UNIVERSITY OF DELHI

MASTER OF ARTS

(GEOGRAPHY)

(Effective from Academic Year 2019-20)

PROGRAMME BROCHURE

XXXXX Revised Syllabus as approved by Academic Council on XXXX, 2019

and Executive Council on YYYY, 2019

CONTENTS

I. ABOUT THE DEPARTMENT

Historical Background of the Department

The Department was established in October 1959 as the "Department of Human Geography" with three young faculty members – Dr. S.S. Bhatia, Dr. S.G. Burman, and Mrs. Rukmani Srinivas. The Department took off under the leadership of Prof. George Kurian (1959-62), followed by Prof. V. L. S. Prakasa Rao (1965-73). Under their dynamic leadership, the department earned academic fame and a distinct identity in India, and among the International community. The Department gradually grew after 1973, under the able guidance of Prof. R. Ramachandran; and with widening scope of teaching and research, it was renamed as "Department of Geography" in 1976.

Department Highlights in terms of its ranking

As per QS World University Rankings, the Department of Geography, University of Delhi is placed in the ranking group 151-200 in 2019. The department was ranked 2nd in India in 2019. https://www.topuniversities.com/university-rankings/university-subject-rankings/2019/geography

The Programme

The department's master's programme – "**Master of Arts in Geography**", is a ***two-year program***, spread over ***four semesters***, and comprising ***18 courses of 90 credits*** (5 credits per course).

The 18 courses are grouped into two categories – ***Core*** (10 courses of 50 credits, all of which are compulsory), and ***Elective*** (8 courses of 40 credits, to be selected out of 50 courses[1]). In-lieu of up to two elective courses offered by the department, ***Open Elective*** courses, equivalent to a maximum of 10 credits, may be selected from elective courses offered by other departments.

Within the two-year period, a student has to complete ***20 credits each in semesters 1 and 2***, which is equivalent to ***four courses per semester*** (three core and one elective courses); and ***25 credits each in semesters 3 and 4***, which is equivalent to ***five courses per semester*** (two core and three elective courses).

Post Graduate Attributes of the Programme

The ten **core courses** cover central and vital areas of geography, about which all students should have knowledge. These ten courses are classifiable as follows, as per the traditional classification of knowledge:

A. Theoretical Base – Two courses on **Modern Geographical Thought**, and **Environment and Ecology**, builds up the theoretical and ideological foundations of geography.

B. Methodological Base – Three courses on **Statistical Techniques in Spatial Analysis**; **Remote Sensing and Geographical Information System**; and **Research Methods and Techniques in Geography** strengthens the methodological and practical fundamentals of geography.

[1] ***The Departmental Council will announce the actual number of elective courses to be offered, at the beginning of each semester.***

C. Systematic Approach – Three courses on **Geomorphological Analysis**, **Contemporary Human Geography**, and **New Economic Geography** address the contemporary issues in geography, both physical and human.

D. Regional Approach – **Geography of India**

E. Applications – **Vulnerability and Disaster**

The **elective courses** cover contemporary, specialized and super-specialized areas of physical and human geography. The elective courses, marked by an asterisk (*) are **open elective courses**, which are also offered to post-graduate students of other departments, subject to fulfilling eligibility conditions mentioned subsequently. In-lieu of up to two elective courses offered by the department, students may select open elective courses, equivalent to a maximum of 10 credits, from elective courses offered by other departments.

All the post-graduate courses are at advanced level, and have been constructed as continuity over the under-graduate courses, which are seen as basic, and are taught at foundation level. The present structure thus covers the foundational aspects of the discipline, and also builds towards specialization.

Process of Course Development (involving various stakeholders at different stages)

In the initial phase, the department commenced the process of updating its Master's curriculum that was decided in the meeting of the Departmental Council held on 19th May 2016.

Following the instruction of the university to revise the post-graduate courses on CBCS pattern, an intensive and rigorous process was started in the subsequent phase, whose milestone stages are mentioned below:

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Approval of **Credit Structure**	Approval of Semester wise **Course Titles**	Approval of **Course Details**	**Stakeholder inputs**	**Experts' Review**; and **Feedback from Students' and Alumni**	Approval by **Committee of Courses**
Approved in Departmental Council Meeting held on 25th April 2018	Approved in Departmental Council Meeting held on 03rd May 2018	Approved in Departmental Council Meeting held on 18th May 2018	Submitted to the University on 15th May 2018 and 22nd May 2018	Approved in Departmental Council Meeting held on 31st May 2018	Approved in Committee of Courses (Post-Graduate and Honours) Meeting held on 14th June 2018

Stage 7: Approval by **Faculty of Social Sciences** in its meeting held on 10th July 2018.

II. INTRODUCTION TO CBCS (CHOICE BASED CREDIT SYSTEM)

Scope

The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising core and elective courses. The courses are evaluated following the grading system, which provides uniformity in the evaluation and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations which enables the student to move across institutions of higher learning. The uniformity in evaluation system also enables the potential employers in assessing the performance of the candidates.

Definitions

(i) '**Academic Programme**' means an entire course of study comprising its programme structure, course details, evaluation schemes etc. designed to be taught and evaluated in a teaching Department/Centre or jointly under more than one such Department/ Centre.

(ii) '**Course**' means a segment of a subject that is part of an Academic Programme.

(iii) '**Programme Structure**' means a list of courses (Core, Elective, and Open Elective) that makes up an Academic Programme, specifying the syllabus, credits, hours of teaching, evaluation and examination schemes, minimum number of credits required for successful completion of the programme etc. prepared in conformity to University Rules, eligibility criteria for admission.

(iv) '**Core Course**' means a course that a student admitted to a particular programme must successfully complete to receive the degree, and which cannot be substituted by any other course.

(v) '**Elective Course**' means an optional course to be selected by a student out of such courses offered in the same or any other Department/Centre.

(vi) '**Open Elective**' means an elective course which is available for students of all programmes, including students of the same department. Students of other Department will opt these courses subject to fulfilling of eligibility of criteria as laid down by the Department offering the course.

(vii) '**Credit**' means the value assigned to a course which indicates the level of instruction.

(viii) '**One Credit**' equals to one-hour lecture/tutorial/or two-hour practical per week. Credit for a practical may be proposed as part of a course or as a separate practical course.

(ix) '**SGPA**' means Semester Grade Point Average calculated for individual semester.

(x) '**CGPA**' is Cumulative Grade Points Average calculated for all courses completed by the students at any point of time. CGPA is calculated each year for both the semesters clubbed together.

(xi) '**FGPA**' is Final Grade Points Average calculated in the last year of the course by clubbing together CGPA of two years, i.e., four semesters. FGPA is being given in Transcript form. To benefit the student a formula for conversation of FGPA into %age marks is given in the Transcript.

III. MASTER'S PROGRAMME DETAILS

Programme Objectives (POs)

The 'Master of Arts in Geography' programme offered by the department, "aims at empowering students with knowledge and skills for spatial thinking and analysis, to navigate real world problems, and contribute to society in a meaningful way".

Programme Specific Outcomes (PSOs)

At the end of the two-year (four-semester) course, students will have comprehensive knowledge about contemporary issues in geography, both physical and human.

Programme Structure

The Master's programme is a two-year course divided into four-semesters. A student is required to complete 90 credits for the completion of course and the award of degree.

Part	**Year**	***Semester***	***Semester***
Part – I	First Year	Semester I	Semester II
Part – II	Second Year	Semester III	Semester IV

Semester	**Core Courses**			**Elective Courses / Open Elective Courses (*)**			**Total No. of Papers**	**Credits (per paper)**	**Grand Total Credits**
	No. of Papers	**Credits (per paper)**	**Total Credits**	**No. of Papers**	**Credits (per paper)**	**Total Credits**			
I	3	5	15	1	5	05	**4**	**5**	**20**
II	3	5	15	1	5	05	**4**	**5**	**20**
III	2	5	10	3	5	15	**5**	**5**	**25**
IV	2	5	10	3	5	15	**5**	**5**	**25**
Total	**10**	**5**	**50**	**8**	**5**	**40**	**18**	**5**	**90**

- All courses, whether Core and Elective, will have 5 hours of teaching per week. However, in practical courses, the equivalent of one-hour of lecture/tutorial (L/T) will be two-hours practical (P).
- **(*)** In-lieu of up to two Elective courses of the department (in semesters III and/or IV), students can offer Open Electives courses of up to 10 credits from other departments.
- Duration of examination of each course shall be 3 hours (for Theory courses) and 4 hours (for Practical courses).
- Each course will be of 100 marks, out of which 70 marks shall be allocated for semester examination, and 30 marks for internal assessment.

The semester wise details of Master's Course are given below.

SEMESTER I

The student will study three core courses, which are compulsory; and select one elective course.

Core Courses (All the three courses are compulsory)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG1C01	Geomorphological Analysis	4	1	0	5
GEOG1C02	Geography of India	4	1	0	5
GEOG1C03	Statistical Techniques in Spatial Analysis	4	1	0	5

Elective Courses (Select any one course)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG1E01	Analytical Physical Geography (Practical)	2	0	6	5
GEOG1E02	Climatology and Biogeography	4	1	0	5
GEOG1E03	Cultural Geography (*)	4	1	0	5
GEOG1E04	Geography of Urban Environment	4	1	0	5
GEOG1E05	Historical Geography	4	1	0	5
GEOG1E06	Population and Development (*)	4	1	0	5
GEOG1E07	Social Geography of India (*)	4	1	0	5
GEOG1E08	Techniques and Methods of Regional Analysis	4	1	0	5
GEOG1E09	Transport Network and Flow Analysis	4	1	0	5
GEOG1E10	Urban Geography	4	1	0	5

SEMESTER II

The student will study three core courses, which are compulsory; and select one elective course.

Core Courses (All the three courses are compulsory)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG2C01	Environment and Ecology	4	1	0	5
GEOG2C02	Contemporary Human Geography	4	1	0	5
GEOG2C03	Remote Sensing and Geographical Information System (Practical)	2	0	6	5

Elective Courses (Select any one course)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG2E01	Agricultural Geography	4	1	0	5
GEOG2E02	Everyday Geographies (*)	4	1	0	5
GEOG2E03	Geographies of Gender and Development in South Asia	4	1	0	5
GEOG2E04	Geography of Cryosphere	4	1	0	5
GEOG2E05	Geography of Global Capitalism	4	1	0	5
GEOG2E06	Geography of Migration	4	1	0	5
GEOG2E07	Heritage Conservation	4	1	0	5
GEOG2E08	Hydrology and Water Resources Management	4	1	0	5
GEOG2E09	Multivariate Statistical Analysis	4	1	0	5
GEOG2E10	Regional Geography	4	1	0	5

SEMESTER III

The student will study two core courses, which are compulsory; and select three elective courses.

In-lieu of one of the three elective courses, students may select open elective course(s) equivalent to 5 credits, from open elective courses offered by other departments.

Core Courses (Both the courses are compulsory)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG3C01	Modern Geographical Thought	4	1	0	5
GEOG3C02	Research Methods and Techniques in Geography	4	1	0	5

Elective Courses (Select any three courses)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG3E01	Cities of Global South (*)	4	1	0	5
GEOG3E02	Climate Change and Adaptations	4	1	0	5
GEOG3E03	Demography and Population Geography	4	1	0	5
GEOG3E04	Development Theory and Regional Policy	4	1	0	5
GEOG3E05	Digital Image Processing (Practical)	2	0	6	5
GEOG3E06	Geographical Information System (Practical)	2	0	6	5
GEOG3E07	Geography in India	4	1	0	5
GEOG3E08	Geography of South Asia	4	1	0	5
GEOG3E09	Land, Ocean and Atmosphere Interaction	4	1	0	5
GEOG3E10	Landslide Risk Analysis	4	1	0	5
GEOG3E11	Media Geography	4	1	0	5
GEOG3E12	Natural Resources Management	4	1	0	5
GEOG3E13	Regional Development in India (*)	4	1	0	5
GEOG3E14	Sexuality and Space (*)	4	1	0	5
GEOG3E15	Territorial Bases of Politics in India	4	1	0	5

SEMESTER IV

The student will study two core courses, which are compulsory; and select three elective courses.

In-lieu of one of the three elective courses, students may select open elective course(s) equivalent to 5 credits, from open elective courses offered by other departments.

Core Courses (Both the courses are compulsory)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG4C01	Vulnerability and Disaster	4	1	0	5
GEOG4C02	New Economic Geography	4	1	0	5

Elective Courses (Select any three courses)

Course Code	Course Name	Hours per Week			Credits
		L	T	P	
GEOG4E01	Project Report (Dissertation)	1	0	8	5
GEOG4E02	Applied Climatology (Practical)	2	0	6	5
GEOG4E03	Culture, History and Landscape	4	1	0	5
GEOG4E04	Demographic Techniques	4	1	0	5
GEOG4E05	Energy Geographies	4	1	0	5
GEOG4E06	Environmental Impact Assessment (*)	4	1	0	5
GEOG4E07	Gender, Space and Society in India	4	1	0	5
GEOG4E08	Geographies of Social Justice in India	4	1	0	5
GEOG4E09	Geography of Health	4	1	0	5
GEOG4E10	Geography of Himalaya	4	1	0	5
GEOG4E11	Integrated Watershed Management	4	1	0	5
GEOG4E12	Terrain Modelling	4	1	0	5
GEOG4E13	Trans Geographies (*)	4	1	0	5
GEOG4E14	Urban and Regional Planning	4	1	0	5
GEOG4E15	Urban Development and Management	4	1	0	5

Selection of Elective Courses

Each elective course, including courses marked as open elective (*), will be offered to a maximum of 25 students from the department, based on merit (and other additional academic abilities[2]) to be decided by the department at the beginning of each semester. For an elective course, including courses marked as open elective (*), to run in any of the semesters, it should be offered by a minimum of 5 students.

In the case of project report (dissertation), a maximum of two students per faculty member will be offered at the beginning of third semester, but the evaluation will be done at the end of fourth semester.

Allocations to elective courses, including project report (dissertation), are purely academic, on the basis of merit (and additional academic abilities), and no reservations or concessions will apply.

Eligibility for Open Elective Courses

Elective course marked by an asterisk (*) are also available to post-graduate students from Faculty of Arts, Faculty of Social Sciences, and Department of Environmental Studies (University of Delhi).

The maximum number, and eligibility criteria for the open elective courses (*) for students from outside the department will be decided by the department at the beginning of each semester.

Students of other departments, offering the open elective courses will have to abide by the various rules and regulations of the Department of Geography. Any, request for re-adjustment of time-tables, and re-scheduling of submission of assignments or conduct of mid-semester and end-semester examinations will not be entertained.

Teaching

The faculty of the Department is primarily responsible for organizing lecture work for the Master's program. Weekly teaching plan is tentative. There shall be 90 instructional days per semester excluding examinations (mid-semester or end-semester examinations).

The students selected for project report (dissertation) are expected to utilize a minimum of 8 hours per week on tasks associated with the project report (dissertation) – review of literature, collection and analysis of data, preparation of tables and maps, report writing, etc. in consultation with the Supervisor. This is in addition to the one hour mandatory consultation with the Supervisor.

The students offering project report (dissertation) will have to attend the classes of other courses as per the time-table. They will have to appear in mid-semester examinations, and submit assignments of other core and elective courses as per schedule.

[2] ***As decided by the Department Council.***

Eligibility for Admission

Exam Type	Seats Distribution (by category)				
	General	SC	ST	OBC	Total
Entrance	19	6	3	10	**38**
Merit	19	6	3	10	**38**
Total	**38**	**12**	**6**	**20**	**76**

Exam Type	Course Requirements	Marks Requirements
Entrance	BA (Hons) / BSc (Hons) in Geography from University of Delhi or any other university recognized by University of Delhi	55% or above marks in aggregate or an equivalent grade
	BA / BSc / B.Ed. with Geography or its equivalent from University of Delhi or any other university recognized by University of Delhi	55% or above in Geography papers and 50 % or above in aggregate or an equivalent grade
Merit	BA (Hons) Geography from University of Delhi	50% or above marks in aggregate or an equivalent grade

Kindly note that additional reservations (including supernumerary categories), and concessions apply as per the latest university rules.

Assessment of Students' Performance and Scheme of Examinations

Assessment of students' performance shall consist of following two components:

- Internal Assessment – 30
  - Attendance – 5
  - Assignments – 15
  - Mid-Semester Examinations – 10
- End-Semester Examinations – 70

The scheme of examination for practical courses, field-based courses, and the course on project report (dissertation) has been explained in the individual course details.

Pass Percentage and Promotion Criteria

A student has to score a minimum of 40% in each course (whether theory or practical), separately in the end-semester examination (28 of 70 marks), and in the total (40 of 100 marks) to pass the course. No separate pass is required in the internal assessment component. Students failing in an individual course are allowed to repeat only the end-semester examinations in the next appropriate session, but within the span period (see below). No repetition will be allowed in practical and field-based courses, and no re-submission of dissertation is permissible in the course on project report (dissertation). Also there is no provision for repeating or re-submitting any of the components of internal assessments (assignments and mid-semester examinations).

Part I to Part II Progression

A student should separately pass 50% of the core and elective courses in Part I (Semesters I and II), i.e. three of the six core courses, and one of the two elective courses, to secure promotion to Part II of the master's program (Semester II to Semester III). However, the student will have to clear the remaining paper(s) while studying in Part II of the programme. Students not promoted to Part II, can however retain the marks in the papers in which they have secured Pass marks.

Conversion of Marks into Grades

Conversion of Marks into Grade as per standard University rule

Grade Points

Grade point table as per University Examination rule

SGPA / CGPA / FGPA Calculation

As per University Examination rule

Conversion of FGPA into Marks

As notified by competent authority the formula for conversion of FGPA into marks is: Final %age of marks = CGPA based on all four semesters × 9.5

Division of Degree into Classes

Post Graduate degree to be classified based on FGPA obtained into various classes as notified into Examination policy.

Attendance Requirement

As per University Examination rule

Span Period

No student shall be admitted as a candidate for the examination for any of the Parts/Semesters after the lapse of **four** years from the date of admission to the Part I/Semester I of the Master's Programme.

Guidelines for the Award of Internal Assessment Marks in Master's Programme

The Internal Assessment of 30 marks will comprise following three components:

- Attendance – 5
- Assignments – 15
- Mid-Semester Examinations – 10

Conversion of attendance into marks will be as per the following standard formula:

- 0 mark for Attendance below 67%
- 1 mark for Attendance equal and above 67% but below 70%
- 2 marks for Attendance equal and above 70% but below 75%
- 3 marks for Attendance equal and above 75% but below 80%
- 4 marks for Attendance equal and above 80% but below 85%
- 5 marks for Attendance equal and above 85%

Assignments can be individual or group work based term-papers (with or without presentations), book reviews, field diary/journal, research papers, etc. The assignments, being a component of internal assessment, can never be repeated or re-submitted.

Mid-semester examination will be conducted for all courses in which an end-semester examination is also to be held. They are to be held preferably in the week before the mid-semester break, and should follow the pattern and rigour, similar to the end-semester examinations. Mid-semester examination will be of 2-hours duration and carry 50 marks. The marks are to be proportionately reduced to 10 with rounding to nearest whole mark. No classes (lectures, tutorials or practicals) will be held during the week in which the mid-semester examinations are held. Mid-semester examinations will not be held again for absenting students, and such students will be awarded zero marks. The mid-semester examinations, being a component of internal assessment, can never be repeated.

In the course on project-report (dissertation), the internal assessment will be based on the supervisor's evaluation of the student's performance in performing various tasks associated with preparation of the project report (dissertation), over the span of one-year (Part II).

In the event of a student failing to obtain 40% marks (separately in end-semester examination and total), the internal assessment will not be repeated, and the marks obtained in the first instance will carry forward.

Hence, students are advised to take the internal assessments seriously as there is no provision for internal assessments to be repeated.

IV. COURSE WISE CONTENT DETAILS FOR MASTER'S PROGRAMME

Course Code – A Note on Formulation

The course-codes are alpha-numeric combination of eight digits (five letters and three numbers).

The first four digits are capital alphabets referring to the **discipline** (of the Master's programme). Here, "GEOG", refers to the discipline "Geography", which is a common prefix for all the course codes, thereby distinguishing these courses from courses of other disciplines.

The fifth digit is a number, referring to the **semester**. Each number is read as follows –
1 is Semester I
2 is Semester II
3 is Semester III
4 is Semester IV

The sixth digit is a capital alphabet, referring to the **type of course**. This is read as follows –
C is for Core courses
E is for Elective courses

The seventh and eighth digits are numbers, referring simply to the **serial number of individual courses**, within each category.

MASTER of ARTS in GEOGRAPHY
Semester I

MASTER of ARTS in GEOGRAPHY
Semester I – Core Course

GEOG1C01: GEOMORPHOLOGICAL ANALYSIS

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

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

Course Learning Outcome:
1) Explain basic principles for development of landforms through time.
2) Make an initial geomorphological fieldwork.
3) Learn the techniques of geomorphological analysis.

Course Contents:
Unit-I. Geomorphology: Approaches in analysis of geomorphology, fundamental concepts in geomorphology, scopes of geomorphology
Unit-II. Global morphology and tectonics: Development of ideas of global tectonics, continental drift, palaeo-magnetic evidence, global seismicity, sea-floor spreading; plate tectonics, mountain building with the Himalaya as an example.
Unit-III. Surface processes and landforms: slope processes and forms, fluvial processes and landforms, aeolian processes and landforms, glacial and periglacial processes and landforms, work of ocean and coastal landforms
Unit-IV. Endogenetic and Exogenetic Processes Interaction: rate of uplift, measurement techniques, denudation rates, factors controlling denudation rates, effects of tectonics on drainage development, sea level change
Unit-V. Planetary geomorphology: approaches to planetary geomorphology, landforms development

Suggested Readings:
1. Allison, Robert (ed.) 2002. *Applied Geomorphology: Theory and Practice*, John Wiley & Sons Ltd., Chichester, U.K.
2. Anderson, R.S. and Anderson, S.P. 2010. *Geomorphology: The Mechanics and Chemistry of Landscapes*, Cambridge University Press, Cambridge.
3. Bierman, P.R. and Montgomery, D.R. 2014. *Key Concepts in Geomorphology*, Macmillan Education, New York.
4. Bloom, A.L. 2003. *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi.

5. Bridges, E.M. 1990. *World Geomorphology*, Cambridge University Press, Cambridge, U.K.
6. Clark, M.J. (ed.) 1988. *Advances in Periglacial Geomorphology*, John Wiley & Sons Ltd., Chichester, U.K.
7. Condie, K.C. 2003. *Plate Tectonic and Crustal Evolution*, Butterworth-Heinemann, Oxford, Burlington.
8. Huggett, R.J. 2011. *Fundamentals of Geomorphology*, Routledge, New York.
9. Kale, V.S. and Gupta, A. 2001. *Introduction to Geomorphology*, Orient Longman, Hyderabad, India.
10. Knighton, A.D. 1984. *Fluvial Forms and Processes*, Edward Arnold Publishers Ltd., London, U.K.
11. Leopold, L.B., Wolman, M.G., and Miller, J.P. 1964. *Fluvial Processes in Geomorphology*, W.H. Freeman Company, San Francisco.
12. Richards, K.S. 1982. *Rivers: Form and Processes in Alluvial Channels*, Methuen & C., Ltd., London.
13. Schumm, S.A. 1977. *The Fluvial System*, John Wiley & Sons, Inc., New York.
14. Singh Savindra. 2014. *भू-आकृति विज्ञान का स्वरूप*, Prayag Pustak Bhawan, Allahabad.
15. Summerfield, M.A. 1991. *Global Geomorphology*, Pearson Prentice Hall, U.K.
16. Thornbury, W.D. 1969. *Principles of Geomorphology*, John Wiley and Sons, New York.

Teaching Plan:

Week 1	Geomorphology: Concept and Processes	Allison, Robert (ed.) (2002)
	Approaches in analysis of Geomorphology	Bierman, P.R. and Montgomery, D.R. (2014)
	Fundamental concepts in Geomorphology	Thornbury, W.D. (1969) Huggett, R.J. (2011)
Week 2	Geomorphic Processes	Thornbury, W.D. (1969)
	Scopes of Geomorphology	Allison, Robert (ed.) (2002); Bierman, P.R. and Montgomery, D.R. (2014)
Week 3	Global Morphology and Tectonics	Anderson, R.S. and Anderson, S.P. (2010)
	Development of ideas of global tectonics	Anderson, R.S. and Anderson, S.P. (2010)
Week 4	Plate tectonics	Anderson, R.S. and Anderson, S.P. (2010)
	Modes of landform development	Anderson, R.S. and Anderson, S.P. (2010)
Week 5	Surface Processes and Landforms	Anderson, R.S. and Anderson, S.P. (2010)
Week 6	Slope processes and forms	Kale, V.S. and Gupta, A. (2001)
Week 7	Fluvial processes and landforms	Leopold, L.B., Wolman, M.G., and Miller, J.P. (1964)
Week 8	Aeolian processes and landforms	Kale, V.S. and Gupta, A. (2001)
Week 9	Glacial, Periglacial processes and landforms	Bloom, A.L. (2003); Clark, M.J. (ed.) (1988)
Week 10	*Mid-Semester Examinations*	
Week 11	*Mid-Semester Break*	
Week 12	Rates of uplift and denudation	Condie, K.C. (2003)
Week 13	Effects of tectonics and drainage development	Condie, K.C. (2003)
Week 14	Sea level change	Knighton, A.D. (1984); Schumm, S.A. (1977)
Week 15	Planetary geomorphology	Anderson, R.S. and Anderson, S.P. (2010)
Week 16	Approaches to planetary geomorphology	Anderson, R.S. and Anderson, S.P. (2010)
Week 17	Landform development	Summerfield, M.A. (1991)

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Knowledge of fundamental concepts in Geomorphology	Lectures and Tutorials	Assignments
II	Knowledge of tectonic movements	Lectures and Tutorials	Assignment
III	Knowledge of surface processes and resultant landforms	Lectures, Tutorials and Field visits	Field diaries
IV	Knowledge of rates of uplift vis-à-vis denudation	Lectures and Tutorials	Assignment
V	Knowledge of geomorphology of other planets	Lectures and Tutorials	Assignments

MASTER of ARTS in GEOGRAPHY
Semester I – Core Course

GEOG1C02: GEOGRAPHY OF INDIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) This course on the Geography of India assumes' that the students are familiar with the basic landforms, climate, soil, vegetation and population characteristics of India.
2) It is a course designed to enable students to broaden and deepen their understanding of India.

Course Learning Outcomes:
1) Students would gain understanding of 'new' geography of their country.
2) The spatial variations of dimensions of vitality and vulnerability would help them see the strength and weakness of the country.
3) The course would help students to contextualize much of their further learnings, teaching and research on India within the contents of this course.

Course Contents:
Unit I: India as a Geographical Entity: Ancient, Medieval and Colonial.
Unit II: Vitality of India: Spatial Pattern of Multi-culturalism, Economic Dynamism, Middle Class.
Unit III: Vulnerable India: Spatial Pattern of Poverty, Hunger, and Disability.
Unit IV: Place and Space (Place Names, Place Based Goods, Displacement).
Unit V: India in the Global Context (Indian Diaspora and Trade).

Suggested Readings:
1. Deshpande, C. B.1992.*India a Regional Interpretation*. New Delhi: Northern Book Center
2. Drèze, Jean and Amartya Sen. 1996. *India: Development and Participation*. Oxford University Press
3. Jayaram, N. 2004. *The Indian Diaspora: Dynamics of Migration.* Sage
4. Kapur, Anu. 2010. *Vulnerable India: A Geographical Study of Disasters.* Sage
5. Kapur, Anu. 2015. *Made Only in India: Goods with Geographical Indications*. Routledge.
6. Khullar, D.R. 2008. India: A Comparative Geography, Kalyani Publishers, New Delhi.
7. Krishan, Gopal. 2017. *The Vitality of India:* A Regional Perspective, Rawat Publications.
8. McKinsey & Company Inc. 2013. *Reimagining India: Unlocking the Potential of Asia's Next Superpower*. Simon & Schuster.
9. Ramachandran, R. 2018. *A History of Hinduism: The Past, Present and Future.* Sage.
10. Singh, Jagdish, 2003. *India: A Comprehensive Geography*, Radha Publications, Gorakhpur.
11. Shukla, Sandhya. 2003. *India Abroad*. Hyderabad: Orient Longman.
12. Tharoor, Shashi. 2016. *An Era of Darkness: The British Empire in India.* Aleph Book Company
13. Wolpert, Stanley. 2005. *India,* 3rd Ed. Berkeley: University of California Press

Teaching Plan:

Week 1-2	:	India as a Geographical Entity
Week 3-4	:	Sequential Occupancy of India: Ancient and Medieval
Week 5-6	:	Colonial Impact
Week 7-8	:	Vitality of India: Indicators
Week 9	:	Vitality of India Spatial Pattern
Week 10	*:*	*Mid-Semester Examinations*
Week 11	*:*	*Mid-Semester Break*
Week 12-13	:	Vulnerable India: Indicators
Week 14	:	Vulnerable India: Spatial Pattern
Week 14-15	:	Place and space, Place Names, Place Based Goods,
Week 16-17	:	Space, Displacement, Diaspora

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course learning outcomes	Teaching and learning activity	Assessment task
I	Broaden and deepen the understanding of India	Lecture; audio-visual; interaction; discussion	Q&A
II	Know the weaknesses of India	Lecture; audio-visual; interaction; discussion	Q&A
III	Know the strengths of India	Lecture; audio-visual; interaction; discussion	Q&A
IV	Understand the relationship between India and its geography	Lecture; audio-visual; interaction; discussion	Term paper
V	Understand the relationship between India and World	Lecture; audio-visual; interaction; discussion	Term paper

MASTER of ARTS in GEOGRAPHY
Semester I – Core Course

GEOG1C03: STATISTICAL TECHNIQUES IN SPATIAL ANALYSIS

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) This course studies the concept of statistics and its geographical applications.
2) It lays the foundation of quantitative techniques to the students for spatial analysis.
3) It will enhance the ability to interpret data statistically.

Course Learning Outcomes:
1) The students will learn various statistical skills.
2) The students will know how the statistical theories and functions will be applied in geography.
3) The students will learn about the significance test to strengthen their argument with facts and represent data.

Course Contents:
Unit I: Introduction: indices of inequality and disparity, Probability Theory: Normal, Binomial and Poisson distributions.
Unit II: Hypothesis testing: F-Distributions, analysis of variance, one-way and two-way classification.
Unit III: Non-parametric Tests: Chi-Square, Kolmogorov-Smirnov, Mann-Whitney and Kruskal-Wallis.
Unit IV: Correlation and Regression Analysis: rank order and product moment correlation; linear regression, multi-linear regression.
Unit V: Pattern Analysis: nearest neighbor analysis, quadrant analysis, entropy analysis, trend surface analysis; Introducing Flow Analysis Techniques.

Suggested Readings:
1. Bart James E. and Gerld M. Barber, 1996. *Elementary Statistics for Geographers*, The Guieford Press, London.
2. Briggs, W. 2016. *Uncertainty: The soul of modeling, probability & statistics*. Springer International Publishing. doi:10.1007/978-3-319-39756-6.
3. Eldon, D. 1983. *Statistics in Geography: A Practical Approach*, Blackwell, London.
4. Cressie, N.A.C. 1991. *Statistics for Spatial Analysis*, Wiley, New York.
5. Gregory, S. 1978. *Statistical Methods and the Geographer* (4th Edition), Longman, London.
6. Davis, John C. (2002). *Statistics and Data Analysis in Geology* (third edition), John Wiley & Sons.
7. Mathews, J.A. 1987. *Quantitative and Statistical Approaches to Geography: A Practical Manual*, Pergamon, Oxford.
8. McGrew, Jr. J.C. and Monroe, C.B. (2000). *An Introduction to Statistical Problem Solving in*

Geography (second edition), McGraw Hill, Boston.

9. Nussbaum, E. M. 2015. *Categorical and Nonparametric Data Analysis: Choosing the Best Statistical Technique*. New York: Taylor & Francis. doi:10.1007/978-3-319-39756-6
10. Rohatgi, V. K. and Saleh, A. K. 2015. *An Introduction to Probability and Statistics*, John Wiley & Sons, New Jersy.
11. Tayler, P.J. 1977. *Quantitative Methods in Geography: An Introduction to Spatial Analysis*, Houghton Mifflin Company Boston, London.
12. Wei, W.S. 1990. *Time Series Analysis: Variate and Multivariate Methods*, Addison Wesley Publishing.
13. Yeates, Mauris, 1974. *An Introduction to Quantitative Analysis in Human Geography*, Mc Graw Hill, New York.

Teaching Plan:

Week 1:	Session 1:	Introduction, Origin and Context
	Session 2:	Concept of probability theory.
Week 2:	Session 1:	Outline of normal, binomial and poison distribution
	Session 2:	Solving Problems related to distributions
Week 3:	Session 1:	Type I and Type II error
	Session 2:	Concept of Significance test
Week 4:	Session 1:	Z-Test and solving of problems
	Session 2:	t-test and solving of problems.
Week 5:	Session 1:	Concept of hypothesis testing
	Session 2:	Null and research hypothesis
Week 6:	Session 1:	Inductive approach
	Session 2:	Deductive approach
Week 7:	Session 1:	Concept of F-Distribution
	Session 2:	Null and research hypothesis
Week 8:	Session 1:	Deductive approach
	Session 2:	Concept of F-Distribution
Week 9:	Session 1:	Solvang's problems of F-Distributions
	Session 2:	Concept of ANOVA
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	One-way classification
	Session 2:	Two-way classification
Week 13:	Session 1:	Solving problems of One-way and Two-way classification
	Session 2:	No-parametric test
Week 14:	Session 1:	Chi-Square, Kolmogorov-Smirnov
	Session 2:	Mann-Whitney and Kruskal-Wallis
Week 15:	Session 1:	Problem solving of non-parametric test
	Session 2:	Correlation and its types
Week 16:	Session 1:	**L**inear regression, multi-linear regression and flow analysis techniques
	Session 2:	Rank order and Product moment correlation
Week 17:	Session 1:	Pattern Analysis
	Session 2:	Introduction of flow analysis techniques

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Concept of probability density function and normal, binomial and poison distributions	Classroom lectures, PPTs and tutorials, debate and discussions	How is the conceptualization of PDF and its types applied in statistical analysis?
II	Sampling theory	Classroom lectures and tutorials, PPTs, debate and discussions	Sampling theory and its uses in social science research
III	F-Distributions and ANOVA	Classroom lectures and tutorials,PPTs, debate and discussions	How to conceptualise the ANOVA with one-way and two-way classification?
IV	Non-Parametric test	Classroom lectures,PPTs and tutorials, debate and discussions	Uses of non-parametric tests in scientific discourse
V	Correlation and regression	Classroom lectures PPTs and tutorials, debate and discussions	Uses of Correlation and regression in spatial analysis

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E01: ANALYTICAL PHYSICAL GEOGRAPHY (PRACTICAL)

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 2, Practical – 6)

Course Objectives:
1) To know diverse methods of analysing and interpreting geographical and geological data.
2) To develop an understanding of how this knowledge may be applied in practice.

Course Learning Outcome:
1) Apply the water balance equation to various hydrological problems in time and space.
2) Learn the techniques of geographical analysis.
3) Analyse hydro-meteorological data for better water resource management in an area.

Course Outline:
Unit-I. Quantitative analysis of morphometric data.
Unit-II. Interpretation of geological maps and identification of rocks.
Unit-III. Surface soil loss equations of watersheds.
Unit-IV. Flood frequency analysis: Waybill's plotting position, Gumbel and Log Pearson Type-III distributions.
Unit-V. Water balance analysis; Humidity and aridity indices: Koeppen, Bailey and Thornthwaite classification.

Suggested Readings:
1. Chorley, R.J. *(ed.) 1972. Spatial* Analysis in Geomorphology, Harper and Row.
2. Doornkamp, J.C. and King, C.A.M. 1971. *Numerical Analysis in Geomorphology*: *An Introduction,* Arnold, London.
3. Mayer, L. 1990. *Introduction to Quantitative Geomorphology*, Prentice Hall, New Jersy.
4. Morisawa, M. 1983. *Geomorphological Laboratory Mannual*, John Wiley & Sons, New York.
5. Pal, S.K. 1998. *Statistics for Geoscientists: Techniques and Application*, Concept Publication Company, New Delhi.
6. Singh, R.L. 1980. *Elements of Practical Geography*, Kalyani Publications, New Delhi.

