
1.	Understanding of landslide hazard and risk assessment methods.
2.	Understanding and usage of geospatial technologies in landslide studies.
3.	Overview of landslide risk reduction program and policies.

Course Outline / Content	
Unit 1	Landslide: definition, types, causes, historical events
Unit 2	Landslide hazard assessment, tools and techniques: geomorphologic, statistical, non-parametric and advanced techniques
Unit 3	Landslide risk assessment, tools and techniques: vulnerability, risk, geotechnical analysis, preparedness and coping capacity
Unit 4	Geo-spatial technologies for Landslide hazard and risk assessment; prediction and early warning
Unit 5	National and international programs on landslide risk reduction, role of NGOs and local communities, gender role and agencies

Suggested / Recommended Readings	
1.	Anderson, M.G. and Holcombe, E. 2013. *Community-based Landslide Risk Reduction: Managing Disasters in Small Steps*, The World Bank.
2.	Dikau, R., Brunsden, D., Schrott, L. and Ibsen, M-L. (eds.), 1996. *Landslide Recognition: Identification, Movement and Causes*, Wiley.
3.	Glade, T., Anderson, M. and Crozier, M.J. (eds.), 2005. *Landslide Hazard and Risk*, John Wiley.
4.	Lee, E.M. and Jones, D.K.C., 2004. Landslide Risk Assessment, Thomas Telford.
5.	Margottini, C., Canuti, P. and Sassa, K. (eds.), 2013. *Landslide Science and Practice*, Volume 1 to 7, Springer.
6.	Ramaswamy, S.M. and Singh, B. (eds.), 2017. *Landslide Research: The DST's Initiatives*, New India Publishing Agency.
7.	Sassa, K. and Canuti, P. (eds.), 2009. *Landslides: Disaster Risk Reduction*, Springer.
8.	Sassa, K., Fukuoka, H., Wang, F. and Wang, G. (eds.), 2005. *Landslides: Risk Analysis and Sustainable Disaster Management*, Proceedings of the First General Assembly of the International Consortium on Landslides, Springer.
9.	van Westen, C.J. et al., 2012. Landslide Inventory, Hazard and Risk Assessment in India, in: B. Pradhan and M. Buchroithner (eds.), *Terrigenous Mass Movements*, Springer.
10.	Yamagishi, H. and Bhandary, N.P. (eds.), 2017. *GIS Landslides*, Springer.

Facilitating Course Learning Outcomes	
Unit 1	Case study of two important landslide events from Himalayas and critical analysis

Unit 2	Comparison of landslide hazard assessment tools and techniques
Unit 3	Comparison of landslide risk assessment tools and techniques
Unit 4	Preparation of landslide hazard and risk map from sample data sets
Unit 5	Critical review of landslide risk reduction policies

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E311: NATURAL RESOURCE MANAGEMENT (UPC 122902311)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E311: NATURAL RESOURCES MANAGEMENT (UPC 122902311)	4	3	1	0	BA/BSc in Geography	-

Learning Objectives:

The learning objectives of this course are as follows:

- Awareness about resource availability, accessibility, utilization, its use and misuse.
- Spatial distribution of natural resources.
- Resource management and governance.

Learning Outcomes:

The learning outcomes of this course are as follows:

- At the end the course student should learn importance of natural resources.
- Conservation methods and awareness about community participation.
- Assessment of role of national and international efforts to mitigate resource problems.

Course Outline:

Unit 1: Introduction: Introduction: Concept, approaches and appraisal to natural resource management.

Readings for Unit 1

- Pandey, B. W. (ed.) 2000. *Natural Resource Management*, Mittal Publication, New Delhi.
- Rees, J. 1990. *Natural Resources: Allocation, Economics and Policy*, Routledge, London.

Unit 2: Natural Resources: Land, Water, Forest.

Readings for Unit 2

- Singh, Jagdish, 2006. *Sansadhan Bhoogol*, Radha Publications, New Delhi (Hindi).
- Taylor, Russel D., and Torquebiau, Emmanuel (Eds.). 2011. *Natural Resource Management and Local Development*, Springer, Netherland.

Unit 3: Problems in Resource Management: Issues and constraints in resource management, Environmental, Political and Socio-Economic challenges.

Readings for Unit 3

- Thakur, B. 2003-2018. *Perspectives in Resource Management in Developing Countries*, Vol.1-13, Concept Publishing Company, New Delhi.
- Lockwood, M., Davidson, J., Curtis, A., Stratford, E., & Griffith, R. (2010). Governance principles for natural resource management. *Society and natural resources*, *23*(10), 986-1001.

Unit 4: Governance: Policy, Planning and Institutional and Technical advancement in natural resource management; Integrated Resource Management; Case Studies.

Readings for Unit 4

- Berkes, F. (ed.), 1989. *Common Property Resources: Ecology and Community Based Sustainable Development,* Belhaven Press London.
- Mitchell B. 1988. *Geography and Resources Analysis*, 2nd edition, Longman, London.

Tutorial Exercises

- **Resource Mapping using RS–GIS:** Delineate and map land, forest, and water resources using satellite imagery.
- **Integrated Resource Case Study:** Analyze a Himalayan, coastal, or desert region for resource management challenges and strategies.
- **Policy Review Exercise:** Critically review a national policy related to land, water, or forest management.
- **Community Participation Survey:** Document local initiatives in participatory natural resource management.
- **Debate on Resource Conflicts:** Discuss ethical and socio-economic dilemmas in resource utilization and conservation.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Berkes, F. (ed.), 1989. *Common Property Resources: Ecology and Community Based Sustainable Development,* Belhaven Press London.
- Mather, A.S. and Chapman, K. 1995. *Environmental Resources*, Longman, Harlow, England.

Suggested Readings:

- McClay, K.R. 1995. *Resource Management Information System: Process & Practice*, Taylor Francis, London.
- Mitchell B. 1988. *Geography and Resources Analysis*, 2nd edition, Longman, London.
- Mitchell, B. 1997. *Resource and Environmental Management*, Longman, Harlow, England.
- Newson, M.D. 1991. *Land, Water and Development: River Basin Systems and Management*, Routledge, London.
- Owen, S. and Owens, P.L. 1991. *Environment, Resources and Conservation*, Cambridge University Press, New York.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E312: REGIONAL DEVELOPMENT IN INDIA (UPC 122902312)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-E312: REGIONAL DEVELOPMENT IN INDIA (UPC 122902312)	4	3	1	0	BA/BSc in Geography	Basic Knowledge of Geography

Learning Objectives

The learning objectives of this course are as follows:

- To introduce students to the fundamental concepts of regional development and key theories underpinning regional development.
- To enable students to critically examine the spatial patterns and temporal trends of regional disparities in India.
- To familiarize students with various regional development policies and programmes.
- To understand India's future regional development trends and challenges.

Learning Outcomes

The learning outcomes of this course are as follows:

- Students will be able to explain the concepts and theories of regional development and how sustainable development is integral to regional planning.
- Students will be able to critically assess the evolution of regional development planning in India, including the roles of key institutions like the Planning Commission and NITI Aayog.
- Students will be able to understand the regional disparities, trends, and challenges of regional development in India.

Course Outline

Unit 1: **Introduction:** Concepts and Theories of regional development, Sustainable Development and Regional planning

Readings

- Stamp, L.D. 1967. Asia: A General and Regional Geography. Methuen and Co. Ltd. London.
- Misra, R.P. (ed.) 1992. Regional Planning Concepts, Techniques, Policies and Case Studies, Concept Publishing Pvt. Ltd, Delhi
- Myrdal, G. 1957. Economic Theory and Under-developed Regions. Gerald Duckworth & Co.
- Chandana, R.C. प्रादेशिक नियोजन तथा विकास. Kalyani Publication

Unit 2: Regional Planning and Disparities in India: Institutions and Mechanisms in India (Planning Commission, and NITI Aayog)**,** Regional Disparities: spatial patterns and temporal trends in India

Readings

- Bhattacharya, B. B., and S. Sakthivel. 2004. "Regional Growth and Disparity in India." Economic and Political Weekly 39 (10): 1071–77.
- Nath, V. 2009. Regional Development and Planning in India, Concept Publishing Company.
- Mitra, Ashok. 1961. Levels of Regional Development in India, Census of India 1, no. 04 Part 1, 4.
- Dreze, J. and Sen, A. 1996. Indian Development: Select Regional Perspectives, Oxford University Press.
- Maurya, S.D. प्रादेशिक नियोजन एवं विकास. Pravalika Publication.

Unit 3: Regional Development Policies and Programmes: Planning strategies since independence, NITI Aayog and contemporary policy framework, Decentralized Planning (Area Development Approach, Integrated Watershed Development, Panchayati Raj Institutions), Aspirational Districts Programme, Industrial corridor policies (SEZ, DMIC, EDFC Etc.)

Readings

- NITI Policy Paper, 2023. Bharatiya Model of Inclusive Development, https://www.niti.gov.in/sites/default/files/2023-06/NITI_policy-paper_BMID_2023-May.pdf
- Strategy for New India @ 75, 2018, https://niti.gov.in/sites/default/files/2019-01/Strategy_for_New_India_0.pdf
- NITI Reports on Aspirational Districts Programme, https://niti.gov.in/aspirational-districts-programme

Unit 4: Future Regional Development in India: Emerging trends and challenges, Green growth and Sustainable Regional Development, Role of GIS and big data in regional planning and development, Climate change and regional vulnerability, Follow-up Field Trip

Readings

- Johnston, R.J. et.al (ed.) (1990). Regional Geography: Current Development and Future Prospects. Routledge London and New York.
- World Bank. Inclusive Green Growth: The Pathway to Sustainable Development, 2012, https://doi.org/10.1596/978-0-8213-9551-6
- Rao, C. H. H. 2005. "Agriculture, Food Security, Poverty and Environment: Essays on Post-Reform India." Oxford University Press.

Tutorial Exercises

- Discussion about Growth Pole and Growth Center approach
- Discussion on role of NITI Aayog in Regional Development
- Human Development Indicators (HDI) and regional development
- Policies and Programmes of Regional Development in India
- Role of Science and Technology in Regional Development

Practical Record: *Not Applicable*

Readings

Essential Readings:

- Stamp, L.D. 1967. Asia: A General and Regional Geography. Methuen and Co. Ltd. London.
- Singh, R.L. (ed.) 1971. India-A Regional Geography. National Geographical Society, India, Varanasi.
- Despande, C.D. 1992. India-A Regional Interpretation. ICSSR, Northern Book Centre, New Delhi.
- Misra, R.P. (ed.) 1992. Regional Planning Concepts, Techniques, Policies and Case Studies, Concept Publishing Pvt. Ltd, Delhi.
- Myrdal, G. 1957. Economic Theory and Under-developed Regions. Gerald Duckworth & Co.
- Rao, C. H. H. 2005. "Agriculture, Food Security, Poverty and Environment: Essays on Post-Reform India." Oxford University Press.
- Dreze, J. and Sen, A. 1996. Indian Development: Select Regional Perspectives, Oxford University Press.
- Mitra, Ashok. 1961. Levels of Regional Development in India, Census of India 1, no. 04 Part 1, 4.
- Nath, V. 2009. Regional Development and Planning in India, Concept Publishing Company.
- Bhattacharya, B. B., and S. Sakthivel. 2004. “Regional Growth and Disparity in India.” Economic and Political Weekly 39 (10): 1071–77.
- Chandana, R.C. प्रादेशिक नियोजन तथा विकास. Kalyani Publication
- Maurya, S.D. प्रादेशिक नियोजन एवं विकास. Pravalika Publication

Suggested Readings:

- Gandhi, M.K. 1909. Hind Swaraj

- Kar, S., and S. Sakthivel. 2007. “Reforms and Regional Inequality in India.” Economic and Political Weekly 42 (47): 69–77.
- UNDP’s Human Development Reports, NITI Aayog Reports
- Dasgupta, D., P. Maity, R. Mukherjee, S. Sarkar, and S. Chakroborty. 2000. “Growth and Interstate Disparities in India.” Economic and Political Weekly 35 (27): 2413–22.
- Johnston, R.J. et.al (ed.) (1990). Regional Geography: Current Development and Future Prospects. Routledge London and New York.

Digital Materials: *Not Applicable*

SKILL BASED (SB) COURSE:
GEOG-S301: SPATIAL DATA MANAGEMENT
(UPC 122903301)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-S301: SPATIAL DATA MANAGEMENT (UPC 122903301)	2	1	1	0	BA/BSc in Geography	

Learning Objectives:

The learning objectives of this course are as follows:

- The students will be opened to the elementary, preliminary and introductory stages of research.

Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will be able to frame research problem, review associated literature, and design a research plan.

Course Outline:

Unit 1: Problematizing Spatial Associations: Formulation of Research Problem, Review of Literature, Preparation of Research Design.

