

UNIVERSITY OF LADAKH



DEPARTMENT OF GEOGRAPHY

COURSE STRUCTURE

Under

Choice Based Credit System (CBCS)

FOR

M.A/M.SC. in GEOGRAPHY

SESSION: 2022 – 23, 2023 – 24

Report of Board of Studies (BOS) Geography 2022-23

Reference: Letter No: UOL/2021/DAA-01/711 Dated: 16th of Dec. 2021, Dean Academics University of Ladakh.

With reference to the letter mentioned above from the Dean Academic Affairs, University of Ladakh regarding constitution of Board of Studies in Geography to frame the UG and PG course curriculum (syllabus) for the session 2022 – 23 & 2023 – 24, a series of BOS meetings with internal and external experts were conducted with effect from 20th December 2021 to 18th February 2022.

The internal members prepared/revised the draft M.A./M.Sc. Geography syllabi through a series of online meeting which were then placed before the external experts for detailed review and suggestions in order to improvise the contents of all the courses. The external experts after a detailed review suggested various changes/modifications in the draft syllabus. The suggested changes/modifications were then duly incorporated in the draft syllabus and was further placed before the external experts. In the final meeting the draft syllabi of M.A./M.Sc. Geography for the session 2022 – 23 & 2023 – 24 were unanimously approved by all the members of BOS including external experts.

Further the syllabi of M.A./M.Sc. Geography have been upgraded as per the provision of the UGC module and the demand of the academic environment in the region. The syllabi have been framed based on current requirements for various jobs, latest technologies, and researches in various fields which can help the students to shape themselves for their bright future.

Internal Members

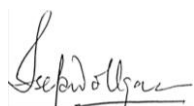
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INTRODUCTION

Program Outcome: The program has been conceptualized with the aim to adequately train the geographers to address the problem and issues being faced in the contemporary times. The curriculum is being continuously updated so that new concepts, innovations, methodologies and approaches are incorporated to keep the subject in line with the changing trends at the global level. The students are expected to have a clear understanding of conceptual framework of the subject field of geography. The program prepares our students to place themselves as regional and urban planners, environmental managers, resource planners and cartographers etc. The program prepares our students for various competitive examinations so that they can carve a niche for themselves in the civil services.

Course Description: The M.A/M.Sc. Post Graduate Program in Geography is of two-year duration, spread over four semesters and comprising of 22 courses of 80 credits (15 courses of 4 credit, 6 courses of 2 credits and 1 course of 8 credits). The 22 courses are grouped into three categories – **Core** (18 courses of 70 credits, all of which are compulsory), **Minor Elective** (3 courses of 6 credits, to be selected out of 7 elective courses) and **Major Elective** (1 course of 4 credit, to be selected out of 4 courses).

It is mandatory for each student to complete a Dissertation/project that will be assigned during 4th semester and will be assessed on the basis of thesis, presentation and viva voce examination.

Attributes of the Post Graduate Programme

- The **core courses** cover central and vital areas of geography, about which all students should have knowledge.
- The **elective courses** cover contemporary, specialized and super-specialized areas of physical and human geography.
- 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.

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

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

- c) **‘Programme Structure’** means a list of courses (Core, 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.
- d) **‘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.
- e) **‘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.
- f) **‘Credit’** means the value assigned to a course which indicates the level of instruction.
- g) **‘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.

Programme Structure

The Master’s programme is a two-year course divided into four-semesters. A student is required to complete 80 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 (*)			Total No. of Papers	Grand Total Credits
	4 Credit	8 Credit	2 Credit	Total Credits	4 Credit	2 Credit	Total Credits		
I	04	Nil	01	18	Nil	1	02	06	20
II	04	Nil	01	18	Nil	1	02	06	20
III	04	Nil	01	18	Nil	1	02	06	20
IV	02	01	Nil	16	1	Nil	04	04	20
Total	14	01	03	70	01	03	10	22	80

- All courses, whether Core and Elective, will have 4 hours of teaching per week for 4 credit and 2 hours of teaching per week for 2 credit courses. However, in practical courses, the equivalent of one-hour of lecture/tutorial will be two-hours practical.
- Duration of examination of each course shall be 3 hours for both theory and practical courses.
- The courses will be of 2, 4, and 8 credits. In theory courses 70% marks shall be allocated for end semester examination, and 30% marks for internal assessment. Whereas in Practical courses 50% marks shall be allocated for end semester examination, and 50% marks for internal assessment.
- (*) In-lieu of up to two Elective courses of the department (in semesters III), students can offer Open Electives courses of up to 02 credits from other departments. Similarly, the elective courses which are marked (*) is open to the students of other departments too.
- In order to incorporate an element of Continuous Internal Assessment of students, the Departments will conduct the following:
 - Written Tests
 - Classroom Presentation
 - Home Assignments
 - Laboratory Performance (practical only)
 - Attendance

The schedule of papers prescribed for various semesters shall be as given in the next page.