Teaching Plan:

Week 1	Quantitative Analysis of Morphometric data	Morisawa, M. (1983); Mayer, L. (1990)
Week 2	Quantitative Analysis of Morphometric data	Morisawa, M. (1983); Mayer, L. (1990)
Week 3	Interpretation of Geological Maps	Singh, R.L. (1980)
Week 4	Interpretation of Geological Maps and Rocks	Singh, R.L. (1980)
Week 5	Surface Soil loss Equations of watersheds	Doornkamp, J.C. and King, C.A.M. (1971)
Week 6	Flood Frequency Analysis: Waybill's plotting position, Gumbel and Log Pearson Type-III distributions	Pal, S.K. (1998)
Week 7	Flood Frequency Analysis: Waybill's plotting position, Gumbel and Log Pearson Type-III distributions	Pal, S.K. (1998)
Week 8	Flood Frequency Analysis: Waybill's plotting position, Gumbel and Log Pearson Type-III distributions	Pal, S.K. (1998)
Week 9	Water balance Analysis	Thornthwaite, C.W. and Mather, J.R. (1957)
Week 10	*Mid-Semester Examinations*	
Week 11	*Mid-Semester Break*	
Week 12	Water balance Analysis	Thornthwaite, C.W. and Mather, J.R. (1957)
Week 13	Humidity and Aridity Indices: Koeppen, Bailey and Thornthwaite classification	Thornthwaite, C.W. and Mather, J.R. (1957)
Week 14	Humidity and Aridity Indices: Koeppen, Bailey and Thornthwaite classification	Thornthwaite, C.W. and Mather, J.R. (1957)

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Quantitative Analysis of Morphometric data	Lectures/Tutorials and Field visit /laboratory based Practicals	Field visit / Lab work
II	Interpretation of Geological Maps and identification of Rocks	Lectures/Tutorials and Field visit /laboratory based Practicals	Field visit / Lab work
III	Surface Soil loss Equations of watersheds	Lectures/Tutorials and Field visit /laboratory based Practicals	Field visit / Lab work
IV	Flood Frequency Analysis	Lectures/Tutorials and Field visit /laboratory based Practicals	Field visit / Lab work
V	Water balance Analysis; Humidity and Aridity Indices	Lectures/Tutorials and Field visit /laboratory based Practicals	Field visit / Lab work

MASTER OF ARTS IN GEOGRAPHY
Semester I – Elective Course

GEOG1E02: CLIMATOLOGY AND BIOGEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objective:
1) In depth study of Climatology and Biogeography.
2) Knowledge of interrelationship between man and nature.
3) Detail discussion of floral and faunal provinces and its various dimensions.

Course Learning Outcome:
1) Dynamics of climate and related theories.
2) Understanding of Vegetation as an index of climate.
3) Assessment of different aspects of floral and faunal provinces.

Course Content:
Unit I: Energy in the earth-atmosphere system.
Unit II: Circulations within the atmosphere.
Unit III: World Climatic Patterns (Koppen)
Unit IV: Evolution of major groups of floral and faunal provinces.
Unit V: Ecological successions: stages and climax.

Selected Readings:
1. Clarke, G. L. 1967. *Elements of ecology*, New York: John Wiley Pub.
2. Haden-Guest, S., Wright, J. K. and Teclaff, E. M. 1956. *World Geography of Forest Resources*, New York: Ronald Press Co.
3. Hoyt, J.B. 1992. *Man, and the Earth*, Prentice Hall, U.S.A.
4. Huggett, R.J. 1998. *Fundamentals of Biogeography*, Routeldge, U.S.A.
5. Lal, D. S. 2003. *Climatology*, Allahabad: Sharda Pustak Bhawan.
6. Lapedes, D.N. 1974. *Encyclopaedia of Environmental Science* (eds.), McGraw Hill.
7. Mathur, H.S. 1998. *Essentials of Biogeography,* Anuj Printers, Jaipur.
8. *Mountain and Tree cover in Mountain Regions Report. 2002*, UNEP-WCMC.
9. Parmesan, C., Yohe, G. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature,* 421 (6918), 37–42.
10. Singh Savindra 2015. *Paryawaran Bhoogol, Prayag Pushtak Bhawan*, Allahabad (Hindi).
11. Sivaperuman, Chandrakasan et al. 2018. *Biodiversity and Climate Change Adaptation in Tropical Islands*. Academic Press, London.
12. Trewartha G. T., 1980. *An Introduction to Climate*, McGraw Hill Company, New York.

Teaching Plan

Week 1: Introduction (Trewartha G. T., (1980) and (Lal, D. S. 2003)
Week 2: Air masses and fronts (Trewartha G. T., (1980) and (Lal, D. S. 2003)
Week 3: Air masses and fronts (Trewartha G. T., (1980) and (Lal, D. S. 2003)
Week 4: Weather phenomenon related to air masses (Trewartha G. T., 1980) and (Lal, D. S. 2003)
Week 5: Theories of planetary winds and circulation (Trewartha G. T., 1980) and (Lal, D. S. 2003)
Week 6**:** Theories of planetary winds and circulation (Trewartha G. T., 1980) and (Lal, D. S. 2003)
Week 7: Jet streams (Trewartha G. T., (1980) and (Lal, D. S. 2003)
Week 8: Indian monsoon (Parmesan, C., Yohe, G. 2003).
Week 9: Climatic classifications (Trewartha G. T., (1980) and (Lal, D. S.2003)
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12 Nature and scope of Biogeography (Huggett, R.J. 1998).
Week 13: Basic ecological principles (Clarke, G. L. (1967).
Week 14: Major groups of floral provinces (Mathur, H.S. 1998)
Week 15: Major groups of faunal provinces (Mathur, H.S. 1998)
Week 16: Ecological succession (Parmesan, C., Yohe, G. 2003).
Week 17: Stages and Climax of Ecological succession (Hoyt, J.B. 1992).

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Introduction to the basic concepts climatology and weather phenomenon	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, presentations, discussions and debates.
II	Deep understanding of the different climatic variables and their impacts on the global climate	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, presentations, discussions and debates.
III	Overview of contemporary global climatic phenomenon such as climate change and global warming	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, presentations, discussions and debates.
IV	Insights to the principles of Biogeography	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, presentations, discussions and debates.
V	Understand the geographical distribution and the impacts of climate change on biomes	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, presentations, discussions and debates.

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E03: CULTURAL GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To enhance the understanding of culture using key concepts of geography
2) To develop analytical skills to decode culture
3) To provide a critical understanding of the contemporary issues and the politics underlying it

Course Learning Outcomes:
1) Make sense of culture
2) Geographic epistemologies for analysing culture
3) Develop analytical capability to read contemporary issues of culture

Course Contents:
Unit I: Approaches to cultural geography: morphology of cultural landscape; representational and more-than-representational critiques.
Unit II: Concepts: culture, politics, identity and the other issues like, space, place, landscape, ideology, hegemony, gender, class, sexuality, race, ability and caste.
Unit III: Methodologies: reading landscapes: textuality, iconography, participant observation and interviews, participatory methods.
Unit IV: Creation of Cultural Spaces: body, home, city, nation, and globe.
Unit V: Politics of Difference: caste, class, race, gender, sexuality.

Suggested Readings:
1. Anderson, K., Domosh, M., Pile, S., & Thrift, N. (eds.). *2002. Handbook of cultural geograph,*. Sage.
2. Blunt, A. 2005. Cultural geography: cultural geographies of home. *Progress in human geography*, *29*(4), 505-515.
3. Cavallaro, D. 2001. *Critical and Cultural Theory: Thematic Variations*, Athlone Press, London and New Brunswick, NJ.
4. Cosgrove, D. 1984. *Social Formation and Symbolic Landscape*, London: Croom Helm.
5. Cosgrove, D., & Daniels, S. (Eds.), 1988. *The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments*, Cambridge University Press.
6. Duncan, J. S. 2005. *The city as Text: The Politics of Landscape Interpretation in the Kandyan Kingdom*, Cambridge University Press.
7. Hirsch, E and Hanlon, M. 2003. *The Anthropology of Landscape: perspectives on space and Place,* Oxford: Clarendon press

8. Lorimer, H. 2005. Cultural geography: the busyness of being more-than-representational'. *Progress in human geography*, *29*(1), 83-94.
9. Mitchell, D. 1996. 'California: The Beautiful and the Damned' from the *'Lie of the Land: Migrant Workers and the California Landscape,* 13-35, Minneapolis: University of Minnesota Press
10. Mitchell, D. 2000. *Cultural Geography: A Critical Introduction*, Blackwell
11. Rose, G. 2008. Looking at Landscape: The Uneasy Pleasures of Power. In *The Cultural Geography Reader* (pp. 183-187), Routledge.
12. Sauer, C. O. 1925. *The Morphology of Landscape.* University of California Publications, Geography 2, 19-54.
13. Valentine, G. 2014. *Social geographies: space and society*, Routledge.
14. Whatmore, S. 2006. Materialist returns: practising cultural geography in and for a more-than-human world, *Cultural geographies*, *13*(4), 600-609.

Teaching Plan:

Week 1:	Session 1:	Introductory class
	Session 2:	Cultural Geography and its scope
Week 2:	Session 1:	Morphology of Cultural Landscape: Life and works of Carl O Saur
	Session 2:	Morphology of Cultural Landscape: Landscape
Week 3:	Session 1:	Morphology of Cultural Landscape: Representational Approach
	Session 2:	Morphology of Cultural Landscape: Representational Approach
Week 4:	Session 1:	Morphology of Cultural landscape: Non-Representational Approach
	Session 2:	Morphology of Cultural landscape: More-Than-Representational Approach
Week 5:	Session 1:	Concepts: Culture; Cultural Politics, Critical Infrastructure
	Session 2:	Concepts: Identity and the Other
Week 6:	Session 1:	Concepts: Space/ Place/ Landscape
	Session 2:	Concepts: Ideology
Week 7:	Session 1:	Concepts: Hegemony
	Session 2:	Concepts: Strategies & Resistance
Week 8:	Session 1:	Methodologies: Textuality
	Session 2:	Methodologies: Iconography
Week 9:	Session 1:	Methodologies: Participant Observation
	Session 2:	Methodologies: Interviews
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Methodologies: Participatory methods
	Session 2:	Production of Cultural Spaces: Body
Week 13:	Session 1:	Production of Cultural Spaces: Home
	Session 2:	Production of Cultural Spaces: Public space
Week 14:	Session 1:	Production of Cultural Spaces: City
	Session 2:	Production of Cultural Spaces: Nation
Week 15:	Session 1:	Production of Cultural Spaces: Globe
	Session 2:	Politics of Difference: Class
Week 16:	Session 1:	Politics of Difference: Caste/ Race
	Session 2:	Politics of Difference: Gender
Week 17:	Session 1:	Politics of Difference: Sexuality
	Session 2:	Closing Lecture

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Scope of cultural geography; Different approaches to Cultural landscapes	Classroom lectures and discussion	Review of papers Class discussion
II	Introduction to concepts	Classroom lectures and discussions	Class discussions & Writing tasks
III	Basic knowledge of analysing cultural spaces on field	Classroom lectures and discussion on field work	Field based task and report on methods
IV and V	Understanding the production of cultural spaces applying concepts learnt in unit two	Classroom lecture and discussion	Field based assignment

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E04: GEOGRAPHY OF URBAN ENVIRONMENT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course attempts to acquaint the students to the conceptual process of urban environment.
2) The course examines the questions related to urban urbanization and contemporary environmental issues in India.
3) It also critically evaluates the policies and interventions aimed at sustainable urban environment development and management strategies.

Course Learning Outcomes:

1) The students will be able to understand the concepts and process of urban environmental issues.
2) The students will be able to analyse the consequences of urban environmental consequences at different scales.
3) The students will be able to get updated knowledge of sustainable environmental management strategies and institutional arrangements.

Course Contents:

Unit I: Introducing Urban Environment: nature and concept, relevance of the study at local, regional and global level, dynamics of urban environment.

Unit II: Urban Development Concepts and Process: trend of urbanization in developed and developing countries, physical expansion of cities, ecological foot prints and urban heat island.

Unit III: Urbanization and Environment in India: trends and patterns of urbanization; contemporary environmental issues: water, air, solid waste and e-waste pollution; slums: ecological and health consequences; Case studies.

Unit IV: Sustainable Environmental Management: urban infrastructure; green building, open and green patches; sustainable waste management; wastewater management strategies; Case studies.

Unit V: Urban Governance: sustainable development goals; Government programmes, polices and initiatives.

Suggested Readings:

1. Badcock, B. 2002. *Making Sense of Cities: A Geographical Survey,* Oxford University Press, London
2. Douglas. I. 1983. *The Urban Environment*, Edward Arnold, Maryland, USA.

3. Friedmann, J. 1995. *Where we stand: A Decade of World City Research*, In: P. L. Knox and P. Taylor (eds) World Cities in a World-system. 21-47. Cambridge University Press, Cambridge:
4. Hardoy, J. E., Mitlin, D. Satterthwaite, D. 1992. Environmental *Problems in Third World Cities*, Earthscan, Great Britain.
5. Housing and Urban Development Corporation (HUDCO) & UN Centre for Human Settlements (Habitat) 2001. *The State of Indian Cities 2001*, HUDCO and Habitat, Nairobi- New Delhi.
6. Michael, P. 2009*. Urban Geography: A Global Perspective*, Taylor & Francis, Great Britain.
7. Marcotullio, P. and Mc Granahan. G. 2007*. Scaling Urban Environmental Challenges: From Local to Global and Back*, Earthscan, Great Britain.
8. Murray, Robin 2002. *Zero Waste,* Greenpeace Environmental Trust, Londoan
9. Newman, P. 2002. *The Environmental Impacts of Cities*, Environment and Urbanization, 18: 275.
10. Singh, R. B. (ed.) 2015. *Urban Development Challenges, Risks and Resilience in Asian Mega Cities,* Springer, Japan.
11. Singh, Savindra 2015. ParyavaranBhoogol, PrayagPustakBhavan, Allahabad **(Hindi)**
12. Roberts, P., Ravetz, J. and George, C. 2009. *Environment and the City.* Routledge, London
13. White, R. 1994. *Urban Environmental Management*, Routledge, London

Teaching Plan:

Week 1 - Overview, nature and concept
Week 2 - Approaches and urban dynamics
Week 3 - Urbanization trends
Week 4 - Physical expansion of cities
Week 5 - Urban congestion and crowding
Week 6 - Ecological foot prints and urban heat island
Week 7 - Patterns of urbanization in India
Week 8 - Water and air based problems
Week 9- Solid waste and e-waste
Week 10 - Mid-Semester Examinations
Week 11 - Mid-Semester Break
Week 12 - Slums and ecological and health consequences
Week 13 - Urban infrastructure
Week 14 - Green buildings and open patches
Week 15 - Management strategies and SDGs,
Week 16 - Programmes and policies
Week: 17 - Governance and Wrap up discussions & feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Conceptual understanding of urban environment	Classroom lectures, tutorials and PPTs	Assignments/discussions on concept and dynamics of urban environment
II	Physical Expansion of Cities; Urban Heat Island	Classroom lectures, tutorials and PPTS	Presentations/discussions on expansion of cities, urban heat island
III	Environmental issues in India and their consequences	Classroom lectures, tutorials and PPTS	Assignments/discussions/Presentations/ on problems and their consequences with case studies
IV	Urban environmental management strategies infrastructure	Classroom lectures, tutorials and PPTs	Assignments/Debates/Presentations on infrastructure and management strategies with case studies
V	Urban Governance: Environmental Development programmes and polices	Classroom lectures, tutorials and PPTs	Assignments/Discussions/Presentations on assessment of programmes and policies

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E05: HISTORICAL GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) The students will be exposed to the historical dimensions in geography.
2) The students will be conscious of the various components of historical geography.

Course Learning Outcomes:
1) The students will be able to understand and analyse the principal issues confronting historical geography.
2) The students will get an insight into various components of historical geography.

Course Contents:
Unit I: Evolution of Historical Geography: Introduction, early (1700-1920), modern (1920-50), contemporary (1950 onwards).
Unit II: Sources of evidence and data.
Unit III: Re-construction of Natural World: physical environment, landscape.
Unit IV: Historical Geographies of Human World: power and control, rural transformations, urbanization, industrialization, trade, transport and communications.
Unit V: Historical Geography of India

Suggested Readings:
1. Ali, S.M. 1966. *The Geography of the Puranas*, People's Publishing House, Delhi.
2. Baker, A.R.H (ed.) 1972. *Progress in Historical Geography*, David and Charles.
3. Baker, A.R.H., Hamshere, J.D., Langton, J., 1972. *Geographical Interpretation of historical Sources*, David and Charles.
4. Bharadwaj, O.P., 1986. *Studies in the Historical Geography of Ancient India*, Sundeep Prakashan, Delhi.
5. Butin, Robin A., 1993. *Historical Geography: Through the Gates of Space and Time*, Edward Arnold, London.
6. Graham Brian, Nash Catherine, 2000. *Modern Historical Geographies*, Longman, Essex, England.
7. Guelke, L., 1982. *Historical Understanding in Geography: An idealist approach*, Cambridge University Press, Cambridge.
8. Law, B., 1968. *Historical Geography of Ancient India*, Societe Asiatique deiParis, Paris.
9. Pacione, M., 1987. *Historical Geography: Progress and Prospect*, Croom Helm, London.
10. Roberts, P.E., 1995. *Historical Geography of India*, Vol. I & II, Printwell, Jaipur.

11. Sircar, D.C., 1971. *Studies in the Geography of Ancient and Medieval India*, Motilal banarasi Dass, India
12. Tamaskar, B.G., 1985. *Contributions to Historical Geography of India*, Inter-India Publications, New Delhi.

Teaching Plan:

Week 1:	Session 1:	Introduction to historical geography
	Session 2:	Introduction to historical geography
Week 2:	Session 1:	Early phase (1700-1920)
	Session 2:	Early phase (1700-1920)
Week 3:	Session 1:	Modern phase (1920-50)
	Session 2:	Modern phase (1920-50)
Week 4:	Session 1:	Contemporary period (1950 onwards)
	Session 2:	Contemporary period (1950 onwards)
Week 5:	Session 1:	Sources of Evidence and Data
	Session 2:	Sources of Evidence and Data
Week 6:	Session 1:	Re-construction of physical environment
	Session 2:	Re-construction of physical environment
Week 7:	Session 1:	Historical geographies of landscape
	Session 2:	Historical geographies of landscape
Week 8:	Session 1:	Historical geographies of power and control
	Session 2:	Historical geographies of power and control
Week 9:	Session 1:	Historical geographies of rural transformations
	Session 2:	Historical geographies of rural transformations
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Historical geographies of urbanization
	Session 2:	Historical geographies of urbanization
Week 13:	Session 1:	Historical geographies of industrialization
	Session 2:	Historical geographies of industrialization
Week 14:	Session 1:	Historical geographies of trade, transport and communications
	Session 2:	Historical geographies of trade, transport and communications
Week 15:	Session 1:	Case Study – Historical Geography of India
	Session 2:	Case Study – Historical Geography of India
Week 16:	Session 1:	Case Study – Historical Geography of India
	Session 2:	Case Study – Historical Geography of India
Week 17:	Session 1:	Conclusions
	Session 2:	Summing up and looking ahead

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Evolution of Historical Geography	Classroom lectures and tutorials	Q&A
II	Sources of Evidence and Data	Classroom lectures and tutorials	Q&A
III	Re-construction of Natural World	Classroom lectures and tutorials	Q&A
IV	Historical Geographies of Human World	Classroom lectures and tutorials	Q&A
V	Historical Geography of India	Classroom lectures and tutorials	Q&A

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E06: POPULATION AND DEVELOPMENT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course intends to apprise the students about different perspectives related to population and development nexus.
2) Student shall learn about the demographic transition models, its genesis, process and consequences from spatial perspectives.
3) Students shall also understand the various population policies and programmes for the sustainable population management.

Course Learning Outcomes:

1) After taking this course, a candidate should be able to appreciate diverse perspective of population and development debate.
2) Students will be confident to visualise the consequences of demographic transition on the economy, society and politics.
3) They should be able to have a clear understanding of population policies and its vital role towards managing the population affairs on the path of sustainability.

Course Contents:

Unit I: Historical perspectives on population and development.
Unit II: Demographic Transition: origins, processes, and effects; regional patterns.
Unit III: Consequences of Demographic Transition: economic, social, and political.
Unit IV: Population policies and planning.

Recommended Readings

1. Birdsell, N., Kelley, A.C., and Sinding, S.W. 2001. *Population matters: demographic change, economic growth, and poverty in developing world*. Auckland: Oxford University Press.
2. Dyson, T. .2010. *Population and development: the demographic transition*. London: Zed Books.
3. Ehrlich, P.R. and Ehrlich, A.H. 1996. Ecoscience: Population, Resources, Environment. 6th edition, W.H. Freeman and Company, San Francisco.
4. Gould, W.T.S. 2009. *Population and Development*, London: Routledge.
5. Graff, M., and Bremner, J. 2014. *A practical guide to population and development*, Washington DC: Population Reference Bureau.
6. James, K.S. 2011. India's demographic change: opportunities and challenges. *Science* 333 (6042), 576-580.
7. May, J.F. 2012. *World population policies: their origin, evolution, and impact*, Washington DC: Springer.

8. Meadow, D.H., Meadows D.L., Randers J., and Behrens W.W. III. 1973. The Limits to Growth. I Report of the Club of Rome, The New American Library, New York.
9. Meadows, D.M. and Meadows, D.L. and Randers, J. 1992. *Global Collapse or A Sustainable Future*, Earthscan Publications, London.
10. National Research Council 1986. Population growth and economic development: policy questions, Washington DC: National Academic Press.
11. National Research Council 2003. *Cities transformed: demographic change and its implications in the developing world*. Panel on Urban Population Dynamics, M.R. Montgomery, R. Stren, B. Cohen, and H.E. Reed, eds., Committee on Population, Division of Behavioral and Social Sciences and Education, Washington, DC: The National Academies Press.
12. Weeks, J.R. 2008. *Population: an introduction to concepts and issues*. 10th edition, Belmont, CA: Thomson Wadsworth.

Teaching Plan:

Week 1: Historical perspectives on population and development
Week 2: Historical perspectives on population and development
Week 3: Historical perspectives on population and development
Week 4: Historical perspectives on population and development
Week 5: Demographic transition: origins, processes, and effects; regional patterns
Week 6: Demographic transition: origins, processes, and effects; regional patterns
Week 7: Demographic transition: origins, processes, and effects; regional patterns
Week 8: Demographic transition: origins, processes, and effects; regional patterns
Week 9: Demographic transition: origins, processes, and effects; regional patterns
Week 10: *Mid-Semester Examinations*
Week 11: *Mid-Semester Break*
Week 12: Consequences of demographic transition: economic, social, and political
Week 13: Consequences of demographic transition: economic, social, and political
Week 14: Consequences of demographic transition: economic, social, and political
Week 15: Consequences of demographic transition: economic, social, and political
Week 16: Population policies and planning
Week 17: Population policies and planning

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding debates on population and development inter-relationships	Classroom lectures and tutorials	Conceptualising the historical perspectives on population and development issues: pessimistic, optimistic and neutralist views
II	Examining demographic transition models across developed and developing world	Classroom lectures and tutorials	Understanding the demographic transition model and regional patterns
III	Implications of demographic transitions on economy, society and politics	Classroom lectures and tutorials	Examining salient implications of demographic transition on society, economy, and politics
IV	Role of population policies and planning	Classroom lectures and tutorials	Understanding roles of population policies and programmes

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E07: SOCIAL GEOGRAPHY OF INDIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To acquaint the students to the unique social geography of India
2) To allow students to appreciate the roles of geographic factors in socio-cultural regionalisation
3) To provide an understanding of the socio-geographical elements within a framework of pan Indian unity and regional specificity.

Course Learning Outcomes:
1) Knowledge of the geographic basis of socio-cultural regionalisation in India and continuity and correspondence of socio- political and geographic boundaries.
2) Knowledge the religious identity in regional context; geographic factors underlying patterning of languages
3) Understanding pan Indian unity and regional specificity of varna and jati along with other spatial dimensions of caste

Course Contents:
Unit I: Social Geography of India: Nature and Scope, Indian society - a study in unity and diversity; Centripetal and centrifugal forces, Aryavarta, Dakshinpatha, Narmada Chota-Nagpur axis , regional identities and regionalism.
Unit II: Historical Bases of Socio cultural regionalization of India: Elements in the development of socio cultural regions; continuity and change in the historically evolved regional structure-correspondence between solasa mahajanpadas and mughal subahs, inversion of regional structure in colonial period, implications of emerging regional structure since independence.
Unit III: Religion and regional culture: Religious diversity and regional identity, Geographical factors explaining the distribution of the tribal religions, Hindus, Muslims, Christian, Buddhist, Jain and Sikh communities.
Unit IV: Geographic analysis of caste and tribe*: Varna* and *jati*-pan Indian structure and regional specificity, Caste Regions, caste and settlement morphology, distribution of SC population, Tribes in India, dominance and dispersion of Tribal population, penetration of tribal regions.
Unit V: Spatial patterning of language in India: Major Language families and their speech areas, linguistic diversity, the politics of stability and fluidity of language returns; language loss, language retention and language shift.

Suggested Readings:

1. Ahmed, A. 1999. *Social Geography*, Rawat publications, Jaipur.
2. Ahmed, A. 1993. (ed) *Social Structure and Regional Development: A Social Geography Perspective*, Rawat Publications, Jaipur.
3. Singh, K.S. 1993. *People of India* Vol I to XI, Oxford University Press, New Delhi.
4. Raza, M. and Ahmed, A. 1990. *An Atlas of Tribal India*, Concept Publishing Co, Delhi.
5. Sopher, D. (ed.) 1980. *An Exploration of India: Geographical Perspectives on Society and Culture*, Cornell Press, New York.
6. Schwartzberg, J. 1978. *A Historical Atlas of South Asia*, University of Chicago Press, Chicago.
7. Crane Robert, I. 1973. *Regions and Regionalism in South Asian Studies: An Exploratory Study*, Duke University Durham.
8. Registrar General of India, 1972. *Economic and Socio cultural Dimensions of Regionalization of India*, Census Centenary Monograph No 7, New Delhi.
9. Pannikar, K.M. 1959. *Geographical Factors in Indian Histor*, Bharatiya Vidya Bhavan, Bombay.
10 Subba Rao, B. 1958. *Personality of India*, MS University Press, Baroda.

Teaching Plan:

Week 1:	Session 1:	Introduction to the course, Nature and Scope, Indian society - a study in unity and diversity; Centripetal and centrifugal forces,
	Session 2:	Aryavarta, Dakshinpatha, significance of Narmada Chota-Nagpur axis, regional identities and regionalism
Week 2:	Session 1:	Elements in the development of socio cultural regions - terrain and agroclimatic conditions.
	Session 2:	Elements in the development of socio cultural regions - mode of economy, diety and dialect.
Week 3:	Session 1:	Emergence of geographic nodes of socio cultural regionalization - the solasa mahajanpadas.
	Session 2:	Continuity and change in the historically evolved regional structure – correspondence between solasa mahajanpadas and mughal subahs.
Week 4:	Session 1:	Inversion of regional structure in colonial period, implications of emerging regional structure since independence.
	Session 2:	Inversion of regional structure in colonial period, implications of emerging regional structure since independence.
Week 5:	Session 1:	Religious diversity and regional identity, Geographical factors explaining the distribution of the tribal religions.
	Session 2:	Spatial patterning of the Hindu population
Week 6:	Session 1:	Spatial patterns and geographical factors explaining the distribution of the Muslims in India.
	Session 2:	Spatial patterns and geographical factors explaining the distribution of the Muslims in India (contd.)
Week 7:	Session 1:	Spatial patterns and factors explaining the distribution of the Christian community in India.
	Session 2:	Spatial patterns and factors explaining the distribution of the Christian community in India.
Week 8:	Session 1:	Spatial patterns and factors explaining the distribution of the Sikhs in India.
	Session 2:	Spatial patterns and factors explaining the distribution of the Sikhs in India.
Week 9:	Session 1:	Spatial patterns and factors explaining the distribution of the Buddhists in India.
	Session 2:	Spatial patterns and factors explaining the distribution of Jains in India.
Week 10:	*Mid-Semester Examinations*	

Week 11: *Mid-Semester Break*

Week 12: Session 1: Varna and jati-pan Indian structure and regional specificity,
Session 2: Caste Regions,

Week 13: Session 1: caste and settlement morphology
Session 2: Distribution of SC population

Week 14: Session 1: Tribes in India, dominance and dispersion of Tribal population, penetration of tribal regions
Session 2: Tribes in India, dominance and dispersion of Tribal population, penetration of tribal regions.

Week 15: Session 1: Tribes in India, dominance and dispersion of Tribal population, penetration of tribal regions.
Session 2: Linguistic diversity, Geographic patterning of languages

Week 16: Session 1: Linguistic diversity, Geographic patterning of languages,
Session 2: Stability and fluidity of language returns; language loss, language retention and language shift.

Week 17: Session 1: Stability and fluidity of language returns; language loss, language retention and language shift.
Session 2: Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Relevance of understanding the unique nature and scope of social geography of India ; horizontal and vertical diversities within pan Indian Unity	Lectures and Tutorials; Discussion on horizontal and vertical diversities.	Assignment on Centripetal and Centrifugal forces/ regional identities
II	Understanding of the geographic basis of socio-cultural regionalisation in India	Lectures and Tutorials; Discussion on elements of socio cultural regionalisation.	Assignment on specific region with regard to tracing elements of regionalisation and sub regionalisation.
III	Understanding the religious identity in regional context	Lectures and Tutorials; Discussion on religious and regional identities.	Assignment on selected region with regard to district-wise distribution of population by religion
IV	Understanding pan Indian unity and regional specificity of varna and jati along with other spatial dimensions of caste.	Lectures and Tutorials; Discussion on and regional specificity of jati, caste regions and caste driven settlement morphology.	Assignment on specific region with regard to distribution of SC population district-wise.
V	Understanding geographic factors underlying patterning of languages	Lectures and Tutorials; Discussion on language families, speech areas and fluidity and stability of returns.	Assignment on specific region with regard to tracing elements of regionalisation and sub regionalisation.

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E08: TECHNIQUES AND METHODS OF REGIONAL ANALYSIS

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

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

Course Learning Outcomes:

1) The students will be able to understand and analyse the role of population and migration in regional economic analysis.
2) The students will be able to appreciate and analyse the implications of region's economic analysis in regional studies.
3) The students will be able to comprehend and analyse the significance of decision analysis and spatial statistics.

Course Contents:

Unit I: Introduction: origin, growth, scope and nature of regional science.
Unit II: Regional Demographic Analysis: census data, population projection, migration estimation.
Unit III: Regional Economic Analysis: regional income estimation and social accounting; interregional flow analysis and balance of payment statements; regional cycle and multiplier analysis; regional industrial location and complex analysis; interregional and regional input-output techniques.
Unit IV: Decision Analysis: game theory and decision analysis.
Unit V: Spatial Statistics and Analysis.

Suggested Readings:

1. Bendavid, A. 1991. *Regional and Local Economic Analysis for Practitioners*, Praeger, New York.
2. Brian Field and MacGregor Bryan, 1987. *Forecasting Techniques for Urban and Regional Planning*, Univ. College London.
3. Davis H. Craig, 1990. *Regional Economic Analysis and Project Evaluation*, UBC Press.
4. Ebdon David, 1985. *Statistics in Geography*, Basil Blackwell.
5. Isard Walter, 1960. *Methods of Regional Analysis: An Introduction to Regional Science*, MIT and John Wiley & Sons, Inc.
6. Isard Walter, *et. Al.* 1998. *Methods of Interregional and Regional Analysis*, Aldershot, Ashgate.

7. Klosterman, R. E. 1990. *Community Analysis and Planning Techniques*, Rowman & Littlefield Savage, Maryland.
8. Krueckeberg, Donald A. and Silvers Arthur L. 1974. *Urban Planning Analysis: Methods and Models*, John Wiley, NY.
9. Maki, Wilbur and Lichty Richard, 2000. *Urban Regional Economics: Concepts, Tools, Applications*, Iowa State Univ. Press.
10. Oppenheim, Norbet, 1980, *Applied Models in Urban and Regional Analysis*, Prentice-Hall, New Jersey.
11. Treyz George I. 1993. *Regional Economic Modelling: A Systematic Approach to Economic Forecasting and Policy Analysis*, Academic Publishers, Boston.

Teaching Plan:

Week 1:	Session 1:	Origin of Regional Science
	Session 2:	Origin of Regional Science
Week 2:	Session 1:	Growth of Regional Science
	Session 2:	Growth of Regional Science
Week 3:	Session 1:	Scope of Regional Science
	Session 2:	Scope of Regional Science
Week 4:	Session 1:	Nature of Regional Science
	Session 2:	Nature of Regional Science
Week 5:	Session 1:	Census Data
	Session 2:	Census Data
Week 6:	Session 1:	Population Projection
	Session 2:	Population Projection
Week 7:	Session 1:	Migration Estimation
	Session 2:	Migration Estimation
Week 8:	Session 1:	Regional Income Estimation and Social Accounting
	Session 2:	Regional Income Estimation and Social Accounting
Week 9:	Session 1:	Interregional Flow Analysis and Balance of Payment Statements
	Session 2:	Interregional Flow Analysis and Balance of Payment Statements
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Regional Cycle and Multiplier Analysis
	Session 2:	Regional Cycle and Multiplier Analysis
Week 13:	Session 1:	Regional Industrial Location and Complex Analysis
	Session 2:	Regional Industrial Location and Complex Analysis
Week 14:	Session 1:	Interregional and Regional Input-Output Techniques
	Session 2:	Interregional and Regional Input-Output Techniques
Week 15:	Session 1:	Game Theory and Decision Analysis
	Session 2:	Game Theory and Decision Analysis
Week 16:	Session 1:	Spatial Statistics and Analysis
	Session 2:	Spatial Statistics and Analysis
Week 17:	Session 1:	Summing up
	Session 2:	Wrap up discussions

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Knowledge of disciplinary history and evolution	Classroom lectures	Evaluating the relevance of the discipline in Geography and Regional Studies
II	Role of population and migration in regional economic analysis	Classroom lectures Practical work based on secondary data	Projection of population of selected spatial units (country, state, district, etc.) using various techniques.
III	Implications of region's economic analysis in regional studies	Classroom lectures Practical work based on secondary data	Calculation of regional multiplier Calculation of Location Quotient Application of Shift-Share Analysis
IV	Significance of decision analysis	Classroom lectures Practical work based on secondary data	Applications of decision analysis
V	Significance of spatial statistics	Classroom lectures Practical work based on secondary data	Applications of spatial statistics

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E09: TRANSPORT NETWORK AND FLOW ANALYSIS

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) The students will be exposed to the role and significance of 'transport' in geography.
2) The students will be conscious of the various facets of transport network.
3) The students will be conscious of the various techniques of flow analysis.

Course Learning Outcomes:
1) The students will be able to understand and analyse the principal issues confronting the transportation systems today.
2) The students will get an insight into 'how transportation systems work', through live case-study from India and World.

Course Contents:
Unit I: Transport for spatial interaction: Spatial interaction and time-space convergence, enlarging the catchment area of markets, dynamic relationship between transport and spatial readjustment, role of transport as a lead sector.
Unit II: Problem of accessibility: The transport network, network shape and location, regional variations in its density, methods of measurement, transport and spatial processes, traffic flow and regional interaction.
Unit III: Graph theory and Network Geometry: Concept of topology, topological measurement of network efficiency.
Unit IV: Urban Transport: Profile of urban transport facilities, traffic in towns, transport services and urban land use pattern, role of intermediary transport modes, modal split.
Unit V: Regional Transport Planning: The framework of regional transport planning traffic generation, methods of forecasting, zonal interchange of traffic, mode and route assignment methods; Indian Transport: Transport development during colonial and plan periods, transport and regional structure of Indian Economy, metropolitan transport.