Readings for Unit 1:

- Flick, U. (2020). Introducing Research Methodology: A beginner's guide to doing a research project (3rd ed.). SAGE Publications, New Delhi.
- Gomez, B., & Jones III, J. P. (Eds.). (2010). Research Methods in Geography: A Critical Introduction. John Wiley & Sons Ltd. Publication, Wiley-Blackwell.
- Telore, N. V., & Borude, S. A. (Eds.). (2023). Advances in Geographical Research. Jyotikiran Publication, Pune.

Unit 2: Methods of Data Collection: Ethical Approval and Informed Consent, Sources of Data, Techniques of Spatial Data Collection.

Readings for Unit 2:

- Bryman, A. (2016). Social Research Methods (5th ed.). Oxford University Press, United Kingdom.
- Creswell, J. W. (2009). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (3rd ed.). SAGE publications, USA.
- Lovell, S. A., Coen, S. E., & Rosenberg, M. W. (Eds.). (2023). The Routledge Handbook of Methodologies in Human Geography. Routledge, Taylor & Francis Group, United Kingdom.

Tutorial Exercises

Tasks will be assigned and assessed through presentations related to individual termpapers.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Clifford, N., Cope, M., Gillespie, T., & French, S. (Eds.). (2023). Key Methods in Geography (4th ed.). SAGE Publications Ltd., London.
- Creswell, J. W. (2009). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (3rd ed.). SAGE publications, USA.
- Flick, U. (2020). Introducing Research Methodology: A beginner's guide to doing a research project (3rd ed.). SAGE Publications, New Delhi.

Suggested Readings:

- Gomez, B., & Jones III, J. P. (Eds.). (2010). Research Methods in Geography: A Critical Introduction. John Wiley & Sons Ltd. Publication, Wiley-Blackwell.
- Koli, L. N. (2025). Research Methodology (2nd ed.). Y. K. Publishers, New Delhi. (Hindi)
- Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Age International (P) Ltd., Publishers, New Delhi.
- Krishna, G., & Singh, N. (2020). Researching Geography: The Indian Context (2nd ed.). Routledge, India.
- Lovell, S. A., Coen, S. E., & Rosenberg, M. W. (Eds.). (2023). The Routledge Handbook of Methodologies in Human Geography. Routledge, Taylor & Francis Group, United Kingdom.
- Patton, M. Q. (2002). Qualitative Research and Evaluation Methods (4th ed.). SAGE Publications, London.
- Telore, N. V., & Borude, S. A. (Eds.). (2023). Advances in Geographical Research. Jyotikiran Publication, Pune.

Digital materials: Not Applicable

RESEARCH METHODS COURSE: GEOG-S302: ADVANCED RESEARCH METHODOLOGY AND TOOLS FOR RESEARCH (UPC: 122903302)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-S302: ADVANCED RESEARCH METHODOLOGY AND TOOLS FOR RESEARCH (UPC: 122903302)	4	3	1		BA/ BSc in Geography	Basic Knowledge of Research Methods and Techniques

Learning Objectives:

The learning objectives of this course are as follows:

- To develop a comprehensive in-depth understanding of the conceptual foundations, literature survey, methodological approaches, and ethical intricacies essential for geographical research.
- To equip students with the ability to design and construct a robust geographical research framework through problem identification and purposeful formulation of questions, aims, and objectives.
- To foster academic writing proficiency by mastering structured dissertation and report writing with proper citation and referencing.

Learning Outcomes:

The learning outcomes of this course are as follows:

- To critically conceptualize research problems and construct methodologically aligned aim based objectives research design with intellectual clarity.
- To demonstrate ethical accountability in research practice by identifying and preventing plagiarism, manipulation, and academic misconduct.
- To efficiently gather, analyse, and visually presents data using field survey, database, and graphical interpretation for the dissertation and report writing.

Course Outline:

Unit 1: Introduction to Geographical Research:

Conceptual framework, Significance, Types, Needs and Approaches to Research in Geography; Literature survey; Academic Integrity and Research Ethics.

Readings:

- Flick, U. (2020). Introducing Research Methodology: A beginner's guide to doing a research project (3rd ed.). SAGE Publications, New Delhi.
- Gomez, B., & Jones III, J. P. (Eds.). (2010). Research Methods in Geography: A Critical Introduction. John Wiley & Sons Ltd. Publication, Wiley-Blackwell.
- Telore, N. V., & Borude, S. A. (Eds.). (2023). Advances in Geographical Research. Jyotikiran Publication, Pune.

Unit 2: Research Design:

Steps, Identification and Conceptualization of Research Problem; Framing Research questions; Aims and Objectives, Relevance of Research study.

Readings:

- Bryman, A. (2016). Social Research Methods (5th ed.). Oxford University Press, United Kingdom.
- Creswell, J. W. (2009). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (3rd ed.). SAGE publications, USA.
- Lovell, S. A., Coen, S. E., & Rosenberg, M. W. (Eds.). (2023). The Routledge Handbook of Methodologies in Human Geography. Routledge, Taylor & Francis Group, United Kingdom.

Unit 3: Methods of Data Collection and Analysis:

Nature and Types of Data Source; Generation and Collection of Primary data: Field Survey Methods; Secondary data: Sources and Methods; Data Processing and Analysis of data; Research Tools and Techniques; Graphical visualization.

Readings:

- Clifford, N., Cope, M., Gillespie, T., & French, S. (Eds.). (2023). Key Methods in Geography (4th ed.). SAGE Publications Ltd., London.
- Neuman, W. L. (2014). Social Research Methods: Qualitative and Quantitative Approaches (7th ed.). Pearson, England.
- Patton, M. Q. (2002). Qualitative Research and Evaluation Methods (4th ed.). SAGE Publications, London.

Unit 4: Geographical Structure of Dissertation and Report Writing:

Preliminary section, Main body of Text, Conclusion, Referencing and Bibliography, Appendix; Databases: Indexing and Citation.

Readings:

- Godwill, E. A. (2015). Fundamentals of Research Methodology: A holistic guide for research completion, management, Validation and ethics. Nova Science Publishers, New York.
- Oliver, P. (2008). Writing Your Thesis (2nd ed.). SAGE Publications Ltd, London.
- Parsons, T., & Knight, P. G. (2015). How to do your dissertation in geography and related disciplines (3rd ed.). Routledge, Taylor & Francis Group, United Kingdom.

Tutorial Exercises

- Identify geographical research problems from local or regional issues.
- Frame research questions and sub-questions for selected research problem.
- Draft aims and objectives aligned with any selected topic.
- Design a short questionnaire for collecting primary field data.
- Compile secondary data from Census or government statistical databases.
- Compare structure and format of any two published research papers.
- Rewrite any unformatted references into accurate citation style.
- Write a concise abstract on a selected research theme.
- Analyze research ethics violation cases and suggest corrective measures.
- Collect some academic sources and write citations in numerous referencing format.

Practical Record: NA

Readings:

Essential Readings:

- Clifford, N., Cope, M., Gillespie, T., & French, S. (Eds.). (2023). Key Methods in Geography (4th ed.). SAGE Publications Ltd., London.
- Creswell, J. W. (2009). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (3rd ed.). SAGE publications, USA.
- Flick, U. (2020). Introducing Research Methodology: A beginner's guide to doing a research project (3rd ed.). SAGE Publications, New Delhi.

Suggested Readings:

- Gomez, B., & Jones III, J. P. (Eds.). (2010). Research Methods in Geography: A Critical Introduction. John Wiley & Sons Ltd. Publication, Wiley-Blackwell.
- Koli, L. N. (2025). Research Methodology (2nd ed.). Y. K. Publishers, New Delhi. (Hindi)
- Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Age International (P) Ltd., Publishers, New Delhi.
- Krishna, G., & Singh, N. (2020). Researching Geography: The Indian Context (2nd ed.). Routledge, India.

- Lovell, S. A., Coen, S. E., & Rosenberg, M. W. (Eds.). (2023). The Routledge Handbook of Methodologies in Human Geography. Routledge, Taylor & Francis Group, United Kingdom.
- Patton, M. Q. (2002). Qualitative Research and Evaluation Methods (4th ed.). SAGE Publications, London.
- Telore, N. V., & Borude, S. A. (Eds.). (2023). Advances in Geographical Research. Jyotikiran Publication, Pune.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC CORE (DSC) COURSE – GEOG-C401: NEW ECONOMIC GEOGRAPHIES (UPC 122901401)

Course title & Code	Credits	Duration (Hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-C401: NEW ECONOMIC GEOGRAPHIES (UPC 122901401)	4	3	1	0	BA/BSc in Geography	

Learning Objectives:

The learning objectives of this course are as follows:

- The students will appreciate the significance of social, cultural and political factors as central to the functioning of economies; and that the economic processes needs to be analyzed in social, cultural and political contexts.
- The students will be exposed to contemporary themes in economic geography, which emerged in post 1970s; and be conscious of the numerous economic issues confronting the world economic system.
- The students will realize the relevance of economic geography for analyzing contemporary societies and economies.

Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will be able to appreciate that geography and space matter in economy.
- The students will be able to identify some key issues that economic geography engages with.
- The students will be able to comprehend and analyze the principal questions confronting the contemporary space-economy:
  a) What are 'economic' reasons for variations in spatial distribution of population and resources?
  b) How to solve the 'mystery' of economic growth?
  c) Has the role of 'distance' and 'proximity' declined?
  d) Has the World become 'flat'?

Course Outline:

Unit 1: Introduction: The Re-Discovery and Core Issues; Economic-Geographic Links; Stages of Economic Growth; Evolution of Economic Systems; Three-Sector Hypothesis and Post-Industrial

Society; Informal Economy and Social Accounting.

Readings

- Dicken P. 1990. *Global Shift: Mapping the Changing Contours of the World Economy*, Harper Collins Publishers, New York.
- Grossman G. 1984. *Economic Systems,* Prentice Hall, New Jersey.
- Prager Jean-Claus and Thisse Jacques-Francois, 2012. *Economic Geography and the Unequal Development of Regions*, Routledge, London.

Unit 2: Information and Knowledge Economies in Spatial Systems: Information Revolution and Age, Economies of Human Attention; Knowledge Economies and Imagination Age; Creative Industries and Cultural Economies.

Readings

- Anderson William P. 2012. *Economic Geography*, Routledge, London.
- Coe N. M., Kelly P. F. and Yeung H. W. C. 2007. *Economic Geography: A Contemporary Introduction*, Blackwell, Oxford.
- Hanink D. M. 1997. *Principles and Applications of Economic Geography*, John Wiley, New York.

Unit 3: Economies of Urban Systems: FIRE and ICE Economies, and Global Cities; Place-Making, Place-based and Place-led Development; Place Marketing and City Branding; City Image and Re-Imaging.

Readings

- Sassen Saskia, 2012. *Cities in a World Economy,* Sage.
- Fujita Masahisa, Krugman Paul and Venables Anthony, 2001. *The Spatial Economy: Cities, Regions and International Trade*, The MIT Press.
- MacKinnon D. and Cumbers A. 2007. *An Introduction to Economic Geography: Globalization, Uneven Development and Place*, Pearson/Prentice Hall, Harlow.

Unit 4: Space-Economy of International Systems: Economic Groupings; Economic Gravitations; Economic Cooperation and Integration.

Readings

- Murray Warwick E. 2006. *Geographies of Globalization*. Routledge.
- Machlup Fritz, 1977. *A History of Thought on Economic Integration*, Columbia University Press, New York.
- Jovanovich M. 1998. *International Economic Integration: Limits and Prospects*, Routledge.

Tutorial Exercises

- Case-Study of events and items displaying links between geography and economy
- Case-Study of social accounting of informal workers
- Case-Study of information overload
- Case-Study of city-reimaging and place marketing
- Understanding the center of economic gravity of selected spatial units

Practical Record: Not Applicable

Teaching Hours:

Unit 1: 15 Hours

Unit 2: 15 Hours

Unit 3: 15 Hours
Unit 4: 15 Hours
Total: 60 Hours

Readings:

Essential Readings:

- Anderson William P. 2012. *Economic Geography*, Routledge, London.
- Prager Jean-Claus and Thisse Jacques-Francois, 2012. *Economic Geography and the Unequal Development of Regions*, Routledge, London.