S. No.	Course Name	Course Code	Credits	Contact Hours	Marks
SEMESTER – I					
1	Geomorphology	PG-GG-C101	04	60	100
2	Geography of India	PG-GG-C102	04	60	100
3	Geographic Thought	PG-GG-C103	04	60	100
<i>Minor Elective (Any one of the following)</i>					
4	i) Settlement Geography	PG-GG-E101	02	30	50
	ii) Geography of Cryosphere	PG-GG-E102	02	30	50
5	Land Surveying & Cartography (Practical)	PG-GG-P101	04	120	100
6	Introduction to Field Studies (Physical) – Minor Project	PG-GG-P102	02	60	50
Total			20	390	500
SEMESTER – II					
1	Climatology	PG-GG-C201	04	60	100
2	Urban Geography	PG-GG-C202	04	60	100
3	Economic Geography	PG-GG-C203	04	60	100
<i>Minor Elective (Any one of the following)</i>					
4	i) Bio-Geography	PG-GG-E201	02	30	50
	ii) Social Geography	PG-GG-E202	02	30	50
5	Advanced Statistical Techniques (Practical)	PG-GG-P201	04	120	100
6	Introduction to Field Studies (Human) – Minor Project	PG-GG-P202	02	60	50
Total			20	390	500
SEMESTER – III					
1	Regional Planning & Development	PG-GG-C301	04	60	100
2	Research Methodology in Geography	PG-GG-C302	04	60	100
3	Remote Sensing & Geographical Information System	PG-GG-C303	04	60	100
<i>Minor Elective (Any one of the following)</i>					
4	i) Environmental Geography	PG-GG-E301	02	30	50
	ii) Climate Change and Earth System (*)	PG-GG-E302	02	30	50
	iii) Agricultural Geography	PG-GG-E303	02	30	50
5	Remote Sensing & Digital Image Processing (Practical)	PG-GG-P301	04	120	100
6	Geographical Information System (Practical)	PG-GG-P302	02	60	50
Total			20	390	500
SEMESTER – IV					
1	Geography of Health & Health Care	PG-GG-C401	04	60	100
<i>Major Elective (Any one of the following)</i>					
2	i) Population Geography	PG-GG-E401	04	60	100
	ii) Gender, Space and Society in India	PG-GG-E402	04	60	100
	iii) Geography of Rural Development	PG-GG-E403	04	60	100
	iv) Political Geography	PG-GG-E404	04	60	100
3	Project (Dissertation)	PG-GG-P401	08	240	200
4	Field Training & Tour (Practical)	PG-GG-P402	04	120	100
Total			20	480	500
GRAND TOTAL (Semester - I, II, III, IV)			80	1650	2000

Instructions/Pattern of End Semester Question Paper (Theory Courses – 4 Credit)

- 1) There will be two sections A and B.
- 2) There will be 9 questions in all.
- 3) **Section A** will carry one compulsory question (question no 1) with four sub-parts (consisting of short answer type questions). Each sub-part (short answer type question) will be from each unit and a student will have to attempt all the four sub-parts.
- 4) **Section B** will comprise of four long answer type questions (question number 2 to 5); each question will have an option. Thus, there will be two questions from each unit. In total, there will be eight questions in the section; two from each unit and a candidate will be asked to attempt four questions.
- 5) All short answer type questions will carry 3½ marks each. Thus, question No 1 will carry weightage of 14 marks. Whereas, each question from no 2 to 5 will carry equal marks of 14 marks.

Note: There will be internal examinations (Assignments, Tests and Presentations) of 30% marks in each semester. End-semester examination will be of the rest 70% marks in each semester.