Suggested Readings:
1. Ashton, W.D., 1966. *The Theory of Traffic Flow*, Methuen , London
2. Berry, B.J.L *et a.,* 1966. *Essays on Commodity Flow and Spatial Structure of Indian Economy*, Department of Geography, Chicago.
3. Berry, B.L.J. and Marble, D.F. (eds.) 197). *Spatial Analysis: A Reader in Statistical Geography*, Prentice Hall.
4. Brooks, P.W., 1994. The Development of Air Transport Hurst, M.E. (ed.) *Transportation geography: Comments and Reading*, Mc Graw Hill, 256-273

5. Cooley, C.H. 1994. The Theory of Transportation, in Hurst, M.E. (ed.) *Transportation geography: Comments and Reading*, Mc Graw Hill, 15-29.
6. Fleming, D.K. and Hayuth, Y. 1994. Spatial Characteristics of Transportation Hubs: Centrality and Intermediacy, *Journal of Transport Geography*, 2 (1), 3-18.
7. Gautam, P.S. 1992. *Transport Geography of India: A Study of Chambal Division, M.P.,* Mittal Publications, New Delhi
8. Haggett, P. 1965. Locational Analysis in Human Geography, London.
9. Haggett, P. and Chorley, R.J. 1969. *Networks Analysis in Geography*, London.
10. Kansky, K.J., 1963. *Structure of Transportation Networks: Relationships between Network Geometry and Regional Characteristics,* University of Chicago, Department of Geography, Research Paper, Chicago, 84.
11. Nagar, V.D. and Gautam S. 1964. *Principles and Problems of Indian Transport*, Kailash Pustak Sadan, Gwalior.
12. Owen, W. 1968. *Distance and Development: Transport and Communications in India*, Washington.
13. Raza, M. and Aggarwal, Y. 1986. *Transport Geography of India,* Concept Publishing Company, New Delhi.
14. White, H. P. and Senior, M.L. 1983. *Transportation Geography,* Longman Inc. New York.

Teaching Plan:

Week 1:	Session 1:	Spatial interaction and time-space convergence
	Session 2:	Enlarging the catmint area of markets
Week 2:	Session 1:	Dynamic relationship between transport and spatial readjustment
	Session 2:	Dynamic relationship between transport and spatial readjustment
Week 3:	Session 1:	Role of transport as a lead sector
	Session 2:	The transport network
Week 4:	Session 1:	Network shape and location
	Session 2:	Regional variations in its density
Week 5:	Session 1:	Methods of measurement, transport and spatial processes
	Session 2:	Methods of measurement, transport and spatial processes
Week 6:	Session 1:	Traffic flow and regional interaction
	Session 2:	Graph theory and Network Geometry
Week 7:	Session 1:	Concept of topology
	Session 2:	Topological measurement of network efficiency
Week 8:	Session 1:	**T**opological measurement of network efficiency
	Session 2:	Profile of urban transport facilities
Week 9:	Session 1:	Traffic in towns
	Session 2:	Transport services and urban land use pattern
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Role of intermediary transport modes
	Session 2:	Modal split
Week 13:	Session 1:	The framework of regional transport planning traffic generation
	Session 2:	The framework of regional transport planning traffic generation
Week 14:	Session 1:	Methods of forecasting
	Session 2:	Zonal interchange of traffic
Week 15:	Session 1:	Mode and route assignment methods
	Session 2:	Transport development during colonial and plan periods
Week 16:	Session 1:	Transport and regional structure of Indian Economy
	Session 2:	Metropolitan transport

Week 17: Session 1: Conclusions – Future of Transportation
Session 2: Summing up and looking ahead

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Role of transport in spatial interaction	Classroom lectures and tutorials	Q&A
II	Knowledge of problems in accessibility	Classroom lectures and tutorials	Q&A
III	Knowledge of graph theory and network geometry	Classroom lectures and tutorials	Q&A
IV	Knowledge of urban transport	Classroom lectures and tutorials	Comparative case-study of towns
V	Knowledge of regional transport planning with special reference to India	Classroom lectures and tutorials	Transport planning of a line between two points Selected case-studies in India

MASTER of ARTS in GEOGRAPHY
Semester I – Elective Course

GEOG1E10: URBAN GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To critically understand the complexities of urban cities and the experience of living in these cities.
2) To critically understand a broad range of issues that cities face today.
3) To provide a basic social, cultural, political and economic understanding of cities.

Course Learning Outcomes:
1) To understand the linkages between urban cities and the societal forces that shapes it.
2) Critically analyse contemporary urban issues from a geographical perspective.
3) Understand urban issues in order to engage with possible and effective planning and policy interventions.

Course Contents:
Unit I: Introduction: Defining the city, understanding the different approaches in examining the city and its transformations.
Unit II: Urban Transformations in Historical Contexts: Early cities to industrial cities, cities in the world system and global cities, colonial and post-colonial cities.
Unit III: Urban society: Social organisation of the city, emergence of urban cultures and sub-cultures, nature of urban economy, the production of urban elite and poor.
Unit IV: Governing the City: Role of state in urban planning and development, local politics, citizenship and governance.

Suggested Readings:
1. LeGates T.R. and Stout F. (ed.) 2016. *The City Reader* (6th edition), Routledge: London and New York.
2. Andrew, E.G.J, McCann, E and Thomas, M 2015. *Urban Geography: A Critical Introduction*, Wiley, Blackwell, UK.
3. Bhattacharya, B. 2006. *Urban Development in India since Pre-Historic Times*, Concept Publishing Company, New Delhi.
4. Bridge, G Watson, S. (eds.) 2010. *The Blackwell City Reader* (2nd Edition), Wiley-Blackwell, UK.
5. Gilbert, A and Gugler, J (eds.) 1992. *Cities, Poverty, and Development: Urbanization the Third World*, Oxford University Press, Oxford.
6. Fainstein, S. S and Campbell, S (eds) 2011. *Readings in Urban Theory* (3rd Edition), Wiley-Blackwell, UK.
7. Hall, T. 2002. *Urban Geography* (2nd Edition), Routledge: London and New York.

8. Fyfe, N.R and Kenny, J.T. 2005. *The Urban Geography Reader*, Routledge: London and New York.
9. Latham, A., McCormick, D., McNamara, K., and McNeil, D. 2009. *Key Concepts in Urban Geography*, Sage: London, California, New Delhi, Singapore.
10. Knox, P and Pinch, S. 2010.*Urban Social Geography* (6th edition), Pearson: England
11. Brunn, S.D., Hays-Mitchell, M., Ziegler, D.J. 2012. *Cities of the World: World Regional Urban Development* (5th edition), Rowman and Littlefield Publishers: England
12. Davidson, M. Martin, D. 2013. Urban Politics. *Critical Approaches*, Sage: London, California, New Delhi, Singapore.

Teaching Plan:

Week 1:	Session 1:	Syllabus overview
	Session 2:	Defining the city
Week 2:	Session 1:	Defining the city
	Session 2:	Approaches in examining the city and its transformations
Week 3:	Session 1:	Approaches in examining the city and its transformations
	Session 2:	Approaches in examining the city and its transformations
Week 4:	Session 1:	Early cities to Industrial cities
	Session 2:	Early cities to Industrial cities
Week 5:	Session 1:	Early cities to Industrial cities
	Session 2:	Cities in the world system and global cities
Week 6:	Session 1:	Cities in the world system and global cities
	Session 2:	Colonial and Post-colonial cities
Week 7:	Session 1:	Colonial and Post-colonial cities
	Session 2:	Colonial and Post-colonial cities
Week 8:	Session 1:	Cities of global south
	Session 2:	Cities of global south
Week 9:	Session 1:	Social organisation of the city
	Session 2:	Social organisation of the city
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Emergence of urban cultures and sub-cultures
	Session 2:	Emergence of urban cultures and sub-cultures
Week 13:	Session 1:	Nature of urban economy
	Session 2:	Nature of urban economy
Week 14:	Session 1:	Nature of urban economy
	Session 2:	The production of urban elite and poor
Week 15:	Session 1:	The production of urban elite and poor
	Session 2:	Role of state in urban planning and development
Week 16:	Session 1:	Role of state in urban planning and development
	Session 2:	Local politics, citizenship and governance
Week 17:	Session 1:	Local politics, citizenship and governance
	Session 2:	Summing up and Wrap up discussions

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the complexities of urban cities	Classroom lectures Group discussions	Tutorial Assignments
II	Understanding the development of and transformation of cities over time	Classroom lectures Group presentations	Mid -term examinations
III	Develop a basic social, political and economic understanding of contemporary urban issues	Classroom lectures Focus City discussions	Tutorial Assignments
IV	Understanding the linkages between cities, state and the people and issues of planning and governance	Classroom lectures Focus City presentations	End term examinations

MASTER of ARTS in GEOGRAPHY
Semester II

MASTER OF ARTS IN GEOGRAPHY
Semester II – Core Course

GEOG2C01: ENVIRONMENT AND ECOLOGY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) Various dimensions of the ecosystems, their spatial distribution.
2) Anthropogenic interventions and resultant impacts on various ecosystems.
3) Understanding of environmental governance.

Course Learning Outcome:
1) Detailed exposure to the concept of ecosystem, processes, theories and concepts.
2) In-depth knowledge of anthropogenic interventions and impacts, conservation strategies and planning.
3) Evaluation and achievement of different environmental programs, policies and legislations.

Course Content:
Unit I: Environment and Ecosystem: Concepts and approaches, global environmental problems and sustainable development.
Unit II: Urban Environmental Problems and their Management: Air, water and solid waste.
Unit III: Desert and Coastal Ecosystems: Desertification-process and patterns, management strategies, issues and problems in coastal ecosystem, mangroves, integrated coastal zone management.
Unit IV: Mountain Ecosystems: Mountain ecology, risks and vulnerabilities, highland-lowland interactive systems, biodiversity and conservation.
Unit V: Environmental Governance: Environmental policies and programs, environmental education and legislation.

Suggested Readings:
1. Alexander, Mike. 2008. *Management planning for nature conservation: A theoretical basis & practical guide*, Springer.
2. Balakrishnan, M., 1998. Environmental Problems and Prospects in India, in Das, R.C., et. al. Oxford & IBH Pub., New Delhi.
3. Consensus Study Report, 2005. *Valuing Ecosystem Services: Toward Better Environmental Decision-Making*, National Research Council, Division on Earth and Life Studies, Water Science and Technology Board, Committee on Assessing and Valuing the Services of Aquatic and Related Terrestrial Ecosystems. National Academies Press, Washington.
4. Das, R. C., 1998. *The Environmental Divide: The Dilemma of Developing Countries*, A.P.H. Pub., New Delhi.

5. Freedman, Bill. 1995. *Environmental Ecology: The Ecological Effects of Pollution, Disturbance, and Other Stresses*, Academic Press. London.
6. Gole, P., 2001. *Nature Conservation and Sustainable Development in India*, Rawat Pub., Jaipur.
7. Hooja, R., et. al., (ed.) 1999. *Desert, Drought and Development: Studies in Resource Management and Sustainability*, Rawat Pub, Jaipur
8. Hussain, M., (ed.) 1996. *Environmental Management in India*, Rawat Pub., Jaipur
9. Munn, T., (ed.) 2001. *Encyclopaedia of Global Environmental Change*, John Wiley & Sons, West Sussex 7.
10. Ramakrishanan, P. S. 1997. *Conservation and Management of Biological Resources in Himalaya,* Oxford & IBH Pub., New Delhi.
11. Singh Savindra, 2015. *Paryavaran Bhoogol*. Prayag Pushtak Bhawan, Allahabad (Hindi).
12. Singh, R.B., (ed.) 1990. *Environmental Geography*, Heritage Pub., New Delhi.

Teaching Plan

Week 1: Introduction (Freedman, Bill. 1995).
Week 2: Concepts and Approaches (Singh, R.B., (ed.) 1990).
Week 3: Global environmental problems (Consensus Study Report, 2005).
Week 4: Urban Environmental Problems and their impacts (Alexander, Mike. (2008).
Week 5: Urban Heat Island (UHI) (Balakrishnan, M., 1998).
Week 6: Management of Urban ecosystems: Air, Water and Solid waste (Balakrishnan, M., 1998).
Week 7: Issues and challenges in Desert ecosystem (Hooja, R., et. al., (ed.) 1999).
Week 8: Coastal Ecosystems: prospects and challenges (Gole, P., 2001).
Week 9: Coastal pollution, mangroves and Integrated Coastal Zone Management (Gole, P., 2001).
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break (Fieldwork)
Week 12 Sustainable management of Mountain ecosystem (Singh R. B. and J. Martin, 1995).
Week 13 Risks and vulnerability in Mountains (Pandey, 2002).
Week 14: Biodiversity and Conservation strategies (Alexander, Mike. 2008).
Week 15: Environmental Policies and Programs (New Environmental Policy GOI 2006).
Week 16: Environmental Education (New Environmental Policy GOI 2006).
Week 17: Environmental legislation (Hussain, M., (ed.) 1996).

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Introduction to the basic concepts in Environment and Ecology	Classroom Lectures, PPTs, documentaries, discussions, fieldworks and tutorials.	Assignments, presentations, discussions and debates.
II	Detailed discussion of environmental problems and their impacts on urban ecosystems	Classroom Lectures, PPTs, documentaries, discussions, fieldworks and tutorials.	Assignments, presentations, discussions and debates.
III	Deep understanding of the challenges faced by coastal and desert ecosystems	Classroom Lectures, PPTs, documentaries, discussions, fieldworks and tutorials.	Assignments, presentations, discussions and debates.
IV	Understand the role of conservation and management strategies for sustainable development of Mountain ecosystems	Classroom Lectures, PPTs, documentaries, discussions, fieldworks and tutorials.	Assignments, presentations, discussions and debates.
V	People's perception and role of governmental agencies for sustainable management of ecosystems	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, presentations, discussions and debates.

MASTER of ARTS in GEOGRAPHY
Semester II – Core Course

GEOG2C02: CONTEMPORARY HUMAN GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To introduce current debates within human geography and develop an understanding of the contexts within which these debates emerged.
2) To critically understand a broad range of contemporary socio-spatial issues that society experiences and undergoes.
3) To provide a basic social, cultural, political and economic understanding from global and local perspectives to a broad range of contemporary issues.

Course Learning Outcomes:
1) Understand the contribution of the discipline of geography to social sciences.
2) Connect theory with practice.
3) Critically analyse contemporary social issues from a geographical perspective.

Course Contents:
Unit I: Introduction: Foundational and Contemporary issues and debates, defining space and place, understanding different approaches in conceptualising space and place.
Unit II: Socio-spatial interconnections: Place-making, processes of place making in everyday lives, identities, difference and exclusion.
Unit III: Critical geopolitics: Territoriality and power, nationalism, citizenship and governance, conflicts.
Unit IV: Development Geographies: Theories of development, Re-thinking development, development in the global south.

Suggested Readings:
1. Kitchin, B and Thrift N (eds) 2009. *International Encyclopaedia of Human Geography*, Elsevier
2. Benko, G and Strohmayer, U (eds) 2004. *Human Geography. A History for the 21st Century*, Routledge, London and New York.
3. Cloke, P., Crang, P. and Goodwin, M. (eds.), 2014. *Introducing Human Geographies*, Third Edition, Routledge, London and New York.
4. Kobayashi, A and MacKenzie, S. 1989. *Remaking Human Geography*, Routledge, London New York.
5. Agnew, J.A. and Duncan, J.S. 2016. *The Wiley Companion to Human Geography*, Wiley, UK.
6. Daniels, S and Lee, R. (eds) 1996. *Exploring Human Geography: A Reader*, Routledge, London and New York.
7. Hubbard P, Kitchin B and Valentine G. 2008. *Key Texts in Human Geography*, Sage, London.

8. Cloke, P., Philo, C., Sadler, D. 2003. *Approaching Human Geography: An Introduction to Contemporary Theoretical Debates*, Sage: London.
9. Hubbard, P., Kitchin, R., Bartley, B., Fuller, D. 2005. *Thinking Geographically. Space, Theory and Contemporary Human Geography*, Continuum: London.
10. Aitken, S.C, Valentine, G. 2015. *Approaches to Human Geography. Philosophies, Theories, People and Practices*, Sage: London, California, Delhi, Singapore.
11. Agnew, J.A., Livingstone, D.J., Rogers, A. 1996. *Human Geography: An Essential Anthology*, Wiley: U.K

Teaching Plan:

Week 1:	Session 1:	Syllabus overview
	Session 2:	Foundational and Contemporary issues and debates
Week 2:	Session 1:	Foundational and Contemporary issues and debates
	Session 2:	Defining space and place
Week 3:	Session 1:	Defining space and place
	Session 2:	Understanding different approaches in conceptualising space and place
Week 4:	Session 1:	Understanding different approaches in conceptualising space and place
	Session 2:	Understanding different approaches in conceptualising space and place
Week 5:	Session 1:	Place-making
	Session 2:	Place-making
Week 6:	Session 1:	Processes of Place making in everyday lives
	Session 2:	Processes of Place making in everyday lives
Week 7:	Session 1:	Identities, difference and exclusion
	Session 2:	Identities, difference and exclusion
Week 8:	Session 1:	Identities, difference and exclusion
	Session 2:	Territoriality and power
Week 9:	Session 1:	Territoriality and power
	Session 2:	Nationalism; Citizenship and governance
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Nationalism; Citizenship and governance
	Session 2:	Nationalism; Citizenship and governance
Week 13:	Session 1:	Conflict
	Session 2:	Conflict
Week 14:	Session 1:	Theories of Development
	Session 2:	Theories of Development
Week 15:	Session 1:	Rethinking development
	Session 2:	Rethinking development
Week 16:	Session 1:	Development in the global south
	Session 2:	Development in the global south
Week 17:	Session 1:	Summing up and Wrap up discussions

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understand current debates in human geography	Classroom lectures Group discussions	Tutorial Assignments
II	Understand the contribution of spatial studies in the understanding of society	Classroom lectures Group presentations	Mid -term examinations
III	Develop a basic social, political and economic understanding of contemporary issues	Classroom lectures Group discussions	Tutorial Assignments
IV	Understand global and local issues and draw linkages between theory and practice	Classroom lectures Group presentations	End term examinations

MASTER of ARTS in GEOGRAPHY
Semester II – Core Course

GEOG2C03: REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM (PRACTICAL)

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 2, Practical – 6)

Course Objectives:
1) To develop an understanding of remote sensing, GIS and GPS technologies and their potential applications.
2) To develop basic skills to interpret remote sensing images for various applications in geography.
3) To develop basic skills to use GIS for various applications in geography.

Course Learning Outcomes:
1) Overall understanding of potential of Remote Sensing, GIS and GPS
2) Understanding of image interpretation
3) Understanding of GIS analysis workflow and integrated applications in various domains of Geography

Course Contents:
Unit I: Remote Sensing: principles, historical development, satellite and sensors, concept of resolution, photography vs. image, GPS applications
Unit II: Aerial photography: stereoscopy, principles of aerial photo interpretation
Unit III: Electromagnetic radiation principles; interaction mechanism with atmosphere and earth surfaces; spectral responses of earth surface features, visual interpretation of satellite images
Unit IV: Definition, Development and Applications: elements of GIS; geographic objects: point, line and area; coordinate systems and map projections
Unit V: Geographic Data, Input, Storage and Editing: spatial and attribute data, vector and raster based models, digitization; storage and manipulation of GIS data bases, presentation of GIS output

Suggested Readings:
1. Burrough, P.A. and McDonnell, R.A. 1998. *Principles of Geographic Information Systems*, Oxford University Press.
2. Chang, K-t. 2006. *Introduction to Geographic Information Systems*, Tata McGraw-Hill.
3. DeMers, M. 2009. *Fundamentals of Geographic Information Systems*, 4th Edition, John Wiley & Sons.
4. Gupta, R.P. 2018. *Remote Sensing Geology*, 3rd Edition, Springer.
5. Heywood, I., Cornelius, S., Carver, S. 2011. *An Introduction to Geographic Information Systems,* 4th Edition, Pearson Education.

6. Jensen, J.R. 2006. *Remote Sensing of the Environment: An Earth Resource Perspective*, 2nd Edition, Pearson Education.
7. Joseph, G. 2005. *Fundamentals of Remote Sensing*, Orient Blackswan.
8. Lillesand, T.M., Kiefer, R.W. and Chipman, J.W. 2004. *Remote Sensing and Image Interpretation*, 5th Edition, Wiley.
9. Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. *Geographic Information Systems and Science*, 3rd Edition, Wiley.
10. Sabins, F.F. 2007. *Remote Sensing: Principles and Interpretation*, 3rd Edition, Waveland Press.

Teaching Plan:

Week 1:	Theory:	Remote Sensing: principles, historical development, components, types, Satellite and sensors
	Practical:	Introduction to Remote Sensing Software, Image visualization
Week 2:	Theory:	Concept of resolution, photography vs. imaging
	Practical:	Comparison of images with various resolution concepts
Week 3:	Theory:	Principles of Aerial photography: stereoscopy
	Practical:	Basic calculations (scale, height of objects) on aerial photographs
Week 4:	Theory:	Principles of aerial photo interpretation
	Practical:	Visual Interpretation of Aerial Photographs
Week 5:	Theory:	Electromagnetic radiation principles, Interaction mechanism with atmosphere and earth surfaces
	Practical:	Colour composite in remote sensing software
Week 6:	Theory:	Spectral responses of earth surface features; visual interpretation of satellite images
	Practical:	Visual interpretation of satellite images, Part-1
Week 7:	Theory:	Remote sensing of common geographical features, interpretations
	Practical:	Visual interpretation of satellite images, Part-2
Week 8:	Theory:	GPS theory and applications
	Practical:	Hands-on exercises on GPS data collection
Week 9:	Theory:	GIS: Definition, development and applications, components & elements of GIS
	Practical:	Introduction to GIS Software
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Theory:	Geographic objects: point, line and area, Coordinate system and map projection, Geo-referencing,
	Practical:	Geo-referencing
Week 13:	Theory:	Geographic Data, Input, Storage and Editing, spatial and attribute data, Digitization
	Practical:	Digitization and data joining
Week 14:	Theory:	Vector and raster based models, Storage and manipulation of GIS data bases
	Practical:	Vector & raster conversion, Geoprocessing tools
Week 15:	Theory:	GIS functions, query, proximity, neighbourhood, network, overlay etc.
	Practical:	Query and Proximity Analysis
Week 16:	Theory:	Integrated applications of GIS, Remote Sensing and GPS
	Practical:	Overlay Analysis
Week 17:	Theory:	Presentation of GIS output
	Practical:	Layout Preparation

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Overall understanding of potential of Remote Sensing Technology and GPS	Lecture, demonstration, and hands-on Practical exercises	Comparison of images with different resolutions. Hands-on exercise with location data collections using GPS.
II	Understanding of photo interpretation	Lecture, demonstration, and hands-on practical exercises	Calculation of scale, height using photogrammetric principles. Visual interpretations aerial photographs.
III	Understanding of remote sensing image interpretation	Lecture, demonstration, and hands-on practical exercises	Visual interpretations remote sensing images with different resolutions.
IV	Overall understanding of potential of GIS Technology	Lecture, demonstration, and hands-on practical exercises	Assessment of geographical problems from the GIS perspectives.
V	Understanding of GIS analysis workflow and integrated applications in various domains of Geography	Lecture, demonstration, and hands-on practical exercises	Comparison and usage of raster and vector database. Preparation of GIS based map using basic GIS database and analysis functions.

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E01: AGRICULTURAL GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course attempts to introduce the students to the nature and origin of agriculture and its regions.
2) The course examines the questions related to agricultural development and productivity in India.
3) It also critically evaluates the environmental consequences and emerging perspective and policies and interventions aimed at sustainable agriculture

Course Learning Outcomes:

1) The students will be able to understand and analyse the historical perspective of agriculture.
2) The students will be able to analyse the agriculture development and productivity and its impacts on various sectors
3) The students will be able to get updated knowledge of contemporary issues and strategies.

Course Contents:

Unit I: Agricultural Geography: Nature & scope, Origin and dispersal of agriculture – Major theories of origin of agriculture and gene-centres of agriculture - New World and Old World.

Unit II: Models and Regions in Agricultural Geography: Bases of classification; normative models; Regionalisation: Concept and criteria; Agricultural regions of India.

Unit III: Agricultural Development and Productivity in India: Concept, Criteria of agricultural development; Agricultural Productivity: Concept and Determinants, Regional imbalances, Socio-economic and human health consequences.

Unit IV: Environmental Consequences of Agriculture in India: Concept, process, regional patterns and consequences: ground water depletion and contamination; salinity and alkalinity, deterioration of soil fertility and soil erosion; Case Studies.

Unit V: Emerging Perspectives in Agriculture and Government Initiatives: Sustainable urban agriculture, food security and safety, national agriculture policy.

Suggested Readings:

1. Bryant, C.R., Johnston, T.R. 1992. *Agriculture in the City Countryside*, Belhaven Press, London.
2. Burch, D., Gross, J. and Lawrence, G. (eds.), 1999. *Restructuring Global and Regional Agriculture*, Ashgate Publishing Company, Burlington.
3. Cakmak, I. and Welch, R. M. (eds), 2009. *Impacts of agriculture on Human Health and Nutrition,* EOLSS Publications, UK.

4. Ferroni, Marco, 2013. *Transforming Indian agriculture- India 2040: Productivity, Markets and Institutions*, Sage Publications, New Delhi.
5. Grigg, D.B. 1984. *Introduction to Agricultural Geography*, Hutchinson, London.
6. Mohammad, N. 1992. *New Dimension in Agriculture Geography*, Vol. I to VIII, Concept Publishing Company, New Delhi.
7. Mohammad, N. and Rai, S.C. 2014. *Agricultural Diversification and Food Security in the Mountain Ecosystem*, Concept Publishing Company, New Delhi.
8. Roling, N.G., and Wageruters, M.A.E. (eds.) 1998. *Facilitating Sustainable Agriculture*, Cambridge University Press, Cambridge.
9. Shafi, M. 2006. *Agricultural Geography*. Pearson Education, Delhi.
10. Singh, J., and Dhillon, S.S. 1994. *Agricultural Geography*, Tata McGraw Hill, New Delhi.
11. Singh, R. B. 2000. Environmental Consequences of Agricultural Development: A Case Study from the Green Revolution state of Haryana, India, *Agriculture, Ecosystems and Environment* 82, 97–103.
12. Tiwari, R. and Singh, B. 1994. *Krishi Bhoogol,* Prayag Pustak Bhandar, Allahabad. **(Hindi)**.
13. White P. 2007. *Emergence of agriculture: A global view*, Routledge, London.
14. Wright J. 2009. *Sustainable agriculture and food security in an era of oil scarcity*, Earthscan, London.
15. Young, A. 1998. *Landuse Resources: Now and for the Future*, Cambridge University Press, Cambridge.

Teaching Plan:

Week 1: Introduction and Nature and Scope
Week 2: Origin and dispersal of agriculture in world
Week 3: Theories and genecentre of agriculture
Week 4: Old world gene centre
Week 5: New world gene centre
Week 6: Models in agriculture
Week 6: World agriculture regionalisation
Week 7: Agriculture regions of India
Week 8: Determinants of Agriculture
Week 9: Agriculture development: concept & criteria
Week 10:Mid-semester Examinations
Week 11:Mid –semester Break
Week 11:Overview on Indian Agriculture
Week 12:Agriculture productivity
Week 13:Impacts of agricultural productivity
Week 14:Environmental consequences of agriculture development, (cont.)
Week 15:Environmental consequences of agriculture development
Week 16:Sustainable urban agriculture, Food security and safety
Week 17:Government initiatives and Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Origin and growth of agriculture	Classroom lectures tutorials and PPTs	Why origin of agriculture took place in particular area? Discussions/ Assignments.
II	Regionalisation and Agricultural regions of India.	Classroom lectures tutorials and PPTs	Discussion/Debate/Presentations regionalisation, agriculture regions in India
III	Driving forces of regional imbalances in productivity and their consequences on different sectors.	Classroom lectures tutorials and PPTs	Assignment/ presentation on agricultural productivity and its impacts.
IV	Environmental consequences of agricultural development	Classroom lectures tutorials and PPTs	Discussions/ Assignments on consequences of agriculture development with case studies
V	Food security and safety, Sustainable agriculture, policy	Classroom lectures tutorials and PPTS	Assignments /Discussion/ Presentations on emerging issues and initiatives

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E02: EVERYDAY GEOGRAPHIES

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15 (Field Journal)
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To engage students methodologically to unpack urban spaces and processes
2) To study the dynamics of 'everyday' as a methodological tool
3) To make sense of 'everyday' context as a field and source of data

Course Learning Outcomes:
1) Engage with literature on urban every-day and diverse forms of agency and methodologies
2) Reflect the ways in which methodological lenses are constituted through understanding urban cultural spaces
3) Innovative methodological approaches and field Journal writing

Course Contents:
Unit I: Locating urban studies and the everyday: Ontology and epistemology of urban studies; cities and the everyday; Field work and Field Journal.
Unit II: Settling: Meanings of residing, housing and home; 'House/homelessness'
Unit III: Encountering: Concept, ethnography and encountering; everyday encounters
Unit IV: Participation: Everyday participation in urban space; Participating as a method; Public space and digital realm
Unit V: Protesting: Meaning of protest, protest as agency, protest vs participation
Unit VI: Mobilities: Understanding the everyday politics of mobility

Note: This course will require regular field visits, and at the end of the course each student will submit a Field Journal as part of the evaluation.

Suggested Readings:
1. Brown, G. 2008. Ceramics, clothing and other bodies: affective geographies of homoerotic cruising encounters, *Social & Cultural Geography*, *9*(8), 915-932.
2. Bunnell, T., Yea, S., Peake, L., Skelton, T. and Smith, M. 2012. Geographies of friendships, *Progress in Human Geography*, *36*(4), 490-507.
3. Caldeira, T. P. 2017. Peripheral urbanization: Auto-construction, transversal logics, and politics in cities of the global south. *Environment and Planning D: Society and Space*, *35*(1), 3-20.
4. Derickson, K. D. 2015. Urban geography I: Locating urban theory in the 'urban age', *Progress in Human Geography*, *39*(5), 647-657.
5. Harding, A. and Blokland, T. 2014. *Urban theory: a critical introduction to power, cities and urbanism in the 21st century*, Sage

6. Hinchliffe, S. and Whatmore, S. 2006. Living cities: towards a politics of conviviality, *Science as culture*, *15*(2), 123-138.
7. Hubbard, P. 2017. *City*, Routledge
8. Ley, D. 2003. Artists, aestheticisation and the field of gentrification, *Urban studies*, *40*(12), 2527-2544.
9. Parnell, S. and Oldfield, S. (eds.). 2014. *The Routledge handbook on cities of the global south*, Routledge.
10. Philo, C. and Wilbert, C. 2004. Animal spaces, beastly places. In *Animal spaces, beastly places* (pp. 15-50), Routledge.
11. Quayson, A. 2010. Signs of the times: Discourse ecologies and street life on Oxford St., Accra. *City & Society*, *22*(1), 72-96.
12. Phillips, R. and Johns, J. 2012. *Fieldwork for human geography*, Sage.
13. Roy, A. 2005. Urban informality: toward an epistemology of planning, *Journal of the American planning association*, *71*(2), 147-158.
14. Zukin, S. 2009. *Naked city: The death and life of authentic urban places*, Oxford University Press.

Teaching Plan:

Week 1:	Session 1:	Introduction to the course
	Session 2:	Locating urban studies and the everyday
Week 2:	Session 1:	The concept of everyday within urban studies
	Session 2:	Introduction to Field Journal
Week 3:	Session 1:	Urban settling: Meaning of housing, home and homelessness
	Session 2:	Urban settling as a method to urban research
Week 4:	Session 1:	Urban settling: Field visit
	Session 2:	Urban Settling: Field visit
Week 5:	Session 1:	Urban settling: Discussion on field visit.
	Session 2:	Everyday urban encounters: Lecture on concept
Week 6:	Session 1:	Everyday urban encounters: Discussion on methods
	Session 2:	Everyday urban encounters: Field visit
Week 7:	Session 1:	Everyday urban encounters: Field visit
	Session 2:	Everyday urban encounters: Discussion and presentation
Week 8:	Session 1:	Participation: Introduction lecture on concept and method
	Session 2:	Participation: Field visit
Week 9:	Session 1:	Participation: Field visit
	Session 2:	Participation: Discussion and presentation
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Methodological reflections on Unit 2, 3, 4
	Session 2:	Protest: Lecture: Concept, politics and method
Week 13:	Session 1:	Protest: Field visit
	Session 2:	Protest: Field visit
Week 14:	Session 1:	Protest: Discussion
	Session 2:	Protest: Writing and presentation of research
Week 15:	Session 1:	Mobilities: Everyday mobilities as concept and method
	Session 2:	Mobilities: Field visit
Week 16:	Session 1:	Mobilities: Field visit
	Session 2:	Mobilities: Field visit
Week 17:	Session 1:	Mobilities: Writing and presentation of research
	Session 2:	Summarising everyday as a method of understanding the urban

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Theoretical understanding of 'urban and everyday' and its methodological notions	Lecture, Reading and discussion	Class discussion and review of papers
II	Cities as settlements, settling down as a method of studying the urban	Lectures, Field Visits, Movie shows, Discussion	Field visits, Data generation and discussion, Presentation
III	Everyday encounters as urban method: strangers, conversations, fights and waiting as methodological practice	Lectures, Field Visits, Movie shows, Discussion	Field visits, Data generation and discussion, Presentation
IV	Participation: can everyday practice of coffee drinking, running and walking help understanding the urban methodologically?	Lectures, Field Visits, Movie shows, Discussion	Field visits, Data generation and discussion, Presentation
V	Protest: Distinct dimension protest as urban method	Lectures, Field Visits, Movie shows, Discussion	Field visits, Data generation and discussion, Presentation
VI	Mobility as methodology	Lectures, Field Visits, Movie shows, Discussion	Field visits, Data generation and discussion, Presentation

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E03: GEOGRAPHIES OF GENDER AND DEVELOPMENT IN SOUTH ASIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

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

Course Learning Outcomes:

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

Course Contents:

Unit I: Gender Roles and Gender Relations in South Asia: South Asia as a geographic and cultural region, transgender roles, gender relations in South Asia, South Asian region as region of 'classic patriarchy'.

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

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

Unit IV: Gender and Development in South Asia: Defining empowerment; empowerment , access and agency; characteristics of gender blind, gender neutral and gender transformative Interventions and policymaking; selected case studies.

Suggested Readings:

1. Banu Ayesha, 2016. *Human Development, Disparity And Vulnerability: Women In South Asia*, Human Development Report Background Paper, UNDP.
2. Kapadia, Karin, 2002. *The Violence of Development: The Politics of Gender, Identity and Social Inequalities in India*, Delhi, Kali for Women
3. Beneria, Lourdes, 2003. *Gender, Development and Globalization: Economics as if All People Mattered,* New York and London: Routledge.
4. Louise Edwards and Mina Roces, Eds. 2000. *Women in Asia: Tradition, Modernity and Globalization*', Ann Arbor, MI: University of Michigan Press.
5. Nussbaum, Martha C. 2001. *Women and Human Development: the Capabilities Approach,* Cambridge University Press.
6. World Bank, 2001. *Engendering Development: Through Gender Equality in Rights, Resources, and Voice***,** Oxford University Press, 2001
7. Parpart, Jane, Patricia Connelly and Eudine Barriteau, 2000. *Theoretical Perspectives on Gender and Development'* International Development Research Centre.
8. March, C., Smyth, I. and Mukhopadyay, M. 1999. *A Guide to Gender Analysis Frameworks***',** Oxfam, Great Britain.
9. Visvanthan, Nalini, Lynn Duggan, Laurie Nisonoff and Nan Wiegersma, (eds.) 1997. *The Women, Gender and Development Reader'.* Zed Books.
10. Moser, Caroline, 1993. *Gender Planning and Development: Theory, Practice and Training***,** Routledge.