Suggested Readings:

- Coe N. M., Kelly P. F. and Yeung H. W. C. 2007. *Economic Geography: A Contemporary Introduction*, Blackwell, Oxford.
- Dicken P. 1990. *Global Shift: Mapping the Changing Contours of the World Economy*, Harper Collins Publishers, New York.
- Fujita Masahisa, Krugman Paul and Venables Anthony, 2001. *The Spatial Economy: Cities, Regions and International Trade*, The MIT Press.
- Grossman G. 1984. *Economic Systems,* Prentice Hall, New Jersey.
- Hanink D. M. 1997. *Principles and Applications of Economic Geography*, John Wiley, New York.
- Jovanovich M. 1998. *International Economic Integration: Limits and Prospects*, Routledge.
- Knox Paul, Agnew John, McCarthy Linda, 2008. *The Geography of the World Economy*, OUP, USA.
- Lee R. and Wills J. (eds.), 1997. *Geography of Economics,* Arnold, New York.
- Machlup Fritz, 1977. *A History of Thought on Economic Integration*, Columbia University Press, New York.
- MacKinnon D. and Cumbers A. 2007. *An Introduction to Economic Geography: Globalization, Uneven Development and Place*, Pearson/Prentice Hall, Harlow.
- Murray Warwick E. 2006. *Geographies of Globalization*. Routledge.
- Sachar A. and Oberg S. (eds.) 1990. *The World Economy and the Spatial Organisation of Power,* E.S.F. Publication, Strasbourg.
- Sassen Saskia, 2012. *Cities in a World Economy,* Sage.
- Sheppard E. and Barnes T. J. 1984. *The Capitalist Space Economy: Geographical Analysis after Ricardo Marx and Strafa,* Unwin Hyman, London.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC CORE (DSC) COURSE – GEOG-C402: TOWARDS VIKSIT BHARAT: GEOGRAPHICAL DIMENSIONS (UPC 122901402)

Course title & Code	Credits	Duration (Hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-C402: TOWARDS VIKSIT BHARAT: GEOGRAPHICAL DIMENSIONS (UPC 122901402)	4	3	1	0	BA/BSc in Geography	

Learning Objectives:

The learning objectives of this course are as follows:

- To develop comprehensive understanding of Viksit Bharat @2047's vision and frameworks while critically evaluating geographical influences on India's developmental trajectory.
- To analyze multidisciplinary linkages across environment, demography, infrastructure, and technology to assess how sectoral synergies drive inclusive growth.
- To integrate institutional frameworks, innovation ecosystems, and indigenous epistemologies to propose culturally grounded, evidence-based developmental strategies.

Learning Outcomes:

The learning outcomes of this course are as follows:

- To examine geographical factors like resources, demography, and infrastructure while articulating perspectives on regional disparities.
- To explain interconnections between sustainability, human development, technology, and governance, demonstrating holistic understanding of national progress.
- To evaluate governance, innovation, and indigenous wisdom in advancing sustainability while proposing implementable, context-specific solutions.

Course Outline:

Unit 1: Introduction:

Introduction to Viksit Bharat @2047 and Geographical Foundation: Concept, Goals, Pillars and Strategic Framework; Geographical Diversity and Heritage; Geographical Implications in National Development: Vitality and Vulnerability.

Readings:

- Aiyar, S., & Mody, A. (2011). The Demographic Dividend: Evidence from the Indian States. International Monetary Fund, Washington, D.C.
- Gupta, D. K., & Singh, S. (Eds.). (2025). Viksit Bharat 2047: New Hopes & Opportunities. Right Way Publication & Distribution, New Delhi.
- Rao, C. B. (2024). Viksit Bharat 2047: Infrastructure. Innovation. Inclusion. Notion Press Media Pvt. Limited, Chennai, India.

Unit 2: Resources and Environmental Sustainability:

Natural Resources & Environment: Inventory, Degradation and Sustainability; Renewable Energy and Green Energy Development; Agricultural Development; Climate Action, Indigenous Knowledge Systems (IKS).

Readings:

- Brokensha, D., Warren, D. M., Slikkerveer, L. J., & Dechering, W. (Eds.). (1995). The cultural dimension of development: Indigenous knowledge systems. Intermediate Technology Publications, United Kingdom.
- Harris, J. M., & Roach, B. (2022). Environmental and Natural Resource Economics: A Contemporary Approach (5th ed.). Routledge, New York.
- Malakar, K. D., Kumar, M., Anand, S., & Kuzur, G. (Eds.). (2024). Climate Change and Socio-Ecological Transformation: Vulnerability and Sustainability. Springer Nature, Singapore.

Unit 3: Changing Demography, Social & Economic Progress:

Demographic changes and challenges; Economic Dynamism: Sectoral Development; Human Development: Education, Healthcare and Skill Development; Social Inclusiveness: Quality of Life and Human Well-being; Indian Diaspora.

Readings:

- Bhaskar, P. B. (2025). Indian Diaspora: Immigrants' Experiences in Literature. Cambridge Scholars Publishing, United Kingdom**.**
- Chadda, I. (2023). Social Sector Development and Inclusive Growth in India. Emerald Publishing Limited, United Kingdom.
- Weber, L. (2010). Demographic Change and Economic Growth: Simulations on Growth Models. Springer Nature, Singapore.

Unit 4: Infrastructure, Innovation, Technology Transformation and Future Prospects:

Rural-Urban Infrastructure and Transformation; Industrial Corridors and Industry 4.0; Research & Development and Innovation, Global Influence, Skilled Bharat, Atmanirbhar Bharat; Sustainable Future India.

Readings:

- Nagarjuna, B., Raghuramapatruni, R., & Shyam, V. M. S. (2024). Viksit Bharat 2047: Empowering India. Archers & Elevators Publishing House.
- Nayyar, A., & Kumar, A. (Eds.). (2020). A Roadmap to Industry 4.0: Smart Production, Sharp Business and Sustainable Development. Springer Nature, Switzerland.
- NITI Aayog (2023). Viksit Bharat @2047: Strategy for New India. Government of India.

Tutorial Exercises

- Prepare a geographical map of a region and analyze its spatial patterns and development indicators.
- Examine some case studies and compare their outcomes to identify key success factors and challenges.
- Collect demographic data and visualize trends using charts, graphs, or maps, then interpret the implications.
- Investigate local indigenous knowledge systems and discuss their relevance for sustainable regional development.
- Case based study on rural and urban infrastructure transformation and discuss its impact on regional growth and connectivity.
- Research digital India initiatives, Start-Up India programs, and the skilled workforce agenda, reflecting their role in national development.
- Assume roles in a governance simulation and propose policies or solutions for a development challenge.
- Document smart infrastructure and develop a policy or governance plan promoting inclusive, sustainable development.

Readings:

Essential Readings:

- Chadda, I. (2023). Social Sector Development and Inclusive Growth in India. Emerald Publishing Limited, United Kingdom.
- Gupta, D. K., & Singh, S. (Eds.). (2025). Viksit Bharat 2047: New Hopes & Opportunities. Right Way Publication & Distribution, New Delhi.
- Rao, C. B. (2024). Viksit Bharat 2047: Infrastructure. Innovation. Inclusion. Notion Press

Media Pvt. Limited, Chennai, India.

Suggested Readings:

- Bhaskar, P. B. (2025). Indian Diaspora: Immigrants' Experiences in Literature. Cambridge Scholars Publishing, United Kingdom
- Brokensha, D., Warren, D. M., Slikkerveer, L. J., & Dechering, W. (Eds.). (1995). The cultural dimension of development: Indigenous knowledge systems. Intermediate Technology Publications, United Kingdom.
- Chatterjee, U., Biswas, A., Mukherjee, J., & Majumdar, S. (Eds.). (2022). Advances in Urbanism, Smart Cities, and Sustainability. CRC Press, Taylor and Francis Group.
- Hooda, S. K. (2022). Health sector, state and decentralised institutions in India. Taylor & Francis Group.
- Kapur, A. (2010). Vulnerable India: A geographical study of disasters. SAGE Publications, India.
- Nagarjuna, B., Raghuramapatruni, R., & Shyam, V. M. S. (2024). Viksit Bharat 2047: Empowering India. Archers & Elevators Publishing House.
- Nayyar, A., & Kumar, A. (Eds.). (2020). A Roadmap to Industry 4.0: Smart Production, Sharp Business and Sustainable Development. Springer Nature, Switzerland.
- NITI Aayog (2023). Viksit Bharat @2047: Strategy for New India. Government of India.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE:
GEOG-E401: APPLIED CLIMATOLOGY (PRACTICAL)
(UPC 122902401)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-E401: APPLIED CLIMATOLOGY (PRACTICAL) (UPC 122902401)	**4**	**2**	**0**	**2**	**BA/ BSc in Geography**	**Basic Knowledge of Geography**

Learning Objectives:

The learning objectives of this course are as follows:

- To explain the fundamental concepts of climatology, including climate components, their interactions, and their impacts on society, health, and the environment.
- To analyze and interpret various types of climate data using appropriate statistical and computational techniques.
- To evaluate the principles, processes, and limitations of numerical weather prediction.
- To apply advanced techniques for practical weather prediction and forecasting.

Learning Outcomes:

On transaction of this course students will be able to:

- Demonstrate proficiency in handling and analyzing climate data for understanding spatial and temporal climatic patterns.
- Assess and interpret the accuracy and limitations of different weather prediction models and techniques.
- Develop informed weather forecasts and climate interpretations using both theoretical knowledge and practical computational tools.

Course Outline:

Unit 1: Introduction (Theory): Introduction to Climatology, climate components and its impact, climate and society, weather and health.

Readings

- Smith, S., 2022. Climatology: Concepts and applications. Scirus Academic Press.
- Thompson, R. D. & Perry, A. H., 1997. Applied climatology: principles and practice. London:

Routledge.

Unit 2: Climate data and its use (Theory): Methods and techniques of data analysis, downscaling methods, bioclimatology.

Readings

- Kotamarthi, R. et al., 2021. Downscaling Techniques for High-Resolution Climate Projections: From Global Change to Local Impacts. Cambridge: Cambridge University Press.
- Auliciems, A., (eds) 1998. Human Bioclimatology. Advances in Bioclimatology. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-031-40567-9

Unit 3: Weather Predictability (Practical): Numerical weather prediction, processes, and limitations.

Readings

- Ki Park S., (eds.) 2023. Numerical Weather Prediction: East Asian Perspectives. Springer International Publishing.
- Palmer, T. and Hagedorn, R., (eds.) 2006. Predictability of Weather and Climate. Cambridge: Cambridge University Press.

Unit 4: Techniques in Weather Prediction (Practical): Empirical Orthogonal Function, Exceedance probability and relative operating characteristics (ROC), regression methods, use of general circulation models for weather prediction.

Readings

- Wilks, D. S., 2019. Statistical Methods in the Atmospheric Sciences, Fourth Edition (pp. 1–818). Elsevier. https://doi.org/10.1016/C2017-0-03921-6
- Neelin, J.D., 2010. Climate Change and Climate Modeling. Cambridge: Cambridge University Press.

Tutorial Exercises: Not Applicable

Practical Record: Four practical exercises to be completed from each unit, and this will involve training students to develop hands-on skills relevant to climatology and weather prediction. In Unit 1, they will analyze climate components, study temperature, precipitation, and humidity variations, and evaluate their impacts on health and sustainability. Unit 2 involves collecting and analyzing climate data using downscaling and bioclimatic methods, generating localized projections, and assessing ecosystem and societal effects. In Unit 3, students will explore numerical weather prediction models, interpret outputs, and evaluate forecasts. Unit 4 focuses on applying statistical and dynamical techniques, including EOF, regression, and GCMs, to identify climate patterns and predict atmospheric behavior.

Readings:

Essential Readings:

1. Mearns, Linda O. Forest, Chris E. Fowler, Hayley J. Lempert, Robert Wilby, Robert L. (eds.), 2025. Uncertainty in Climate Change Research, Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-

85542-9
2. Melesse, A. M., Abtew, W., & Senay, G., 2019. Extreme hydrology and climate variability: Monitoring, modelling, adaptation and mitigation (pp. 1–561). Elsevier. https://doi.org/10.1016/C2017-0-04193-9
3. Swadhin Behera and Toshio Yamagata 2016. Indo-Pacific Climate Variability and Predictability, World Scientific, Singapore.
4. Maraun, D., & Widmann, M., 2018. Statistical Downscaling and Bias Correction for Climate Research. Cambridge University Press. https://doi.org/10.1017/9781107588783

Suggested Readings:

1. John E Hobbs, 2016. Applied climatology: A study of Atmospheric Resources, Elsevier, London.
2. Antonio Navarra , Valeria Simoncini , 2010. A Guide to Empirical Orthogonal Functions for Climate Data Analysis, Springer, Dordrecht, The Netherlands.
3. Antonio NavarraEugenia Kalney, 2003, Atmospheric Modeling, Data Assimilation and Predictability, Cambridge University Press, London.
4. Sahu, N., Robertson, A. W., Boer, R., Behera, S., DeWitt, D. G., Takara, K., … Singh, R. B., 2017. Probabilistic seasonal streamflow forecasts of the Citarum River, Indonesia, based on general circulation models. Stochastic Environmental Research and Risk Assessment, 31(7), 1747–1758. https://doi.org/10.1007/s00477-016-1297-4
5. Lorenz, E. N., 1956. Empirical Orthogonal Functions and Statistical Weather Prediction. Statistical Forecasting Project Rep. 1, MIT Department of Meteorology, 49.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E402: DIGITAL CULTURES AND LANDSCAPES (UPC 122902402)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E402: DIGITAL CULTURES AND LANDSCAPES (UPC 122902402)	4	3	1	0	BA/BSc in Geography	

Learning Objectives:

- Understand key theoretical frameworks for analyzing digital cultures and landscapes
- Critically engage with digital technologies and their societal implications
- Explore the relationship between space, place, and digital infrastructures.