Instructions/Pattern of End Semester Question Paper (Theory Courses – 2 Credit)

- 1) There will be two sections A and B.
- 2) There will be 5 questions in all.
- 3) **Section A** will carry one compulsory question (question no 1) with two sub-parts (consisting of short answer type questions). Each sub-part (short answer type question) will be from each unit and a student will have to attempt all the two sub-parts.
- 4) **Section B** will comprise of four long answer type questions (question number 2 to 3); each question will have an option. Thus, there will be two questions from each unit. In total, there will be four questions in the section; two from each unit and a candidate will be asked to attempt two questions.
- 5) All short answer type questions will carry 3½ marks each. Thus, question No 1 will carry weightage of 07 marks. Whereas, each question from no 2 to 3 will carry equal marks of 14 marks.

Note: There will be internal examinations (Assignments, Tests and Presentations) of 30% marks in each semester. End-semester examination will be of the rest 70% marks in each semester.

Detailed Syllabus

for

M.A./M.Sc. Geography

SEMESTER - I

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – I (Core Course)

Course Title: **GEOMORPHOLOGY**

Course Code: **PG-GG-C101**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives:

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

Course Learning Outcome:

- ✓ The students will be able to Explain basic principles for development of landforms through time.
- ✓ Make an initial geomorphological fieldwork.
- ✓ Learn the techniques of geomorphological analysis.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Definition, Nature and Scope of Geomorphology
- 1.2 Fundamental Concepts in Geomorphology
- 1.3 Continental Drift, Convectional Current theory and Sea Floor Spreading
- 1.4 Plate Tectonics

Unit – II

15 Hours

- 2.1 Wilson Cycle of Landform Evolution
- 2.2 Epeirogenic and Orogenic Earth Movements
- 2.3 Theories of Mountain Building: Concept of Kober, Daly and Holmes
- 2.4 Evolution and Structure of Himalaya

Unit – III

15 Hours

- 3.1 Weathering: types and Associated Factors.
- 3.2 Mass Movement: types and Associated Factors
- 3.3 Davis Cycle of Erosion
- 3.4 Penks Cycle of Erosion

Unit – IV

15 Hours

- 4.1 Dynamics of Fluvial Processes and Associated Landforms.
- 4.2 Dynamics of Glacial Processes and Associated Landforms.
- 4.3 Dynamics of Aeolian Processes and Associated Landforms.
- 4.4 Slopes: Evolution and replacement Models.

SUGGESTED READINGS

1. Bartolomé, A., Francisco, C., Juan, J. D., James W.: *Advances in Research in Karst Media*, Springer Heidelberg Dordrecht, London, New York, 2010.
2. Bierman, P. and Montgomery, D.: *Key Concepts in Geomorphology* - 14 edition, W.H. Freeman, U.K. 2014.
3. Bird, E.: *Coastal Geomorphology: An Introduction* 2nd Edition, Wiley, 2008.
4. Bloom, Arthur L.: *Geomorphology: A Systematic Analysis of Late Cainozoic Landforms*, Pearson Education, Singapore, 3rd Edition, 2003.
5. Bridge, J.S.: *Rivers and Floodplains: Forms, Processes, and Sedimentary Record*, Wiley-Blackwell, UK, 2003.
6. Bridge, J. and Demicco, R.: *Earth Surface Processes, Landforms and Sediment Deposits*, Cambridge University Press, New York, 2008.
7. Burbank, D.W. and Anderson, R.S.: *Tectonic Geomorphology* 2nd edition, Wiley-Blackwell, UK, 2012.
8. David, S.G. Thomas: *Arid Zone Geomorphology: Pattern, Form and Change in Dry Lands*, Wiley Blackwell, New York, 2011.
9. Douglas, W.B., Robert, S.A.: *Tectonic Geomorphology*, Wiley Blackwell, New York, 2011.
10. Goudie, A. and Viles, H.: *Landscapes and Geomorphology: A Very Short Introduction*, Oxford University Press, 2010.
11. Goudie, A.S.: *Arid and Semi-arid Geomorphology*, Cambridge University Press, England, 2013.
12. Gregory, K.J.: *The Earth's Land Surface: Landforms And Processes In Geomorphology*, Sage Publications (CA), 2010.
13. Leopold, L.B., Miller, J.P. and Wolman M.G.: *Fluvial Processes in Geomorphology*, Dover Publications, 1995.
14. Masselink, G., Hughes, M. and Knight, J.: *Introduction to Coastal Processes and Geomorphology* 2nd Edition, Routledge, 2011.
15. Richard, J.H.: *Fundamentals of Geomorphology*, Routledge, Taylor & Francis Group, London, 2011.
16. Ritter, D.F., Kochel, R.C. and Miller, J.R.: *Process Geomorphology* 5th edition, Waveland Press Inc., Long Grove, Illinois, 2006.
17. Scroder, J.F.: *Treatise on Geomorphology*, Elsevier, London, 2013.
18. Singh, Savindra: *Geomorphology*, Prayag, Prakashan, Allahabad, 1998.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – I (Core Course)

Course Title: ***GEOGRAPHY OF INDIA***

Course Code: **PG-GG-C102**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ This course on the Geography of India aims to make the students familiar with the basic landforms, climate, soil, vegetation and population characteristics of India.
- ✓ It is a course designed to enable students to broaden and deepen their understanding of India.