Teaching Plan:

Week 1:	Session 1:	Introduction to the course, overview and relevance.
	Session 2:	S. Asia as a geographic and cultural region.
Week 2:	Session 1:	S. Asia as a geographic and cultural region- implications for gender and development.
	Session 2:	Concept of gender roles and its spatial underpinnings.
Week 3:	Session 1:	Gender roles and gender relations in S Asia.
	Session 2:	Theoretical understanding of patriarchy in S Asia using Walby's framework.
Week 4:	Session 1:	Theoretical understanding of patriarchy in S Asia - Kandiyoti's 'classic patriarchy'.
	Session 2:	Implications of patriarchal culture in S. Asia, examining son preference and daughter discrimination.
Week 5:	Session 1:	Implications of patriarchal culture on capabilities and opportunities in South Asia.
	Session 2:	Son preference and Sex ratio differentials in S Asia: Bangladesh, Pakistan, Sri Lanka
Week 6:	Session 1:	Son preference and Sex ratio differentials in S Asia: India, Nepal.
	Session 2:	Gender and Health as a development and cultural issue in S Asia.
Week 7:	Session 1:	Gender disparities in school enrolment, drop outs, female literacy: Bangladesh, Pakistan, Sri Lanka
	Session 2:	Gender disparities in school enrolment, drop outs, female literacy: India, Nepal.
Week 8:	Session 1:	Work force participation in rural and urban areas: Bangladesh, Pakistan, Sri Lanka
	Session 2:	Work force participation in rural and urban areas: India, Nepal.
Week 9:	Session 1:	Patterns of women's participation in household decision making and local and national politics- implications for change: Bangladesh, Sri Lanka and Nepal

	Session 2:	Patterns of women's participation in household decision making and local and national politics- implications for change: India and Pakistan.
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Concepts and patterns of Gender Empowerment Measure (GEM), Gender Development Index (GDI)
	Session 2:	Global Patterns of Gender Empowerment Measure (GEM), Gender Development Index(GDI),
Week 13:	Session 1:	Reading Trends and Patterns of GEM and GDI in S Asian region.
	Session 2:	Understanding the differences between 'position', 'condition' and 'status' of women
Week 14:	Session 1:	Concept of strategic gender interests and practical needs- case study
	Session 2:	Comparison and critique of WID and WAD approaches.
Week 15:	Session 1:	GAD – theoretical base, critiques
	Session 2:	Understanding empowerment as a development goal, its relationship with, access and agency, nature of interventions and their implications for gender.
Week 16:	Session 1:	Gender transformative intervention- selected case study from India.
	Session 2:	Gender transformative intervention- selected case study from Pakistan and Nepal
Week 17:	Session 1:	Gender transformative intervention- selected case study from Bangladesh and Sri Lanka.
	Session 2:	Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Critical understanding of S Asia as a geographic region and understanding of particularities of patriarchy within this region.	Lectures and Tutorials; Discussion on S Asia as a socio-cultural region	Assignment on Patriarchy and reading Kandiyoti " Bargaining with Patriarchy" and V. Geetha " Patriarchy"
II	Appreciating culturally driven gender disparities in well-being, capabilities, opportunities and life chances within the region	Lectures and Tutorials; Discussion on son preference and daughter discrimination as well as gender disparities in key areas of well being	Assignment on women's land ownership and property rights in S Asia. Reading " A Field of One's Own"
III	Knowledge of key approaches to Gender and Development, Concept of GEM and GDI and rankings of S. Asian countries in comparative perspective	Lectures and Tutorials; Discussion on measures of GEM and GDI	Assignment on GDI rankings for countries in S Asia
IV	Appreciating Access, Empowerment and Agency and gender transformative interventions for change.	Lectures and Tutorials; Discussion on gender sensitive interventions for change	Assignment on case studies showing gender transformative interventions.

MASTER OF ARTS IN GEOGRAPHY
Semester II – Elective Course

GEOG2E04: GEOGRAPHY OF CRYOSPHERE

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objective:
1) To make student understand glacial geomorphology and hydrology using earth observation and GIS.
2) Of specific interest are glacier variations and response to climate which includes consequences of the cryospheric change to society such as glacial hazards and its impact on livelihood of Himalayan mountain dwellers.

Course Learning Outcome:
1) The course will help in understanding cryosphere geography and its relevance in the present time.
2) Student will learn how to use Earth Observation and GIS for glacier and glacial lake inventory and impact assessment on society.

Course Contents:
Unit I: Introduction to Cryosphere Geography: concept, nature and scope, global distribution and contemporary relevance.
Unit II: Glacial Geomorphology and Hydrology: glacial system, permafrost/ground ice, runoff, glacial lake environment.
Unit III: Mapping and Monitoring Glaciers and Glacial Lakes: remote sensing and GIS for glacier inventory, mass balance, glacial Lake parameter retrieval.
Unit IV: Applied Glaciology: glacier variations-response to climate change, glacial hazards and mountain society, field trip follow up.

Suggested Readings:
1. Barry, Roger G and Gan, Thian Yew, 2011. *The Global Cryosphere Past, Present and Future.* Cambridge University Press.
2. Pelto, Mauri, 2017. *Recent Climate Change Impacts on Mountain Glaciers* (The Cryosphere Science Series), Wiley-Blackwell, UK
3. Benn, D. I., and Evans, D. J. A. 1998. *Glaciers and Glaciations,* New York, New York, Wiley
4. Andrews, J. T. 1970. *Glacial systems*, Belmont, California, Wadsworth
5. C.J. van der Veen. 2013. *Fundamentals of Glacier Dynamics*, Second Edition, CRC Press
6. Embleton, C., and King, C. A. M. 1975. *Glacial Geomorphology,* New York, New York, Wiley
7. ICIMOD, 2013, Glacial Lakes and Glacial Lake Outburst Floods in Nepal, http://www.icimod.org/publications/index.php/search/publication/750

8. Kulkarni, A. V. 1992. Mass balance of Himalayan glaciers using AAR and ELA methods. *Journal of Glaciology*, 38: 101-104
9. 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.
10. Sugden, D. E. and John, B. S. 1976. *Glaciers and Landscape*, New York, New York, Wiley
11. Slaymaker, Olav and Kelly, Richard, 2006. *The Cryosphere and Global Environmental Change*, Wiley-Blackwell
12. Richardson, Shaun D. and Reynolds, John M. 2000. An overview of glacial hazards in the Himalayas*, Quaternary International,* 65/66, 31-47

Teaching Plan:

Week 1: Concept, Nature and Scope (Barry, Roger G and Gan, Thian Yew., 2011)
Week 2: Global distribution (Barry, Roger G and Gan, Thian Yew., 2011)
Week 3: Contemporary relevance (Barry, Roger G and Gan, Thian Yew., 2011)
Week 4: Glaciers and snow cover in Himalaya (Pelto, 2017)(Benn, D. I., Evans, D. J. A., 1998)
Week 5: Glacial system, glaciations and deglaciation (Andrews, J. T., 1970)
Week 6**:** Paleo-glaciology (C.J. van der Veen., 2013)
Week 7: Permafrost/ground ice (Embleton, C., and King, C. A. M., 1975)
Week 8: Runoff (Pellikka, P. and Rees, W.G. 2010)
Week 9: Glacial lake environment (Pellikka,P and Rees, W.G., 2010)
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12: Remote sensing and GIS for glacier inventory (ICIMOD, 2013)
Week 13: Mass balance (Kulkarni, A. V., 1992)
Week 14: Glacial Lake parameter retrieval (Slaymaker, Olav and Kelly, Richard, 2006)
Week 15: Snowfall and mountain livelihood (Slaymaker, Olav andKelly, Richard, 2006)
Week 16: Glacier variations-response to climate change (Sugden, D. E. and John, B. S., 1976)
Week 17: Glacial hazards and mountain society (Richardson, Shaun D. Reynolds, and John M., 2000)

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Deep understanding regarding cryosphere geography.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.
II	Knowledge about glacial system, permafrost areas and glacial lake environment.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.
III	Use of Remote Sensing and GIS for studying glaciers and glacial lakes.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.
IV	Understanding impact of glacier and snow fall variation induced hazards on the livelihood of mountain dwellers.	Classroom Lectures, PPTs, documentaries, fieldworks and discussions.	Assignments, Presentations, discussions and debates.

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E05: GEOGRAPHY OF GLOBAL CAPITALISM

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) Taking perspectives from Geography, Economics, History and Political science, the course tends to address key issues and developments that have gone into making of the present World Economic Landscape
2) To introduce the student to basic concepts of global economy

Course Learning Outcomes:

1) Basic concepts of the Global economy
2) The political economic forces that have shaped the world

Course Contents:

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

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

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

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

Suggested Readings:

1. Beaud, M. 2004. *A history of capitalism, 1500-2000*, Aakar Books
2. Bery, B.J.L., Conkling, E.C. and Ray, D.M. 1993. The *Global Economy: Resource Use, Locational Choice and International Trade,* Englewood Cliffs, N.J.: Prentice Hall.
3. Cox, K. R. (eds.) 1997. *Spaces of Globalisation- reasserting the Power of the Local*, Guilford Press, New York and London.
4. D'Costa, A. P. 2004. The Indian software industry in the global division of labour. In *India in the global software industry* (pp. 1-26), Palgrave Macmillan, London.
5. Friedman, T. L. 2006. *The world is flat: The globalized world in the twenty-first century* (p. 593), London: Penguin.
6. Gilpin, R. 2011. *Global political economy: Understanding the international economic order*, Princeton University Press.
7. Gwynne, R., Shaw, D. and Klak, T. 2014. *Alternative capitalisms: Geographies of emerging regions*, Routledge.

8. Hardt, M. and Negri, A. 2001. *Empire*, Harvard University Press.
9. Harvey, D. 2006. *Spaces of Global capitalism*, Verso.
10. Knox, P., Agnew, J. A. and McCarthy, L. 2014. *The Geography of the World Economy*, Routledge.
11. Lechner, F. J. and Boli, J. (eds.). 2014. *The Globalization Reader*, John Wiley & Sons.
12. Murray, W. E. and Overton, J. 2014. *Geographies of Globalization*, Routledge.
13. Peet, R. and Hartwick, E. 2015. *Theories of Development: Contentions, Arguments, Alternatives*, Guilford Publications.
14. Porter, P. W. and Sheppard, E. 1998. *A World of Difference: Society, Nature, Development*, Guilford Press.
15. Power, M. 2004. *Rethinking Development Geographies*, Routledge.
16. Rosser, J. B. and& Rosser, M. V. 2018. *Comparative Economics in a Transforming World Economy*, Mit Press.

Teaching Plan:

Week 1: Session 1: Introduction to the course
Session 2: Types of Economic systems and characteristics.
Week 2: Session 1: Types of Economic systems and characteristics.
Session 2: Nature of economies across the world
Week 3: Session 1: Geospatial paradigms
Session 2: Geospatial paradigms
Week 4: Session 1: Geospatial paradigms
Session 2: Geospatial paradigms
Week 5: Session 1: Geospatial paradigms
Session 2: Socio-economic spatial relations
Week 6: Session 1: Socio-economic spatial relations: Division of Labour
Session 2: Socio-economic spatial relations: Division of Labour
Week 7: Session 1: Socio-economic spatial relations: Global production
Session 2: Socio-economic spatial relations: Global production
Week 8: Session 1: Socio-economic spatial relations: Trade
Session 2: Socio-economic spatial relations: Trade
Week 9: Session 1: Socio-economic spatial relations: Finance
Session 2: Socio-economic spatial relations: Finance
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12: Session 1: Changing geographies of capitalism: Colonial expansion
Session 2: Changing geographies of capitalism: Post War Developments
Week 13: Session 1: Changing geographies of capitalism: The Development Agenda
Session 2: Changing geographies of capitalism: The Development Agenda
Week 14: Session 1: Changing geographies of capitalism: Neo Liberalism and Globalisation
Session 2: Changing geographies of capitalism: Neo Liberalism and Globalisation
Week 15: Session 1: Changing geographies of capitalism: Regionalism
Session 2: Changing geographies of capitalism: Regionalism
Week 16: Session 1: Changing geographies of capitalism: Resistance Movements
Session 2: Changing geographies of capitalism: Resistance Movements
Week 17: Session 1: Student activity
Session 2: Closing lecture: Summarising Global Capitalism

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Types of economic Systems: In theory and Practice	Class Lectures Tutorial discussion	Class Test
II	Understanding Development of economy	Class Lectures Tutorial discussion	Class Test
III	Key concepts and processes in global economy	Class Lectures Tutorial discussion	Class Test Long Essay
IV	Historical development of Global capitalist economies	Class Lectures Tutorial discussion	Long Essay

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E06: GEOGRAPHY OF MIGRATION

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course endeavours to encourage the understanding of issues and challenges of human migration from spatial perspectives.
2) Different forms of human migration, its characteristics and regional patterns shall be highlighted.
3) Place of migration issues in the 2030 SDG agenda shall be evaluated.

Course Learning Outcomes:

1) This course should allow the candidates to learn about the basic concepts related to human migration.
2) Furthermore, the student will become conversant with the different forms of human migration, its characteristics, types, regional patterns, major drivers and consequences across geographical context.
3) Students should be able to appreciate the various dimensions of global environmental change and human migration.

Course Contents:

Unit I: Migration Overview: basic concepts, data source, measures, and historical perspectives
Unit II: Internal Migration: concepts, characteristics, typologies, regional patterns, explanations, and implications
Unit III: International Migration: concepts, characteristics, typologies, regional patterns, explanations, and consequences
Unit IV: Migration Policies and Governance: regional models across global north-global south
Unit V: Migration, Environment, and Climate Change linkages: floods, droughts, desertification, natural disasters; Migration, Development, and Sustainable Development Goals.

Suggested Readings:

1. Brettell, C. B., and Hollifield, J.F. (eds.) 2014. *Migration Theory: Talking across Disciplines*, 3d ed. New York: Routledge.
2. Castles, S., de Haas, H. and Miller, M.J. 2014. *The Age of Migration: International Population Movements in the Modern World*, 5th ed. New York and London: Guilford.
3. Hatton, T., and Williamson, J.G. 1998. The age of mass migration: causes and economic impact, New York: Oxford University Press.
4. Kosinsk, L.A., Elahi, K.M. (eds.) 1985. *Population redistribution and development in South Asia*, Boston: Kluwer Academic Publishers Group.

5. Li, W., Skop, E., Morken, A. 2017. *Geography of Migration,* London: Oxford University Press.
6. Mavroudi, E. and Nagel, C. 2016. *Global migration: patterns, processes, and politics,* New York, NY: Routledge.
7. Mishra, D.K. (eds.) 2016. *Internal migration in contemporary India*, New Delhi: Sage.
8. Naerssen, T.V., Spaan, E., and Zoomers, A. 2008. *Global migration and development*, New York: Routledge.
9. Piguet,E., and Laczko F. (eds.) 2014. *People on the move in a changing climate: the regional impact of environmental change on migration*, New York: Springer.
10. Rajan, S.I., and Bhagat R.B. (eds.) 2018. *Climate change, vulnerability and migration*, London: Routledge.
11. Rajan, S.I., and Percot, M. (eds.) 2012. *Dynamics of Indian migration: historical and current perspectives*, London: Routledge.
12. United Nations Development Programme (UNDP) 2009. *Human Development Report 2009: Overcoming barriers- human mobility and development*, New York: Palgrave MacMillan.

Teaching Plan:

Week 1: Migration Overview: basic concept and issues
Week 2: Migration Overview: Data Sources and measures
Week 3: Migration Overview: historical perspectives
Week 4: Internal Migration: concepts
Week 5: Internal Migration: characteristics and typologies
Week 6: Internal Migration: regional patterns, explanations, and consequences
Week 7: International Migration: Concepts
Week 8: International Migration: characteristics and typologies
Week 9: International Migration: regional patterns, explanations, and consequences
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12: Migration policies and governance: emerging issues
Week 13: Migration policies and governance: regional models across global north-south
Week 14: Migration, environment, and climate change linkages
Week 15: Migration, environment, and climate change linkages: floods, droughts, and desertification
Week 16: Migration, Development and Sustainable Development
Week 17: Migration, Development and Sustainable Development

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Basic concepts and issues related to human migration	Classroom lectures and tutorials	Understanding definitions of migration, its measurement, and historical perspectives
II	Basic concepts and issues related to internal migration	Classroom lectures and tutorials	Understanding definition, characteristics, typologies, regional patterns, explanations and consequences of internal migration
III	Basic concepts and issues related to international migration	Classroom lectures and tutorials	Understanding definition, characteristics, typologies, regional patterns, explanations and consequences of international migration
IV	Issues related to migration policies and governance	Classroom lectures and tutorials	Understanding emerging policies issues and challenges related to human migration and governance
V	Issues related to migration, environment, climate change linkage; development, and sustainable development goals (SDG)	Classroom lectures and tutorials	Understanding emerging issues related to migration, environment, and climate change inter-relationships Understanding migration, development, and sustainable development goals inter-relationships (SDGs)

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E07: HERITAGE CONSERVATION

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To critically understand the meaning of heritage and the relevance of heritage conservation.
2) To understand how policies at the global level and at national levels shape conservation practices.
3) To appreciate the different meanings of heritage and particularly how diverse communities understand, practice and preserve heritage.

Course Learning Outcomes:
1) To understand the intersections between space, culture, history and heritage.
2) To develop an interdisciplinary approach towards heritage conservation and relate theory, every-day practices and policy.
3) To develop ideas and suggestions for new and innovative ways in which heritage can be identified and conserved effectively.

Course Contents:
Unit I: Introduction: Concept of heritage, different perspectives on heritage culture and history, terms, definitions and trope.
Unit II: The Content of Heritage: Global perspectives of heritage, the world heritage concept, Implementation of World Heritage Convention, Broadening the representation and meaning of heritage-Intangible and tangible heritage.
Unit III: Conserving Heritage: Heritage complexities, tensions and ethical challenges, conservation and management of cultural and natural heritage, heritage and socio-economic development, community based heritage work.
Unit IV: Heritage Conservation with Particular Reference to India: Managing and interpreting heritage in India, representing complicated and diverse heritages of India, government of India policies and programs on heritage conservation.

Suggested Readings:
1. Lowenthal, D. 2003. *The Past is a Foreign Country*, Cambridge University Press: UK
2. UNESCO World Heritage Convention 1972. whc.unesco.org/en/globalstrategy/#analysiswhc.unesco.org/en/criteria/
3. UNESCO, 2003. Intangible Heritage Convention.
4. Rodney Harrison, 2013. *Heritage: Critical Approaches*, Routledge, London.
5. Harold, Kalman, 2014. *Heritage Planning: Principles and Process*, Routledge, New York.
6. Laurajane Smith, 2006. *Uses of Heritage,* Routledge, London.

7. Boym, S. 2002. *The Future of Nostalgia*, Basic Books, Case, New York.
8. Miles Glendinning, 2013. *The Conservation Movement: A History of Architectural Preservation*, Routledge, London and New York.
9. Chitty, G. 2017. *Heritage, Conservation and Communities. Engagement, Participation and Capacity Building*, Routledge, London and New York.
10. Silva, K.D., and Chapagain, N.K. (eds) 2013. *Asian Heritage Management. Contexts, Concerns , Prospects*, Routledge, London and New York.

Teaching Plan:

Week 1:	Session 1:	Syllabus overview
	Session 2:	Concept of heritage
Week 2:	Session 1:	Perspectives on heritage culture and history
	Session 2:	Perspectives on heritage culture and history
Week 3:	Session 1:	Terms, definitions and trope
	Session 2:	Terms, definitions and trope
Week 4:	Session 1:	Global perspectives of heritage
	Session 2:	World heritage concept
Week 5:	Session 1:	World heritage concept
	Session 2:	Implementation of World Heritage Convention
Week 6:	Session 1:	Broadening the representation and meaning of heritage
	Session 2:	Intangible and tangible heritage
Week 7:	Session 1:	Intangible and tangible heritage
	Session 2:	Heritage complexities; tensions and ethical challenges
Week 8:	Session 1:	Heritage complexities; tensions and ethical challenges
	Session 2:	Conservation and management of cultural and natural heritage
Week 9:	Session 1:	Conservation and management of cultural and natural heritage
	Session 2:	Heritage and socio-economic development
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Heritage and socio-economic development
	Session 2:	Community based heritage work
Week 13:	Session 1:	Community based heritage work
	Session 2:	Managing and interpreting heritage in India
Week 14:	Session 1:	Managing and interpreting heritage in India
	Session 2:	Managing and interpreting heritage in India
Week 15:	Session 1:	Representing complicated and diverse heritages of India
	Session 2:	Representing complicated and diverse heritages of India
Week 16:	Session 1:	Government of India policies and programs on heritage conservation
	Session 2:	Government of India policies and programs on heritage conservation built environment and the imagination of urban landscapes – in global South
Week 17:	Session 1:	Summing up and Wrap up discussions
	Session 2:	Summing up and Wrap up discussions

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the theoretical approaches in heritage conservation	• Classroom lectures • Group discussions	Tutorial Assignments
II	Understanding international policies in shaping the concept and practice of heritage conservation.	• Classroom lectures • Group presentations	Mid -term examinations
III	Develop an understanding of challenges in heritage management and the role of community in heritage protection, awareness and conservation.	• Classroom lectures • Focus Case study discussions	Tutorial Assignments
IV	Understanding the context, tropes and challenges in heritage conservation in India.	• Classroom lectures • Focus Case study presentations	End term examinations

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E08: HYDROLOGY AND WATER RESOURCES MANAGEMENT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course give a holistic view of the water environments i.e., hydrology seen as a water carrier in nature with human influence.
2) To know diverse methods of collecting the hydrological information, which is essential to understand surface and groundwater hydrology?
3) To develop an understanding of how this knowledge may be applied in practice in an economic and environmentally sustainable manner.

Course Learning Outcome:

1) Apply the water balance equation to various hydrological problems in time and space.
2) Describe how components of the water cycle are influenced by human activities.
3) Analyse hydrological data in order to evaluate water resource management in an area.

Course Contents:

Unit-I. Introduction: The history of hydrology, System Concept in hydrology, hydrologic cycle, elements of hydrologic cycle, human impact on the hydrologic cycle, water balance.

Unit-II. Surface Water Hydrology: River basin and problems of regional hydrology, sources of streamflow, streamflow hydrograph, streamflow measurement, rainfall-runoff relationships, flow duration curve, surface water resource of India, wetlands hydrology.

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

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

Unit-V. Water Resource Planning, Management and Policy: Water resources management (demand and supply side), watershed management, water harvesting, national water policy.

Suggested Readings:

1. Abbas, B.M. 1982. *The Ganges Water Dispute*, Vikas Publishing House Pvt. Ltd., New Delhi.
2. Aggarwal, A. 1991. *Floods, Floodplains and Environmental Myths*, Centre for Science and Environment, New Delhi.

3. Andrew, D. W. and Trimble, S. 2004. *Environmental Hydrology*, 2nd Edition, Lewis Publishers, CRC Press.
4. Beek, E., Loucks, P.D. 2005. *Water Resource Systems Planning and Management*: *An Introduction to Methods, Models and Applications*, UNESCO, Paris.
5. Bhattacharya, S.K. 1988. *Urban Domestic Water Supply in Developing Countries*, CBS Publishers, CR Distributors, Delhi.
6. Chow, V.T., Maidment, D.R. and Mays, W.L. 1988. *Applied Hydrology*, McGraw-Hill International Editions, McGraw-Hill Book Company, New York.
7. Beach, Tim and Jonathan, M.F. 2017. *Wetland Hydrology: The International Encyclopaedia of Geography*, Wiley Online Library.
8. Jain, S.K., Aggarwal, P.K. and Singh, V.P. 2007. *Hydrology and Water Resources of India*, Springer, The Netherlands.
9. Karanth, K.R. 1988. *Groundwater: Exploration, Assessment and Development*, Tata-McGraw Hill, New Delhi.
10. Mahajan G. 1989. *Evaluation and Development of Groundwater*, Ashish Publishing House, New Delhi.
11. Micklin, Philip, P. 1996. Man and the water cycle: challenges for the 21st century, *Geojournal,* 39 (3): 285-298.
12. Rai, S.C. 2017. *Hydrology and Water Resources: A Geographical Perspective*, Ane Book Pvt. Ltd., New Delhi.
13. Singh, V.P. 1995. *Environmental Hydrology*, Kluwar Academic Publications, The Netherlands.
14. Subramanya, K. 2010. *Engineering Hydrology*, Tata McGraw Hill Education Pvt. Ltd. New Delhi.
15. Thornthwaite, C.W. and Mather, J.R. 1957. *Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance*, Drexel Institute of Technology, Centerton, New Jersy.
16. Todd, D.K. 1980. *Groundwater Hydrology*, John Wiley, New York.

Teaching Plan:

Week 1	Introduction	Subramanya, K. (2010); Rai, S.C. (2017)
	The history of hydrology	Chow, V.T., Maidment, D.R. and Mays, W.L. (1988); Rai, S.C. (2017)
	System Concept in hydrology	Chow, V.T., Maidment, D.R. and Mays, W.L. (1988); Rai, S.C. (2017)
Week 2 & 3	Hydrologic Cycle; Elements of Hydrologic Cycle: precipitation, interception, evaporation, evapo-transpiration, infiltration, subsurface water, surface water & runoff	Chow, V.T., Maidment, D.R. and Mays, W.L. (1988); Rai, S.C. (2017); Subramanya, K. (2010
	Human impact on the hydrologic cycle	Micklin, Philip, P. (1996); Rai, S.C. (2017)
	Water Balance	Thornthwaite C.W. and Mather, J.R. (1957); Rai, S.C. (2017)
Week 4	River basin and problems of regional hydrology	Subramanya, K. (2010); Jain, S.K., Aggarwal, P.K. and Singh, V.P. (200
Week 5	Sources of streamflow; streamflow hydrograph; streamflow measurement	Chow, V.T., Maidment, D.R. and Mays, W.L. (1988); Rai, S.C. (2017)
Week 6	Rainfall-runoff relationships; flow duration curve; surface water resource of India	Subramanya, K. (2010); Rai, S.C. (2017); Todd, D.K. (1980)
Week 7	Wetlands hydrology	Tim Beach and Jonathan, M.F. (2017)

Week 8	Divisions of subsurface water Formations according to their water-bearing properties Types of aquifer and Aquifer properties Darcy's law and elementary groundwater flow equation	Subramanya, K. (2010); Rai, S.C. (2017); Todd, D.K. (1980)
Week 9	Geological formations as Aquifers Groundwater monitoring Groundwater resource estimation	Subramanya, K. (2010); Rai, S.C. (2017); Todd, D.K. (1980)
Week 10	*Mid-Semester Examinations*	
Week 11	*Mid-Semester Break*	
Week 12	Drought management	Aggarwal, A. (1991); Bhattacharya, S.K. (1988)
Week 13	Flood management	Abbas, B.M. (1982); Bhattacharya, S.K. (1988)
Week 14	Water use conflicts	Beek, E., Loucks, P.D. (2005); Abbas, B.M. (1982); Rai S.C. (2017)
Week 15	Water quality and major water pollutants (points and non-point source) Water quality criteria for different uses	Beek, E., Loucks, P.D. (2005); Rai S.C. (2017)
Week 16	Water resources management (demand and supply side) Watershed Management	Beek, E., Loucks, P.D. (2005); Rai S.C. (2017); Sharma et.al. (1992)
Week 17	Water harvesting National Water Policy	Beek, E., Loucks, P.D. (2005); Rai S.C. (2017)

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Knowledge of fundamental concepts in Hydrology	Lectures and Tutorials	Assignments
II	Knowledge of Surface water hydrology	Lectures, Tutorials and Field visits	Field diaries
III	Knowledge of ground water hydrology	Lectures, Tutorials and Field visits	Field diaries
IV	Knowledge of contemporary issues and challenges	Lectures and Tutorials	Assignments
V	Knowledge of Water Resource Planning, Management and Policy	Lectures and Tutorials	Assignments

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E09: MULTIVARIATE STATISTICAL ANALYSIS

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course shall equip the students to have a basic understanding of multivariate statistical analyses. It shall allow them to understand purpose and basic assumptions related to regression models.
2) They will also learn about different family of regression models, with data requirements, assumptions, and diagnostic tests.

Course Learning Outcomes:

1) This course must train the student about the need, purpose, and advantage of regression models over other crude methods.
2) Students should be well conversant with different families of regression models, its underlying assumptions, data requirements, interpretation of regression results, and able to apply the diagnostic test to check the model fit.

Course Contents:

Unit I: Introduction to regression models: assumptions, properties, and applications
Unit II: Bivariate linear regression
Unit III: Multiple regression
Unit IV: Logit regression
Unit V: Factor analysis; Principal component analysis

Suggested Readings:

1. Berry, W.D. 1993. *Understanding Regression Assumptions*, Sage Publications, London.
2. Dunteman, G.H. 1989. *Principal Component Analysis*, Sage Publications, London.
3. Kim, J., and Mueller, C.W. 1978. Factor Analysis: Statistical Methods and Practical Issues, Sage Publications, London.
4. Menard, S. 2002. *Applied Logistic Regression Analysis*. 2nd edition, Sage Publications, London.
5. Retherford, R.D., and Choe, M.K. 1993. *Statistical Models for Causal Analysis*, Wiley& Sons Inc, New York.
6. Schroeder, L.D., Sjoquist, D.L., and Stephan, P.E. 1986. *Understanding Regression Analysis: An Introductory Guide*, Sage Publications, London.
7. Goddard, J., Kirby, A. 1976. *An Introduction to Factor Analysis*. Concepts and Techniques in Modern Geography, Institute of British Geographers, London.
8. Daultrey,S. (1976) *Principal Component Analysis*. Concepts and Techniques in Modern Geography, Institute of British Geographers, London.

Teaching Plan

Week 1: Introduction to regression models: basic concept
Week 2: Introduction to regression models: assumptions and properties
Week 3: Introduction to regression models: applications
Week 4: Bivariate linear regression: basic concepts
Week 5: Bivariate linear regression: assumptions and properties application
Week 6: Bivariate linear regression: application
Week 7: Multiple linear regression: basic concepts
Week 8: Multiple linear regression: assumptions and properties and application
Week 9: Multiple linear regression: application
Week 10: *Mid-Semester Examinations*
Week 11: *Mid-Semester Break*
Week 12: Logit regression: basic concepts
Week 13: Logit regression: assumptions and properties and application
Week 14: Logit regression: application
Week 15: Factor analysis: basic concept
Week 16: Factor analysis: properties and application
Week 17: Principal component analysis: concept, properties and application

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Basic concepts of regression models	Classroom lectures and tutorials	Understanding basic concept of regression model
II	Concepts and application of bivariate linear regression	Classroom lectures and tutorials	Doing bivariate regression model
III	Concepts and application of multiple regression	Classroom lectures and tutorials	Doing multiple regression model
IV	Concepts and application of logit regression	Classroom lectures and tutorials	Doing logit regression model
V	Concepts and application of factor analysis	Classroom lectures and tutorials	Doing factor analysis
VI	Concepts and application of principal component analysis	Classroom lectures and tutorials	Doing principal component analysis

MASTER of ARTS in GEOGRAPHY
Semester II – Elective Course

GEOG2E10: REGIONAL GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) The students will be exposed to 'regional' approach in studying geography.
2) The students will be conscious of the various facets of regional geography – foundations and dimensions, regional consciousness and identity, and forms and evolution.
3) The students will be aware of the hierarchy of regional divisions of India.

Course Learning Outcomes:
1) The students will be able to understand and analyse the principal issues confronting the regions today.
2) The students will get an insight into 'how regions work', through case-study from India.
3) The students will be able to understand and analyse the principal issues confronting the different regions of India.

Course Contents:
Unit I: Introduction: origin and development of regional studies, regional approach, methods of regionalization.
Unit II: Foundations and Dimensions of Regional Geography: ecological foundations, economic foundations, social and cultural dimensions.
Unit III: Regional Organization of Space: regional consciousness and identity, region and political life.
Unit IV: Forms and Evolution of Regional Organization: societies without space, regional organization of traditional and industrial societies, globalization and new territorial order.
Unit V: Future of the Regional Approach: selected case-studies from India.

Suggested Readings:
1. Abler R., Adams J. S., and Gould P. R., 1971. *Spatial Organization: A Geographer's View of the World*, Englewood Cliffs, Prentice-Hall.
2. Claval Paul, 1998. *An Introduction to Regional Geography*, Blackwell Publishers, Oxford and Massachusetts.
3. De Blij H. J. 1971. *Geography: Regions and Concepts*, John Wiley and Sons.
4. Deshpande C. D. 1992. *India: A Regional Interpretation*, ICSSR, New Delhi.
5. Johnson E. A. J. 1970. *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.
6. Johnston R. J. And Hauer J. 1990. *Regional Geography: Current Developments and Future Prospects*, Taylor and Francis.

7. Johnston R. J. and Sidaway J. D. 2004. *Geography and Geographers: Anglo-American Human Geography since 1945*, Arnold, London.
8. Mandal R. B. (ed.), 1990. *Patterns of Regional Geography – An International Perspective. Vol. 1 – Conceptual Development*.
9. Minshull Roger, 2007. *Regional Geography: Theory and Practice*, Transaction Publishers.
10. Singh R. L. 1971. *India: A Regional Geography*, National Geographical Society of India.
11. Spate O. H. K. and Learmonth A. T. A. 1954. *India and Pakistan – A General and Regional Geography*, Methuen.
12. Whittlesey D. 1952. *The Regional Concept and the Regional Method* in P. James and C. F. Jones (eds.), *American Geography – Inventory and Prospect*, AAAG.

Teaching Plan:

Week 1:	Session 1:	Development of Regional Studies
	Session 2:	Development of Regional Studies
Week 2:	Session 1:	Regional Approach
	Session 2:	Regional Approach
Week 3:	Session 1:	Methods of Regionalization
	Session 2:	Methods of Regionalization
Week 4:	Session 1:	Ecological Foundations of Regional Geography
	Session 2:	Ecological Foundations of Regional Geography
Week 5:	Session 1:	Economic Foundations of Regional Geography
	Session 2:	Economic Foundations of Regional Geography
Week 6:	Session 1:	Social and Cultural Dimensions of Regional Geography
	Session 2:	Social and Cultural Dimensions of Regional Geography
Week 7:	Session 1:	Regional Consciousness and Identity
	Session 2:	Regional Consciousness and Identity
Week 8:	Session 1:	Region and Political Life
	Session 2:	Region and Political Life
Week 9:	Session 1:	Societies without Space
	Session 2:	Societies without Space
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Regional Organization of Traditional Societies
	Session 2:	Regional Organization of Traditional Societies
Week 13:	Session 1:	Regional Organization of Industrial Societies
	Session 2:	Regional Organization of Industrial Societies
Week 14:	Session 1:	Globalization and the New Territorial Order
	Session 2:	Globalization and the New Territorial Order
Week 15:	Session 1:	Conclusions – Future of the Regional Approach
	Session 2:	Regionalization of India by O. H. K. Spate and R. L. Singh
Week 16:	Session 1:	Case Study – Regional Geography of India (Himalaya Mountain)
	Session 2:	Case Study – Regional Geography of India (Indus-Ganga Plain)
Week 17:	Session 1:	Case Study – Regional Geography of India (Peninsular Plateau)
	Session 2:	Case Study – Regional Geography of India (Coastal Plain and Islands)

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Knowledge of the regional approach in geography	Classroom lectures and tutorials	Relevance of the regional approach
II	Knowledge of foundations and dimensions of regional geography	Classroom lectures and tutorials	Comparative study of ecological, economic and socio-cultural dimensions
III	Knowledge of regional organization of space	Classroom lectures and tutorials	Case-study of regional consciousness leading to regionalism
IV	Knowledge of forms and evolution of regional organization	Classroom lectures and tutorials	Comparative case-study of traditional and industrial societies
V	Future of the regional approach and regions of India	Classroom lectures and tutorials	Case-study of selected regions from India

MASTER of ARTS in GEOGRAPHY
Semester III

MASTER of ARTS in GEOGRAPHY
Semester III – Core Course

GEOG3C01: MODERN GEOGRAPHICAL THOUGHT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) This course aims to provide knowledge of disciplinary developments post 1970.
2) It aims to enable students to contextualize the conceptual traditions within geography along with the major philosophical influences.
3) It promotes an understanding of the fluidity, expansion and inclusivity of Modern Geographical Thought as against imperial underpinnings and latent eurocentricity.

Course Learning Outcomes:
1) A thorough knowledge of the growth, development, philosophical influences and relevance of geography from 1970 to the present time.
2) Knowledge of emerging areas and new theorisations within the discipline
3) An appreciation of the discipline's dynamic and inclusive nature.

Course Contents:
Unit I: Brief Disciplinary History: Early origins, imperial influences and multi paradigmic nature; towards professionalization and institutionalisation; a contested discipline.
Unit II: Philosophical Influences in Modern Geographical Thought: Behaviouralism, Realism, Marxism, Structuralism, Post-structuralism and Postmodernism.
Unit III: Emergence of Modern Geography: Key developments in the 1970's; post positivist Humanistic Geography; Behavioural Geography; Marxist Geography, Feminist Geography; Postmodern Geographies.
Unit IV: Ontological turns and New Theories in Modern 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, Non-Representational Theory.
Unit V: Future of Geography: Drivers of global relevance, emerging subfields, difference, diversity and greater inclusivity in a globalising world.