Learning Outcomes:

- Apply key theoretical frameworks to critically analyze digital technologies and their implications.
- Examine the relationship between digital technologies and spatiality and the formation of digital communities.
- To understand the role of digital technologies in mediating contemporary crises, such as pandemics, climate change, and political unrest, and their capacity to shape collective futures

Course Outline:

Unit 1: Introduction to Digital Cultures: Historical and conceptual perspectives of digital culture; Digitization of culture vs. culture of the digital;
Readings

- Couldry, N., & Hepp, A. (2018). *The mediated construction of reality*. John Wiley & Sons. (Chapter 1)
- Jenkins, H. (2006). Convergence culture: Where old and new media collide. *New York University Press.* (Introduction)
- Miller, V. (2020). Understanding digital culture. (Introduction)

Unit 2: Digital Spaces and Spatiality: Cyberspace and the virtual/real dichotomy; Geographies of digital media, Locative media and co-creative digital spatiality
Readings

- Zook, M. A., & Graham, M. (2007). Mapping DigiPlace: Geocoded Internet Data and the Representation of Place. *Environment and Planning B: Planning and Design*, *34*(3), 466–482.
- Leszczynski, A., & Crampton, J. (2016). Introduction: Spatial Big Data and everyday life. *Big Data & Society*, *3*(2), 205395171666136.
- Farman, J. (2020). *Mobile interface theory: Embodied space and locative media*. Routledge. (C)hapter 2, 6)

Unit 3: Cybercultures and Virtual Communities: Online identity, performance, and self-presentation; Digital tribes, online forums, and fandoms; Memes, virality, and internet subcultures;
Readings

- Papacharissi, Z. (2016). Affective publics and structures of storytelling: Sentiment, events and mediality. *Information, communication & society*, *19*(3), 307-324.
- Baym, N. K. (2015). *Personal connections in the digital age*. John Wiley & Sons. (chapter **4, 5, 6**)

Unit 4: Crisis, Technology, and Digital Futures: Misinformation and digital crises; Resilience, sustainability, and critical digital literacy; Speculative futures: AI, metaverse, digital afterlives.
Readings

- Crawford, K. (2021). *The atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. Yale University Press. (Introduction)
- Kitchin, R. (2021). *Data lives: How data are made and shape our world*. Bristol University Press.(chapters 1, 27)

Tutorial Exercises

- Compare arguments from *Miller (2011)* and *Ash et al. (2018)* about what constitutes "digital culture." Each group defends one author's stance in a short debate.
- Each student chooses one location on Google Maps and examines how digital representation (photos, reviews, tags) reshapes its spatial meaning.
- Students bring one meme that represents a social or political issue and analyze it through semiotic frameworks (signifier, context, affect).
- Small groups imagine speculative digital futures—AI governance, metaverse citizenship, digital afterlives—and present
- Simulate a panel discussion on "AI, Ethics, and the Global South." Students represent various stakeholders (governments, corporations, activists, academics).

Practical Record: Not Applicable

Readings:

Essential Readings:

- Ash, J., Kitchin, R., & Leszczynski, A. (2018). *Digital Geographies*. SAGE.
- Miller, V. (2011). *Understanding Digital Culture.* Sage Publications.

Suggested Readings:

- Jose Van Dijck. (2013). *The culture of connectivity: a critical history of social media*. Oxford University Press.
- Kitchin, R. (2021). *Data Lives*. Policy Press.

- Adams, P. C (2009) Geographies of Media and Communication: A Critical Introduction. London: Wiley-Blackwell.
- Adams, PC, Craine, J, Dittmer, J (eds) (2014) The Ashgate Research Companion to Media Geography. Aldershot: Ashgate Press.

- Sheller, M., & Urry, J. (2006). *Mobile Technologies of the City*. Routledge.

- Farman, J. (2020). *Mobile Interface Theory*. Routledge.
- Castells, M. (2010). *The Rise of the Network Society: The Information Age: Economy, Society, and Culture Volume I*. Wiley
- Linus Dahlander, Lars Frederiksen, & Rullani, F. (2011). *Online communities and open innovation : governance and symbolic value creation*. London Routledge.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E403: ENERGY GEOGRAPHIES (UPC 122902403)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E403: ENERGY GEOGRAPHIES (UPC 122902403)	4	3	1	0	BA/BSc in Geography	NIL

Learning Objectives:

The learning objectives of this course are as follows:

- To understand the geographical perspectives on Energy
- To understand the centrality of energy to human civilization
- To engage with key debates on major energy systems

Learning Outcomes:

The learning outcomes of this course are as follows:

- Geographical study of Energy using key concepts in the discipline
- Knowledge of current debates in field of energy geographies

Course Outline:

Unit 1: Introduction: Geographical perspectives on energy

Readings for Unit 1

1. Calvert, K. 2016. From 'energy geography' to 'energy geographies': Perspectives on a fertile academic borderland. Progress in Human Geography, 40(1), 105-125.
2. Huber, M. 2015. Theorizing energy geographies. Geography Compass, 9(6), 327-338.

Unit 2: Historical development of energy; the global trends and patterns in energy

Readings for Unit 2

1. Gordon, R. T. 1982. Inventions that changed the World, READER'S DIGEST (selected entries).
2. British Petroleum (latest year) Statistical Review of World Energy Report

Unit 3: Energy resources of the World: Coal, Oil, Natural Gas, Nuclear, and Renewable energy

Readings for Unit 3

1. Freese, B. 2016. Coal: A Human History, Basic Books
2. Watts, M. 2009. Crude politics: Life and death on the Nigerian oil fields. Niger delta economies

of violence working papers, 25.
3. Victor, D. G., Jaffe, A. M., & Hayes, M. H. (Eds.), 2006. Natural gas and geopolitics: From 1970 to 2040. Cambridge University Press.
4. Alexis-Martin, B. and Davies, T., 2017. Towards nuclear geography: Zones, bodies, and communities. Geography Compass, 11(9), p.e12325.

Unit 4: Contemporary Issues: Energy security, Geo-Politics of energy, Energy, environment and sustainable development

Readings for Unit 4

1. Cherp, A. and Jewell, J. 2011. The three perspectives on energy security: intellectual history, disciplinary roots and the potential for integration. Current Opinion in Environmental Sustainability, 3(4), 202-212.
2. Verrastro, F. A., Ladislaw, S. O., Frank, M., and Hyland, L. 2010. The geopolitics of energy: emerging trends, changing landscapes, uncertain times. A Report of the CSIS Energy and National Security Program October.

Tutorial Exercises

- Reading based discussions on
  - BP Statistical review of world energy
  - Theorizing energy geographies
  - Coal's Resurgence & the Global Low-Carbon Societies
  - Oil Assemblage
  - Global production networks and the extractive sector of Oil
  - Petro-State Thesis
  - Geo-politics of energy
  - Climate Change & Energy

Practical Record: Not Applicable

Readings:

Essential Readings:

- Calvert, K. 2016. From 'energy geography' to 'energy geographies': Perspectives on a fertile academic borderland. Progress in Human Geography, 40(1), 105-125.
- Huber, M. 2015. Theorizing energy geographies. Geography Compass, 9(6), 327-338. Freese, B. 2016. Coal: A Human History, Basic Books
- Freese, B. 2016. Coal: A Human History, Basic Books
- Watts, M. 2009. Crude politics: Life and death on the Nigerian oil fields. Niger delta economies of violence working papers, 25.
- Victor, D. G., Jaffe, A. M., & Hayes, M. H. (Eds.), 2006. Natural gas and geopolitics: From 1970 to 2040. Cambridge University Press.
- Alexis-Martin, B. and Davies, T., 2017. Towards nuclear geography: Zones, bodies, and communities. Geography Compass, 11(9), p.e12325.
- Cherp, A. and Jewell, J. 2011. The three perspectives on energy security: intellectual history, disciplinary roots and the potential for integration. Current Opinion in Environmental Sustainability,

3(4), 202-212.
- Verrastro, F. A., Ladislaw, S. O., Frank, M., and Hyland, L. 2010. The geopolitics of energy: emerging trends, changing landscapes, uncertain times. A Report of the CSIS Energy and National Security Program October.

Suggested Readings:

- Yergin, D. 2020. The New Map: Energy, Climate and the Clash of Nations, Penguin Press UK.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E404: GENDER, SPACE AND SOCIETY IN INDIA (UPC 122902404)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E404: GENDER, SPACE AND SOCIETY IN INDIA (UPC 122902404)	**4**	**3**	**1**	**0**	**BA/BSc in Geography**	

Learning Objectives:

The learning objectives of this course are as follows:
1. To enable students to understand the relevance of and developments in the subfield of geography of gender in India.
2. To equip students with an understanding of regional variations in construction of gender through the frame of genderscapes.
3. To provide an understanding of spaces of indigenous feminisms in the Indian context.
Course

Learning Outcomes:

The learning outcomes of this course are as follows:
1. Understanding the emergence of the subfield of geography of gender as well its trajectory of growth in India.
2. Understanding gendered implications of public and private spaces and spatial variations in construction of gender in India.
3. Understanding the concept of a genderscape and appreciating regional genderscapes in India.

Course Outline:

Unit 1: Geography of Gender: Concepts, Development of and theoretical approaches to the study of gender in geography; contextualizing growth and development of the sub field globally and in India.
Readings for Unit 1

- Peake, Linda. "Women in geography." *International Encyclopedia of Geography: People, the Earth, Environment and Technology. New York: Wiley. https://doi. org/10.1002/9781118786352. wbieg1173* (2017).
- Datta, Anindita, Peter Hopkins, Lynda Johnston, Elizabeth Olson, and Joseli Maria Silva, eds. *Routledge handbook of gender and feminist geographies*. London: Routledge, 2020 Chapter 1

- Garcia Ramon, Maria Dolors, and Janice Monk. "Gender and geography: World views and practices." *Belgeo. Revue belge de géographie* 3 (2007): 247-260.

Unit 2: Spatial Patterns and Bases of Gender inequalities: Kandiyoti's Classic Patriarchy, son preference, social value; new reproductive technology, skewed sex ratios

Readings for Unit 2

- Saraswati, Raju, Peter J. Atkins, Naresh Kumar, and Janet G. Townsend. "Atlas of women and men in India." (1999).
- Mazumdar Vina and N Krishnaji (eds), 2001. Enduring Conundrum: India's Sex Ratio, Centre for Women's Development Studies, Rainbow Publishers, Delhi**.**
- Datta, Anindita. "Natural landscapes and regional constructs of gender: theorizing linkages in the Indian context." *Gender, Technology and Development* 15, no. 3 (2011): 345-362.

Unit 3: Towards Genderscapes: Spatial variations in the construction of gender in India -Concept of Genderscape, Regional Genderscapes in India, Genderscapes of violence and well-being in India-gendered patterns of crime and violence, gender disparities in selected indicators of social wellbeing

Readings for Unit 3

- Rustagi, Preet. "Significance of gender-related development indicators: An analysis of Indian states." Indian Journal of Gender Studies 11, no. 3 (2004): 291-343.

Unit 4: Indigenous Feminisms and feminist counterspaces: Theorizing indigenous feminisms, indigenous feminisms, power and agency in classic patriarchy; indigenous feminisms and feminist counterspaces**.**

Readings for Unit 4

- Datta, Anindita. "Reinterpreting resistance and agency: Excavating feminist counterspaces within indigenous feminisms." In Gender, Space and Agency in India, pp. 145-159. Routledge India, 2020**.**

Tutorial Exercises

Practical Record: Not Applicable

Readings:

Essential Readings:

1. Agarwal Bina, 1994. A Field of One's Own: Gender and Land Rights in South Asia, Cambridge University Press.
2. Geetha V. 2007. Patriarchy, Stree publications
3. Gregory Derek et al., 2009. Dictionary of Human Geography, 5th Edition, Wiley
4. Massey Doreen, 1994. Space, Place and Gender, University of Minnesota Press, Minneapolis.
5. Mazumdar Vina and N Krishnaji (eds), 2001. Enduring Conundrum: India's Sex Ratio, Centre for Women's Development Studies, Rainbow Publishers, Delhi.
6. McDowell Linda, 1999. Gender, Identity and Place: Understanding Feminist Geographies, Blackwell Publishers, Oxford.

7. McDowell, Linda and Sharp, Joanne, eds. 1997. Space/Gender/Knowledge: Feminist Readings. London: Arnold.
8. Phadke Shilpa, Ranade Shilpa and Sameera Khan, 2011. Why Loiter: Women and Risk on Mumbai Streets, Penguin
9. Spain Daphne, 1992. Gendered Spaces, University of North Carolina Press.
10. Walby Sylvia, 1990. Theorizing Patriarchy, Wiley Blackwell publishers.