Course Learning Outcomes

- ✓ Students would gain understanding of ‘new’ geography of their country.
- ✓ The spatial variations of dimensions of vitality and vulnerability would help them see the strength and weakness of the country.
- ✓ The course would help students to contextualize much of their further learnings, teaching and research on India within the contents of this course.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Indian subcontinent as a geographical entity: unity in diversity in its physical as well as human attributes.
- 1.2 Major Physical features: details of mountain ranges and drainage systems.
- 1.3 Modern theories on monsoon in India.
- 1.4 Land resources and utilization (change in land use/land cover in India).

Unit – II

15 Hours

- 2.1 Population: Distribution, growth, age and sex composition.
- 2.2 Demographic dividend and ageing of population; issues and challenges.
- 2.3 Vulnerability of population: Spatial Pattern of Poverty, Hunger, and Disability.
- 2.4 Human Resource Development in India; trends and HDI Index, comparison with neighboring countries.

Unit – III

15 Hours

- 3.1 Indian agriculture: characteristics, changing geography of major food crops rice and wheat.
- 3.2 Impacts of Green Revolution and needs and prospects of second wave of Green Revolution.
- 3.3 Marketing and promotions of agricultural products in India; prospects and challenges, issues of rural indebtedness and farmer suicides.
- 3.4 Mineral resources (iron ore, manganese, mica)

Unit – IV

15 Hours

- 4.1 Power resources: potential and utilization (coal, petroleum, hydro-power, wind and solar)
- 4.2 Regionalisation of India: Physiographic (Spate and R. L. Singh)
- 4.3 Regionalisation of India: Socio – cultural (Sopher and A. Ahmed), Economic (Sengupta)
- 4.4 Industrial development: locational factors and industrial zone of major manufacturing as well as service industries in India.

SUGGESTED READINGS

1. Deshpande, C. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi.
2. Johnson, B. L. C., ed. 2001. Geographical Dictionary of India. Vision Books, New Delhi.
3. Mandal, R. B. (ed.), 1990: Patterns of Regional Geography – An International Perspective. Vol. 3 – Indian Perspective.
4. Sdyasuk Galina and P Sengupta (1967): Economic Regionalisation of India, Census of India
Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.
5. Singh R. L., 1971: India: A Regional Geography, National Geographical Society of India.
6. Singh, Jagdish 2003: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
7. Spate O. H. K. and Learmonth A. T. A., 1967: India and Pakistan: A General and Regional Geography, Methuen.
8. Tirtha, Ranjit 2002: Geography of India, Rawat Publications, Jaipur & New Delhi.
9. Bose, A. et. al. eds, 2001: Population in India's Development, 1947-2000, Vikas, New Delhi.
10. Pathak, C. R. 2003: Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata.
11. Raza, M and Aggarwal, Y 1999: Transport Geography of India: Commodity Flows and the Regional Structure of Indian Economy, Concept Publishing House, New Delhi.
12. Balkrishan C. V 2003, Geography of Transport Development in India, Concept Publishing House, New Delhi.
13. Krishan, G.: The Vitality of India: A Regional Perspective, Rawat Publications, 2017
14. Mahindra K. Premi, 2014; changing population profile of India, National Book Trust of India, ministry of Education, GOI.
15. Bhagat R.B 2016; Ageing in India: Class Demographics and Policy Issues, published in Lancy Lobo and Jayesh Shah (Eds) The Trajectory of India's Middle Class: Economy, Ethics and Etiquette, Cambridge Scholar Publications, Newcastle upon Tyne, UK, pp. 248-263, Available from:
[https://www.researchgate.net/publication/275334916 Ageing in India Class Demographics and Policy Issues](https://www.researchgate.net/publication/275334916_Ageing_in_India_Class_Demographics_and_Policy_Issues)

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – I (Core Course)

Course Title: ***GEOGRAPHIC THOUGHT***

Course Code: **PG-GG-C103**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ This course aims to provide knowledge of past disciplinary developments.
- ✓ It aims to enable students to contextualize the conceptual traditions within geography along with the major philosophical influences.