Suggested Readings:
1. Cresswell, Tim, 2013. *Geographic Thought: A Critical Introduction*, Wiley Blackwell.
2. Nayak, Anoop & Jeffrey Alex, 2011. *Geographical Thought: An Introduction to Ideas in Human Geography*, Harlow: Prentice Hall.
3. Gregory, Derek; Johnston, Ron; Pratt, Geraldine; Watts, Michael; Whatmore, Sarah, 2009. *The Dictionary of Human Geography*, Wiley-Blackwell.
4. Bonnett, Alastair, 2008. *What is geography*? Sage Publications.

5. Hubbard, Phil., Kitchin, Rob, and Gill Valentine, 2008. *Key Texts in Human Geography*, Sage Publications.
5. Castree, R, A. Rogers and D. Sherman, 2005. *Questioning Geography: Fundamental Debates*, Blackwell.
6. Hubbard, Phil., Kitchin, Rob., Bartley Brendan and Duncan Fuller, (eds) 2002.*Thinking Geographically: Space, Theory and Contemporary Human Geography*, Continuum
7. Crang, Mike and Nigel Thrift, 2000. *Thinking Space*, Routledge.
8. Holt Jensen Arid, 1999. *Geography: History and Concepts*, Sage Publications.
9. Peet, Richard, 1998. *Geographical Thought*, Blackwell.
10. Benko, Georges, Strohmayer, Ulf, 1997. *Space and Social Theory*, Blackwell Publishers.

Teaching Plan:

Week 1:	Session 1:	Introduction to the course, Bridging with CBCS undergraduate syllabus and overview; Early origins, imperial influences.
	Session 2:	Multi paradigmic nature of the discipline, towards professionalization and institutionalisation.
Week 2:	Session 1:	Towards professionalization and institutionalisation, a contested discipline.
	Session 2:	Philosophical influences on Modern Geographical Thought-Behaviouralism.
Week 3:	Session 1:	Philosophical influences on Modern Geographical Thought- Realism.
	Session 2:	Philosophical influences on Modern Geographical Thought- Marxism.
Week 4:	Session 1:	Philosophical influences on Modern Geographical Thought- Structuralism.
	Session 2:	Philosophical influences on Modern Geographical Thought- Post Structuralism.
Week 5:	Session 1:	Philosophical influences on Modern Geographical Thought – Postmodernism.
	Session 2:	Key developments in the 1970's, Disciplinary androcentricity and racism Phenomenology and post positivist Humanistic Geography.
Week 6:	Session 1:	Behavioural Geography- key themes, critiques
	Session 2:	Marxist Geography-key themes, critiques
Week 7:	Session 1:	Feminist Geography- key themes, intersectionality
	Session 2:	Feminist Geography-intersectionalities, post-feminist geographies?
Week 8:	Session 1:	Post Modern Geographies
	Session 2:	Post Modern Geographies (contd.)
Week 9:	Session 1:	New ontologies of space and place, hetrerotopias.
	Session 2:	New ontologies of space and place, production of space, trialectics of space.
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Ontological turns- cultural turn
	Session 2:	Ontological turns -emotional turn, narrative turn
Week 13:	Session 1:	Fieldwork and politics of representation
	Session 2:	Decolonizing geographical research, Purposing Minor Theory
Week 14:	Session 1:	Minor Theory (contd.), Grounded Theory approach
	Session 2:	Grounded Theory approach (contd.), Non Representational theory.
Week 15:	Session 1:	Non Representational theory (contd.)
	Session 2:	Future of Geography-drivers of global relevance
Week 16:	Session 1:	Emerging areas and new subfields overview and examples
	Session 2:	Difference, diversity and greater inclusivity in a globalising world
Week 17:	Session 1:	Portrait of discipline relevant to contemporary global and local concerns-
	Session 2:	Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Knowledge of disciplinary history and evolution	Lectures and Tutorials/seminars; Presentation and discussion on imperial underpinnings, multiple paradigms	Assignment on paradigms
II	Knowledge of important philosophical influences on the discipline	Lectures and Tutorials/seminars; Discussion and details of major philosophical influences	Assignment on any two major philosophical influences on the work of geographers
III	Knowledge of post positivist geographies	Lectures and Tutorials/seminars; Discussion on emergence of new geographies in the 1970's	Assignment on critique of positivism and responses within mainstream geography.
IV	Knowledge of Ontological turns and New Social Theories in Geography	Lectures and Tutorials/seminars; Discussion on ontological turns and newer social theories in the discipline	Assignment on Cultural turn; Assignment on decolonizing research/ purposing Minor theory/ Nonrepresentational Theory
V	Appreciating the relevance of Geography in assessing contemporary global and local concerns	Lectures and Tutorials/seminars; Discussions on difference, diversity and relevance of geography	Assignment on Future of Geography as an inclusive and integrative discipline.

MASTER of ARTS in GEOGRAPHY
Semester III – Core Course

GEOG3C02: RESEARCH METHODS AND TECHNIQUES IN GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) This course attempts to introduce the students to the basic knowledge related to geographical field research design.
2) The course examines the questions related to data collection, methods and its analysis.
3) It also critically evaluates the dissertation based on field survey.

Course Learning Outcomes:
1) The students will be able to understand basic concepts of field research methods and research design in geography.
2) The students will be able to do field work through practical experience and get skills of data collection methods and processing and analysis of obtained data.
3) The students will be able to write dissertation based on field work on given topic.

Course Contents:
Unit I: Introduction to Geographical Research: Concept, Significance, Types and Approaches to Research in Geography; Literature survey; Research Ethics; Limitations.
Unit II: Research Design: Steps, Identification and formulation of Research Problem; Research questions; Aims and Objectives.
Unit III: Data Sources and Methods of Data Collection: Nature of Data: qualitative and quantitative, Primary Data: Field survey, Selection of sample, Questionnaire, Interview, Observation, PRA; Secondary Data.
Unit IV: Data Analysis: Processing of Data; tabulation, graphic presentation and analysis of Data; Referencing; Structure of dissertation.

Suggested Readings:
1. Black, James A. and Champion, D.J. 1976. *Methods and Issues in Social Research,* John Wiley and Sons, New York.
2. Bonnett, Alastai, R. 2008. *What Is Geography*? Sage, London.
3. Creswell, J. W. 2009. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches,* Sage, California, USA
4. Gopal, Krishan and Singh, Nina, 2016. *Researching Geography: The Indian Context*. Routledge, Delhi.
5. Harris, C. 2001. Archival Fieldwork, *Geographical Review,* 91 (1-2), 328-334
6. Hart, C. 1999. *Doing Literature Review: Releasing the Social Science Research Imagination,* Sage, London.

7. Hay. I. 2010. *Qualitative Research Methods in Human Geography*, 3rd ed. Oxford University Press, South Melbourne, Australia,
8. Lunsbury J.F. and Aldrich, F.T. 1979. *Introduction to Geographic Field Methods and Techniques*, Charles E. Mercill Publishing Company, Columbus.
9. Misra, R. P. 2015. *Research Methodology: A Handbook,* Concept Publishing Company, New Delhi.
10. Montello, Daniel R. and Sutton, P.C. 2006. *An Introduction to Scientific Research in Geograph*y, Sage Publications, London.
11. Oliver, Paul, 2004. *Writing Your Thesis, Vistaar Publications*, New Delhi
12. Preece, R. 1994. *Starting Research: An Introduction to Academic Research and Dissertation Writing*, Continuum, London.
13. Sharma, P.R., R. S. Yadava and Sharma, V.N. 2011. *Research Methodology: Concepts and Studies*, R. K. Books, New Delhi.
14. Stoddard, Robert H. 1982. Field Techniques and Research Methods in Geography, Kendall/Hunt for National Council for Geographic Education.

Teaching Plan:

Week 1 - Overview about research in geography
Week 2 - Types and approaches of research
Week 3 - Literature survey
Week 4 - Research ethics
Week 5 - Research design and process
Week 6 - Identification of problem
Week 7 - Research questions, objectives
Week 8 - Nature and sources of data
Week 9- Primary data sources: field survey
Week 10- Mid-Semester Examinations
Week 11- Mid-Semester Break
Week 12 - Questionnaire & interview
Week 13 - Observation & PRA
Week 14 - Secondary data sources
Week 15 - Processing and analysis of data
Week 16 - References and Structure of dissertation
Week: 17 -Dissertation writing

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Conceptual background of Research	Classroom lectures tutorials and PPTs	Assignments/ discussion on concepts of field research
II	Identify and formulate of Research Problem	Classroom lectures, tutorials and PPTs	Assignments/presentations/ debates on formulation and preparation of research problem
III	Methods of Data Collection and Field survey,	Classroom lectures, tutorials and PPTs	Assignments/discussions/presentations on using techniques for primary survey
IV	Processing and Analysis of Data and writing dissertation	Classroom lectures and tutorials	Presentations/discussions on detailed structure of dissertation

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E01: CITIES OF GLOBAL SOUTH

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To critically understand the complexities of urban cities in the global context and the experience of living in these cities.
2) To critically understand a broad range of issues that global cities face today.
3) To provide a social, cultural, political and economic understanding of global cities of the South.

Course Learning Outcomes:
1) To understand the linkages between global cities of the South and the particular context in which they emerge.
2) Critically analyse contemporary issues of Cities in the South from a geographical perspective.
3) Understand urban issues of specific contexts, in the case of global cities in the South in order to work for possible and effective planning and policy interventions.

Course Contents:
Unit I: Understanding Global Cities: Definitions and approaches in understanding global cities - foundational Ideas, Marxist and post-modern views.
Unit II: Cities in Global Economy: Globalization and cities; emergence of new economy-information communication technologies (ICTs) and informal sectors; Gentrification and social exclusion.
Unit III: Politics, Governance in Global Cities: Local politics and governance in global era; Issues and politics of community development and empowerment; contemporary planning and its impact on everyday lives of citizens.
Unit IV: Future of Global Cities: Sustaining new ways of living and ideas of green cities; Global terrorism, violence, loneliness and homelessness and public policy; Smart cities.

Suggested Readings:
1. 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.
2. Castells, Manuel, Gustavo Cardoso, 2006. *The Network Society: From Knowledge to Policy*, Washington, DC, Center for Transatlantic Relations.
3. Hall, P. 2001. *Cities in Civilization: Culture, Innovation and Urban Order*, Phoenix.
4. Hall, P. 2002. *Cities in Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, 3rd Edition, Oxford: Blackwell.

5. Misra, R.P. (ed.) 2013. *Urbanization in South Asia: Focus on Mega Cities*, Cambridge University Press, New Delhi.
6. 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.
7. Sassen, S (ed.) 2002. *Global Network, Linked Cities*, New York: Routledge.
8. Scott, A.J. 2002. *Global City-Regions: Trends, Theory, Policy*, Oxford: OUP.
9. Southhall, A. 1998. *The City in Time and space, Cambridge*, Cambridge University Press.
10. 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.
11. Parnell, S. and Oldfield, S. 2014.*The Routledge Handbook on Cities of Global*, Routledge, London and New York.

Teaching Plan:

Week 1:	Session 1:	Syllabus overview
	Session 2:	Understanding Global cities
Week 2:	Session 1:	Foundational Ideas
	Session 2:	Marxist Approaches
Week 3:	Session 1:	Post-modern Approaches
	Session 2:	Globalisation and cities
Week 4:	Session 1:	Globalisation and cities
	Session 2:	Emergence of new economy
Week 5:	Session 1:	New economies of information communication technologies (ICTs)
	Session 2:	New economies of information communication technologies (ICTs)
Week 6:	Session 1:	Informal sectors
	Session 2:	Informal sectors
Week 7:	Session 1:	Gentrification and social exclusion
	Session 2:	Gentrification and social exclusion
Week 8:	Session 1:	Local politics and governance in global era
	Session 2:	Local politics and governance in global era
Week 9:	Session 1:	Issues and politics of community development and empowerment
	Session 2:	Issues and politics of community development and empowerment
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Contemporary planning and its impact on everyday lives of citizens
	Session 2:	Contemporary planning and its impact on everyday lives of citizens
Week 13:	Session 1:	Sustaining new ways of living and ideas of green cities
	Session 2:	Sustaining new ways of living and ideas of green cities
Week 14:	Session 1:	Global terrorism, violence
	Session 2:	Global terrorism and violence
Week 15:	Session 1:	Loneliness and homelessness
	Session 2:	Loneliness and homelessness
Week 16:	Session 1:	Public policies in tackling the emerging issues in Cities of Global South
	Session 2:	Smart cities
Week 17:	Session 1:	Summing up and Wrap up discussions
	Session 2:	Summing up and Wrap up discussions

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the complexities of Cities of Global South	Classroom lectures Group discussions	Tutorial Assignments
II	Understanding the economic processes of development of Cities of Global South	Classroom lectures Group presentations	Mid -term examinations
III	Develop a social, political and economic understanding of contemporary urban issues in Cities of Global South.	Classroom lectures Focus City discussions	Tutorial Assignments
IV	Understanding the future of Urbanism and urbanisation trends in Cities of Global South	Classroom lectures Focus City presentations	End term examinations

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E02: CLIMATE CHANGE AND ADAPTATIONS

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objective:
1) Providing in depth knowledge of Climate Change.
2) Assessment of Climate Change impacts on fragile ecosystems.
3) Adaptation strategy and governance.

Course Learning Outcome:
1) Understanding of various dimensions of Climate Change.
2) Significance of adaptation strategies.
3) Evaluation of role of Local and global organisations.

Course Content:
Unit I: Science of Climate Change: Meaning, Concept and Approaches.
Unit II: Measuring Climate Change: Stress, exposure, risk and vulnerability related to climatic hazards and disasters.
Unit III: Empirical Assessment of Climate Change Adaptation: Assessment in fragile ecosystems; Mountain, Desert and Coastal.
Unit IV: Climate Change Adaptation: Role of Indigenous Traditional Knowledge (ITK) and Resilience for Future Sustainability
Unit V: Policy Framework for Climate Change Adaptation: SDGs Approach, International Climate Change Agreements and Local Governance.

Suggested Readings:
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
3. 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.
4. Bergkamp, G., Orlando, B. and Burton, I. 2003. *Change: Adaptation of Water Resources Management to Climate Change*, IUCN, Gland.
5. Brewster, E. N. 2010. *Climate Change Adaptation: Steps for a Vulnerable Planet*, New York, Nova Science.
6. **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.

7. 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.
8. Mukherji Shormila, 2004*. Fragile Environment*, Manak Publication Pvt. Ltd.
9. NDMA, 2009. National Disaster Management Guidelines-Management of Landslides and Snow Avalanches. Publication of National Disaster Management Authority, Government of India. New Delhi
10. 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
11. Rai, S.C. 2009. *Land Use and Climate Change*, Nova Science Publishers, Inc., New York.
12. Reid, Hannah. 2014*. Climate change and human development*, London, UK : Zed Books
13. Singh, Savindra, 2015*. Paryavaran Bhoogol*, Prayag Pushtak Bhavan Allahabad (Hindi).

Teaching Plan

Week 1: Introduction of Climate Change (Barros, Vicente R. (eds.), 2014).
Week 2: Concepts of Climate Change (Reid, Hannah. 2014).
Week 3: Approaches to Climate Change adaptation (Bergkamp, G., Orlando, B. and Burton, I. 2003).
Week 4: Climatic Stress, exposure (Pandey, R, Jha S., 2011).
Week 5: Vulnerability and Risk related to climate change
Week 6**:** Climatic hazards and disasters (NDMA, 2009).
Week 7: Climate Change: Assessment in fragile ecosystem (Mukherji Shormila, 2004).
Week 8: Assessment of Mountain ecosystem (NDMA, 2009 and Pandey, B. W. 2002)
Week 9: Assessment of Coastal and Desert ecosystems IPCC, 2013).
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break (Fieldwork)
Week 12 Role of Indigenous Traditional Knowledge (ITK) (Barros, Vicente R. (eds.), 2014).
Week 13: Climate Change Resilience (Adger, W. N., 2006).
Week 14: Future Sustainability (**IPCC**, 2012)
Week 15: Climate Change Adaptation and role of SDGs (Brewster, E. N. 2010).
Week 16: Climate Change Agreements (**IPCC**, 2012)
Week 17: Regional Cooperation and Local Governance (NDMA, 2009)

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Introduction to climate change adaptations in different geographic conditions	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldwork.	Assignments, Presentations, discussions and debates.
II	Detailed study of vulnerability risk factors related to climate change	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldwork.	Assignments, Presentations, discussions and debates.
III	Empirical understanding of different bio-geographic regions	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldwork.	Assignments, Presentations, discussions and debates.
IV	Role of indigenous practices and adaptation methods to combat climate change	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldwork.	Assignments, Presentations, discussions and debates.
V	Role of different players from the formulation to implementation of policies	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldwork.	Assignments, Presentations, discussions and debates.

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E03: DEMOGRAPHY AND POPULATION GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) This course intends to orient the students towards interdisciplinary perspectives on population issues at different geographical scales.
2) It will acquaint the candidate to appreciate the role of spatial perspectives towards showcasing population changes and its impact on the economy, society, environment and politics at diverse geographical spheres.

Course Learning Outcomes:
1) After taking this course, a candidate should be able to appreciate the active role of population geography as a distinct field of human geography.
2) S/he should be conversant with different sources of demographic data, and well versed with debates on population-development linkages.
3) Students should be able to examine the different components of population change, its drivers, and their consequences upon contemporary socio-economic, environmental, and political changes.

Contents:
Unit I: Demography and Population Geography: nature, scope, development, sources of population data.
Unit II: Population Composition: age, sex, literacy, rural- urban; theories of population: Malthus and critique; the demographic transition theory, population composition and theories.
Unit III: Mortality: measurements, theories, regional patterns.
Unit IV: Fertility and Nuptiality: measurements, theories, regional patterns.
Unit V: Migration: theories, typologies, patterns and flows; causes and consequences.

Suggested Readings
1. Birdsell, N., Kelley, A.C., and Sinding, S.W. 2001. *Population Matters: Demographic Change, Economic Growth, and Poverty in Developing World*, Auckland: Oxford University Press.
2. Clarke, J.I. 1972. *Population Geography*. 2nd edition, Oxford: Pergamon Press.
3. Dyson, T. 2010. *Population and Development: The Demographic Transition*, London: Zed Books.
4. Jeffery, R., and Jeffery, P. 1997. *Population, Gender, and Politics: Demographic Change in Rural North India*, Cambridge, UK: Cambridge University Press.
5. May, J.F. 2012. *World Population Policies: Their Origin, Evolution, and Impact*, Washington DC: Springer.

6. Newbold, K.B. 2010. *Population Geography: Tools and Issues*, New York: Rowman and Littlefield Publishers Inc.
7. Poston, D.L., and Bouvier, L.F. 2010. *Population and Society: An Introduction to Demography*, New York: Cambridge University Press.
8. Poston, D.L., and Micklin, M. (eds.) 2005. *Handbook of Population*, New York: Kluwer Academic.
9. Preston, S., Heuveline, P., and Guillot, M. 2000. *Demography: Measuring and Modelling Population Processes,* Oxford: Wiley-Blackwell.
10. Seigal, J.S., and Swanson, D.A. (eds.) 2004. *The Methods and Materials of Demography*. 2nd edition, San Diego, CA: Elsevier Academic Press.
11. Srinivasan, K. 2017. *Population Concerns in India: Shifting Trends, Policies, and Programs*, New Delhi: Sage.
12. Weeks, J.R. 2008. *Population: An Introduction to Concepts and Issues*. 10th edition, Belmont, CA: Thomson Wadsworth.

Teaching Plan:

Week 1: Understanding the definitions, concepts, and issues related to population geography
Week 2: Scope and development of the sub-field; sources of population data
Week 3: Population Composition: Age, Sex, Literacy, Rural-urban
Week 4: Theories of Population: Malthus and his critique; the Demographic transition theory
Week 5: Mortality: Basic concepts and measurements
Week 6: Mortality: Theories, determinants, regional patterns
Week 7: Fertility and nuptiality: Basic concepts and measurements
Week 8: Determinants of fertility
Week 9: Theories/explanations of fertility decline
Week 10: *Mid-Semester Examinations*
Week 11: *Mid-Semester Break*
Week 12: Migration: basic concepts
Week 13: Migration: theories
Week 14: Migration: typologies
Week 15: Migration: patterns and flows
Week 16: Migration: causes
Week 17: Migration: consequences

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding of fundament issues and concepts of population; inter-relationships with other social science disciplines including geography	Classroom lectures and tutorials	Developing basic concepts and issues related to population issues
II	Understanding of population composition: age and sex, education, marital status, rural-urban; population theories	Classroom lectures and tutorials	Examining population characteristics and composition
III	Basic concepts of mortality: determinants and consequences, regional patterns	Classroom lectures and tutorials	Understanding of mortality measures and determinants
IV	Basic concepts of fertility: determinants and consequences, regional patterns	Classroom lectures and tutorials	Understanding of fertility/nuptiality measures and determinants
V	Basic concepts of migration: determinants and consequences, regional patterns	Classroom lectures and tutorials	Understanding of migration measures, types, and models

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E04: DEVELOPMENT THEORY AND REGIONAL POLICY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

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

Course Learning Outcomes:
1) The students will be aware of Anglo-American academic traditions, and overlapping disciplinary roots of the regional development theories.
2) 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)
3) The students will learn about the regional policies emanating out of these development theories.

Course Contents:
Unit I: Introduction: Origin and Context, Concept of Space and Region, Rationalization of Regional Planning and Spatial Policy.
Unit II: Common Regional Policy Objectives: regional Imbalance as a policy problem; growth, income distribution and spatial inequality.
Unit III: Rival Regional Planning Strategies: urban-industrial growth pole strategies; polarization and the development of underdevelopment; neo-populist regional development strategies.
Unit IV: Globalization of Development Policy: liberalization, privatization and globalization; sustainable human development.
Unit V: Conclusion: territorial regional planning; state, development and regional planning.

Suggested Readings:
1. Friedmann J. 1966. *Regional Development Policy: A Case Study of Venezuela*, Cambridge, Mass., MIT.
2. Friedmann J. 1973. *Urbanization, Planning and National Development*, Sage Pub., London.

3. Gore C. 1984. *Regions in Question: Space, Development Theory and Regional Policy*, London, Methuen.
4. 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.
5. 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.
6. Hirschman A. O. 1958. *The Strategy of Economic Development*, New Haven, Yale University Press.
7. Lo Fu-chen and Salih K. 1978. *Growth Pole Strategy and Regional Development Policy: Asian Experiences and Alternative Approaches*, Pergamon, Oxford.
8. Myrdal G. 1957. *Economic Theory and Underdeveloped Regions*, London, Duckworth.
9. Peet R. 1999. *Theories of Development*, Guilford Press, New York.
10. 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.

Teaching Plan:

Week 1:	Session 1:	Introduction, Origin and Context
	Session 2:	Concept of Space and Region, Rationalization of Regional Planning and Spatial Policy
Week 2:	Session 1:	Bertil Ohlin (1933) – Inter-regional Income Equalization, August Losch (1938, 1954) – Hierarchical Order in an Ideal Economic Region
	Session 2:	Gunnar Myrdal (1957) – Circular and Cumulative Causation, John Friedmann (1966) – Spatial Integration of Space Economy
Week 3:	Session 1:	Willliam Alonso (1968) – Aggregate Efficiency vs. Interregional Equity, Willliam Alonso (1971) – Large City Problem: Optimum City Size Debate
	Session 2:	H. W. Richardson (1973) – Large City Problem – Urban Primacy from a National Perspective, Michael Lipton (1977) – Urban Bias
Week 4:	Session 1:	Francois Perroux (1955) – Growth Pole Concept
	Session 2:	Transformation of Growth Pole into Regional Theory
Week 5:	Session 1:	Albert O. Hirschman (1958) – Interregional Transmission of Growth, Jeffrey G. Williamson (1965) – Disparity vis-à-vis Development
	Session 2:	J.-R. Boudeville (1966) – Strategy of Polarized Development, John Friedmann (1966) – Regional Development Policy
Week 6:	Session 1:	Theodore W. Schultz (1950) – Urban-Industrial Growth and Agricultural Incomes, William A. Lewis (1954) – Dualistic Model of Development
	Session 2:	Douglass C. North (1955) – Regional Exports and Economic Growth, Harvey S. Perloff (1960) – Industrial Location, Natural Resources and Regional Growth
Week 7:	Session 1:	B. F. Hoselitz (1952) – Geography of Modernization, Peter Gould (1965) – Geography of Modernization
	Session 2:	Brian J. L. Berry (1971) – Hierarchical Diffusion
Week 8:	Session 1:	Failure of Urban-Industrial Growth Pole Strategies
	Session 2:	Dependent Development

Week 9:	Session 1:	Andre G. Frank (1967) – Spatial Image of World Capitalist System, Milton A. Santos (1969) – Shared Space
	Session 2:	J. Friedmann (1972) – Theory of Polarized Development, David Slater (1974) – Colonialism and Spatial Structure of Underdevelopment
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Question of National Development Strategy
	Session 2:	E. A. J. Johnson (1970) – Market Towns as Rural Growth Centres, W. Stohr and F. Todtling (1977) – Selective Spatial Closure
Week 13:	Session 1:	D. A. Rondinelli and K. Ruddle (1978) – Strategy of Integrated Regional Development, J. Friedmann and Mike Douglass (1978) – Agropolitan Development
	Session 2:	J. Friedmann and C. Weaver (1979) – Territorial Regional Planning
Week 14:	Session 1:	Developmental Planning, Globalization of Development Policy, Shift from Historicism to A historical Performance Assessment
	Session 2:	John Williamson (1989) – Washington Consensus, UNDP (1990) – Sustainable Human Development
Week 15:	Session 1:	Charles G. Gore (1995) – Southern Consensus: Latin American, Neo-Structuralism and East Asian Developmentalism, Joseph E. Stiglitz (2004) – Post Washington Consensus
	Session 2:	Joshua C. Ramo (2004) – Beijing Consensus, Larry Summers (2010) – Mumbai Consensus
Week 16:	Session 1:	Territorial Regional Planning as an Alternative, Territorial Interests, Organic Conception of Region
	Session 2:	Regional Planning, State, Territory and Power, Development and Regional Planning
Week 17:	Session 1:	Characteristics and Policy Formation in Developmentalist States, Regional Planning Strategies, Regional Planning Practices
	Session 2:	Summing up and looking ahead Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Concept of space, as visualized in regional development theoretical structure	Classroom lectures and tutorials	How is the conceptualization of space in regional development different from other disciplines?
II	Causes of regional imbalances, spatial inequalities; and problems of large cities.	Classroom lectures and tutorials	Debate on efficiency and equity. Incidents of urban bias. Problem in large city vis-à-vis Problems of large city Explore possible contemporary issues and innovations.
III	Regional development discourse in 1950s and 1960s – emphasis on 'urban' and 'industry'. Regional development discourse in 1970s and 1980s – neo-populist emphasis on 'rural' and 'agriculture'.	Classroom lectures and tutorials	How the concept of growth pole transformed into a regional theory? Reasons for failure of growth-pole strategies. Essential ingredients of a national development strategy. Explore possible contemporary issues and innovations.
IV	Regional development discourse in 1990s and 2000s – globalization of development policy.	Classroom lectures and tutorials	How did the development policy globalize? Evaluation of normative vs. explanatory frameworks Explore possible contemporary issues and innovations.
V	Regional planning practices and strategies in developmentalist states.	Classroom lectures and tutorials	Critical evaluation of regional planning practices and strategies. Explore possible contemporary issues and innovations.

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E05: DIGITAL IMAGE PROCESSING (PRACTICAL)

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 2, Practical – 6)

Course Objectives:

1) To make students acquainted with standard digital image processing techniques through hands-on practical exercises
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 Outcomes:

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 Contents:

Unit I: Digital image, supply and storage of digital data, radiometric and geometric correction, image registration
Unit II: Colour Composite, image enhancement, filtering, transformation, indices
Unit III: Colour enhancement, image fusion, perspective visualization
Unit IV: Digital image classification: supervised and unsupervised classification; accuracy assessment
Unit V: Digital change detection

Suggested 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 D*ata, 2nd Edition, CRC Press.

Teaching Plan:

Week 1:	Theory:	Digital Image Processing and spatial statistics
	Practical:	Computation of spatial statistics on 2-D matrices
Week 2:	Theory:	Digital image acquisition, storage, format conversion
	Practical:	Import, format conversion and display of images
Week 3:	Theory:	Image radiometric correction
	Practical:	Dark-object subtraction technique and de-striping
Week 4:	Theory:	Image geometric correction and co-registration
	Practical:	Geometric correction and image to image registration
Week 5:	Theory:	Colour Composites and interpretation
	Practical:	Colour composites from multispectral images and interpretation
Week 6:	Theory:	Image enhancement, contrast stretching, filtering
	Practical:	Contrast stretching on RAW image, filtering operations
Week 7:	Theory:	Image transformation, PCA, indices
	Practical:	PCA and Indices (at least 3) computation on multi-spectral image
Week 8:	Theory:	Image fusion
	Practical:	Image fusion exercise
Week 9:	Theory:	Perspective visualization
	Practical:	Hands-on exercise on perspective visualization
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Theory:	Digital Image classification methods
	Practical:	Image space and feature space conversion, sampling concepts
Week 13:	Theory:	Unsupervised classification
	Practical:	Unsupervised classification on an image
Week 14:	Theory:	Supervised classification
	Practical:	Supervised classification on an image
Week 15:	Theory:	Classification accuracy assessment
	Practical:	Error Matrix Calculation
Week 16:	Theory:	Digital Change Detection
	Practical:	Change detection from temporal images, matrix computation and interpretation
Week 17:	Theory:	Summing up
	Practical:	Land-cover extraction from a downloaded image using DIP routine

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Overview of Digital Image processing and Pre-processing of images	Lecture, demonstration, and hands-on practical exercises	Image registration and radiometric correction on any Indian Remote Sensing satellite data.
II	Understanding of image enhancement techniques for better interpretation	Lecture, demonstration, and hands-on practical exercises	Enhancement of any raw satellite data. Segregation of Vegetative and other classes from multispectral image.
III	Understanding of multi-resolution data fusion and visualization	Lecture, demonstration, and hands-on practical exercises	Comparison of high spatial/spectral image with fused images. Comparison of various images after applying fusion techniques.
IV	Understanding of Image Classification	Lecture, demonstration, and hands-on practical exercises	Comparison of landcover map garneted from same image using supervised and unsupervised classification techniques.
V	Understanding of Change detection techniques	Lecture, demonstration, and hands-on practical exercises	Assessment of urban sprawl, deforestation etc. using time-series satellite data.

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E06: GEOGRAPHICAL INFORMATION SYSTEM (PRACTICAL)

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 2, Practical – 6)

Course Objectives:
1) To make students acquainted with standard GIS techniques through hands-on practical exercises
2) To enable students to use GIS as a decision support system for different geographical applications
3) To enable students for preparation of thematic maps using GIS tools.

Course Learning Outcomes:
1) Understanding of geospatial data management and analysis functions
2) Understanding of analytical modelling with GIS
3) Understanding of thematic map designing using GIS

Course Contents:
Unit I: GIS data management and work flow: DBMS, Geo-database, Web-GIS
Unit II: GIS analysis functions: Geo-processing, spatial Analysis, network analysis, overlay analysis
Unit III: Analytical modelling in GIS, multi-criteria evaluation, analytical hierarchic process
Unit IV: Cartographic Techniques of Mapping: Thematic map designing using GIS, Layout
Unit V: Applications of GIS: environmental modelling, disaster management, social science etc.

Suggested Readings:
1. Chang, K-t. 2006. *Introduction to Geographic Information Systems,* Tata McGraw-Hill.
2. DeMers, M. 2009. *Fundamentals of Geographic Information Systems*, 4th Edition, John Wiley & Sons.
3. 3 Fisher, P. and Unwin, D.J. 1995. *Re-presenting GIS,* John Wiley.
4. Graser, A. 2016. *Learning QGIS*, 3rd Edition, Packt.
5. Heywood, I., Cornelius, S., Carver, S. 2011. *An Introduction to Geographic Information Systems*, 4th Edition, Pearson Education.
6. Kresse, W. and Danko, D.M. (eds.), 2012. *Springer Handbook of Geographic Information*, Springer.
7. Law, M. and Collins, A. 2018. *Getting to Know ArcGIS Desktop*, 5th Edition, ESRI Press.
8. Longley, P.A., Goodchild, M., Maguire, D.J. and Rhind, D.W. 2010. *Geographic Information Systems and Science*, 3rd Edition, Wiley.
9. Okabe, A. (ed.), 2005. *GIS-Based Studies in the Humanities and Social Sciences*, Taylor and Francis.
10. Peterson, G.N. 2009. *GIS Cartography, A Guide to effective map designing*, CRC Press.

11. Shekar, S. and Xiong, H. (eds.), 2008. *Encyclopaedia of GIS*, Springer.

Teaching Plan:

Week 1:	Theory:	GIS data management and work flow: DBMS
	Practical:	Data joining, query analysis
Week 2:	Theory:	Geo-database
	Practical:	Geo-database creation: point, line, area
Week 3:	Theory:	Web-GIS
	Practical:	Web-GIS applications
Week 4:	Theory:	Geoprocessing vector data
	Practical:	Geoprocessing tools
Week 5:	Theory:	Spatial Analysis
	Practical:	Spatial analysis tools
Week 6:	Theory:	Network analysis
	Practical:	Network analysis, shortest path, location-allocation
Week 7:	Theory:	Overlay analysis
	Practical:	Overlay analysis exercise
Week 8:	Theory:	Analytical modelling in GIS
	Practical:	Overlay analysis exercise
Week 9:	Theory:	Multi-criteria evaluation, analytical hierarchic process
	Practical:	AHP exercise with sample data
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Theory:	Cartographic Techniques of Mapping
	Practical:	Usage of cartographic tools
Week 13:	Theory:	Thematic map designing using GIS / Layout
	Practical:	Designing a thematic map using GIS
Week 14:	Theory:	Applications of GIS, Social science applications
	Practical:	Case study with sample GIS database
Week 15:	Theory:	Environmental modelling with GIS
	Practical:	Case study with sample GIS database
Week 16:	Theory:	Disaster Management with GIS
	Practical:	Case study with sample GIS database
Week 17:	Theory:	Summing up
	Practical:	Summing up

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding of geospatial data, storage and management	Lecture, demonstration, and hands-on practical exercises	Creation of geodatabase for any GIS application. Preparation of census thematic map from Census of India WebGIS database.
II	Understanding of various GIS analysis functions	Lecture, demonstration, and hands-on practical exercises	Perform overlay analysis on sample data set for any decision support problem.
III	Understanding of analytical modelling with GIS	Lecture, demonstration, and hands-on practical exercises	Use AHP for any spatial decision support problem.
IV	Understanding of thematic map designing using GIS	Lecture, demonstration, and hands-on practical exercises	Prepare thematic maps (with minimum two plates) using various techniques.
V	Overview and hands-on experience on applications of GIS in geography	Lecture, demonstration, and hands-on practical exercises	Usage of GIS analysis for any two application areas using sample dataset.

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E07: GEOGRAPHY IN INDIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) As a discipline geography has nearly 100 years of existence within the formal system of university education in India.
2) Although students are made aware of geographical ideas and concepts that emerged from USA, Canada, Europe and other parts of the world, what is India's contribution to the knowledge of geography is rarely brought to light.
3) This course has been designed so that post graduate students are well acquainted with “their discipline in their country".

Course Learning Outcomes:

1) The students would engage with a critical understanding of the evolution, growth and characteristics of geography as a science in India.
2) How Higher Education, Policies have impacted the status of Geography in India would be an important component to add depth to the analysis.
3) Students would be introduced to geographers of India (their life and works) with an aim to gather the purpose and works of key contributors to geography in India.