Suggested Readings:

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE COURSE – GEOGRAPHY OF SOCIAL JUSTICE IN INDIA (GEOG- E405) (UPC: 122902405)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOGRAPHY OF SOCIAL JUSTICE IN INDIA	4	3	1	0	BA/ BSc in Geography	NIL

Learning Objectives:

The learning objectives of this course are as follows:

- To provide a critical understanding of conceptual foundations, key components, and evolving theoretical approaches to social justice from a geographical and interdisciplinary perspective.
- To examine the historical trajectories of marginalization, social stratification, and spatial disparities in India, focusing on caste, class, and minority identities within rural and urban contexts.
- To evaluate the efficacy of policies and grassroots interventions aimed at promoting social equity, inclusive development, and sustainable empowerment to the marginalized communities in India.

Learning Outcomes:

The learning outcomes of this course are as follows:

- To develop a nuanced understanding of social justice as a geographical construct, recognizing its relevance in addressing inequality and promoting equitable spatial development in India.
- To critically examine socio-historical processes and spatial patterns of caste-based discrimination, migration, poverty, and resource access across diverse socio-economic landscapes.
- To acquire analytical tools to assess constitutional provisions, human rights frameworks, development programs, and the role of civil society in achieving empowerment and sustainable justice for unrepresented groups.

Course Outline:

Unit 1: Introduction to Geography of Social Justice:

Nature, Scope and Relationship of Geography of Social Justice**;** Conceptual framework, components, principles and approaches of Social Justice; Geographical Perspective of Social Justice; Overview of social justice theories.

Readings:

- Ahmad, A. (2012). Social Geography of India (2nd Revised and Enlarged ed.). Concept Publishing Company Pvt. Ltd., New Delhi.
- Harvey, D. (1993). Social Justice and the City (Reprinted ed.). Basil Blackwell Oxford.
- Omvedt, G. (2014). Dalits and the Democratic Revolution: Dr. Ambedkar and the Dalit Movement in Colonial India. Sage Publication Pvt. Ltd., New Delhi.

Unit 2: Historical Context of Marginalisation and Injustice:

Stratification of Indian society; Caste system; Caste discrimination, Atrocities and violence against SC/ST; Spatial distribution of SC, ST, OBC and Minorities population; Resource distribution.

Readings:

- Balagopal, K. (2020). Probings in the Political Economy of Agrarian Classes and Conflicts (2nd online ed.). Perspectives, Hyderabad.
- Borooah, V. K. et al. (2015). Caste, Discrimination, and Exclusion in Modern India. Sage Publications Pvt. Ltd., New Delhi.
- Channa, S. M., & Mencher, J. P. (Eds.). (2013). Life as a Dalit: Views from the Bottom on Caste in India. Sage Publication Pvt. Ltd., New Delhi.

Unit 3: Social (in) Justice in India:

Urban and Rural dimensions; Dalit Rights; Social exclusion and segregation, Migration; Poverty, Inequality, land rights and security: Case Studies.

Readings:

- Gorski, P. C., & Pothini, S. G. (2024). Case Studies on Diversity and Social Justice Education (3rd ed.). Routledge, New York.
- Karade, J. (Ed.). (2008). Development of scheduled castes and scheduled tribes in India. Cambridge Scholars Publishing, United Kingdom.
- Schejtman, A. (1999). Urban dimensions in rural development. Cepal Review, (67), 15-33.

Unit 4: Social Justice Empowerment and Legal framework:

Role of civil society and media; Contemporary movements; Inclusive Development, Human rights, Constitutional Provisions, Laws, Acts, Programs & Policies.

Readings:

- Atkinson, A. B. (1983). Social Justice and Public Policy (First MIT press ed.). Wheatsheaf Books Ltd., Great Britain.
- Srivastava, D. K. (2019). Legal Protection of Scheduled Castes and Tribes (Constitutional Safeguards and Social Justice). Jain Book Agency, New Delhi.
- Thorat, S. (2006). Ambedkar's Role in Economic Planning, Water and Power Policy (2nd ed.). Shipra Publication, New Delhi.

Tutorial Exercises

- Based on case studies evaluate the marginalized communities to map local knowledge on resource access, discrimination, and resistance.
- Use district-level data to identify spatial clusters of educational disadvantage among scheduled castes, tribes, and minorities.
- Compare spatial patterns of inequality in Indian cities through key historical and contemporary events.
- Examine development-induced displacement and its social-geographic impact on indigenous and marginalized communities.
- Analyze the geographic spread of social justice movements using social media and demographic data.
- Create a spatial database combining multiple indicators of inequality for a selected district.
- Analyse the intersections of caste, class, and gender influence access to urban public spaces based on observation.

Readings:

Essential Readings:

- Atkinson, A. B. (1983). Social Justice and Public Policy (First MIT press ed.). Wheatsheaf Books Ltd., Great Britain.
- Harvey, D. (1993). Social Justice and the City (Reprinted ed.). Basil Blackwell Oxford.
- Karade, J. (Ed.). (2008). Development of scheduled castes and scheduled tribes in India. Cambridge Scholars Publishing, United Kingdom.

Suggested Readings:

- Ahmad, A. (2012). Social Geography of India (2nd Revised and Enlarged ed.). Concept Publishing Company Pvt. Ltd., New Delhi.
- Arneson, R. J (1989). Equality and Equal Opportunity for Welfare. Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition, 56 (1), 77-93. Springer.
- Balagopal, K. (2020). Probings in the Political Economy of Agrarian Classes and Conflicts (2nd online ed.). Perspectives, Hyderabad.
- Borooah, V. K. et al. (2015). Caste, Discrimination, and Exclusion in Modern India. Sage Publications Pvt. Ltd., New Delhi.
- Channa, S. M., & Mencher, J. P. (Eds.) (2013). Life as a Dalit: Views from the Bottom on Caste in India. Sage Publication Pvt. Ltd., New Delhi.

- Gorski, P. C., & Pothini, S. G. (2024). Case Studies on Diversity and Social Justice Education (3rd ed.). Routledge, New York.
- Karade, J. (Ed.). (2008). Development of scheduled castes and scheduled tribes in India. Cambridge Scholars Publishing, United Kingdom.
- Omvedt, G. (2014). Dalits and the Democratic Revolution: Dr. Ambedkar and the Dalit Movement in Colonial India. Sage Publication Pvt. Ltd., New Delhi.
- Puniyani, R. (2010). Social Justice (An illustrated Introduction). Vani Prakashan, India. (Hindi)
- Schejtman, A. (1999). Urban dimensions in rural development. Cepal Review, (67), 15-33.
- Srivastava, D. K. (2019). Legal Protection of Scheduled Castes and Tribes (Constitutional Safeguards and Social Justice). Jain Book Agency, New Delhi.
- Thorat, S. (2006). Ambedkar's Role in Economic Planning, Water and Power Policy (2nd ed.) Shipra Publication, New Delhi.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E406: GEOGRAPHY OF CRYOSPHERE (UPC 122902406)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-E406: GEOGRAPHY OF CRYOSPHERE (UPC 122902406)	4	3	1	0	BA/BSc in Geography	Basic Knowledge of Geography

Learning Objectives

The learning objectives of this course are as follows:

- To make students understand the nature and distribution of the cryosphere in a changing climate.
- To understand the different processes of glacial and periglacial environments.
- To have a good command of glacial hazards and the role of technology and traditional knowledge in risk mitigation
- To be well-versed in how glacier variations respond to water-energy security and SDGs?

Learning Outcomes

The learning outcomes of this course are as follows:

- The course will help in understanding cryosphere geography while focusing on glacial systems, the Periglacial Environment, the Lake environment and its relevance in the changing climate.
- Students will also learn how to identify various glacier-related hazards, risks, and vulnerabilities, and about various risk-mitigating measures.
- This course will give them the opportunity to link the changing cryosphere with water, energy and SDGs in a geographical perspective.

Course Outline

Unit 1: Introduction: Concept, Nature, Scope, Spatial Distribution of Cryosphere

Readings

- Barry, Roger G and Gan, Thian Yew, 2011. The Global Cryosphere Past, Present and Future. Cambridge University Press.
- Marshall, S.J., 2011. The cryosphere. Princeton University Press.
- Qin, D, Yao, T, Ding, Y, and Ren, J (Eds.), (2021). *Introduction to Cryospheric Science*. Springer Nature.

Unit 2: Glacial System and Climate Change: Glacial System, Periglacial Environment, Role of RS and GIS in Snow, Glacier and Glacial Lake Monitoring.

Readings

- Cuffey, K.M. and Paterson, W.S.B., 2010. The physics of glaciers. Academic Press.
- Sugden, D. E. and John, B. S. 1976. Glaciers and Landscape, New York, New York
- Pellikka, P., and Rees, W.G. 2010. Remote Sensing of Glaciers-Techniques for Topographic, Spatial and Thematic Mapping of Glaciers, CRC Press/Taylor and Francis Group, London, U.K.

Unit 3: Cryospheric Hazards and Risk: Types of Cryospheric hazards, Avalanche, Glacial Lake Outburst Floods (GLOFs) Risk and Vulnerability, Technology (Participatory GIS, RS, Early Warning System) and Traditional Knowledge in Resilience Building, Hazards and Risk Mapping.

Readings

- Richardson, Shaun D. and Reynolds, John M. 2000. An overview of glacial hazards in the Himalayas, Quaternary International, 65/66, 31-47
- ICIMOD, 2013, Glacial Lakes and Glacial Lake Outburst Floods in Nepal, http://www.icimod.org/publications/index.php/search/publication/750
- Bolch, T., Kulkarni, A., Kääb, A., Huggel, C., Paul, F., Cogley, J.G., Frey, H., Kargel, J.S., Fujita, K., Scheel, M. and Bajracharya, S., 2012. The State and Fate of Himalayan Glaciers. Science, 336(6079), pp.310-314.

Unit 4: Applied Glaciology: Climatic and Environmental Record in Cryosphere, Glacier Variations-Response to Water and Energy Security, Cultural dimensions of Cryosphere, Changing Cryosphere and Sustainable Development Goals (SDGs), Follow-up Field Trip

Readings

- IPCC Special Report 'State of the Cryosphere Reports 2024' https://www.un-glaciers.org/en/articles/state-cryosphere-report-2024
- Slaymaker, Olav and Kelly, Richard, 2006. The Cryosphere and Global Environmental Change, Wiley-Blackwell
- Glacier: Nature and Culture, 2019, Peter G. Knight. London: Reaktion Books, ISBN: 978-1-78914-134-4.

Tutorial Exercises

- Discussion about the Electromagnetic spectrum (focusing on snow & glacier properties)
- Discussion on the keys of satellite image interpretation
- Visual interpretation of change in snow cover area
- Identification of glacial and periglacial landforms
- Discussion on the limitations of Earth observation (EO) in the cryosphere environment studies

Practical Record: *Not Applicable*

Readings

Essential Readings:

1. Barry, Roger G and Gan, Thian Yew, 2011. The Global Cryosphere Past, Present and Future. Cambridge University Press.
2. Cuffey, K.M. and Paterson, W.S.B., 2010. The physics of glaciers. Academic Press.
3. Qin, D, Yao, T, Ding, Y, and Ren, J (Eds.), (2021). *Introduction to Cryospheric Science*. Springer Nature.
4. Richardson, Shaun D. and Reynolds, John M. 2000. An overview of glacial hazards in the Himalayas, Quaternary International, 65/66, 31-47
5. Glacier: Nature and Culture, 2019, Peter G. Knight. London: Reaktion Books, ISBN: 978-1-78914-134-4.

Suggested Readings:

1. Marshall, S.J., 2011. The cryosphere. Princeton University Press.
2. C.J. van der Veen. 2013. Fundamentals of Glacier Dynamics, Second Edition, CRC Press
3. Embleton, C., and King, C. A. M. 1975. Glacial Geomorphology, New York, New York, Wiley
4. Sugden, D. E. and John, B. S. 1976. Glaciers and Landscape, New York, New York, Wiley
5. Pellikka, P and Rees, W.G. 2010. Remote Sensing of Glaciers-Techniques for Topographic, Spatial and Thematic Mapping of Glaciers, CRC Press/Taylor and Francis Group, London, U.K.
6. IPCC Special Report 'State of the Cryosphere Reports 2024' https://www.un-glaciers.org/en/articles/state-cryosphere-report-2024
7. Raina, V.K. and Srivastava, S.H. Om. हिमानी (हिम-नहियाँ). The Geological Society of India.
8. Singh Savindra. 2022. हिम भूगोल. Pravalika Publication

Digital Materials: *Not Applicable*

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE:
GEOG-E407: GEOGRAPHY OF HEALTH
(UPC 122902407)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-E407: GEOGRAPHY OF HEALTH (UPC 122902407)	**4**	**3**	**1**	**0**	**BA/ BSc in Geography**	**Basic Knowledge of Geography**

Learning Objectives:

The learning objectives of this course are as follows:

- To explain the spatial foundations of health and disease, including major sources of health data and the geographical dynamics of emerging and re-emerging diseases.
- To identify and analyze environmental pollution and spatial health risks, focusing on determinants, exposure patterns, and hotspot identification.
- To examine spatial inequalities in health across global, regional, and neighbourhood scales, combined with vulnerability mapping and community-level assessment.
- To evaluate emerging health challenges and policy initiatives at national, regional, and international levels, emphasizing geographically informed health interventions.