Course Learning Outcomes

- ✓ A thorough knowledge of the growth, development, philosophical influences and relevance of geography from the past till present time.
- ✓ Knowledge of emerging areas and new theorizations within the discipline

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Origin, Development and changing nature of Geography.
- 1.2 Geography in the ancient period: Contribution of Greek and Roman Scholars.
- 1.3 Concept of Geography in the medieval period – Dark Age & Contribution of Arab Scholars.
- 1.4 Impact of voyages; Discoveries and Renaissance on Geographical Thought.

Unit – II

15 Hours

- 2.1 Foundation of Scientific Geography: Contributions of Varenius and Kant.
- 2.2 Classical period of modern geography: Contributions of Humboldt and Ritter
- 2.3 Development of Geography in Europe during the second half of the 19th century & first half of 20th century.
- 2.4 Darwin's Impact on Geography.

Unit – III

15 Hours

- 3.1 Developments in Geography since World war – II: From Areal to Spatial Analysis.
- 3.2 Quantitative Revolution in Geography.
- 3.3 Rise of Behavioral, Radical & Humanistic Geography.
- 3.4 Post-modern and Feminist Geography.

Unit – IV

15 Hours

- 4.1 Environmental Determinism, Possibilism and Neo-Determinism
- 4.2 Regional VS Systematic Geography
- 4.3 Geography as a Science of Distribution and as a science of Areal Differentiation
- 4.4 Geography as a Science of Relationships.

SUGGESTED READINGS

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Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – I (Elective Course)

Course Title: **SETTLEMENT GEOGRAPHY**

Course Code: **PG-GG-E101**

Credits: **02**

Contact Hours: **30** (2 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ To understand and evaluate the concept of settlement geography and its approaches as well as relevance.
- ✓ To identify the issues relating to the human settlement of the region through the process of spatial organization of various attributes and their interrelationship.
- ✓ The course also intends to help students in identifying the settlement issues and settlement planning.

Course Learning Outcome

- ✓ The students will learn about evolution and growth of human settlements and geographical influences on it.
- ✓ The students will study about the different issues and policies of settlement planning.

COURSE CONTENT

Unit – I

09 Hours

- 1.1 Definition, Nature and Scope of Settlement Geography
- 1.2 Site and Situation factors in the Development of Settlement
- 1.3 Classification of Settlements

Unit – II

06 Hours

- 2.1 Characteristics of Rural Settlement
- 2.2 Types and patterns of rural settlements and their cause and effect relationships

Unit – III

09 Hours

- 3.1 Urban Settlement and its Morphology: Concentric Zone, Sectoral and Multiple Nuclei Model
- 3.2 Rural-Urban Dichotomy & Continuum.
- 3.3 Issues and Policies of Settlement and Settlement Planning.

Unit – IV

06 Hours

- 4.1 House types and their characteristics in different Geographical Environments.
- 4.2 Traditional and Folk Rural House types with special reference to Ladakh.

SUGGESTED READINGS

1. Ambrose, Petir, Concepts in Geography, Vol., I, Settlement Pattern, Longman, 1970.
2. Baskin, C., (Translator), Central Places in Southern Germany, Prentice Hall Inc. Englewood Cliffs, New Jersey, 1966. Originally written by C.W. Christaller in German with title Die Zentralen Orte Suddeutsch Land in 1933.
3. Hagget, Peter, Andrew D. Cliff and Allen Frey (edited), Location Models , Arnold Heinemann, 1979.
4. King, Leslie, J., Central Place Theory, Sage Pub., New Delhi, 1986.

5. Mayer, M. Harold and Clyde F. Kohn (editors), Reading in Urban Geography, Central Book Depot, Allahabad, 1967.
6. Mitra, Ashok, Mukherjee, S and Bose R., Indian Cities, Abhinav Pub., New Delhi.
7. Ramachandran, R., Urbanization and Urban Systems in India, Oxford University Press, New Delhi, 1992.
8. Singh, R.L. and Kashi Nath Singh (editors), Readings in Rural Settlement Geography, National Geographical Society of India, Varanasi, 1975.
9. Srinivasan, K. and M. Vlassoff, (editors), Population-Development Nexus in India: Challenges for the New Millennium, Tata McGraw-Hill Publishing Co. Ltd., New Delhi 2001.
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Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – I (Elective Course)

Course Title: ***GEOGRAPHY OF CRYOSPHERE***

Course Code: **PG-GG-E102**

Credits: **02**

Contact Hours: **30** (2 Hrs./week)

Max. Marks: **50**

Course Objective

- ✓ To make student understand glacial geomorphology and hydrology.
- ✓ 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 mountain dwellers.