Course Contents:

Unit I: Origin of Geography in India: Ancient, Medieval, Colonial and Post-Colonial
Unit II: Characteristics of Geography in India: Diversity and Disparity
Unit III: Geography in India: Contribution and School
Unit IV: Practice of Geography in India: Theoretical and Applied
Unit V: Status of Geography in India: Comparisons and Concerns
Unit VI: Geography in India within a Globalizing world

Suggested Readings:

1. Deshpande, C.D. 1974. Geography in India, in Roland J. Fuchs and John M. Street (eds.) *Geography in Asian Universities*, Honolulu: Oriental Publications, pp. 86-133.
2. Dikshit, K.R. 2006. The changing Western perspective on geography and the Indian context, *Transactions, Institute of Indian Geographers*, 28 (2): 123–155.
3. Dikshit, R.D. 2001. Indian Geography: An encounter with reality, *Transactions, Institute of Indian Geographers*, 17 (2): 145–163.
4. Kapur, Anu. 1998. *Indian Geography: A Future with a Difference*, Allied Publishers.
5. Kapur, Anu. 2002. *Indian Geography: Voice of Concern*, Concept Publishing Co.

6. Kapur, Anu. 2004. Geography in India: A Languishing Social Science'. *Economic and Political Weekly*, 39 (37 – Sep. 11-17): 4187-4195.
7. Misra, R.P. (Ed.) 1983. *Contributions to Indian Geography; Volume 1: Concepts and Methods,* New Delhi: Heritage Publishers.
8. Mukherjee, A.B. 1991. What ails Indian geography? in Jayamala Diddee (ed.) *Emerging Trends in Indian Geography*, Jaipur: Rawat Publications, pp. 135-155.
9. Sharma, H.S. (Ed.). 2004. *Progress in Indian Geography 2000-2004: A Country Report*, New Delhi: Indian National Science Academy

Teaching Plan:

Week 1 – 2 : Origin of Geography in India: Ancient and Medieval
Week 3 – 4 : Development of Geography in India: Colonial and Post-Colonial
Week 5 – 6 : Characteristics of Geography in India: Diversity and Disparity
Week 7 – 9 : Geography in India: Contribution and Schools
Week 10 : Mid-Semester Examinations
Week 11 : Mid-Semester Break
Week 12 – 13 : Practice of Geography in India: Theoretical and Applied
Week 14 – 15 : Status of Geography in India: Comparisons and Concerns
Week 16 – 17 : Geography in India within a Globalizing World

Facilitating the achievement of Course Learning Outcomes:

(*Each Student should expect one individual assignment which may involve a case of studying in depth the life and works of a geographer of India or an institution which engages with geographical works in India like Census of India, Planning Institutions, Mapping Organisations, etc.)*

Unit No.	Course learning outcomes	Teaching and learning activity	Assessment task
I	Understanding of the evolution and growth of geography as a science in India	Lecture; audio-visual; interaction; discussion	Q&A
II	Understanding the characteristics of geography in India	Lecture; audio-visual; interaction; discussion	Q&A
III	Disparities and differences in the production of geographical knowledge	Lecture; audio-visual; interaction; discussion	Q&A
IV	Professionalization of geography in the country; Higher Education Policies impact on the Geography in India	Lecture; audio-visual; interaction; discussion	Term paper
V	Type of knowledge that is being produced	Lecture; audio-visual; interaction; discussion	Q&A
VI	Relevance of Geographical knowledge produced in India at the global level	Lecture; audio-visual; interaction; discussion	Q&A

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E08: GEOGRAPHY OF SOUTH ASIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) Explore South Asia as a region and a concept
2) Examine its geostrategic significance
3) Understand it in global context

Course Learning Outcomes:
1) Dimensions of South Asia as a region
2) Distinct location in International Politics
3) Representations of South Asia as an identity

Contents:
Unit I: South Asia as a region: geography, polity, history and economy; South Asia as a concept
Unit II: Social formations in South Asia: Caste, religion, gender and sexuality, kinship and marriage
Unit III: South Asian Urbanisms and Urbanization: Origins and post-colonial development and urbanization, Neo liberal globalization/urbanisation.
Unit IV: South Asia: Geo Strategic space, Indian Ocean Region and evolving role of the Indo-Pacific, Expanding Geography
Unit V: South Asia in global context: migration and Diaspora, security and regional cooperation.

Suggested Readings:
1. Ahmed, A. 2009. *Geography of the south Asian subcontinent: A critical approach*, Concept Publishing Company.
2. Anjaria, J. S., and McFarlane, C. (eds.), 2011. *Urban navigations: Politics, space and the city in South Asia*, Routledge.
3. Batra, A. 2012. *Regional Economic Integration in South Asia: Trapped in Conflict?* (Vol. 64), Routledge.
4. Chattopadhyaya, H., and Sarkar, S. K. (eds.), 2003. *Ethnic Composition and Crisis in South Asia: India* (Vol. 1), Global Vision Publishing House.
5. Hagerty, D. T. 2005. *South Asia in world politics*, Rowman & Littlefield Publishers.
6. Hirst, J. G. S., and Zavos, J. 2013. *Religious traditions in modern South Asia*, Routledge.
7. Jain, B. M. 2010. *India in the new South Asia: strategic, military and economic concerns in the age of nuclear diplomacy* (Vol. 45), IB Tauris.
8. Mathur, S. K. 2007. *Global Economic Trends and South Asia*, ICFAI Books.
9. Mitra, A. P., and Sharma, C. (eds.), 2012. *Global environmental changes in South Asia: a regional perspective*, Springer Science & Business Media.

10. Schug, G. R., and Walimbe, S. R. 2016. *A companion to South Asia in the past* (Vol. 31), John Wiley & Sons.
11. Sharma, S. L., and Oommen, T. K. (eds.), 2000. *Nation and National Identity in South Asia*, Orient Blackswan.
12. Sundaram, C., Sugata Bose and Ayesha Jalal, 2005. Modern South Asia: History, Culture, Political Economy, *Contemporary South Asia - Abingdon*, *14*(2), 234
13. Tewari, S., and Khanijo, R. (eds.), 2016. *The Indo Pacific Region: Security Dynamics and Challenges*. Vij Books India Pvt Ltd.
14. Warikoo, K. (ed.), 2009. *Himalayan frontiers of India: historical, geo-political and strategic perspectives,* Routledge.

Teaching Plan:

Week 1:	Session 1:	Introduction to the course
	Session 2:	South Asia as a region: geography, polity, history and economy
Week 2:	Session 1:	South Asia as a region: geography, polity, history and economy
	Session 2:	South Asia as a region: geography, polity, history and economy
Week 3:	Session 1:	South Asia as a region: geography, polity, history and economy
	Session 2:	South Asia as a region: geography, polity, history and economy
Week 4:	Session 1:	South Asia as a concept
	Session 2:	South Asia as a concept
Week 5:	Session 1:	Social formations in South Asia: Family, Kinship and Marriage
	Session 2:	Social formations in South Asia: Family, Kinship and Marriage
Week 6:	Session 1:	Social formations in South Asia: Gender
	Session 2:	Social formations in South Asia: Caste
Week 7:	Session 1:	Social formations in South Asia: Sexuality
	Session 2:	Social formations in South Asia: Religion
Week 8:	Session 1:	South Asian Urbanisms: Origin
	Session 2:	South Asian Urbanisms: Post-colonial development
Week 9:	Session 1:	South Asian Urbanisms: Urbanisation
	Session 2:	South Asian Urbanisms: Neo liberal globalisation/urbanisation
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	South Asia: Geo Strategic space
	Session 2:	South Asia: Geo Strategic space
Week 13:	Session 1:	South Asia in global context: security
	Session 2:	South Asia in global context: Security
Week 14:	Session 1:	South Asia in global context: Regional cooperation
	Session 2:	South Asia in global context: Regional cooperation
Week 15:	Session 1:	South Asia in global context: Migration
	Session 2:	South Asia in global context: Diaspora
Week 16:	Session 1:	Movie Screening and Discussion
	Session 2:	Student Activity
Week 17:	Session 1:	Student activity
	Session 2:	Closing lecture: Summarising South Asia

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	South Asia as Region and Concept	Lecture presentation	Reading and class discussion
II	Social formations in South Asia that make it distinct region	Lecture presentation and movie screenings	Class discussion based on readings
III	Distinct development and urbanisation experiences	Lecture presentation, Video screenings and Class readings	Class discussion based on readings
IV	Geo political significance of South Asia	Lecture presentation	Class discussion based on readings
V	South Asia as seen in global context	Lecture presentation and movie screening	Movie review

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E09: LAND, OCEAN AND ATMOSPHERE INTERACTION

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) This course will lay the foundation of the understanding of coupled dynamics between land and ocean, ocean and atmosphere, land and atmosphere.
2) It will enhance the understanding of relationship and linkages between land, ocean and atmosphere.

Course Learning Outcomes:
1) The students will understand the earth system sciences and impacts of climate variability.
2) The student shall be able to use different models for climate forecasting and understanding.

Course Contents:
Unit I: Introduction to earth system science: Definition and scope of earth system science, Geographic perspective to earth system science, interaction between five spheres.
Unit II: Land-Ocean Interaction: shelf-sea-ocean linkages, coupling Phenomenon, land ocean interactions, processes and issues.
Unit III: Ocean-Atmosphere Interaction: significance of ocean atmosphere interaction, coupling phenomenon, concept of boundary layers, ocean –atmosphere interaction near the tropics.
Unit IV: Sea surface warming and Climate variability: 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.

Suggested Readings:
1. Brian, J. S., Barbara, W.M. 2010. *The Blue Planet: An Introduction to Earth System Science*, 3rdEdition, Wiley.
2. Ernst, W.G. 2000. *Earth Systems: Processes and Issues*, Cambridge University Press.
3. Garatt, J.R. 1992. *The Atmospheric Boundary Layer*, Cambridge University Press.
4. André Monaco, Patrick Prouzet (edt) 2014. *The land- sea interactions*, Willey Press.
5. Eric B Kraus, 2010. *Atmosphere Ocean interactions*, Oxford University Press
6. 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.
7. 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.

8. Swadhin K. Behera and Toshio Yamagata, 2015. *Indo-Pacific Climate variability and Predictability*, World Scientific Press, Singapore.
9. 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.
10. Toshio, Y., Morioka, Y., & Behera, S., 2015. Old and New Faces of Climate Variations. In *Indo-Pacific Climate Variability and Predictability* (Vol. 7).World Scientific Co., Singapore.

Teaching Plan:

Week 1:	Session 1:	Introduction, Origin and Context
	Session 2:	Introduction to earth system science.
Week 2:	Session 1:	Scope of earth system science
	Session 2:	Geographic perspective to earth system science
Week 3:	Session 1:	interaction between five spheres
	Session 2:	interaction between five spheres
Week 4:	Session 1:	Land-Ocean Interaction
	Session 2:	shelf-sea-ocean linkages
Week 5:	Session 1:	Coupling Phenomenon
	Session 2:	land ocean interactions
Week 6:	Session 1:	Processes and issues of land-ocean interaction
	Session 2:	Ocean-Atmosphere Interaction
Week 7:	Session 1:	significance of ocean atmosphere interaction
	Session 2:	coupling phenomenon
Week 8:	Session 1:	concept of boundary layers
	Session 2:	Ocean –atmosphere interaction near the tropics.
Week 9:	Session 1:	Sea surface warming and Climate variability
	Session 2:	Inter-annual variability
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Decadal variability
	Session 2:	Teleconnections of India summer monsoon with southern oscillation
Week 13:	Session 1:	Teleconnections of India summer monsoon with southern oscillation
	Session 2:	Indian Ocean Dipole
Week 14:	Session 1:	ENSO Modoki
	Session 2:	Global impact of ENSO
Week 15:	Session 1:	Global impact of IOD
	Session 2:	Global impact of ENSO Modoki
Week 16:	Session 1:	New faces of climate variability
	Session 2:	Ningaloo Nino
Week 17:	Session 1:	California Nino
	Session 2:	Sub tropical dipoles

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Introduction to earth system science: Definition and scope of earth system science, Geographic perspective to earth system science, interaction between five spheres.	Classroom lectures, PPTs and tutorials, debate and discussions	How is the conceptualization of PDF and its types applied in statistical analysis?
II	Land-Ocean Interaction: shelf-sea-ocean linkages, coupling Phenomenon, land ocean interactions, processes and issues.	Classroom lectures and tutorials, PPTs, debate and discussions	Sampling theory and its uses in social science research
III	Ocean-Atmosphere Interaction: significance of ocean atmosphere interaction, coupling phenomenon, concept of boundary layers, ocean–atmosphere interaction near the tropics.	Classroom lectures and tutorials, PPTs, debate and discussions	How to conceptualise the ANOVA with one-way and two-way classification?
IV	Sea surface warming and Climate 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	Classroom lectures,PPTs and tutorials, debate and discussions	Uses of non-parametric tests in scientific discourse

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E10: LANDSLIDE RISK ANALYSIS

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

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 Outcomes:
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 Contents:
Unit I: Landslide: definition, types, causes, historical events
Unit II: Landslide hazard assessment, tools and techniques: geomorphologic, statistical, non-parametric and advanced techniques
Unit III: Landslide risk assessment, tools and techniques: vulnerability, risk, geotechnical analysis, preparedness and coping capacity
Unit IV: Geo-spatial technologies for Landslide hazard and risk assessment; prediction and early warning
Unit V: National and international programs on landslide risk reduction, role of NGOs and local communities, gender role and agencies

Suggested 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.

Teaching Plan:

Week 1:	Session 1:	Introduction, concepts, definitions
	Session 2:	Overview of Landslides, historical events
Week 2:	Session 1:	Landslide types
	Session 2:	Causes and consequences
Week 3:	Session 1:	Need for landslide hazard and risk assessment
	Session 2:	Geomorphologic techniques for landslide hazard assessment
Week 4:	Session 1:	Statistical and non-parametric techniques for landslide hazard zonation
	Session 2:	Statistical and non-parametric techniques for landslide hazard zonation
Week 5:	Session 1:	Advanced techniques for landslide hazard zonation Part-I
	Session 2:	Advanced techniques for landslide hazard zonation Part-II
Week 6:	Session 1:	Landslide risk assessment, tools and techniques Part-I
	Session 2:	Landslide risk assessment, tools and techniques Part-II
Week 7:	Session 1:	Landslide vulnerability, risk
	Session 2:	Geotechnical analysis
Week 8:	Session 1:	Landslide preparedness
	Session 2:	Coping Capacity
Week 9:	Session 1:	Overview of GIS tools used in landslide studies
	Session 2:	Geo-spatial technologies for landslide hazard assessment
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Geo-spatial technologies for landslide risk assessment
	Session 2:	Geo-spatial technologies for landslide risk assessment (Cond.)
Week 13:	Session 1:	Landslide prediction
	Session 2:	Early warning systems
Week 14:	Session 1:	National programs on landslide risk reduction
	Session 2:	International programs on landslide risk reduction
Week 15:	Session 1:	Role of NGOs
	Session 2:	Role of local communities
Week 16:	Session 1:	Gender role and agencies
	Session 2:	Community based landslide risk reduction
Week 17:	Session 1:	Summing up
	Session 2:	Summing up

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Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding of causes and severity of landslides	Lecture and Tutorial	Case study of two important landslide events from Himalayas and critical analysis
II	Understanding of landslide hazard assessment methods	Lecture and Tutorial	Comparison of landslide hazard assessment tools and techniques
III	Understanding of landslide risk assessment methods	Lecture and tutorial exercises	Comparison of landslide risk assessment tools and techniques
IV	Understanding and usage of geospatial technologies in landslide studies	Lecture, demonstration, and hands-on tutorial exercises	Preparation of landslide hazard and risk map from sample data sets
V	Overview of landslide risk reduction program / policies	Lecture and tutorial exercises	Critical review of landslide risk reduction policies

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E11: MEDIA GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To critically understand the intersection between geography and media.
2) To understand how mediascapes take shape and influence spatial thinking
3) To understand the role of media in bringing rapid transformations in society.

Course Learning Outcomes:
1) To understand the role media is playing in expanding the horizons of geographical knowledges.
2) To critically engage with changing constructs of space and place as an outcome of media related branding, representation and regeneration.
3) To be able to understand the intersection between the physical realm and the digital realm and the continuous making of space and place that goes beyond conventional episteme.

Course Contents:
Unit I: Introduction: Concept of media and the production of space and place; understanding the different approaches in mediascapes; understanding different forms of media and geographical knowledge.
Unit II: The Media Industry: Political economy of media industries, production of consumptive cultures, advertising and global markets; creation of global capital and markets.
Unit III: Mediascapes: Mediated spaces of affect; everyday representations of space and place in different forms of media; politics of representations and reproduction in mediascapes.
Unit IV: Moral economy of Media: Media and the public sphere; free speech and democratisation; value of engagement and participation of audiences and producers.

Suggested Readings:
1. Aitken, Stuart C., and Leo E. Zonn. 1994. *Place, Power, Situation, and Spectacle: A Geography of Film*, Lanham, MD: Rowman & Littlefield.
2. Boym, S. 2002. *The Future of Nostalgia,* New York: Basic Books. Casey.
3. Burgess, J. and John R. Gold, eds. 1985. *Geography, the Media, and Popular Culture*, New York: St. Martin's.
4. Jenkins, H. 2006. *Convergence Culture: Where Old and New Media Collide*, New York: New York University Press.
5. Adams, P. C. 2009. *Geographies of Media and Communication: A Critical Introduction*, London: Wiley-Blackwell.
6. Adams, PC, Craine, J, Dittmer, J (eds) 2014. *The Ashgate Research Companion to Media Geography*, Aldershot: Ashgate Press.

7. Travis, C. And von Lunen. A. (eds), 2016. *The Digital Arts and Humanities, Neogeography, Social Media, Big Data Integrations and applications*, Springer: Switzerland.
8. Gokulsing, K.M., and Dissanayake, W. 2009. *Popular Culture in a Globalised India*, Routledge: London and New York.
9. Rajagopal, A. and Rao, A. 2016. *Media and Utopia: History Imagination and Technology*, Routledge: London and New York.
10. Chung, W.H.K. and Keenan, T. (eds), 2006. *New Media, Old Media: A History and Theory Reade*r, Routledge: London and New York.

Teaching Plan:

Week 1:	Session 1:	Syllabus overview
	Session 2:	Concept of media
Week 2:	Session 1:	Mediated production of space and place
	Session 2:	Approaches to studying mediascapes
Week 3:	Session 1:	Approaches to studying mediascapes
	Session 2:	Forms of media and production of geographical knowledges
Week 4:	Session 1:	Political economy of media industries
	Session 2:	Political economy of media industries
Week 5:	Session 1:	Production of consumptive cultures, advertising and global markets
	Session 2:	Production of consumptive cultures, advertising and global markets
Week 6:	Session 1:	Creation of global capital and markets
	Session 2:	Creation of global capital and markets
Week 7:	Session 1:	Mediated spaces of affect
	Session 2:	Mediated spaces of affect
Week 8:	Session 1:	Everyday representations of space and place in media (Print Media)
	Session 2:	Everyday representations of space and place in media (Television)
Week 9:	Session 1:	Everyday representations of space and place in media (Films)
	Session 2:	Everyday representations of space and place in media (Social media)
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Everyday representations of space and place in media (Social media)
	Session 2:	Everyday representations of space and place in media (Video games)
Week 13:	Session 1:	Politics of representations and reproduction in mediascapes
	Session 2:	Politics of representations and reproduction in mediascapes
Week 14:	Session 1:	Media and the public sphere
	Session 2:	Media and the public sphere
Week 15:	Session 1:	Free speech and democratisation
	Session 2:	Free speech and democratisation; free speech and democratisation;
Week 16:	Session 1:	Value of engagement and participation of audiences and producers
	Session 2:	Value of engagement and participation of audiences and producers
Week 17:	Session 1:	Summing up and Wrap up discussions
	Session 2:	Summing up and Wrap up discussions

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the theoretical approaches in reading mediascapes	Classroom lectures Group discussions	Tutorial Assignments
II	Understanding the mediascape and the drivers of the media industry	Classroom lectures Group presentations	Mid -term examinations
III	Develop a social and political understanding of contemporary mediascapes	Classroom lectures Case study discussions	Tutorial Assignments
IV	Understanding the linkages between media and transformation of society	Classroom lectures Case study presentations	End term examinations

MASTER OF ARTS IN GEOGRAPHY
Semester III – Elective Course

GEOG3E12: NATURAL RESOURCES MANAGEMENT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objective:
1) Awareness about resource availability, accessibility, utilization, its use and misuse.
2) Spatial distribution of natural resources.
3) Resource management and governance.

Course Learning Outcome:
1) At the end the course student should learn importance of natural resources.
2) Conservation methods and awareness about community participation.
3) Assessment of role of national and international efforts to mitigate resource problems.

Course Contents:
Unit I: Introduction: Concept, approaches and appraisal to natural resource management.
Unit II: Natural Resources: Land, Water, Forest.
Unit III: Problems in Resource Management: Issues and constraints in resource management, Environmental, Political and Socio-Economic challenges.
Unit IV: Integrated Resource Management: Case Studies (any one) from Himalayan, coastal and desert regions, use of techniques of RS and GIS.
Unit V: Governance: Policy, Planning and Institutional advancement in natural resource management.

Suggested Readings:
1. Berkes, F. (ed.), 1989. *Common Property Resources: Ecology and Community Based Sustainable Development,* Belhaven Press London.
2. Mather, A.S. and Chapman, K. 1995. *Environmental Resources*, Longman, Harlow, England.
3. McClay, K.R. 1995. *Resource Management Information System: Process & Practice*, Taylor Francis, London.
4. Mitchell B. 1988. *Geography and Resources Analysis*, 2nd edition, Longman, London.
5. Mitchell, B. 1997. *Resource and Environmental Management*, Longman, Harlow, England.
6. Newson, M.D. 1991. *Land, Water and Development: River Basin Systems and Management*, Routledge,London.
7. Owen, S. and Owens, P.L. 1991. *Environment, Resources and Conservation*, Cambridge University Press, New York.
8. Pandey, B. W. (ed.) 2000. *Natural Resource Management*, Mittal Publication, New Delhi.
9. Rees, J. 1990. *Natural Resources: Allocation, Economics and Policy*, Routledge, London.
10. Singh, Jagdish, 2006. *Sansadhan Bhoogol*, Radha Publications, New Delhi (Hindi).

11. Taylor, Russel D., and Torquebiau, Emmanuel (Eds.). 2011. *Natural Resource Management and Local Development*, Springer, Netherland.
12. Thakur, B. 2003-2018. *Perspectives in Resource Management in Developing Countries*, Vol.1-13, Concept Publishing Company, New Delhi.

Teaching Plan:

Week 1: Introduction to NRM
Week 2: Concept and approaches
Week 3: Appraisal to natural resource management
Week 4: Types of Natural Resources
Week 5: Land, Water and Forest resources
Week 6**:** Utilization and monitoring of resources
Week 7: Issues and constraints in resource management
Week 8: Environmental challenges
Week 9: Socio-Economic challenges
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12: Integrated Resource Management
Week 13: Case Studies from Himalayan region
Week 14: Case Studies from coastal and desert regions,
Week 15: Governance
Week 16: Policy and Planning for Himalaya
Week 17: Institutional advancement in natural resource management.

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Deep understanding of concept and approaches of Natural Resources Management	Classroom Lectures, PPTs, documentaries, fieldworks, discussions and tutorials.	Assignments, Presentations, discussions and debates.
II	Knowledge of availability and spatial distributions of natural resources,	Classroom Lectures, PPTs, documentaries, fieldworks, discussions and tutorials.	Assignments, Presentations, discussions and debates.
III	Overview of issues and constraints in natural resources management	Classroom Lectures, PPTs, documentaries, fieldworks, discussions and tutorials.	Assignments, Presentations, discussions and debates.
IV	Socio-economic, political and technological inputs in resource management	Classroom Lectures, PPTs, documentaries, fieldworks, discussions and tutorials.	Assignments, Presentations, discussions and debates.
V	In-depth perception and value of planning and policies of natural resource management	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.

MASTER OF ARTS IN GEOGRAPHY
Semester III – Elective Course

GEOG3E13: REGIONAL DEVELOPMENT IN INDIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objective:

1) Our main focus is teach changing paradigm of regional development and why at present there is need of sustainable regional development strategy.
2) Apart from these of specific interest is to cover the role of NITI Aayog and planning commission and its various regional development strategies shaping present and future regional development pattern in India.

Course Learning Outcome:

1) The course will help in understanding concept and need of sustainable regional development along with changing paradigm of regional development in India.
2) It will improve understanding about role of various development ideas shaping regional development strategies.
3) Understanding spatial and temporal pattern of area development, poverty and HDI indicators.

Course Content:

Unit I: Concept of Regional Development: changing paradigm, need for sustainable regional development
Unit II: Indian Development Thought: development ideas of Gandhi, Census of India, Planning commission, and NITI Aayog.
Unit III: Identification of Regional Disparities: spatial patterns and temporal trends, Human Development Index
Unit IV: Regionalisation for Sustainable Development: area development programmes, agro climatic regions, metropolitan regions.
Unit V: Regional development strategies: Growth Center, Special Economic Zones, watershed approach, micro level planning.

Suggested Readings:

1. Bardhan, P. 1984. *The Political Economy of Development in India*, Oxford, Blackwell.
2. Bhalla, A.S. 1992. *Uneven Development in the Third World: A Study of India and China*, London, Macmillan.
3. Dreze, J. and Sen, A. 1996. *Indian Development: Select Regional Perspectives,* Oxford University Press.
4. Ganguli B.N. 1997. *Indian Economic Thought: A 19th Century, Perspective*, Tata McGraw Hill, New Delhi

5. Misra, R.P. (ed.) 1992. *Regional Planning Concepts, Techniques, Policies and Case Studies,* Concept Publishing Pvt. Ltd, Delhi.
6. Mitra, Ashok. 1961. *Levels of Regional Development in India*, Census of India 1, no. 04 Part 1, 4.
7. Nath, V. 2009. *Regional Development and Planning in India*, Concept Publishing Company.
8. Sharma, H.S and Chattopadhyaya, S. 1998. *Sustainable Development: Issues and Case Studies*, Concept Publishing, Delhi.

Teaching Plan

Week 1: Changing paradigm (Misra, R.P., Nath, V.,)
Week 2: Need for sustainable regional development (Misra, R.P., Nath, V.,)
Week 3: Regional development and planning in India (Misra, R.P., Nath, V.,)
Week 4: Early development ideas; Kautilya (Dreze, J. and Sen, Bardhan, P.,)
Week 5: Modern ideas; Naroji, Ranade, development ideas of Gandhi(Dreze, J. and Sen, Bardhan, P.,)
Week 6: Planning commission, NITI Aayogl (Dreze, J. and Sen, Bardhan, P.,)
Week 7: Spatial patterns and temporal trends (Mitra, Ashok, Nath, V., Sharma, H.S and Chattopadhyaya, S.,)
Week 8: Human Development Index, poverty by region (Mitra, Ashok, Nath, V., Sharma, H.S and Chattopadhyaya, S.,)
Week 9: Agro climatic regions, metropolitan regions (Mitra, Ashok, Nath, V., Sharma, H.S and Chattopadhyaya, S.,)
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12: Ecological regions (Bardhan, P., Sharma, H.S and Chattopadhyaya, S., Ganguli B.N.,)
Week 13: Area development programmes (Bardhan, P., Sharma, H.S and Chattopadhyaya, S., Ganguli B.N.,)
Week 14: Growth center approach (Bardhan, P., Sharma, H.S and Chattopadhyaya, S., Ganguli B.N.,)
Week 15: Special Economic Zones (Bardhan, P., Sharma, H.S and Chattopadhyaya, S., Ganguli B.N.,)
Week 16: Watershed approach (Misra, R.P., Bhalla, A.S., Nath, V.,)
Week 17: Micro level planning (Misra, R.P., Bhalla, A.S., Nath, V.,)

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Deep understanding of concept of regional development and planning in India.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, discussions and debates.
II	Knowledge about early and modern ideas of Indian development thought.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.
III	Assessment of spatial and temporal Regional Disparities in India based on HDI.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.
IV	How area development programmes are contributing in shaping regional development.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.
V	In-depth study of regional development strategies.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E14: SEXUALITY AND SPACE

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To understand geographers' contributions to sexuality studies
2) To know the ways in which sexuality mediates the production of space and place

Course Learning Outcomes:
1) Concepts and terminologies of diverse sexualities
2) Reflect on sexuality as a key player in production of space

Course Contents:
Unit I: Critical Beginnings: sexualising/ queering geography
Unit II: Concepts and terminologies
Unit III: Hegemonic sexuality and resistance: heteronormativity and its others
Unit IV: Sexualising space: Home, public space, cyber space, nation and globe
Unit V: Methodologies in sexuality and space research

Suggested Readings:
1. Bell, D., & Valentine, G. (Eds.), 1995. *Mapping Desire: Geographies of Sexualities*, Psychology Press
2. Binnie, J., & Valentine, G. 1999. Geographies of sexuality-a review of progress, *Progress in human geography*, *23*(2), 175-187.
3. Boellstorff, T. 2012. Some notes on new frontiers of sexuality and globalisation. *Understanding Global Sexualities: New Frontiers, London: Routledge, hal*, 171-185.
4. Brown, G. 2008. Ceramics, clothing and other bodies: affective geographies of homoerotic cruising encounters, *Social & Cultural Geography*, *9*(8), 915-932.
5. Brown, M. P. 2005. *Closet space: Geographies of Metaphor from the Body to the Globe*, Routledge.
6. Browne, K. 2005. Snowball sampling: using social networks to research non-heterosexual women, *International journal of social research methodology*, *8*(1), 47-60.
7. Browne, K. 2006. Challenging queer geographies, *Antipode*, *38*(5), 885-893.
8. Browne, K., Lim, J., & Brown, G. (Eds.), 2009. *Geographies of Sexualities: Theory, Practices and Politics*, Ashgate Publishing, Ltd.
9. Boyce, P. 2006. Moral ambivalence and irregular practices: contextualizing male-to-male sexualities in Calcutta/India, *Feminist review*, *83*(1), 79-98.

10. Gorman-Murray, A. 2006. Homeboys: uses of home by gay Australian men, *Social & Cultural Geography*, *7*(1), 53-69.
11. Hubbard, P. 2013. *Cities and sexualities*, Routledge.
12. Kole, S. K. 2007. Globalizing queer? AIDS, homophobia and the politics of sexual identity in India, *Globalization and health*, *3*(1), 8.
13. Oswin, N. 2008. Critical geographies and the uses of sexuality: Deconstructing queer space, *Progress in Human Geography*, *32*(1), 89-103.
14. Shahani, P. 2008. *Gay Bombay: Globalization, love and (be) longing in contemporary India*, SAGE Publications, Delhi.
15. Tellis, A. 2007. Cyberpatriarchy: Chat rooms and the construction of 'man to man 'relations in urban India. In *East-West Identities* (pp. 361-372). Brill.

Teaching Plan:

Week 1:	Session 1:	Introduction to the course
	Session 2:	Critical Beginnings: Sexuality
Week 2:	Session 1:	Critical Beginnings: Sexualising/ queering Geography
	Session 2:	Critical Beginnings: Sexualising/ queering Geography
Week 3:	Session 1:	Critical Beginnings: Sexualising/ queering Geography
	Session 2:	Critical Beginnings: Sexualising/ queering Geography
Week 4:	Session 1:	Concepts and terminologies
	Session 2:	Concepts and terminologies
Week 5:	Session 1:	Concepts and terminologies
	Session 2:	Concepts and terminologies
Week 6:	Session 1:	Hegemonic sexuality and resistance: heteronormativity
	Session 2:	Hegemonic sexuality and resistance: heteronormativity
Week 7:	Session 1:	Hegemonic sexuality and resistance: LGBTQ resistances
	Session 2:	Hegemonic sexuality and resistance: LGBTQ resistances
Week 8:	Session 1:	Sexualising space: Home
	Session 2:	Sexualising space: Home
Week 9:	Session 1:	Sexualising space: Public space
	Session 2:	Sexualising space: Public space
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Sexualising space: Cyber space
	Session 2:	Sexualising space: Cyber space
Week 13:	Session 1:	Sexualising space: Nation
	Session 2:	Sexualising space: Nation
Week 14:	Session 1:	Sexualising space: Globalisation
	Session 2:	Sexualising space: Globalisation
Week 15:	Session 1:	Methodologies in sexuality and space research
	Session 2:	Methodologies in sexuality and space research
Week 16:	Session 1:	Methodologies in sexuality and space research
	Session 2:	Student Activity
Week 17:	Session 1:	Student activity
	Session 2:	Closing lecture: Summarising geographies of sexualities

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Geographer's engagement with sexuality	Class lecture	Paper review
II	Introduction to concepts and terms	Class lecture and discussion	Class test
III	Social and spatial production of sexuality	Class lecture, group discussion, Movie screening	Short essay
IV	Nuanced understanding of sexual spaces	Class lecture, Group discussion and Field visit	Field report
V	Undertaking sexual research projects	Lecture and Field visit	Field report

MASTER of ARTS in GEOGRAPHY
Semester III – Elective Course

GEOG3E15: TERRITORIAL BASES OF POLITICS IN INDIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

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

Course Learning Outcomes:

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

Course Contents:

Unit I: Geographical Bases of the Indian State: India as a federal state-Territoriality, Location and size; Population: Distribution, ethnic and religious composition, quality; Implications in the current geopolitical context.

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

Unit III: Internal Conflicts and Problems of Nation Building: Religious conflicts: Linguistic conflicts, insurgency and separatist movements as failure to federalize, environmental movements and issues of rehabilitation and livelihoods, river water disputes, politics of exclusion and inclusion in nation building.

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

Unit V: Geography of International Relations: ASEAN and SAARC as regional power blocs and India's position within them, India's bilateral relations with SAARC nations; Geopolitics of the Indian Ocean and India's position in the region; Between two worlds India's position in world politics.

Suggested Readings:

1. Adhikari, S. 1997. *Political Geography*, Rawat publications, Jaipur and Delhi.
2. Bandhopadhya, J. 1991. *The Making of India's Foreign Policy*, Allied Pub, Delhi.
3. Bhambri, C.P. 1991. *Political Process in India*, Vikas, New Delhi.
4. Brass, P.R. 1990. *The Political Economy of India since Independence*, Cambridge University Press, New Delhi.
5. Brass, P.R. 1983. *Caste, Faction and Party in Indian Politics*, Vol I and II, Chankya Pub, Delhi.
6. Brass, P. R. 2003. *The production of Hindu Muslim Violence in Contemporary India*, Oxford University Press, Delhi.
7. Varshney, A. 2002. *Ethnic Conflict and Civic Life: Hindus and Muslims in India*, Yale Univ Press, New Haven.
8. Weiner M and J Osgoodfield (eds.), 1975. *Electoral Politics in the Indian States,* Centre for International Studies, MIT.
9. Pannikar, K.N. 1955. *Geographical Factors in India's History*, Bharatiya Vidya Bhavan, Bombay.
10. Harrisson, S. et al (eds.) 1999. *India and Pakistan: The First Fifty Years*, Woodrow Wilson Centre and Cambridge University Press.