Learning Outcomes:

On transaction of this course students will be able to:

- Apply spatial concepts and data sources to interpret disease patterns, monitor health risks, and understand spatial variations in health outcomes.
- Assess environmental pollution and its health impacts through spatial analysis, including mapping pollution sources, risk zones, and changing risk environments.
- Carry out vulnerability mapping, and generate community-level vulnerability profiles.
- Critically analyze health policies and initiatives and propose spatially informed strategies for addressing global, national, and regional health challenges.

Course Outline:

Unit 1: Introduction (Theory): Spatial Foundations of Health & Disease, Sources of Health Data, Emerging and Re-emerging Diseases, Disease Surveillance and Spatial Monitoring

Readings

- Emch, M., Root, E. D., & Carrel, M. (2017). Health and medical geography (4th ed.). Guilford Press.
- Misra, R. P. (2007). Geography of health: A treatise on geography of life and health in India. Concept Publishing Company.

Unit 2: Environmental Pollution and Health Risks Patterns (Theory): Environmental Determinants of Health**,** Health Impacts of Pollution, Changing Risk Factors, Pollution Sources and Spatial Patterns, Hotspots and Risk Zones

Readings

- Alam, A., Rukhsana, Biswas, S., Islam, N., & Roy, R. (2024). Population, Environment and Disease: Towards Health Geography. Springer Nature. https://doi.org/10.1007/978-3-031-67624-6
- Ahamer, G. (2020). Mapping Global Dynamics: Geographic Perspectives from Local Pollution to Global Evolution (pp. 1–436). Springer International Publishing. https://doi.org/10.1007/978-3-319-51704-9

Unit 3: Spatial Inequalities and Health Risks (Theory): Health inequalities across global, regional, and neighbourhood scales, Vulnerability Mapping, Community-Level Vulnerability Assessment

Readings

- Steinberg, S. L., & Sprigg, W. A. (Eds.). (2025). Climate, vulnerability and health (2nd ed.). Springer Cham. https://doi.org/10.1007/978-3-031-77046-3
- Souris, M. (2019). Epidemiology and geography: Principles, methods and tools of spatial analysis. Wiley. https://doi.org/10.1002/9781119528203

Unit 4: Emerging Health Challenges and Policy Initiatives (Theory): Global and Regional Health Challenges, National-Level Health Initiatives (India), International Health Initiatives, Geographical Perspectives on Health Interventions.

Readings

- Johnson, S. A. (2017). Challenges in health and development: From global to community perspectives, second edition. Springer International Publishing. https://doi.org/10.1007/978-3-319-53204-2
- Brown, G. W., Yamey, G., & Wamala, S. (2014). The handbook of global health policy. Wiley. https://doi.org/10.1002/9781118509623

Tutorial Exercises:

- Discussion on the spatial foundations of health and disease with emphasis on geographic factors that shape disease patterns.
- Identification and analysis of environmental pollution sources and associated spatial health risk zones.
- Discussion on spatial inequalities in health at global, regional, and neighbourhood scales.
- Analysis of emerging health challenges and national–international policy initiatives
- Review and comparison of major methods used in spatial health analysis, including disease surveillance, hotspot identification, and community-level vulnerability assessment.

Practical Record: Not Applicable

Readings:

Essential Readings:

5. Anthamatten, P., & Hazen, H. (2011). An introduction to the geography of health. Routledge.
6. Brown, T., McLafferty, S., & Moon, G. (Eds.). (2010). A companion to health and medical geography. Wiley-Blackwell.
7. Gaimard, M. 2014. Population and Health in Developing Countries, Springer, New York.
8. Luginaah, I., & Kerr, R. B. (Eds.). (2015). Geographies of health and development. Ashgate.

Suggested Readings:

6. Burton, L. M., Kemp, S. P., Leung, M., Matthews, S. A., & Takeuchi, T. A. (2011). Communities, neighbourhoods, and health: Expanding the boundaries of place. Springer.
7. Curtis, S. (2004). Health and inequality: Geographical perspectives. Sage Publications.
8. Freudenberg, N., Klitzman, S., & Saegert, S. (Eds.). (2009). Urban health and society: Interdisciplinary approaches to health and practice. Jossey-Bass.
9. Gatrell, A. C., & Elliott, S. J. (2015). Geographies of health: An introduction (3rd ed.). Wiley-Blackwell.
10. Ozdenerol, E. (2016). Spatial Health Inequalities: Adapting GIS Tools and Data Analysis (pp. 1–173). CRC Press. https://doi.org/10.1201/9781315371894
11. Roig, B., Weiss, K., & Thireau, V. (2018). Management of emerging public health issues and risks: Multidisciplinary approaches to the changing environment. Elsevier. https://doi.org/10.1016/C2016-0-00995-6

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E408: GEOGRAPHY OF HIMALAYA (UPC 122902408)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E408: GEOGRAPHY OF HIMALAYA (UPC 122902408)	4	3	1	0	BA/BSc in Geography	-

Learning Objectives:

The learning objectives of this course are as follows:

- Understanding physiological characteristics, ecology of river basins of Himalaya.
- Mapping vulnerability, hazards and Disaster Risk Reduction (DRR) in Himalaya.
- Evaluation of livelihood and Sustainability in Himalaya.

Learning Outcomes:

The learning outcomes of this course are as follows:

- In depth understanding of Third Pole and regional entity of Himalaya.
- Spatial distribution of hazards and risks and mitigation in Himalaya.
- Conservation strategies, good practices and success stories.

Course Outline:

Unit 1: Introduction: Himalayan Physiology: Structures; Folds and faults and Vertical divisions; Regional Entity: Regional characteristics, river basin based divisions (Sir Sydney Burrard)

Readings for Unit 1

- Ahmad, E. 1992. *Geography of the Himalaya*, Kalyani Publication, Ludhiana.
- Burrard, S. G., Hubert, S. and Hayden, H. 1908. A Sketch of the Geography and Geology of the Himalaya Mountains and Tibet: The high peaks of Asia, Superintendent Government Printing.

Unit 2: Hazard-Risk and Vulnerability: Floods/Flash Floods, Cloudburst, Earthquake, Landslides and GLOF (Case Study).

Readings for Unit 2

- Bose, S.C. 1976. *Geography of the Himalaya*, National Book Trust, New Delhi.
- Pandey, B.W. 2002. *Geo-environmental Hazards in Himalaya, Assessment and Mapping*, Mittal Publication, New Delhi.

Unit 3: Developmental Implications: Fragile Ecosystem Syndromes at Spatial Scale (Case Studies).

Readings for Unit 3

- Lall, J.S. (ed.), 1981. *The Himalaya: Aspects of Change*, Oxford University Press, Delhi.
- Kapur, A. 1995. *Paradise in Peril: An Ecological Profile of the Kashmir valley*, Allied publishers, Delhi.

Unit 4: Management of Himalayan Fragility: Integrated Resource Management, Movements and Institutions for Himalayan Conservation (Case studies).

Readings for Unit 4

- Singh, R.B. 1998. *Sustainable Development of Mountain Environment of India and Canada*, New Delhi, Oxford & IBH Pub., 1998, Pages 345.
- Singh, R. B. Schickhoff, Udo and Mal Suraj (eds) 2016. *Climate Change, Glacier Response and Vegetation Dynamics in the Himalaya, Springer, Switzerland.*

Tutorial Exercises

- **Physiographic Mapping:** Prepare a physiographic map showing major divisions, folds, and faults of the Himalaya.
- **River Basin Analysis:** Study and delineate Himalayan river basins following Burrard's regional classification.
- **Hazard Mapping:** Identify and map flood, landslide, and cloudburst-prone zones using case studies.
- **Livelihood and Sustainability Survey:** Assess livelihood patterns and sustainability challenges in a selected Himalayan region.
- **Conservation Case Study:** Evaluate institutional and community-based initiatives for Himalayan biodiversity and ecosystem conservation.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Ahmad, E. 1992. *Geography of the Himalaya*, Kalyani Publication, Ludhiana.
- Bose, S.C. 1976. *Geography of the Himalaya*, National Book Trust, New Delhi**.**

Suggested Readings:

- Lall, J.S. (ed.), 1981. *The Himalaya: Aspects of Change*, Oxford University Press, Delhi.
- M.J. Crozier, 1986. *Landslides: Causes, Consequences and Environment*, Croom Helm, London.
- Mohammad, Noor and Rai, S.C. 2014. *Agricultural Diversity and Food Security in the Mountain Ecosystem*, Concept Publishing Company, New delhi.
- Pandey, B.W. 2002. *Geo-environmental Hazards in Himalaya, Assessment and Mapping*, Mittal Publication, New Delhi.
- Pandey, B. W, Negi, V. S. and Kumria, Poonam, 2018. *Environmental Concerns and Sustainable Development in Himalaya*, Research India Press, New Delhi.
- Sah, N.K., Bhatt, S.D., and Pande, R.K. (eds.), 1990. *Himalaya: Environment, Resources and Development,* Shree Almora Book Depot, Almora.

- Sen Roy, S. and Singh, R.B. 2002. Climate Variability, Extreme Events and Agricultural Productivity in Mountain Regions, Oxford & IBH Pub., New Delhi, pages 232.
- Singh, R. B. Schickhoff, Udo and Mal Suraj (eds) 2016. *Climate Change, Glacier Response and Vegetation Dynamics in the Himalaya, Springer, Switzerland.*
- Singh, R.B. 1998. *Sustainable Development of Mountain Environment of India and Canada*, New Delhi, Oxford & IBH Pub., 1998, Pages 345.

Digital materials: Not Applicable

Course Name	MACHINE LEARNING AND ADVANCE GEO-COMPUTATION				
Course Type	DSE	Part	2	Semester	IV
UPC	122902409	Course Code	GEOG-E409	Credits	4
Duration (Hours/week)	4	Lecture	3	Tutorial	1
				Practical	0

Course Objectives	
1.	This course introduces the domain of data science in geo-spatial analysis
2.	It sets the foundation of AI-ML with integration of advanced geo-spatial analysis
3.	To efficiently solve contemporary geographical problems with AI-ML tools

Course Learning Outcome	
1.	Students will be acquainted with contemporary Data Science and conceptual understanding of Artificial Intelligence – Machine Learning theories.
2.	Ability to execute geo-spatial problems with data mining and extraction approach through AI-ML models.
3.	Capability to provide solutions to contemporary geographical problems with AI-ML tools.

Course Outline / Content	
Unit 1	Concept of Geo-computation: scopes and limitations, introduction to AI-ML, evolution, basic concepts and terminologies.
Unit 2	Theories of AI-ML: mathematical building blocks of neural network, Keras and Tensor Flow, gradient-based optimization, backpropagation algorithm
Unit 3	Connecting AI-ML to Geo-Spatial technologies: data mining, extractions, cleaning and representation
Unit 4	Algorithms/models and fullstack workflow: random forest, decision tree, support vector machine, XGBOOST, MLPNN; Model validation: accuracy matrices and visualization
Unit 5	Applications of ML in Geo-computation (GeoAI): hazard assessment, regional planning, climate modelling

Suggested / Recommended Readings	
1.	Brunsdon, C., & Singleton, A. (2015). Geocomputation: A Practical Primer. SAGE Publications.
2.	Fischer, M. M., & Getis, A. (2010). Handbook of Applied Spatial Analysis: Software Tools, Methods, and Applications. Springer.
3.	Zhang, C., & Zhu, A.-X. (2018). Machine Learning in Geospatial Analysis: Theory and Applications. Springer.
4.	Goodchild, M. F., & Longley, P. (1999). The Future of the Spatial Information Infrastructure. Wiley.
5.	Lary, D. J. (2018). Artificial Intelligence and Deep Learning for Earth Sciences. Springer.
6.	Miller, H. J., & Han, J. (2009). Geographic Data Mining and Knowledge Discovery (2nd ed.). CRC Press.
7.	Mas, J. F., Karp, A., Souza, C. M., & Aragón-Carrasco, F. (2021). Machine Learning for Remote Sensing Applications. CRC Press.
8.	Matt, D., Qian, S., & Worboys, M. F. (2024). GIS: A Computational Perspectives (3rd ed.). CRC Press.
9.	Gao, S., Hu, Y., & Li, W. (2024) Handbook of Geospatial Intelligence, CRC Press.
10.	Korstanje, J. (2022) Machine Learning on Geographical Data Using Python: Introduction into Geodata with Applications and Use Cases, Apress Berkeley, CA

Facilitating Course Learning Outcomes	
Unit 1	Students will be acquainted with contemporary Data Science and its ever-growing applications in geo-spatial studies.
Unit 2	Conceptual understanding of Artificial Intelligence – Machine Learning theories.
Unit 3	Ability to execute geo-spatial problems with data mining and extraction approach.
Unit 4	Ability to execute AI-ML algorithms and models.
Unit 5	Capability to provide solutions to contemporary geographical problems with AI-ML tools.

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E410: REGIONAL GEOGRAPHY OF INDIA (UPC 122902410)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E410: REGIONAL GEOGRAPHY OF INDIA (UPC 122902410)	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 analyse 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

- Glasson John and Marshall Tim, 2007. *Regional Planning*, Taylor and Francis, London and New York.
- Hall Peter and Tewdwr-Jones Mark, 2010. *Urban and Regional Planning*, Routledge, London and New York.

Unit 2: Geography of India: An overview of Land, People and Economy.

Readings

- Stiftel B. and Watson V. 2005. *Dialogues in Urban and Regional Planning*, Psychology Press.
- Wang X. and Hofe R. 2008. *Research Methods in Urban and Regional Planning*, Springer.

Unit 3: Regionalization of India: Basis of Division, Regional Divisions.

Readings

- Lichfield N., Kettle P. and Whitbread M. 2016. *Evaluation in the Planning Process: The Urban and Regional Planning Series (Volume 10)*, Elsevier.
- Wong C. 2006. *Indicators for Urban and Regional Planning: The Interplay of Policy and Methods*, Routledge.

Unit 4: Regionalizations by Spate and Learmonth (1954) and Singh (1971): Selective Case Studies.

Readings

- Kulshreshta S. K. 2012. *Urban and Regional Planning in India: A Handbook for Professional Practice*, Sage, New Delhi.
- Rahmaan A. U. 2011. *The Imperatives of Urban and Regional Planning: Concepts and Case Studies from the Developing World*, Xlibris Corporation.

Tutorial Exercises

- Discuss the relevance of regional planning
- Selected study of thinkers and their contributions
- Assignment on selected theories
- Evaluate the working of planning process
- Evaluate the contemporary of planning practices in India

Practical Record: Not Applicable

Teaching Hours:

Unit 1: 15 Hours
Unit 2: 15 Hours
Unit 3: 15 Hours
Unit 4: 15 Hours
Total: 60 Hours

Readings:

Essential Readings:

- Glasson John and Marshall Tim, 2007. *Regional Planning*, Taylor and Francis, London and New York.
- Hall Peter and Tewdwr-Jones Mark, 2010. *Urban and Regional Planning*, Routledge, London and New York.

Suggested Readings:

- Glasson John and Marshall Tim, 2007. *Regional Planning*, Taylor and Francis, London and New York.
- Hall Peter and Tewdwr-Jones Mark, 2010. *Urban and Regional Planning*, Routledge, London and New York.
- Kulshreshta S. K. 2012. *Urban and Regional Planning in India: A Handbook for Professional Practice*, Sage, New Delhi.
- Lichfield N., Kettle P. and Whitbread M. 2016. *Evaluation in the Planning Process: The Urban and Regional Planning Series (Volume 10)*, Elsevier.
- Rahmaan A. U. 2011. *The Imperatives of Urban and Regional Planning: Concepts and Case Studies from the*

Developing World, Xlibris Corporation.
- Stiftel B. and Watson V. 2005. *Dialogues in Urban and Regional Planning*, Psychology Press.
- Wang X. and Hofe R. 2008. *Research Methods in Urban and Regional Planning*, Springer.
- Wong C. 2006. *Indicators for Urban and Regional Planning: The Interplay of Policy and Methods*, Routledge.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E411: SACRED LANDSCAPE AND PILGRIMAGE GEOGRAPHIES IN INDIA (UPC: 122902411)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E411: SACRED LANDSCAPE AND PILGRIMAGE GEOGRAPHIES IN INDIA (UPC 122902411)	4	3	1	0	BA/BSc in Geography	NA

Learning Objectives:

The learning objectives of this course are as follows:

- To introduce students to the interdisciplinary field of pilgrimage studies with a specific focus on geographical perspectives and India
- To critically analyze the social, cultural, economic, and political impacts of pilgrimage on both sites and the regions they are embedded within
- To explore different theoretical frameworks used in the study of pilgrimage geography, including the concepts of the sacred, profane, and hyper-meaningful journey

Learning Outcomes:

The learning outcomes of this course are as follows:

- Analyze the spatial organization of sacred landscapes and pilgrimages
- Understand and connect to the significance of cultural heritage
- Conceptualize the spatio-spiritual character of India

Course Outline:

Unit 1: Introduction: Significance of Sacred Landscapes and Pilgrimages, Religious and Secular Dimensions, Vedic vs Buddhist debate, Development of Pilgrimage Studies in Geography.

Readings for Unit 1

1. Luitikas, D., 2025. Introduction to Sacred Landscape, Pilgrimage , and Ritual Practices. In *Creating the Sacred Landscape: Pilgrimages and Ritual Practices* (pp 1-20). Cham: Springer Nature, Switzerland.
2. Singh, R.P.B., Niglio, O, & Rana, P.S. (Eds) (2023). *Placemaking and Cultural Landscapes*. Springer.
3. Lopez, L., ed., 2023. *Geography of World Pilgrimages: Social, Cultural and Territorial*

Perspectives. Springer Nature.

Unit 2: Key Concepts: Sacred & Profane, Hierophany, Axis Mundi, Sacred Geometry:- Cosmogram; (Microcosm, Mesocosm, Macrocosm), Sacred Journeys and spaces.

Readings for Unit 2

1. Singh, R. P. B., 2013. *Hindu Tradition of Pilgrimage: Sacred Space and System*. [Planet Earth & Cultural Understanding Series, Pub. 9]. Dev Publishers & Distributors, New Delhi

Unit 3: Geography of Sacred Sites: Mandalas, Sacred Circuits; Directions, Routes and Temporality, Case Studies, Sacred Geographies of India.

Readings for Unit 3

1. Singh, R. P.B., 2013. *Hindu Tradition of Pilgrimage: Sacred Space and System*. [Planet Earth & Cultural Understanding Series, Pub. 9]. Dev Publishers & Distributors, New Delhi
2. Singh, R. P.B., 2009. *Cosmic order and cultural astronomy: Sacred cities of India*. Cambridge Scholars Publishing.
3. Singh, R. P.B., 2004. *Cultural Landscapes and the Lifeworld: Literary Images of Banaras*. Indica Books, Varanasi.

Unit 4: Contemporary Issues: Modernity and Tradition, Development, Revitalization, & Heritagization; Local development, Policies and Sustainable Practices.

Readings for Unit 4

1. Collins-Kreiner, N., 2010. Geographers and pilgrimages: Changing concepts in pilgrimage tourism research. *Tijdschrift voor economische en sociale geografie*, *101*(4), pp.437-448.
2. Chandan, S. and Kumar, A., 2019. Challenges for urban conservation of core area in pilgrim cities of India. *Journal of Urban Management*, *8*(3), pp.472-484.
3. Trombino, G. and Trono, A., 2018. Environment and sustainability as related to religious pilgrimage routes and trails. In *Religious pilgrimage routes and trails: Sustainable development and management* (pp. 49-60). Wallingford UK: CAB International.

Tutorial Exercises

- Sacred landscapes: Characteristics
- Case study of sacred site in Delhi
- Mapping Pilgrimage routes in India
- Analysis of Sacred settlements in India: For example: Kashi, Rameshwaram, Rishikesh, Gokarna

Practical Record: Not Applicable

Readings:

Essential Readings:

- Bhardwaj, S. M., 1973. *Hindu places of pilgrimage in India: A study in cultural geography*. Univ of

California Press.

- Eck, D. L., 2012. *India: A sacred geography*. Harmony.
- Singh, R. P. B., 2013. Hindu Tradition of Pilgrimage: Sacred Space and System. [Planet Earth & Cultural Understanding Series, Pub. 9]. Dev Publishers & Distributors, New Delhi
- Singh, R. P. B., 2013. *Hindu Tradition of Pilgrimage: Sacred Space and System*. [Planet Earth & Cultural Understanding Series, Pub. 9]. Dev Publishers & Distributors, New Delhi

Suggested Readings:

Digital materials: Not Applicable

Course Name	TERRAIN MODELLING				
Course Type	DSE	Part	2	Semester	IV
UPC	122902412	Course Code	GEOG-E412	Credits	4
Duration (Hours/week)	4	Lecture	3	Tutorial	1
				Practical	0

Course Objectives	
1.	To develop an understanding of terrain extraction principles, modelling and potential applications.
2.	To enable students to efficiently deal problems in physical geography and environmental issues.

Course Learning Outcome	
1.	Board understanding of Digital Terrain Modelling
2.	Understanding of digital terrain and surface model generation tools
3.	Understanding of Primary and Secondary topographic Attributes and applications

Course Outline / Content	
Unit 1	Digital Terrain Modelling: principles and applications, data sources, scale and quality assessment.
Unit 2	Principles of Photogrammetry, Radargrammetry, LiDAR and GPS-based altitude determination.
Unit 3	DTM vs. DSM, Contour/Point interpolation: IDW, Spline, Krigging etc.; 3D Visualization
Unit 4	Terrain Analysis on Gridded DEM: slope, aspect, curvature, flow direction, watershed delineation etc.
Unit 5	Terrain Classification; Secondary topography Attributes – wetness indices, stream-power indices, radiation indices, temperature indices etc.

Suggested / Recommended Readings	
1.	De Mers, M.N. 2008. Fundamentals of Geographic Information Systems, 4th Edition, John Wiley & Sons, NewYork.
2.	El-Sheimy, N., Valeo, C. and Habib, A. 2005. Digital Terrain Modeling: Acquisition, Manipulation and Applications, Artech House.
3.	Florinsky, I.V. 2012. Digital Terrain Analysis in Soil Science and Geology, Academic Press, Elsevier.
4.	Jensen, J.R. 2007. Remote Sensing of the Environment: An Earth Resource Perspective, 2nd Edition, Pearson.
5.	Jensen, J.R. 2015. Introductory Digital Image Processing: A Remote Sensing Perspective, 4th Edition, Pearson.
6.	Peckham, R.J. and Jordan, G. (eds.), 2007. Digital Terrain Modelling: Development and Applications in a Policy Support Environment, Springer.
7.	Wilson, J.P. and Gallant, J.C. (eds.), 2000. Terrain Analysis: Principles and Applications, John Wiley & Sons.
8.	Wilson, J.P. 2018. Environmental Applications of Digital Terrain Modeling, Wiley-Blackwell.
9.	Zhou, Q., Lee, B. and Tang, G. (eds.), 2008. Advances in Digital Terrain Analysis, Springer.

Facilitating Course Learning Outcomes	
Unit 1	Board understanding of Digital Terrain Modelling
Unit 2	Understanding of DTM/DSM extraction techniques

Unit 3	Understanding of digital surface model generation tools
Unit 4	Understanding of Primary topographic Attributes and applications
Unit 5	Understanding of Secondary topographic Attributes and applications

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E413: TRANS GEOGRAPHIES (UPC 122902413)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E413: TRANS GEOGRAPHIES (UPC 122902413)	4	3	1	0	BA/BSc in Geography	NA

Learning Objectives:

The learning objectives of this course are as follows:

- To apply key concepts of geography to understand Transgender lives and life worlds.
- To bring awareness about Transgender issues.
- To examine the wayforwards for socio-economic development of Trans Persons.

Learning Outcomes:

The learning outcomes of this course are as follows:

- Understanding of concepts and terminologies of Trans communities.
- Application of geographical knowledge to Transperson's issues and life worlds.
- Awareness of Trans persons' needs for policy interventions at different levels and scales.

Course Outline:

Unit 1: Introduction: Concepts and Terminologies; Geographical concepts;Trans bodies: Key Theorisations

Readings for Unit 1

4. Browne, K., Nash, C. J., & Hines, S. 2010. Introduction: towards trans geographies, Gender, Place & Culture, 17(5), 573-57.
5. Dutta, Aniruddha, and Raina Roy, 2014. Decolonizing transgender in India: Some reflections, Transgender Studies Quarterly 1, no. 3: 320-337.
6. Halberstam, J. 2005. In a Queer Time and Place: Transgender Bodies, Sub cultural Lives, NYU Press.

Unit 2: Trans persons and space: Home, public space, urban space, work place & region.

Readings for Unit 2

2. Doan, P. L. 2010. The tyranny of gendered spaces–reflections from beyond the gender dichotomy, Gender, Place & Culture, 17(5), 635-654.
3. Choi, Y. 2013. The Meaning of Home for Transgendered People. In Queer Presences and Absences (pp. 118-140), Palgrave Macmillan, London.
4. Bradford, N. J. 1983. Transgenderism and the cult of Yellamma: Heat, sex, and sickness in South Indian ritual, Journal of Anthropological Research, 39(3), 307-322.

Unit 3: Trans persons & the Nation-state: laws, recognitions and Policies for Transgender inclusion, and development.