Teaching Plan:

Week 1:	Session 1:	Introduction and overview, relevance of the course
	Session 2:	Understanding India as a federal political unit: Territoriality, Location and size
Week 2:	Session 1:	Political implications of population distribution, ethnic and religious composition, quality.
	Session 2:	India as a federal political unit- the forces of integration and separation; coexistence of regional diversities within pan Indian unity.
Week 3:	Session 1:	Appreciating territorial factors in India's political history- Role of terrain.
	Session 2:	Appreciating territorial factors in India's political history- rivers and sea coasts in fostering integration and isolation
Week 4:	Session 1:	Role of geographical factors in continuity and change in the political and social boundaries.
	Session 2:	Conflicts and Disputes, Conflicts and disputes as problems of nation making
Week 5:	Session 1:	India's border disputes.
	Session 2:	River water disputes (International and state)
Week 6:	Session 1:	Linguistic conflicts in India
	Session 2:	Caste conflicts in contemporary India
Week 7:	Session 1:	Religious conflicts in contemporary India
	Session 2:	Environmental movements and issues of rehabilitation and livelihoods.
Week 8:	Session 1:	Environmental movements and issues of rehabilitation and livelihoods: case study from NBA
	Session 2:	Insurgency and separatist movements as issues related to failure to federalize.
Week 9:	Session 1:	Evolution of political constituencies in India
	Session 2:	Redistricting- issues and concerns
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Regional Parties, and National parties
	Session 2:	Politics of coalition- balancing the regional and national issues
Week 13:	Session 1:	Patterns of electoral support and representation
	Session 2:	Patterns of electoral support and representation
Week 14:	Session 1:	Emerging politico electoral regions of India

	Session 2:	Reading emerging politico electoral regions of India
Week 15:	Session 1:	ASEAN and SAARC as regional blocs and India's position within these blocs
	Session 2:	Geo politics of the Indian Ocean region and India's position in this region.
Week 16:	Session 1:	SAARC as a regional bloc. India's position within SAARC
	Session 2:	Bilateral relations with SAARC countries: Bangladesh, Nepal and Sri Lanka
Week 17:	Session 1:	Bilateral relations with SAARC countries: Pakistan
	Session 2:	Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	To understand India as a political unit in terms of geographic bases of the state	Lectures and Tutorials; Discussion on India as a federal state.	Reading OHK Spate " India and Pakistan"
II	To appreciate the role of terrain and other geographical factors in India's political history.	Lectures and Tutorials; Discussion on nature of terrain and role of sea coast in India's political history	Assignment based on reading Pannikar KN, (1955), *Geographical Factors in India's History*, Bharatiya Vidya Bhavan, Bombay
III	To understand internal conflicts and problems of Nation building in India	Lectures and Tutorials; Discussion on conflicts and disputes between states, inclusive nation building.	Assignment on case studies of river water disputes /rehabilitation and livelihood issues
IV	To understand the process of evolution of constituencies and politico electoral regions of India	Lectures and Tutorials; Discussion on evolution of constituencies and politico electoral regions of India	Assignment on mapping politico electoral regions of India based on last three Lok sabha elections.
V	An understanding of (i) Regional blocs , bilateral relations with SAARC countries (ii) The geopolitics of the Indian Ocean region and India's position in this region.	Lectures and Tutorials; Discussion on ASEAN and SAARC as regional power blocs, the geo-politics of Indian Ocean region.	Assignment on mapping India's position in ASEAN and Indian Ocean region

MASTER of ARTS in GEOGRAPHY
Semester IV

MASTER of ARTS in GEOGRAPHY
Semester IV – Core Course

GEOG4C01: VULNERABILITY AND DISASTER

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) The course begins with a discussion on alternative concepts of disasters, calamity, risk and hazard.
2) The course then proceeds to aggregate the models used to benchmark disasters
3) In the final it de-myths that disasters are natural and lays bare the role of vulnerability in creating disasters and what needs to be managed.

Course Learning Outcomes:

1) The student gains a perspective of disasters different than the Nature as Cause of Disaster.
2) The student keen to pursue a profession in Disasters can do so by addressing real life issues of vulnerability of people.
3) Students could become champions to spread the 'real' reason for disasters and thus become the torchbearers of change needed to mitigate disasters especially in India.

Course Contents:

Unit I: Idea of a Disaster vs. Hazards vs Risk
Unit II: Classification of Disasters (Focus on why these classifications evolved)
Unit III: Disasterscape: Concept and Characteristics (World and India examples)
Unit IV: Response to Disaster, Traditional and Colonial
Unit V: Post Independence Response to Disasters (Tri-forces, NGOs, Disaster Management Act)
Unit VI: Vulnerability: Concept, Measurement, Models; Vulnerability and Disaster: Myth of the Natural Disaster

Suggested Readings:

1. Bankoff, G., G. Frerks and D. Hilhorst (eds.) 2003. *Mapping Vulnerability: Disasters, Development and People*, Earthscan.
2. Beck, Ulrich, 1992. *Risk Society: Towards a New Modernity,* Sage.
3. Cutter, Susan (ed). 1993. *Environmental Risks and Hazards,* Pearson.
4. Drabek, Thomas, 2010. *The Human Side of Disaster*, Taylor and Francis
5. Government of India, 2005. *Disaster Management Act, 2005*, The Gazette of India, New Delhi.
6. Kapur, Anu. *et al.* 2005. *Disasters in India: Studies of Grim Reality,* Rawat Publications, Jaipur and Delhi.
7. Kapur, Anu, 2008. *On Disasters in India,* Cambridge University Press.
8. Kapur, Anu, 2010. *Vulnerable India: A Geographical Study of Disaster,* Sage.

9. Parasuraman, S. 2004. *India Disasters Report: Towards a Policy Initiatives*, Oxford University Press.
10. National Centre for Disaster Management, 2001. *Report of the High Powered Committee (HPC) on Disaster management*, New Delhi, http://nidm.gov.in/PDF/pubs/HPC_Report.pdf.
11. Tripathi, Punam, 2018. *Vulnerable Andaman and Nicobar Islands: A Study of Disasters and Response,* Routledge.
12. United Nations, 2004. *Living With Risk: A Global Review of Disaster Reduction Initiatives*.
13. Wisner, B., P. Blaikie, T. Cannon and I. Davis, 2004. *At Risk: Natural Hazards, Peoples' Vulnerability and Disasters*, Routledge (Second Edition).
14. World Disasters Report, http://www.ifrc.org/en/publications-and-reports/world-disasters-report/

Teaching Plan:

Week 1-2 : Idea of a disaster
Week 3 : Classification of Disasters
Week 4 : Disasterscape: Concept and Characteristics
Week 5 : Disasterscape: India and Global Case studies
Week 6 – 7 : Traditional Response to Disaster
Week 8 : Colonial Response to Disasters
Week 9 : Post Independence Response to Disasters
Week 10 : Mid-Semester Examinations
Week 11 : Mid-Semester Break
Week 12 : Post Independence Response to Disasters
Week 13 : Vulnerability: Concept and intersection with Disaster
Week 14 – 15 : Vulnerability and Disaster: Models
Week 16 – 17 : Vulnerability and Disasters: Myth of the Natural Disaster

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course learning outcomes	Teaching and learning activity	Assessment task
I	Familiarize students with alternative concepts of disasters, calamity, risk and hazard	Lecture; audio-visual; interaction; discussion	Q&A
II	Assessing why these classifications evolved	Lecture; audio-visual; interaction; discussion	Q&A
III	Understanding the landscape of disasters	Lecture; audio-visual; interaction; discussion	Q&A
IV	Assessing the various responses in case of disaster with special reference to India	Lecture; audio-visual; interaction; discussion	Term paper
V	A shift in the focus from “nature” as a cause of disaster to “vulnerability” as cause of disaster	Lecture; audio-visual; interaction; discussion	Q&A
VI	A perspective of disasters different than the Nature as Cause of Disaster	Lecture; audio-visual; interaction; discussion	Q&A

MASTER of ARTS in GEOGRAPHY
Semester IV – Core Course

GEOG4C02: NEW ECONOMIC GEOGRAPHY

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) 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 analysed in social, cultural and political contexts.
2) 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.
3) The students will realise the relevance of economic geography for analysing contemporary societies and economies.

Course Learning Outcomes:

1) The students will be able to appreciate that geography and space matter in economy.
2) The students will be able to identify some key issues that economic geography engages with.
3) The students will be able to comprehend and analyse 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 Contents:

Unit I: Introduction to Spatial Economics: the re-discovery; issues in spatial economic systems; economic-geographic links.

Unit II: Stages of Growth; Evolution of Economic Systems and Sectors: stages of economic growth; evolution of economic systems; three-sector hypothesis and post-industrial society; informal economy and social accounting.

Unit III: Information and Knowledge Economies in Spatial Systems: information revolution, economies of human attention; knowledge economies and imagination age; creative industries and cultural economies, recreating economic spaces.

Unit IV: Economies of Urban Systems: FIRE & ICE economies and global cities; city re-imaging, city branding and place marketing, place-making and place-led development.

Unit V: Space-Economy of International Systems: economic groupings; economic gravitations; economic cooperation and integration, sustainable development goals (Goal 17: global partnership for sustainable development).

Suggested Readings:

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

Teaching Plan:

Week 1:	Session 1:	The Re-discovery, Issues, Factors, Hierarchies, and Models and Assumptions in Spatial Economic Systems
	Session 2:	Economic-Geographic Links
Week 2:	Session 1:	Concept of Growth Survey of Stages of Economic Growth
	Session 2:	Marxian Stages of Development of Productive Forces, Rostovian Stages of Economic Growth
Week 3:	Session 1:	Evolution of Economic Systems and its Implications
	Session 2:	Three-sector Hypothesis Post-Industrial society and emergence of Quaternary and Quinary sectors
Week 4:	Session 1:	Social Accounting and Informal Economy
	Session 2:	Social Accounting and Informal Economy (case studies)
Week 5:	Session 1:	Political Economy of Resource Extraction
	Session 2:	Political Economy of Resource Extraction (case studies)
Week 6:	Session 1:	Social Marketing of Green Products
	Session 2:	Social Marketing of Green Products (case studies)
Week 7:	Session 1:	Urban Agriculture
	Session 2:	Inland Waterways
Week 8:	Session 1:	Information Revolution
	Session 2:	Information Super-highways and Netocracy
Week 9:	Session 1:	Information Overload and Economies of Human Attention

	Session 2:	Knowledge Economies and Creative Industries, Imagination Age and Economies
Week 10:	Mid-Semester Examinations	
Week 11:	Mid-Semester Break	
Week 12:	Session 1:	Economy of World Heritage Sites, and Intangible Cultural Heritage
	Session 2:	Cultural Economies of Geographical Indications
Week 13:	Session 1:	Recreation of Creative Economic Spaces (Historic City Centres, Urban Villages, etc.)
	Session 2:	FIRE and ICE Economies, Global and Smart Cities
Week 14:	Session 1:	City Re-imaging City Branding and Place Marketing
	Session 2:	Place-making and place-led development
Week 15:	Session 1:	Evolution of Economic Groupings
	Session 2:	Survey of contemporary Economic Groupings
Week 16:	Session 1:	Economic Gravitations
	Session 2:	Progressions in Economic Cooperation and Integration
Week 17:	Session 1:	Sustainable Development Goals
	Session 2:	Summing up and looking ahead Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Significance of space in economy	Classroom lectures Practical work based on secondary data	Case-Study of events/items displaying links between geography and economy
II	Trajectory of growth Evolution of sectors	Classroom lectures Practical work based on secondary data Field-visits	Determine stages of growth of spatial units (state/district) Case-Study of social accounting of informal workers Case-Study of political economy of resource extraction Case-Study of social marketing of green products
III	Role of information in economic activities Dominance of knowledge in economic activities	Classroom lectures Field-visits	Case-Study of information overload Case-Study of products with GI and associated cultural economy Case-Study of world heritage sites and intangible heritage
IV	Economy and economic framework of modern urban systems	Classroom lectures Practical work based on secondary data Field-visits	Calculate composite index of smart cities Case-Study of historic city centres and urban villages Case-Study of city-reimaging and place marketing
V	Globalization of economic systems	Classroom lectures Practical work based on secondary data	Calculate centre of economic gravity of selected spatial units

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E01: PROJECT REPORT (DISSERTATION)

Credits: **Total – 4**

Marks: **Total - 100** Internal Assessment – 30
Project Report (Dissertation) – 70

Duration (Hours per week): **Total – 5** (Lecture – 1[3], Practical – 8[4])

Course Objectives:

1) The students will be taught how to write a project report / dissertation

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Course Learning Outcomes:

1) The students will learn to write a project report / dissertation, after duly following all the steps in research methodology, which are taught in the course entitled Research Methods and Techniques in Geography (Course No. GEOG3C02).

[3] ***Lecture is 1-hour per week consultation with the Supervisor.***

[4] ***Practical is 8-hours per week on tasks associated with the project report (dissertation) – review of literature, collection and analysis of data, preparation of tables and maps, report writing, etc. in consultation with the Supervisor.***

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E02: APPLIED CLIMATOLOGY (PRACTICAL)

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 2, Practical – 6)

Course Objectives:
1) To disseminate the first hand experiences of the climate prediction processes.

Course Learning Outcomes:
1) The students will learn the tools and techniques of climate prediction methods.

Course Contents:
Unit I: Introduction to Climatology: climate components and its impact, climate and society, weather and health.
Unit II: Climate data and its use, methods and techniques of data analysis, downscaling methods, bioclimatology.
Unit III: Weather Predictability: Numerical weather prediction, processes and limitations.
Unit IV: Empirical Orthogonal Function, Exceedance probability and relative operating characteristics (ROC), regression methods, use of general circulation models for weather prediction.

Suggested Readings
1. Antonio Navarra, Valeria Simoncini, 2010. *A Guide to Empirical Orthogonal Functions for Climate Data Analysis*, Springer, Dordrecht, The Netherlands.
2. Antonio NavarraEugenia Kalney, 2003, *Atmospheric Modeling, Data Assimilation and Predictability*, Cambridge University Press, London.
3. John E Hobbs, 2016. *Applied climatology: A study of Atmospheric Resources,* Elsevier, London
4. Russell D. Thompson and Allen Perry (eds.), 1997. *Applied Climatology: Principles and Practice*, Routledge, London.
5. Swadhin Behera and Toshio Yamagata 2016. *Indo-Pacific Climate Variability and Predictability*, World Scientific, Singapore.
6. Sahu N. Robertson A. Boer R. Behera S. DeWitt D.G. Kaoru T. Kumar M. Singh R.B. 2016. Probabilistic Seasonal Streamflow Forecasts of the Citarum River, Indonesia, Based on General Circulation Models, *Journal of Stochastic Environmental Research and Risk Assessment*, doi 10.1007/s00477-016-1297-4.
7. Tim Palmer and Renate Hagedorn (eds.), 2006. *Predictability of Weather and Climate*, Cambridge University Press, London.

Teaching Plan:

This is Practical paper so weekly teaching plan will be announced in the class.

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Introduction	Lectures/Tutorials	Assignments
II	Analysis of climate data	Lectures/Tutorials and laboratory based Practical	Lab work and assignments
III	Weather Prediction	Lectures/Tutorials and laboratory based Practical	Lab work and assignments
IV	Empirical Orthogonal Function	Lectures/Tutorials and laboratory based Practical	Lab work and assignments

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E03: CULTURE, HISTORY AND LANDSCAPE

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To critically understand the inter-relations between human society and landscapes.
2) To understand how landscapes take shape in a larger historical and socio-political contexts.
3) To understand how landscapes are products of both local issues contextualised within broader socio-political contexts.

Course Learning Outcomes:
1) To understand the intersections between geographical space, society and history.
2) Critically analyse and understand the evolution of contemporary landscapes from a geographical perspective.
3) To understand the continuous making of landscapes and how they reflect human struggles, contestations, conflicts and ambiguities.

Course Contents:
Unit I: Introduction: Concept of landscape; understanding the different approaches to studying landscape; re-evaluation of landscape and new cultural geography
Unit II: The Content of Landscape: Finding the colonial and tropicality; local and the vernacular landscape; memories and memorialisation of landscapes;
Unit III: Reproduction of Landscape: everyday representations of landscape in literature, popular media and new media; politics of representations and reproduction of landscapes;
Unit IV: Metropolitan Landscapes: Modernity and the spectacles of urban landscapes; built environment and the imagination of landscapes – in global North and South;

Suggested Readings:
1. Cosgrove, D.E. 1984. *Social Formation and Symbolic Landscape*, University of Wisconsin: USA.
2. Bender, B. 1993. *Landscape: Politics and Perspectives*, London: Berg.
3. Boym, S. 2002. *The Future of Nostalgia*, New York: Basic Books. Casey.
4. Edward S. 2002. *Representing Place: Landscape Painting and Maps, Minneapolis and,* London: University of Minnesota Press.
5. Corner, James, 1999. *Recovering Landscape: Essays in Contemporary Landscape Theory*, Princeton, NJ: Princeton University Press.
6. Daniels, Stephen, 1993. *Fields of Vision: Landscape Imagery and National Identity in England and the United States*, Cambridge: Polity Press.
7. Hirsch, Eric and O'Hanlon, Michael, 1995. *The Anthropology of Landscape: Perspectives on Place and Space*, Clarendon Press, Oxford.

8. Mitchell, W.J.T. 2002. *Landscape and Power,* 2nd ed., The University of Chicago Press, Chicago and London.
9. Doherty,G. And Waldheim, C. (eds), 2016. *Is Landscape...? Essays on the Identity of Landscape*, Routledge: London and New York.
10. Terkenli, T.S and 'd Hauteserre, A. (eds), 2006. *Landscapes of a new Cultural Economy of Space*, Springer: Netherlands.

Teaching Plan:

Week 1:	Session 1:	Syllabus overview
	Session 2:	Concept of landscape
Week 2:	Session 1:	Concept of landscape
	Session 2:	Approaches to studying landscape
Week 3:	Session 1:	Approaches to studying landscape
	Session 2:	Re-evaluation of landscape and new cultural geography
Week 4:	Session 1:	Re-evaluation of landscape and new cultural geography
	Session 2:	Colonial landscapes
Week 5:	Session 1:	Colonial landscapes
	Session 2:	Construction of tropicality in colonial landscapes
Week 6:	Session 1:	Local and the vernacular landscape
	Session 2:	Local and the vernacular landscape
Week 7:	Session 1:	Memories and memorialisation of landscapes
	Session 2:	Memories and memorialisation of landscapes
Week 8:	Session 1:	Affect and landscapes
	Session 2:	Affect and landscapes
Week 9:	Session 1:	Everyday representations of landscape in literature
	Session 2:	Everyday representations of landscape in literature
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Everyday representations of landscape in popular media
	Session 2:	Everyday representations of landscape in popular media
Week 13:	Session 1:	Everyday representations of landscape in new media
	Session 2:	Everyday representations of landscape in new media
Week 14:	Session 1:	Politics of representations and reproduction of landscapes
	Session 2:	Politics of representations and reproduction of landscapes
Week 15:	Session 1:	Modernity and the spectacles of urban landscapes
	Session 2:	Built environment and imagination of urban landscapes – in global North
Week 16:	Session 1:	Built environment and imagination of urban landscapes – in global North
	Session 2:	Built environment and imagination of urban landscapes – in global South
Week 17:	Session 1:	Built environment and imagination of urban landscapes – in global South
	Session 2:	Summing up and Wrap up discussions

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the theoretical approaches in reading landscapes	Classroom lectures Group discussions	Tutorial Assignments
II	Understanding the development of and transformation of landscapes over time	Classroom lectures Group presentations	Mid -term examinations
III	Develop a social and political understanding of contemporary landscapes	Classroom lectures Focus Case study discussions	Tutorial Assignments
IV	Understanding the linkages between modernity and landscape production	Classroom lectures Focus Case study presentations	End term examinations

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E04: DEMOGRAPHIC TECHNIQUES

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course shall equip the students with a basic understanding of demographic concepts and issues.
2) It shall enable them to understand different sources of demographic data and related data limitations.
3) The students will learn about estimates of different measures related to fertility, nuptiality, mortality, and population projections.

Course Learning Outcomes:

1) This course must train the student about the concepts and issues of demography.
2) Students should have good knowledge of various sources of demographic data and related limitations.
3) They must be conversant with different estimations methods related to fertility, nuptiality, mortality, migration, urbanization, and population projections.

Course Contents:

Unit I: Introduction to Basic Concepts and Measures: rate, ratios, proportions, person-years of life
Unit II: Sources of Demographic Data: census, vital statistics, surveys, UN/ other government publications
Unit III: Population Age-structures: quality of data and adjustments
Unit IV: Basic Measures of Mortality and Life Table; Fertility and Nuptiality; Migration and Urbanization
Unit V: Population Projections

Suggested Readings

1. Carmichael, G.A. 2016. *Fundamentals of Demographic Analysis: Concepts, Measures, and Methods*, Springer, London.
2. Hinde, A. 2009. *Demographic Methods*, Routledge, London.
3. Moultrie, T.A., Dorrington, R.E., Hill, A.G., Hill, K., Timaeus, I., and Zaba, B. (eds.) 2013. *Tools of Demographic Estimation*, Paris: International Union for the Scientific Study of Population.
4. Office of the Registrar General of India, and United Nations Population Fund, 2014. *Training Manual on Demographic Techniques*. New Delhi: ORGI, UNFPA-India. http://india.unfpa.org/en/publications/training-manual-demographic-techniques
5. Preston, S., Heuveline, P., and Guillot, M. 2000. *Demography: Measuring and Modelling Population Processes,* Wiley-Blackwell, Oxford.

6. Seigal, J.S., and Swanson, D.A. (eds.) 2004. *The Methods and Materials of Demography*. 2nd edition, San Diego, CA: Elsevier Academic Press.
7. Watcher, K.W. 2014. *Essential Demographic Methods,* Cambridge, MA: Harvard University Press.
8. Yusuf, F., Martins, J.M., Swanson, D.A. 2014. *Methods of Demographic Analysis,* Springer, London.

Teaching Plan:

Week 1: Understanding basic population concepts and measures
Week 2: Understanding basic population concepts and measures
Week 3: Sources of demographic data
Week 4: Sources of demographic data
Week 5: Population age-structure
Week 6: Quality of population data and adjustments
Week 7: Basic measures of mortality and life tables
Week 8: Basic measures of mortality and life tables
Week 9: Basic measures of mortality and life tables
Week 10: *Mid-Semester Examinations*
Week 11: *Mid-Semester Break*
Week 12: Basic measures of fertility and nuptiality
Week 13: Basic measures of fertility and nuptiality
Week 14: Basic measures of migration and urbanization
Week 15: Basic measures of migration and urbanization
Week 16: Population projections
Week 17: Population projections

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding of basic concepts and measures in demography	Classroom lectures and tutorials	Conceptualising basic concepts and measures in demography
II	Learning various sources of demographic data	Classroom lectures and tutorials	Understanding different sources of demographic data
III	Age-sex composition of population, data quality issues	Classroom lectures and tutorials	Understanding population age-sex structure, data quality and adjustment methods
IVA	Measures of mortality	Classroom lectures and tutorials	Understanding measures of mortality
IVB	Measures of fertility and nuptiality	Classroom lectures and tutorials	Examining measures of fertility/nuptiality
IVC	Measures of migration and urbanization	Classroom lectures and tutorials	Examining measures of migration
V	Doing Population projections	Teaching and Learning Activity	Undertaking population projection

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E05: ENERGY GEOGRAPHIES

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To understand the geographical perspectives on Energy
2) To understand the centrality of energy to human civilization
3) To engage with key debates on major energy systems

Course Learning Outcomes:
1) Geographical study of Energy
2) Knowledge of current debates in field of energy geographies

Course Contents:
Unit I: Geographical perspectives on energy
Unit II: Historical development of energy; the global trends and patterns in energy
Unit III: Energy resources of the World: Coal, Oil, Natural Gas, Nuclear, and Renewable energy
Unit IV: Contemporary Issues: Energy security, Geo-Politics of energy, Energy, environment and sustainable development

Suggested Readings:
1. Bridge, G. 2008. Global production networks and the extractive sector: governing resource-based development. *Journal of Economic Geography*, *8*(3), 389-419.
2. Calvert, K. 2016. From 'energy geography' to 'energy geographies': Perspectives on a fertile academic borderland. *Progress in Human Geography*, *40*(1), 105-125.
3. 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.
4. Colgan, J. D. 2013. *Petro-aggression: When Oil Causes War*, Cambridge University Press, Cambridge.
5. Freese, B. 2016. *Coal: A Human History*, Basic Books.
6. Gordon, R. T. 1982. *Inventions that changed the World*, READER'S DIGEST (selected entries).
7. Huber, M. 2015. Theorizing energy geographies. *Geography Compass*, *9*(6), 327-338.
8. Lahiri-Dutt, K. (ed.) 2014. *The Coal Nation: Histories, Ecologies and Politics of Coal in India*, Surrey, Ashgate, U.K.
9. Nakićenović, N., Grübler, A., & McDonald, A. (Eds.). 1998. *Global Energy Perspectives*, Cambridge University Press, Cambridge.
10. Nel, W. P., & van Zyl, G. 2010. Defining limits: Energy constrained economic growth. *Applied Energy*, *87*(1), 168-177.

11. Simeon, D. 1996. Coal and colonialism: production relations in an Indian coalfield, c. 1895–1947. *International Review of Social History*, *41*(S4), 83-108.
12. Tyfield, D. 2014. King Coal is Dead! Long Live the King: The Paradoxes of Coal's Resurgence in the Emergence of Global Low-Carbon Societies. *Theory, Culture & Society*, *31*(5), 59-81.
13. 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*.
14. Victor, D. G., Jaffe, A. M., & Hayes, M. H. (Eds.), 2006. *Natural gas and geopolitics: From 1970 to 2040*. Cambridge University Press.
15. Watts, M. 2009. Crude politics: Life and death on the Nigerian oil fields. *Niger delta economies of violence working papers*, *25*.

Teaching Plan:

Week 1:	Session 1:	Introduction to Class
	Session 2:	Importance of Energy, Key innovations
Week 2:	Session 1:	Geographical perspectives on Energy: Energy geographies
	Session 2:	Geographical perspectives on Energy: Theorising Energy in Geography
Week 3:	Session 1:	Historical development of Energy
	Session 2:	Global trends and patterns in Energy
Week 4:	Session 1:	Coal: Shaping Britain
	Session 2:	Coal: Shaping China
Week 5:	Session 1:	Coal: India
	Session 2:	Coal: Low Carbon Societies
Week 6:	Session 1:	Oil: Global Production Network
	Session 2:	Oil: Petro State and Resource Cure
Week 7:	Session 1:	Oil: Assemblages
	Session 2:	Oil: Movie Show
Week 8:	Session 1:	Oil Geographies and Chokepoints
	Session 2:	Natural Gas: Origins and Global Trends
Week 9:	Session 1:	Natural Gas: Fuel of the future
	Session 2:	Natural Gas: Geo Politics
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Nuclear Energy
	Session 2:	Nuclear Energy
Week 13:	Session 1:	Renewable Energy
	Session 2:	Renewable Energy
Week 14:	Session 1:	Renewable Energy
	Session 2:	Energy Security
Week 15:	Session 1:	Energy Security
	Session 2:	Geo Politics of Energy
Week 16:	Session 1:	Geo Politics of Energy
	Session 2:	Energy and Environment
Week 17:	Session 1:	Energy and Environment
	Session 2:	Closing Lecture

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	To understand geography's contribution to Energy studies.	Lecture presentation and class Interaction.	Readings and discussion.
II	To know the historical trajectories in development of Energy and its implications. Understanding Global Trends and patterns in Energy.	Lecture presentation and class Interaction.	Readings and class discussion.
III	Locating the trajectories of different Energy Sources and their social. Spatial and political implications.	Lecture presentation and class Interaction.	Bi-weekly readings and class discussion. Argumentation and writing.
IV	To make sense of contemporary issues concerning energy and the debates around them.	Lecture presentation and class Interaction.	Readings and class Discussion. Class presentation.

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E06: ENVIRONMENTAL IMPACT ASSESSMENT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) It lays the foundation of environmental issues and its impact on society.

Course Learning Outcomes:
1) The students will learn various issues related to environmental impact assessment and its importance.

Course Contents:
Unit I: EIA: Principles of EIA, Concepts and approaches, methods and procedure and currents issues in EIA, POSCO imbroglio.
Unit II: EIA: evaluation and mitigation, cost-benefit analysis of DMRC and Golden Quadrilateral projects and valuation of environmental impacts, public participation, presentation and review.
Unit III: Selected National and International Procedures of EIA: Developed and Developing countries EIA Procedures, National Green Tribunal.
Unit IV: Case Studies of environmental impact assessment: Water Impact Assessment; Hydro-electric power Impact Assessment; Ecological Impact assessment; Social Impact Assessment; Mining Impact Assessment.
Unit V: Environmental Impact Assessment Regulations and Policies in India.

Suggested Readings
1. Betty Bowers Marriott, 1997. *Environmental Impact Assessment*, Mc Graw Hill Professional Bookstore.
2. Goel ,R.S. 2000. *Environmental Impacts Assessment of water Resources Projects -concerns*, *Policy Issues Perceptions and Scientific Analysis*, Oxford Publishing Co. Pvt. Ltd.
3. Goel R.S., and R.N. Srivastava, 1999. Hydropower *and River Valley Development Environment Management, Case Studies and Policy Issues*, Oxford & IBH Publishing Co. Pvt., New Delhi.
4. Goudie, A. 2000. *The Human Impact on the Natural Environment*, Blackwell, Publishers, Oxford.
5. J. Glasson, R. Therivel and A. Chadwick, 1994. Introduction *to Environmental Impact Assessment: Principles and Procedures, Process, Practice and Prospects,* Research Press, Delhi.
6. Judith, Petts (eds.) 1999. *Handbook of Environmental Impact Assessment*, Blackwell Science Publication.
7. Prasad, K. and Goel, R. S. 2000. *Environmental Management in Hydro Electric Projects*,

Concept Pub., New Delhi.
8. Richard, K. Morgan, 1999. *Environmental Impact Assessment: A Methodological Perspective*, Springer.
9. Sinclair, J., 2000. *Canadian Environmental Assessment in Transitio*n, University of Waterloo Press, Waterloo.
10. Smith, L.G., 1993. *Impact Assessment and Sustainable Resource Management*, Longman, Harlow.
11. Subramanian, V., 2001. *Text Book on Environmental Sciences*, Narosa Publishing House, N. Delhi.
12. Eccleston, C. H., 2017. *Environmental Impact Assessment: A Guide to Best Professional Practices,* CRC Press, New York.

Teaching Plan:

Week 1:	Session 1:	Introduction, Principles of EIA
	Session 2:	Concepts and approaches of EIA
Week 2:	Session 1:	Methods and procedure in EIA
	Session 2:	Currents issues in EIA, POSCO imbroglio-I
Week 3:	Session 1:	Currents issues in EIA, POSCO imbroglio-II
	Session 2:	EIA: evaluation and mitigation
Week 4:	Session 1:	Cost-benefit analysis of DMRC
	Session 2:	Golden Quadrilateral projects
Week 5:	Session 1:	Selected national procedures
	Session 2:	Selected national procedures
Week 6:	Session 1:	Selected international procedures
	Session 2:	Selected international procedures
Week 7:	Session 1:	Examples from developing countries
	Session 2:	Examples from Developed countries
Week 8:	Session 1:	National green Tribunal I
	Session 2:	National Green Tribunal II
Week 9:	Session 1:	Valuation of environmental impacts -I
	Session 2:	Valuation of environmental impacts -II
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Public participation, presentation and review-I
	Session 2:	Public participation, presentation and review-II
Week 13:	Session 1:	Case Studies of environmental impact assessment-I
	Session 2:	Case Studies of environmental impact assessment-II
Week 14:	Session 1:	Water Impact Assessment-I
	Session 2:	Water Impact Assessment-II
Week 15:	Session 1:	Hydro-electric power Impact Assessment-I
	Session 2:	Hydro-electric power Impact Assessment-II
Week 16:	Session 1:	Social Impact Assessment-I
	Session 2:	Social Impact Assessment-II
Week 17:	Session 1:	Mining Impact-I
	Session 2:	Mining Impact-II

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Principles of EIA, Concepts and approaches, methods and procedure and currents issues in EIA	Classroom lectures, PPTs and tutorials, debate and discussions	How is the conceptualization of PDF and its types applied in statistical analysis?
II	EIA: evaluation and mitigation, Golden Quadrilateral projects and valuation of environmental impacts	Classroom lectures and tutorials, PPTs, debate and discussions	Sampling theory and its uses in social science research
III	National and International Procedures of EIA, National Green Tribunal.	Classroom lectures and tutorials, PPTs, debate and discussions	How to conceptualise the ANOVA with one-way and two-way classification?
IV and V	Case Studies of environmental impact assessment	Classroom lectures, PPTs and tutorials, debate and discussions	Uses of non-parametric tests in scientific discourse

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E07: GENDER, SPACE AND SOCIETY IN INDIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
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:
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 Contents:
Unit I: Geography of Gender: Development of and theoretical approaches to the study of gender in geography; contextualising growth and development of the sub field in India.
Unit II: Gender and Space: Division of space into private and public spaces, Gendered spaces; Spatial variations in the construction of gender in India.
Unit III: Spatial Patterns and Bases of Gender inequalities: Patriarchy, son preference, social value; new reproductive technology, skewed sex ratios, gendered patterns of crime and violence, gender disparities in selected indicators of social wellbeing.
Unit IV: Towards Genderscapes: Concept of Genderscape, Regional Genderscapes in India, Genderscapes of violence and well-being in India.
Unit V: Indigenous Feminisms and Spaces of Resistance: Theorizing indigenous feminisms, indigenous feminisms, power and agency in patriarchy; indigenous feminisms and spaces of resistance.

Suggested Readings:
1. Phadke Shilpa, Ranade Shilpa and Sameera Khan, 2011. *Why Loiter: Women and Risk on Mumbai Streets*, Penguin
2. Gregory Derek et al., 2009. *Dictionary of Human Geography*, 5th Edition, Wiley
3. Geetha V. 2007. *Patriarchy***,** Stree publications
4. Mazumdar Vina and N Krishnaji (eds), 2001. *Enduring Conundrum: India's Sex Ratio*, Centre for Women's Development Studies, Rainbow Publishers, Delhi.

5. Spain Daphne, 1992. *Gendered Spaces*, University of North Carolina Press.
6. Agarwal Bina, 1994. *A Field of One's Own: Gender and Land Rights in South Asia*, Cambridge University Press.
7. Mc Dowell Linda, 1999. *Gender, Identity and Place: Understanding Feminist Geographies,* Blackwell Publishers, Oxford.
8. McDowell, Linda and Sharp, Joanne, eds. 1997. *Space/Gender/Knowledge: Feminist Readings.* London: Arnold.
9. Massey Doreen, 1994. *Space, Place and Gender*, University of Minnesota Press, Minneapolis.
10. Walby Sylvia, 1990. *Theorizing Patriarchy*, Wiley Blackwell publishers.

Teaching Plan:

Week 1:	Session 1:	Introduction to the course, overview and relevance.
	Session 2:	Understanding Sex and Gender as contested terms.
Week 2:	Session 1:	Gender roles and gender relations
	Session 2:	Questioning initial invisibility of women as subjects and practioners in geography, responses to visibilize women in geographical research.
Week 3:	Session 1:	Examining theoretical approaches to the study of gender in geography.
	Session 2:	Examining theoretical approaches to the study of gender in geography (contd.) - growth trajectory in the Anglo Saxon world
Week 4:	Session 1:	Contextualising growth and development of the sub field in India- early origins.
	Session 2:	Contextualising growth and development of the sub field in India-from the margins to critical mass.
Week 5:	Session 1:	Contextualising growth and development of the sub field in India- concerns and opportunities.
	Session 2:	Gender as performance, spatiality of gender.
Week 6:	Session 1:	Gendered division of space into public and private- theoretical issues relating to access in India.
	Session 2:	Gendered spaces in the everyday
Week 7:	Session 1:	Socio cultural regions and spatial variations in the construction of gender in India- Northern and Western India
	Session 2:	Socio cultural regions and spatial variations in the construction of gender in India- Southern and Eastern India.
Week 8:	Session 1:	Productive and punitive aspects of patriarchy, kinship contracts.
	Session 2:	Culturally driven son preference, social value and new reproductive technology
Week 9:	Session 1:	India's declining sex ratio from 1901-2011.
	Session 2:	Gendered patterns of crime and violence
Week 10:	Mid-Semester Examinations	
Week 11:	Mid-Semester Break	
Week 12:	Session 1:	Inter Gender disparities in selected indicators of social wellbeing- access to health care.
	Session 2:	Inter Gender disparities in selected indicators of social wellbeing- literacy
Week 13:	Session 1:	Inter Gender disparities in selected indicators of social wellbeing- work participation rates
	Session 2:	Concept of Genderscape- realm of Nature, meaning, social relations and agency within genderscapes.
Week 14:	Session 1:	Mapping regional genderscapes in India
	Session 2:	Genderscapes of violence and well-being in India
Week 15:	Session 1:	Genderscapes of violence and well-being in India- way forward.

	Session 2:	Theorizing indigenous feminisms in the Indian context - patriarchal power and agency in classic patriarchy
Week 16:	Session 1:	Indigenous feminisms, patriarchal power and agency through productive aspects of patriarchy.
	Session 2:	Indigenous feminisms and creation of spaces of resistance- liminality
Week 17:	Session 1:	Indigenous feminisms and spaces of resistance- adaptability
	Session 2:	Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the emergence of the subfield of geography of gender as well its trajectory of growth in India	Lectures and Tutorials; Discussion on emergence of the subfield of geography of gender as well its trajectory of growth in India	Assignment on reading Monk and Hanson 1992.
II	Understanding gendered implications of public and private spaces and the spatial variations in construction of gender in India.	Lectures and Tutorials; Discussion on differential access to public spaces, terrain, women's labour and construction of gender roles and relations.	Assignment on reading Phadke et al 2010 and mapping gendered access to public spaces
III	Understanding spatial patterns of sex ratio and gender disparities in key areas of well being	Lectures and Tutorials; Discussion on gender differences in literacy, work force participation and regional patterns of Crimes against Women	Assignment on mapping and explaining declining sex ratio, in conjunction with change in key indicators of well-being in selected meso-regions of India
IV	Understanding the concept of a genderscape and appreciating regional genderscapes in India	Lectures and Tutorials; Discussion	Assignment on explaining realm of meaning within selected regional genderscapes
V	Theorizing Indigenous Feminisms	Lectures and Tutorials; Discussion	Essay based on lectures and reading Kandiyoti "Bargaining with Patriarchy"

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E08: GEOGRAPHIES OF SOCIAL JUSTICE IN INDIA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) The course examines the questions related to social problems and social justice to marginalised sections of society.
2) It also critically evaluates the policies and interventions aimed at providing social justice to marginalized sections in India.