Readings for Unit 3

4. Dhall, P., & Boyce, P. 2015. Livelihood, exclusion and opportunity: socioeconomic welfare among gender and sexuality non-normative people in India (No. IDS Evidence Report; 106). IDS
5. Mittal, K. and Garg, S., 2015. Transgender in India: New developments and enactments. International Journal of Multidisciplinary Research and Development, 2(11), pp.402-405.
6. Bhattacharya, S., Ghosh, D. and Purkayastha, B., 2022. 'Transgender persons (protection of rights) act'of India: an analysis of substantive access to rights of a transgender community. Journal of Human Rights Practice, 14(2), pp.676-697.

Unit 4: Globalisation: Activism & Rights, Trans-local/ National- connections

Readings for Unit 4

4. Tyagi, M.S., Vats, A.C. and Tyagi, A.S., 2025. Trans Lives Across Borders: A Comparative Study of Transgender Rights and Realities in India and USA. Journal of Marketing & Social Research, 2, pp.17-24.
5. Dutta, A., 2013. Legible identities and legitimate citizens: The globalization of transgender and subjects of HIV-AIDS prevention in Eastern India. International Feminist Journal of Politics, 15(4), pp.494-514.
6. Dutta, A., 2024. Globalizing Through the Vernacular: Kothis, Hijras, and the Making of Queer and Trans Identities in India. Bloomsbury Publishing.

Tutorial Exercises

- Identifying Trans communities in India and their distinction
- Visiting/ Interacting with Trans persons in Delhi to make note on their experiences in everyday spaces
- Identifying Means and Methods to identify problems and finding solutions through community based engagements for Transgender inclusion in social and economic policy
- Decoding the development of Rights perspectives through translocal and transnational discourses.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Browne, K., Nash, C. J., & Hines, S. 2010. Introduction: towards trans geographies, Gender, Place & Culture, 17(5), 573-57.
- Dutta, Aniruddha, and Raina Roy, 2014. Decolonizing transgender in India: Some reflections, Transgender Studies Quarterly 1, no. 3: 320-337.
- Halberstam, J. 2005. In a Queer Time and Place: Transgender Bodies, Sub cultural Lives, NYU Press.
- Nash, C. J. 2010. Trans geographies, embodiment and experience, Gender, Place & Culture, 17(5), 579-595.
- Reddy, G. 2006. With Respect to Sex: Negotiating Hijra Identity in South India, Yoda Press.
- Mondal, B., Das, S., Ray, D. and Banerjee, D., 2020. “Their Untold Stories…”: Lived experiences of being a transgender (Hijra), A qualitative study from India. Journal of Psychosexual Health, 2(2), pp.165-173.

Suggested Readings:

- Whittle, S., and Stryker, S. 2006. The Transgender Studies Reader, EEUU: Routledge.

Digital materials: Not Applicable

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSE: GEOG-E414: URBAN AND REGIONAL PLANNING (UPC 122902414)

Course Title & Code	Credits	Duration (hours per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-E414: URBAN AND REGIONAL PLANNING (UPC 122902414)	4	3	1	0	BA/BSc in Geography	Basic Knowledge of Economics

Learning Objectives:

The learning objectives of this course are as follows:

- The students will be exposed to basic concepts of urban and regional planning.
- The students will be conscious of pioneering thinkers in urban planning.
- The students will be aware of the background theory of regional planning and its processes.

Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will learn about basic principles of urban and regional planning.
- The students will know about pioneering thinkers in the field of urban planning.
- The students will study about the different theoretical background and structure of the regional planning process.

Course Outline:

Unit 1: Introduction: Application to Urban and Regional Planning; 'Planning' as an Activity; Objectives in Planning – Simple and Complex; Pioneer Thinkers in Urban Planning – Anglo-American and European Tradition.

Readings

- Glasson John and Marshall Tim, 2007. *Regional Planning*, Taylor and Francis, London and New York.
- Hall Peter and Tewdwr-Jones Mark, 2010. *Urban and Regional Planning*, Routledge, London and New York.

Unit 2: Theorizing Regional Planning: Introduction, Approaches, Controls, Policy Cycle and Planning Process, Planning Professionals, Power Relations, Regional Growth and Development, Regional Spatial Structure, Sustainable Regional Development.

Readings

- Stiftel B. and Watson V. 2005. *Dialogues in Urban and Regional Planning*, Psychology Press.

- Wang X. and Hofe R. 2008. *Research Methods in Urban and Regional Planning*, Springer.

Unit 3: The Planning Process: Systems Planning versus Master Planning; New Planning Paradigms; Spatial Strategic Coordination.

Readings

- Lichfield N., Kettle P. and Whitbread M. 2016. *Evaluation in the Planning Process: The Urban and Regional Planning Series (Volume 10)*, Elsevier.
- Wong C. 2006. *Indicators for Urban and Regional Planning: The Interplay of Policy and Methods*, Routledge.

Unit 4: Urban and Regional Planning Practices in India: Public Sector (National, Inter-State, State, District, Metropolitan and Local), Private and Joint Sector.

Readings

- Kulshreshta S. K. 2012. *Urban and Regional Planning in India: A Handbook for Professional Practice*, Sage, New Delhi.
- Rahmaan A. U. 2011. *The Imperatives of Urban and Regional Planning: Concepts and Case Studies from the Developing World*, Xlibris Corporation.

Tutorial Exercises

- Discuss the relevance of regional planning
- Selected study of thinkers and their contributions
- Assignment on selected theories
- Evaluate the working of planning process
- Evaluate the contemporary of planning practices in India

Practical Record: Not Applicable

Teaching Hours:

Unit 1: 15 Hours
Unit 2: 15 Hours
Unit 3: 15 Hours
Unit 4: 15 Hours
Total: 60 Hours

Readings:

Essential Readings:

- Glasson John and Marshall Tim, 2007. *Regional Planning*, Taylor and Francis, London and New York.
- Hall Peter and Tewdwr-Jones Mark, 2010. *Urban and Regional Planning*, Routledge, London and New York.

Suggested Readings:

- Glasson John and Marshall Tim, 2007. *Regional Planning*, Taylor and Francis, London and New York.
- Hall Peter and Tewdwr-Jones Mark, 2010. *Urban and Regional Planning*, Routledge, London and New York.
- Kulshreshta S. K. 2012. *Urban and Regional Planning in India: A Handbook for Professional Practice*, Sage, New Delhi.
- Lichfield N., Kettle P. and Whitbread M. 2016. *Evaluation in the Planning Process: The Urban and Regional*

Planning Series (Volume 10), Elsevier.
- Rahmaan A. U. 2011. *The Imperatives of Urban and Regional Planning: Concepts and Case Studies from the Developing World*, Xlibris Corporation.
- Stiftel B. and Watson V. 2005. *Dialogues in Urban and Regional Planning*, Psychology Press.
- Wang X. and Hofe R. 2008. *Research Methods in Urban and Regional Planning*, Springer.
- Wong C. 2006. *Indicators for Urban and Regional Planning: The Interplay of Policy and Methods*, Routledge.

Digital materials: Not Applicable

SKILL BASED (SB) COURSE:
GEOG-S401: SPATIAL DATA ANALYSIS AND REPORT WRITING
(UPC 122903401)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical / Practice		
GEOG-S401: SPATIAL DATA ANALYSIS AND REPORT WRITING (UPC 122903401)	2	1	0	1	BA/BSc in Geography	

Learning Objectives:

The learning objectives of this course are as follows:

- The students will be exposed to the advanced and closing stages of research.

Learning Outcomes:

The learning outcomes of this course are as follows:

- The students will be able to analyze the data, interpret the results, and present them through tables, maps and diagrams in a report.

Course Outline:

Unit 1: Methods of Data Analysis: Physical, Environmental, Social, Cultural and Economic Techniques of Analysis.

Readings for Unit 1:

- Clifford, N., Cope, M., Gillespie, T., & French, S. (Eds.). (2023). Key Methods in Geography (4th ed.). SAGE Publications Ltd., London.
- Neuman, W. L. (2014). Social Research Methods: Qualitative and Quantitative Approaches (7th ed.). Pearson, England.
- Patton, M. Q. (2002). Qualitative Research and Evaluation Methods (4th ed.). SAGE Publications, London.

Unit 2: Interpretation of Data and Writing of Report: Structure of Report, Techniques of Research Writings.

Readings for Unit 2:

- Godwill, E. A. (2015). Fundamentals of Research Methodology: A holistic guide for research

completion, management, Validation and ethics. Nova Science Publishers, New York.
- Oliver, P. (2008). Writing Your Thesis (2nd ed.). SAGE Publications Ltd, London.
- Parsons, T., & Knight, P. G. (2015). How to do your dissertation in geography and related disciplines (3rd ed.). Routledge, Taylor & Francis Group, United Kingdom.

Tutorial Exercises

Tasks will be assigned and assessed through presentations related to individual termpapers.

Practical Record: Not Applicable

Readings:

Essential Readings:

- Clifford, N., Cope, M., Gillespie, T., & French, S. (Eds.). (2023). Key Methods in Geography (4th ed.). SAGE Publications Ltd., London.
- Creswell, J. W. (2009). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (3rd ed.). SAGE publications, USA.
- Flick, U. (2020). Introducing Research Methodology: A beginner's guide to doing a research project (3rd ed.). SAGE Publications, New Delhi.

Suggested Readings:

- Gomez, B., & Jones III, J. P. (Eds.). (2010). Research Methods in Geography: A Critical Introduction. John Wiley & Sons Ltd. Publication, Wiley-Blackwell.
- Koli, L. N. (2025). □□□□□□ □□□□□□□□□ (Research Methodology) (2nd ed.). Y. K. Publishers, New Delhi. (Hindi)
- Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Age International (P) Ltd., Publishers, New Delhi.
- Krishna, G., & Singh, N. (2020). Researching Geography: The Indian Context (2nd ed.). Routledge, India.
- Lovell, S. A., Coen, S. E., & Rosenberg, M. W. (Eds.). (2023). The Routledge Handbook of Methodologies in Human Geography. Routledge, Taylor & Francis Group, United Kingdom.
- Patton, M. Q. (2002). Qualitative Research and Evaluation Methods (4th ed.). SAGE Publications, London.
- Telore, N. V., & Borude, S. A. (Eds.). (2023). Advances in Geographical Research. Jyotikiran Publication, Pune.

Digital materials: Not Applicable

RESEARCH METHODS COURSE:
GEOG-S402: TECHNIQUES OF RESEARCH WRITING (UPC: 122903402)

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
GEOG-S402: TECHNIQUES OF RESEARCH WRITING (UPC: 122903402)	2	1	1	0	BA/BSc in Geography	

Learning Objectives:

The learning objectives of this course are as follows:

- The student will learn to write research papers and dissertations.

Learning Outcomes:

The learning outcomes of this course are as follows:

- Understand and create effective research writing documents for end-users.
- Follow writing process and strategies to produce clear, high-quality research papers in a multitude of technical writing genres.
- Apply professional research writing conventions of clean and clear design, style, and layout of written materials.
- Analyze research documents appropriately with citing resources.
- Present research paper clearly, concisely and effectively.

Course Outline:

Unit 1: Fundamentals of Research Writing – Introduction to research writing; Knowing the details of research writing; Planning the purpose and material; Practicing for the audience and content delivery; Processing the steps, activities and outputs.

Unit 2: Different Methods in Research Writing – Nature and meaning of research methods; Types of research - pure and applied research; Types of communication research – Quantitative, Qualitative and Rhetorical; Questionnaire and Observation Methods; Data Collection and Data Analysis; Thesis / Synopsis writing – Structure and Importance.

Unit 3: Mechanics and Conventions of Research Writing – Research writing in broader spectrum -

The tone -The language; Conventions of Research; Evidence-based arguments; Thesis-driven analysis; Complexity and higher-order thinking.

Unit 4: Components of Research Writing – Formatting a research paper – Title page, Abstract, Introduction, Methodology, Conclusion, Proof reading, Citing sources.

Unit 5: Effective Research Presentation – Introduction - Definition, meaning, purpose and method, Personal skill, Language skill, Content development, Gathering supporting evidence.

Tutorial Exercises

Tasks will be assigned and assessed through presentations related to individual dissertation

Practical Record: Not Applicable

Readings:

- Alred G.J., Brusaw C.T. and Oliu W.E. 2011. Handbook of Technical Writing, St. Martin's Press.
- Booth W.C., Colomb G.C., Williams I.N. 2008. The Craft of Research, University of Chicago Press.
- Creswell J.D. and Creswell J.W. 2017. Research Design: Qualitative, Quantitative and Mixed Methods Approaches. Sage.
- Flick U. 2014. Introducing Research Methodology: A Beginner's Guide to Doing a Research Project. Sage.
- Jones D.J. and Sam Dragga S. 1998. Technical Writing Style. Allyn and Bacon.
- Kerlinger F.N. 2004. Foundations of Behavioral Research. Surjeet
- Morgan K. 2015. Technical Writing Process, Lightning Source Inc

Digital materials: Not Applicable