Course Learning Outcomes:
1) The students will able to understand the idea of social justice in Geography and its relevance in Indian context.
2) Understanding Historical context of marginalisation and Injustice, Appreciating socio-economic problems in India.
3) Assessment of Programmes and Policies and legal framework for Social Justice and empowerment.

Course Contents:
Unit I: Introduction to Geography of Social Justice: Concept and components of social justice, Overview of theories of social justice, Ethics.
Unit II: Historical Context of Marginalisation and Injustice: Stratification of Indian society; caste system; Caste discrimination and violence; Spatial distribution of SC & ST population, and Minorities; Resource distribution,
Unit III: Social (in) Justice in India: Urban and Rural dimensions; Urbanisation and the question of Caste; globalisation and capitalism; migration; Poverty, Inequality, land rights and security: Case Studies.
Unit IV: Programmes, Policies and safe guards for Social Justice and Empowerment: Role of civil society and media; contemporary movements; Social and economic and political empowerment, SDG-16, Policies and interventions.
Unit V: Legal Framework and Social Justice in India: Human rights, Constitutional Provisions, Laws, Acts

Suggested Readings:
1. Arneson, Richard, 1989. Equality and Equal Opportunity for Welfare, *Philosophical Studies*, 56, pp. 77-93
2. Atkinson, A. B. 1983. *Social Justice and Public Policy*, Wheatsheaf Books Ltd., Sussex.
3. Balagopal, K. 1988. *Probing in the Political Economy of Agrarian Classes and Conflicts*, *Perspectives*, Hyderabad.

4. Bhattacharjea, A. 1997. *Social Justice and the Constitution*, Indian Institute of Advanced Study, Shimla.
5. Channa Subhadra Mitra and Pencher P. Joan, 2013. *Life as a Dalit: Views from the Bottom on Caste in India,* Sage Publication India Pvt. Ltd, New Delhi
6. Clayton, Matthew and Williams Andrew, 2004. *Social Justice*, Blackwell Publishing, USA.
7. Govt of India, 2005, *Social, Economic and Educational Status of the Muslim Community in India,* Report of the Sachar Committee.
8. Govt. of India, 1985. Ministry of Agriculture, Department of Rural Development, Government of India, New Delhi, *Report of the committee to review the existing Administrative Arrangement for Rural Development and Poverty Alleviation Programmes,* December.
9. Harvey, David, 2010. *Social Justice and the Cit*y, revised edition, University of Georgia Press, London.
10. Mukharji, Partha N. 1992. *Class and Ethnic Movements in India*, Rudebeck, 13:30
11. Omvedt, Gail, 1994. *Dalit and the Democratic Revolution: Dr. Ambedkar and the Dalit Movement in Colonial India*, Sage, New Delhi.
12. Oommen, T. K. 1990. *State and Society in India*, Sage, New Delhi.
13. Rawls, John, 1982. Social Units and Primary Goods, in Amartya Sen and Bernard Willians, eds., *Utilitarianism and Beyond*, Cambridge University Press, Cambridge, UK.
14. Smith David Marshall, 1997. *Geography and Social Justice: Social Justice in a Changing World,* Basil, Blackwell.
15. Throat, S.K., 1999. *Ambedkar's Role in Economic Planning and Water Policy*, Shipra Publication, New Delhi.

Teaching Plan:

Week 1: Introduction to Geography of Social Justice
Week 2: Ethics, Social Justice in Geography
Week 3: Concept and components, Theories of social justice
Week 4: Stratification of Indian society; Caste system in India,
Week 5: Spatial distribution of SC & ST population, and Minorities
Week 6: Caste discrimination and violence
Week 7: Resource distribution
Week 8: Urban and Rural dimensions; globalisation and capitalism;
Week 9: Migration; Poverty, Inequality
Week 10: *Mid-Semester Examinations*
Week 11: *Mid-Semester Break*
Week 12: Land rights and security;
Week 13: Civil society and media; contemporary movements
Week 14: Social, economic and political empowerment, SDG-16
Week 15: Policies and interventions.
Week 16: Human rights, Constitutional Provisions,
Week 17: Laws, Acts and Summing up and looking ahead & Wrap up discussions and feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the idea of social justice in Geography	Classroom lectures and tutorials	Assignments/ Discussions on concepts, components and theories of social Justice
II	Understanding Historical Context of Marginalisation and Injustice spatial distribution of SC, ST and minorities	Classroom lectures and tutorials	Assignments/ Presentations on social and educational profiles of SC/ST, Minority reading Census data on marginalized groups and
III	Appreciating specific socio-economic problems	Classroom lectures and tutorials	Presentation/debates Case studies assignments
IV	Knowledge of Programmes and Policies for Social Justice and Empowerment.	Classroom lectures and tutorials	Assignment/ Presentations based on critical evaluation of selected policies and programmes
V	Examining Legal Framework for Social Justice in India	Classroom lectures and tutorials	Discussions/Presentations on adequacy of existing legal framework in addressing issues of social justice.

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E09: GEOGRAPHY OF HEALTH

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course intends to reorient the students towards interdisciplinary perspectives on population health issues at different geographical scales.
2) It will acquaint the candidate to appreciate the role of spatial perspectives towards showcasing drivers of population health transition and major approaches used to explain it.
3) Students shall be able to understand the interplay of social environment, global environmental changes and its association with population health.

Course Learning Outcomes:

1) Students would be acquainted with the basic concepts of population health from geographical perspectives.
2) Students would get clear understanding about the process of population health transition and its major drivers. In addition, students should recognize the mechanism of how social and economic environment shapes population health.
3) Further, the linkages between global environmental changes and population health should be well understood.

Contents:

Unit I: Introducing Geography of Health: fundamental concepts; Approaches explaining Geography of Health: ecological, social, and spatial perspectives.
Unit II: Global Health Transition: the epidemiological transition, its drivers, and regional patterns.
Unit III: Social Environment and Health: health inequalities across global, regional, and neighbourhood scales; health care systems and inequalities in health care services.
Unit IV: Global Environmental Change and Health: air quality; contamination of food, and water; climate change, temperature extremes, natural hazards.
Unit V: Emerging Health Challenges: Urban health and well-being; Gender equity in health; migration and health; unhealthy lifestyle and chronic diseases; ageing and health; adolescent/youth and health.

Suggested Readings

1. Anthamatten, P. and Hazen, H. 2011. *An introduction to the Geography of Health*, Routledge, New York.
2. Braveman, P., Egerter, S., Williams, D.R. 2011. The Social determinants of health: coming of age, *Annual Review of Public Health,* 32:381-398.

3. Brown, T., McLafferty, S., and Moon, G. (eds.) 2010. *A Companion to Health and Medical Geography*, Wiley-Blackwell, Oxford.
4. Burton, L.M., Kemp, S.P., Leung, M., Matthews, S.A., and Takeuchi, T.A. 2011. *Communities, Neighbourhoods, and Health: Expanding the Boundaries of Plac*e, Springer, New York.
5. Curtis, S. 2004. *Health and Inequality: Geographical Perspectives*, Sage Publications, London.
6. Freudenberg, N., Klitzman, S., and Saegert, S. (eds.) 2009. *Urban Health and Society: Interdisciplinary Approaches to Health and Practice*, San Francisco, CA: Jossey-Bass.
7. Gaimard, M. 2014. *Population and Health in Developing Countries*, Springer, New York.
8. Gatrell, A.C. and Elliott, S.J. 2015. *Geographies of Health: An Introduction*. 3rd edition, Wiley-Blackwell, Oxford.
9. Kawachi, I., and Berkman, L.F. (eds.) 2003. *Neighborhoods and Health,* Oxford University Press, Oxford.
10. Luginaah, I., and Kerr, R.B. (eds.) 2015. *Geographies of Health and Development,* Burlington, VT: Ashgate.
11. Misra, R.P. 2007. *Geography of Health: A Treatise on Geography of Life and Health in India*, Concept Publishing Company, New Delhi.
12. Meade, M.S. and Emch, M. 2010. *Medical Geography*. 3rd edition, Guilford Press, New York.
13. Sen, G., and Ostlin, P. (eds.) 2010. *Gender Equity in Health: The Shifting Frontiers of Evidence and Action,* Routledge, New York.

Teaching Plan:

Week 1: Introducing geography of health: basic concepts and issues
Week 2: Introducing geography of health: basic concepts and issues
Week 3: Approaches to explaining geography of health: ecological, social
Week 4: Approaches to explaining geography of health: spatial
Week 5: Global health transition: concept and issues
Week 6: Global health transition: its drivers and regional patterns
Week 7: Social environment and health: health inequalities I (global and regional patterns)
Week 8: Social environment and health: health inequalities I (local patterns)
Week 9: Social environment and health: health care systems and inequalities in health care services
Week 10: *Mid-Semester Examinations*
Week 11: *Mid-Semester Break*
Week 12: Global environmental change and health: air quality and health
Week 13: Global environmental change and health: contamination of water, food, and health
Week 14: Global environmental change and health: climate change, extreme weather, and health
Week 15: Emerging health challenges: urban health and well-being
Week 16: Emerging health challenges: gender equity in health
Week 17: Emerging health challenges: migration and health; lifestyle and chronic disease; ageing and health; adolescent and youth

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
IA	Understanding basis concepts and issues of health geography	Classroom lectures and tutorials	Examining basic concepts and issues of geography of health
IB	Conceptualising approaches of doing health geography	Classroom lectures and tutorials	Understanding approaches of doing geography of health
II	Examining health transition	Classroom lectures and tutorials	Conceptualising the health transition and its drivers
III	Understanding health inequalities	Classroom lectures and tutorials	Examining the concept of health inequalities and its implications
IV	Linkages between health and global environmental changes	Classroom lectures and tutorials	Understanding linkages between global environmental changes and health
V	Emerging health issues and challenges	Classroom lectures and tutorials	Understanding emerging health issues

MASTER OF ARTS IN GEOGRAPHY
Semester IV– Elective Course

GEOG4E10: GEOGRAPHY OF HIMALAYA

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) Understanding physiological characteristics, ecology of river basins of Himalaya.
2) Mapping vulnerability, hazards and Disaster Risk Reduction (DRR) in Himalaya.
3) Evaluation of livelihood and Sustainability in Himalaya.

Course Learning Outcomes:
1) In depth understanding of Third Pole and regional entity of Himalaya.
2) Spatial distribution of hazards and risks and mitigation in Himalaya.
3) Conservation strategies, good practices and success stories.

Course Content:
Unit I: Himalayan Physiology: Structures; Folds and faults and Vertical divisions.
Unit II: Regional Entity: Regional characteristics, river basin based divisions (Sir Sydney Burard)
Unit III: Hazard Risk and Vulnerability: Floods, Cloudburst and Landslides (Case Study).
Unit IV: Fragile Ecosystem Syndromes: Developmental Implications (Case Studies).
Unit V: Management of Himalayan Fragility: Integrated Resource Management, Movements and Institutions for Himalayan Conservation (Case studies).

Suggested Readings:
1. Ahmad, E. 1992. *Geography of the Himalaya*, Kalyani Publication, Ludhiana.
2. Bose, S.C. 1976. *Geography of the Himalaya*, National Book Trust, New Delhi.
3. 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.
4. Gupta. K.M. (ed.), 1990. Himalaya: Man, and Nature, Lancer Books, New Delhi.
5. Kapur, A. 1995. *Paradise in Peril: An Ecological Profile of the Kashmir valley*, Allied publishers, Delhi.
6. Lall, J.S. (ed.), 1981. *The Himalaya: Aspects of Change*, Oxford University Press, Delhi.
7. M.J. Crozier, 1986. *Landslides: Causes, Consequences and Environment*, Croom Helm, London.
8. Mohammad, Noor and Rai, S.C. 2014. *Agricultural Diversity and Food Security in the Mountain Ecosystem*, Concept Publishing Company, New delhi.
9. Pandey, B.W. 2002. *Geo-environmental Hazards in Himalaya, Assessment and Mapping*, Mittal Publication, New Delhi.
10. Pandey, B. W, Negi, V. S. and Kumria, Poonam, 2018. *Environmental Concerns and Sustainable Development in Himalaya*, Research India Press, New Delhi.

11. Sah, N.K., Bhatt, S.D., and Pande, R.K. (eds.), 1990. *Himalaya: Environment, Resources and Development,* Shree Almora Book Depot, Almora.
12. 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.
13. Singh, R. B. Schickhoff, Udo and Mal Suraj (eds) 2016. *Climate Change, Glacier Response and Vegetation Dynamics in the Himalaya, Springer, Switzerland.*
14. Singh, R.B. 1998. *Sustainable Development of Mountain Environment of India and Canada*, New Delhi, Oxford & IBH Pub., 1998, Pages 345.

Teaching Plan:

Week 1: Introduction of Himalaya (Bose, S.C., 1976; Ahmad, E. 1992).
Week 2: Physical characteristics, folds and faults (Bose, S.C., 1976)
Week 3: Vertical divisions of Himalaya (Bose, S.C., (1976)
Week 4: Regional characteristics of Himalaya (Burrard, S. G., & Hubert, S. H., Hayden. 1908).)
Week 5: Division of Himalaya by Sir Sydney Burrard (Burrard, S. G., & Hubert, S. H., Hayden. 1908).)
Week 6: Hazard Risk and Vulnerability in Himalaya (Singh, R.B. 2005.)
Week 7: Floods, Cloudburst (Pandey, B.W. 2002)
Week 8: Landslides, (Case Study) (M.J. Crozier 1986)
Week 9: Agricultural (cropping, horticulture and animal husbandry) development in Himalaya (Sen Roy, S. and Singh, R.B. 2002)
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break (Fieldwork)
Week 12 Forestry in Himalayan region (MOEFCC Report 2017)
Week 13: Tourism in Himalaya (Tourism Development Corporation Report 2017)
Week 14: (Case Study)
Week 15: Management of Himalayan Fragility (Singh, R.B. 1998)
Week 16: Environmental Movements in Himalaya (Sah, N.K., Bhatt, S.D., Pande, R.K. (eds.), 1990)
Week 17: Biodiversity Conservation and Management (Case studies) (Singh, R. B. Schickhoff, Udo and Mal Suraj (eds) (2016).

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Understanding the significance of Himalaya for the Indian Sub-continent	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldworks.	Assignments, presentations, discussions and debates.
II	Detailed discussion on the livelihood opportunities in the natural extremes	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldworks.	Assignments, presentations, discussions and debates.
III	Thorough explanations on the disasters in Himalayas and their management strategies	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldworks.	Assignments, presentations, discussions and debates.
IV	Overview of the recent developmental programs for Himalayan region	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldworks.	Assignments, presentations, discussions and debates.
V	In-depth observation on the sustainable management strategies for mountains in general and Himalayas in particular	Classroom Lectures, PPTs, documentaries, discussions, tutorials and fieldworks.	Assignments, presentations, discussions and debates.

MASTER OF ARTS IN GEOGRAPHY
Semester IV – Elective Course

GEOG4E11: INTEGRATED WATERSHED MANAGEMENT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) A comprehensive approach to integrated watershed management
2) To identify threats to watershed health and learn sustainable and integrated ways to ameliorate those threats.
3) Intended for students interested in the sustainable management of watershed applying earth observation and GIS.

Course Learning Outcomes:
1) Conceptual understanding of Integrated Watershed Management.
2) Understanding the factors affecting the quantity and quality of water within a watershed.
3) How to use Earth Observation and GIS for watershed analysis and management.

Course Contents:
Unit I: Introduction of Watershed: Definition, Principles and objectives.
Unit II: Characteristics of Watershed: Physical and hydrological characteristics.
Unit III: Soil and Water Quality**:** Soil erosion, estimation of soil erosion, Water quality and land use.
Unit IV: Flood and Drought Assessment: Flood and drought assessment, analysis and mitigation.
Unit V: Integrated Watershed Management and Modelling: integrated approach and watershed models.

Suggested Readings:
1. Debarry Paul A. 2004. *Watershed: Processes, Assessment and Management*, John Wiley & Sons, New Jersey.
2. Dhruva N.V.V., Sastry G. and Patnaik U.S. 1990. *Watershed Management*, Indian Council of Agricultural Research, New Delhi.
3. Tideman E.M. 1999. *Watershed Management–Guidelines for Indian Conditions*, Omega Scientific Publishers, New Delhi.
4. Iyer K. G. and Roy U.N., (ed.), 2005. *Watershed Management and Sustainable Development*, Kanishka Publishers, New Delhi.
5. Gregersen H.M, Folliott P.F and Brooks K.N. 1983. *Integrated Watershed Management: Connecting People to their Land and Water*, CAB International, London.
6. Randhir O. Timothy, 2007. *Watershed Management-Issues and Approaches*, IWA Publishing.
7. Singh V.P and Frevert D.K. (ed.), 2005. *Watershed Models,* CRC Press, Taylor and Francis.
8. Rahaman, M.M. and Varis, O. 2005. Integrated water resources management: evolution, prospects and future challenges, sustainability, *Sci. Pract. Policy*, 1, 15–21.

9. Morgan R.P. 2009. *Soil Erosion and Conservation*, John Wiley and Sons.

Teaching Plan:

Week 1: Introduction to Watershed (Dhruva N.V.V., Sastry G. and Patnaik U.S., 1990).
Week 2: Principles and Objectives of watershed (Randhir O. Timothy, 2007)
Week 3: Watershed health and sustainability (Randhir O. Timothy, 2007)
Week 4: Watershed management policies and decision making (Debarry Paul A., 2004).
Week 5: Physical and hydrological characteristics (Debarry Paul A., 2004).
Week 6**:** Delineation of watershed, field trip follow up (Tideman E.M., 1999).
Week 7: Soil erosion, estimation of soil erosion (Morgan R.P., 2009).
Week 8: Water quality and pollution (Morgan R.P., 2009).
Week 9: Types and sources of pollution, land use and water quality (Gregersen H.M, Folliott P.F and Brooks K.N. 1983).
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12: Flood and drought assessment and classification (Gregersen H.M, Folliott P.F and Brooks K.N. 1983).
Week 13: Analysis techniques, mitigation planning (Debarry Paul A., 2004).
Week 14: Introduction to integrated approach (Debarry Paul A., 2004).
Week 15: Watershed assessment models (Rahaman, M.M.; Varis 2005).
Week 16: Earth Observation and GIS (Singh V.P and Frevert D.K., 2005).
Week 17: Integrated watershed management case studies (Iyer K. G. and Roy U.N., 2005).

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Deep understanding of watershed along with its principles and objectives.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.
II	Knowledge about characteristics of watershed.	Classroom Lectures, PPTs, documentaries, fieldworks, discussions and tutorials.	Assignments, Presentations, discussions and debates.
III	Understanding of issues regarding soil and water focussing mainly on soil erosion and water pollution.	Classroom Lectures, PPTs, documentaries, fieldworks, discussions and tutorials.	Assignments, Presentations, discussions and debates.
IV	Assessing flood and drought problems and their mitigation strategies.	Classroom Lectures, PPTs, documentaries, fieldworks, discussions and tutorials.	Assignments, Presentations, discussions and debates.
V	In-depth understanding of integrated watershed management and watershed models.	Classroom Lectures, PPTs, documentaries, discussions and tutorials.	Assignments, Presentations, discussions and debates.

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E12: TERRAIN MODELLING

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

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

Suggested 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.
3. Jensen, J.R. 2007. *Remote Sensing of the Environment: An Earth Resource Perspective*, 2nd Edition, Pearson.
4. Jensen, J.R. 2015. *Introductory Digital Image Processing: A Remote Sensing Perspective*, 4th Edition, Pearson.
5. Li, Z., Zhu, C. and Gold, C. 2004. *Digital Terrain Modeling: Principles and Methodology*, CRC Press.

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.

Teaching Plan:

Week 1:	Session 1:	Introduction to the Digital Terrain Modelling
	Session 2:	Digital Terrain Modelling: principles and applications
Week 2:	Session 1:	DEM data sources and scale
	Session 2:	DEM quality assessment
Week 3:	Session 1:	Photogrammetry Principles
	Session 2:	Photogrammetric computations
Week 4:	Session 1:	Radar Principles
	Session 2:	Radargrammetry
Week 5:	Session 1:	LiDAR principles
	Session 2:	LiDAR computation
Week 6:	Session 1:	GPS Principles
	Session 2:	GPS-based altitude determination
Week 7:	Session 1:	Concepts of DTM and DSM, Interpolation
	Session 2:	IDW, Spline, Trend Surface
Week 8:	Session 1:	Krigging
	Session 2:	Krigging
Week 9:	Session 1:	3D visualization principles
	Session 2:	3D visualization techniques
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Gridded DEM concepts, applications
	Session 2:	Slope, aspect, curvature computation
Week 13:	Session 1:	Flow Direction
	Session 2:	Watershed delineation
Week 14:	Session 1:	Terrain Classification
	Session 2:	Terrain Classification
Week 15:	Session 1:	Wetness indices
	Session 2:	Stream-power indices
Week 16:	Session 1:	Radiation indices
	Session 2:	Temperature indices
Week 17:	Session 1:	Summing up
	Session 2:	Summing up

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Board understanding of Digital Terrain Modelling	Lecture and Tutorial	Evaluation of DEM from different sources in GIS.
II	Understanding of DTM/DSM extraction techniques	Lecture and Tutorial	Numerical exercises to compute elevation from source data
III	Understanding of digital surface model generation tools	Lecture, demonstration, and hands-on tutorial exercises	Hands-on exercises to compute various interpolation models from point data sources. 3-D visualization of the terrain in software and interpretation.
IV	Understanding of Primary topographic Attributes and applications	Lecture, demonstration, and hands-on tutorial exercises	Computation of various parameter in a GIS software.
V	Understanding of Secondary topographic Attributes and applications	Lecture, demonstration, and hands-on tutorial exercises	Computation of various indices in a GIS software.

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E13: TRANS GEOGRAPHIES

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) To apply key concepts of geography to understand Trans lives and life worlds.
2) To bring awareness about Trans identities and issues.

Course Learning Outcomes:
1) Understanding of concepts and terminologies of Trans identities and communities.
2) Application of geographical knowledge to Trans issues and life worlds.
3) Awareness of Trans persons' needs for policy interventions at different levels and scales.

Contents:
Unit I: Concepts and Terminologies, Trans Identities; Geographical concepts
Unit II: Trans bodies: Key Theorisations
Unit III: Trans persons and the Home space; Trans persons and Urban space
Unit IV: Trans persons and the nation-state: laws, recognitions and Policies
Unit V: Globalisation: Activism & Rights, Trans-local/ National- connections

Suggested Readings:
1. 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.
2. Browne, K., Nash, C. J., & Hines, S. 2010. Introduction: towards trans geographies, *Gender, Place & Culture*, *17*(5), 573-57.
3. Choi, Y. 2013. The Meaning of Home for Transgendered People. In *Queer Presences and Absences* (pp. 118-140), Palgrave Macmillan, London.
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. Doan, P. L. 2010. The tyranny of gendered spaces–reflections from beyond the gender dichotomy, *Gender, Place & Culture*, *17*(5), 635-654.
6. Dutta, Aniruddha, and Raina Roy, 2014. Decolonizing transgender in India: Some reflections, *Transgender Studies Quarterly* 1, no. 3: 320-337.
7. Ekins, R., & King, D. 2006. *The transgender phenomenon*, Sage.
8. Halberstam, J. 2005. *In a Queer Time and Place: Transgender Bodies, Sub cultural Lives*, NYU Press.
9. Hines, S. 2010. Queerly situated? Exploring negotiations of trans queer subjectivities at work and within community spaces in the UK, *Gender, Place & Culture*, *17*(5), 597-613

10. Knopp, L. 2001. A queer journey to queer geography, *Placing autobiography in geography*, 78-98.
11. Knopp, L. 2004. Ontologies of place, placelessness, and movement: Queer quests for identity and their impacts on contemporary geographic thought, *Gender, Place & Culture*, *11*(1), 121-134.
12. Nash, C. J. 2010. Trans geographies, embodiment and experience, *Gender, Place & Culture*, *17*(5), 579-595.
13. Johnston, L. 2016. Gender and sexuality I: Genderqueer geographies? *Progress in Human Geography*, *40*(5), 668-678.
14. Reddy, G. 2006. *With Respect to Sex: Negotiating Hijra Identity in South India*, Yoda Press.
15. Whittle, S., and Stryker, S. 2006. *The Transgender Studies Reader*, EEUU: Routledge.

Teaching Plan:

Week 1: Session 1: Introduction to the course
Session 2: Concepts in Geography
Week 2: Session 1: Concepts in Geography
Session 2: Concepts & terminologies: Trans Identities and Subjectivities
Week 3: Session 1: Concepts, terminologies: Communities
Session 2: Concepts, terminologies: Communities
Week 4: Session 1: Body: Theorisations
Session 2: Body: Theorisations
Week 5: Session 1: Body: Theorisations
Session 2: Body: Theorisations
Week 6: Session 1: Trans-persons and the Home
Session 2: Trans-persons and the Home
Week 7: Session 1: Trans-persons and the Home
Session 2: Interactions with Trans Persons
Week 8: Session 1: Trans-genders and Urban space
Session 2: Trans-genders and Urban space
Week 9: Session 1: Trans-genders and Urban space
Session 2: Trans-genders and Urban space
Week 10: Mid-Semester Examinations
Week 11: Mid-Semester Break
Week 12: Session 1: Trans-genders and the nation-state: Rights Intervention
Session 2: Trans-genders and the nation-state: laws and recognitions
Week 13: Session 1: Trans-genders and the nation-state: laws and recognitions
Session 2: Trans-genders and the nation-state: Policies
Week 14: Session 1: Trans-genders and the nation-state: Policies
Session 2: Visit to Trans gender CBOs
Week 15: Session 1: Globalisation: Activism, Rights. Trans-local/ National- connections
Session 2: Globalisation: Activism, Rights. Trans-local/ National- connections
Week 16: Session 1: Globalisation: Activism, Rights. Trans-local/ National- connections
Session 2: Globalisation: Activism, Rights. Trans-local/ National- connections
Week 17: Session 1: Student activity
Session 2: Closing lecture: Summarising Trans Geographies

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Terminologies and concepts	Lecture presentation	Class test
II	Understanding gender and sex beyond binaries	Lecture presentation and class interaction	Class test, readings and discussions
IIIA	Home as an ideological construct, exclusionary	Lecture presentation, class interaction with trans identified persons	Short essay based on lecture, readings and interaction with guest
IIIB	Urban Experiences	Lecture presentation with Film screening; Field visit	Film content analysis Discussion
IV	Limits of citizenship, ideology of the nation	Lecture presentation, Visit to community based organisation	Short Report
V	Trans national processes and networks of activism and empowerment	Lecture presentations and interactions with trans activists	Short essay

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E14: URBAN AND REGIONAL PLANNING

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:
1) The students will be exposed to basic concepts of urban and regional planning.
2) The students will be conscious of pioneering thinkers in urban planning.
3) The students will be aware of the background theory of regional planning and its processes.

Course Learning Outcomes:
1) The students will learn about basic principles of urban and regional planning.
2) The students will know about pioneering thinkers in the field of urban planning.
3) The students will study about the different theoretical background and structure of the regional planning process

Course Contents:
Unit I: Introduction: application to urban and regional planning; 'planning' as an activity; objectives in planning – simple and complex.
Unit II: Pioneer Thinkers in Urban Planning: Anglo-American tradition; European tradition.
Unit III: 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.
Unit IV: The Planning Process: systems planning versus master planning; new planning paradigms; spatial strategic coordination.
Unit V: Urban and Regional Planning Practices in India: public sector (national, inter-state, state, district, metropolitan and local), private and joint sector.

Suggested Readings:
1. Glasson John and Marshall Tim, 2007. *Regional Planning*, Taylor and Francis, London and New York.
2. Hall Peter and Tewdwr-Jones Mark, 2010. *Urban and Regional Planning*, Routledge, London and New York.
3. Kulshreshta S. K. 2012. *Urban and Regional Planning in India: A Handbook for Professional Practice*, Sage, New Delhi.
4. Lichfield N., Kettle P. and Whitbread M. 2016. *Evaluation in the Planning Process: The Urban and Regional Planning Series (Volume 10)*, Elsevier.
5. RahmaanA. U. 2011. *The Imperatives of Urban and Regional Planning: Concepts and Case Studies from the Developing World*, Xlibris Corporation.
6. Stiftel B. and Watson V. 2005. *Dialogues in Urban and Regional Planning*, Psychology Press.

7. Wang X. and Hofe R. 2008. *Research Methods in Urban and Regional Planning*, Springer.
8. Wong C. 2006. *Indicators for Urban and Regional Planning: The Interplay of Policy and Methods*, Routledge.

Teaching Plan:

Week 1:	Session 1:	The Application to Urban and Regional Planning, 'Planning' as an Activity
	Session 2:	Objectives in Planning – Simple and Complex
Week 2:	Session 1:	Howard, Wright
	Session 2:	Unwin and Parker
Week 3:	Session 1:	Perry, Stein and Tripp
	Session 2:	Geddes and Abercrombie
Week 4:	Session 1:	Soria Y Mata, Le Corbusier
	Session 2:	Garnier and May
Week 5:	Session 1:	Approaches (Rationality vs. Interpretative)
	Session 2:	Controls (Elite vs. Participatory)
Week 6:	Session 1:	Policy Cycle
	Session 2:	Regional Planning Process (Vertical vs. Horizontal)
Week 7:	Session 1:	Planning Professionals
	Session 2:	Power in Planning; Planning and Democracy
Week 8:	Session 1:	'Traditional' Theories of Regional Growth
	Session 2:	'Traditional' Theories of Regional Growth
Week 9:	Session 1:	Competitive Regions – A Contemporary Approach
	Session 2:	Competitive Regions – A Contemporary Approach
Week 10:	*Mid-Semester Examinations*	
Week 11:	*Mid-Semester Break*	
Week 12:	Session 1:	Hierarchies of Activities and Settlements
	Session 2:	Growth Poles, Clusters and Agglomeration Economies
Week 13:	Session 1:	Transport and Connectivity
	Session 2:	Polycentric Development
Week 14:	Session 1:	Conflict and Opportunity
	Session 2:	Dimensions of Sustainability and Sustainable Regional Development
Week 15:	Session 1:	Goals, Objectives and Targets
	Session 2:	Forecasting, Modelling and Plan Design, Plan Design and Plan Evaluation;
Week 16:	Session 1:	Implementing the Plan
	Session 2:	New Planning Paradigms
Week 17:	Session 1:	Spatial Strategic Coordination
	Session 2:	Planning Practices in India

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Basic and introductory knowledge of regional planning	Classroom lectures and tutorials	Relevance of regional planning
II	Knowledge of pioneering thinkers of urban planning	Classroom lectures and tutorials	Selected study of thinkers and their contributions
III	Knowledge of theoretical background of regional planning	Classroom lectures and tutorials	Assignment on selected theories
IV	Knowledge of the planning process today	Classroom lectures and tutorials	Evaluate working of planning process
V	Knowledge of regional planning practices in India	Classroom lectures and tutorials	Evaluate planning practices in India

MASTER of ARTS in GEOGRAPHY
Semester IV – Elective Course

GEOG4E15: URBAN DEVELOPMENT AND MANAGEMENT

Credits: **Total – 5**

Marks: **Total - 100**
Attendance – 5
Assignments – 15
Mid-Semester Examinations – 10
End-Semester Examinations – 70

Duration (Hours per week): **Total – 5** (Lecture – 4, Tutorial – 1)

Course Objectives:

1) This course attempts to acquaint the students with urban issues and components.
2) The course examines the questions related to urban poverty and slums in India.
3) It also critically evaluates the infrastructure development and programmes & policies aimed at sustainable urban development and management strategies.

Course Learning Outcomes:

1) The students will be able to understand the concepts and components of urban development and management.
2) The students will be able to analyse the urban poverty and slums at different scales.
3) The students will be able to get updated knowledge of urban infrastructure development management and urban governance.

Course Content:

Unit I: Urban Issues and Components: Concept of urban development and management; urbanization: trends, patterns; challenges in developing world.

Unit II: Urban Poverty Alleviation: Concept of urban poverty, poverty and informal sector; urban basic services for the poor; employment opportunities; Case studies

Unit III: Slum Improvement and Upgradation in India: Nature of slum; evaluation of slum improvement programmes and schemes; resettlement and rehabilitation actions; infrastructure development in slums; Case Studies.

Unit V: Infrastructure Development Management: Urban land use planning; water supply and sanitation; housing; traffic; disaster management.

Unit V: Sustainable Urban Development and Management: Integrated infrastructure development planning; Management towards sustainable cities; Government programmes and policies.

Suggested Readings:

1. Atkinson, A. et. al., 1999. *The Challenges of Environmental Management in Urban Areas*, Ashgate Pub. Co., Sydney.
2. Gilbert, R., Stevenson, G. H. and Stren, R. 1996. *Making Cities Work*, Earthscan Publications, London.
3. Hardoy, J.E., Mitlin, D. and Satterthwaite, D. 1992. *Environmental Problems in Third World Cities*, Earthscan, London.
4. Joss, Simon, 2015. *Sustainable Cities: Governing for Urban Innovation*, Palgrave, London.
5. Kundu, A. 1993. *In the Name of Urban Poor: Access to Basic Amenities,* Sage, Delhi.

6. Maitra, A. K. 2000. *Urban Environment in Crisis*, New Age International Publishers, New Delhi.
7. Pugh, C. 1996. *Sustainability, the Environment and Urbanization*, Earthscan Publications, London.
8. Ronald, J. F., et.al. 1994. *Mega City Growth and the Future,* United Nations University Press, New York.
9. Singh, K. and Steinberg, F.M. 1996. *Urban India in Crisis*, New Age International Limited Publications, New Delhi.
10. Singh, R.B. (ed) 2006. *Sustainable Urban Development*, Concept Publishing Company, New Delhi.
11. Singh, R. B. (ed) 2015. *Urban Development Challenges, Risks and Resilience in Asian Mega Cities,* Springer, Japan.
12. Sivaramakrishnan, K.C. 2001. *Problems of Governance in South Asia*, Centre for Policy Research, New Delhi.
13. Timothy, B. 2009. *Sustainable Urban Development*, Routledge, London
14. Wheeler, S.M. and Beatley, T. 2014. *The Sustainable Urban Development*, Routhledge, New York.

Teaching Plan:

Week 1 - Overview and nature
Week 2 - Concept and components
Week 3 - Trends and patterns of urbanization
Week 4 - Concept of urban poverty
Week 5 - Poverty and informal sector
Week 6 - Urban basic services
Week 7 - Employment opportunities
Week 8 - Improvement and infrastructure of slums
Week 9 - Resettlement and rehabilitation
Week 10 - Mid-Semester Examinations
Week 11 - Mid-Semester Break
Week 12 - Urban landuse
Week 13 - Water supply and sanitation
Week 14 - Housing and Traffic
Week 15 - Urban Disaster
Week 16 - Government programmes and policies
Week: 17 - SDGs and Wrap up discussions & feedback

Facilitating the achievement of Course Learning Outcomes:

Unit No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
I	Conceptual background of urban development and management	Classroom lectures, tutorials and PPTs	Assignments/discussions on urban issues
II	Urban poverty and basic services	Classroom lectures, tutorials and PPTs	Assignments/Discussion/Debates on urban poverty and urban basic services
III	Nature of slum; infrastructure development in slums	Classroom lectures, tutorials and PPTs	Review/Assignments/Discussions on slums and available infrastructure
IV	Urban Infrastructure management strategies	Classroom lectures, tutorials and PPTs	Knowing the understanding level of management strategies through tests, presentations, debates etc.
V	Government programmes and policies;	Classroom lectures, tutorials and PPTs	Reviewing the institutional arrangements through assignments/ presentations