Course Learning Outcome

- ✓ The course will help in understanding cryosphere geography and its relevance in the present time.
- ✓ Student will learn about field observation of glacier and glacial lake and impact assessment on society.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Introduction to Cryosphere Geography: concept, nature and scope
- 1.2 Glaciers: Origin and classification
- 1.3 Glacial ice movement: Basal flow and internal deformation
- 1.4 Ice ages: Causes and evidences
- 1.5 Pleistocene Glaciation: Onset, retreat, direct and indirect effect

Unit – II

15 Hours

- 2.1 Global Warming, Climate Change and Glacial Retreat
- 2.2 Hazards in Glacial Environment: Glacial Surges and GLOF
- 2.3 Glacial Lake Outburst Floods in Trans-Himalayan Ladakh – Case Study of Recent GLOF
- 2.4 Climate Change, water scarcity and adaptation in Ladakh – Role of Artificial Glaciers.

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. Kulkarni, A. V. 1992. Mass balance of Himalayan glaciers using AAR and ELA methods. *Journal of Glaciology*, 38: 101-104
8. 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.
9. Sugden, D. E. and John, B. S. 1976. *Glaciers and Landscape*, New York, New York, Wiley

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – I (Core Course - Practical)

Course Title: **LAND SURVEYING & CARTOGRAPHY**

Course Code: **PG-GG-P101**

Credits: **04**

Contact Hours: **120** (08 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ To inculcate the diverse methods of land surveying methods, their usefulness and drawbacks.
- ✓ To develop an understanding of how this knowledge may be applied in practice for the optimum and efficient utilization of space.
- ✓ To promote awareness of the students to various cartographic techniques available for graphic representation of relief, climatic, population and agriculture data.

Course Learning Outcome

- ✓ The students will be able to explain the basic principles and types of land surveying.
- ✓ The students will be able know important techniques required for representation of geographical data.
- ✓ Overall understanding of techniques of relief representation.

COURSE CONTENT

Unit – I

30 Hours

- 1.1 Surveying: Definitions, Classification and Principles
- 1.2 Triangulation: Principles, Base line Measurement, Extension of Baseline.
- 1.3 Plane Table Survey: Meaning, Instruments Used and Procedure
- 1.4 Methods of Plane Table Survey

Unit – II

30 Hours

- 2.1 Prismatic Compass Survey: Meaning, Instruments Used and Procedure
- 2.2 Methods of Prismatic Compass Survey
- 2.2 Dumpy level survey: Meaning and Components
- 2.3 Dumpy level survey: Procedure and Method

Unit – III

30 Hours

- 3.1 History, Development and Significance of Cartography
- 3.2 Topographical Maps and their Interpretation
- 3.3 Depiction of relief: Drawing of Profiles – Serial, Superimposed, Composite and Projected; Profiles and their Usefulness in Studying Landforms.
- 3.4 Gradient and Slope: Significance and Calculation

Unit – IV

30 Hours

- 4.1 Methods of Slope Analysis: Wentworth and Smith
- 4.2 Hypsographic and Altimetric frequency Curves.
- 4.3 Representation of Climatic Data: Climograph, Hythergraph and Rainfall Dispersion Diagram
- 4.4 Thematic Mapping: Choropleth & Isopleth.

SUGGESTED READINGS

1. Punmia, B.C., Surveying and Leveling, Vol I.
2. Alvi, Zamiruddin, A Text Book of Surveying
3. Aylmer Johnson. 2004. Plane and Geodetic Surveying. CRC Press.
4. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
5. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
6. Lillesand T.M and Keifer R.W. 2008 (6th edition). Remote Sensing and Image Interpretation. John Wiley and Sons, New York.
7. Joseph George. 2005 (2nd edition), Fundamentals of Remote Sensing. University Press. Hyderabad.
8. Sabins, F.F. 1986. Remote Sensing: Principles and Interpretation. Freeman, New York.
9. Rashid S.M. and Mazhar A.K. 1993. Dictionary of Remote Sensing. Manak Publishing House, Delhi.
10. Lo, C.P. and Yeung AKW. 2006(2nd edition). Concepts and Techniques of GIS, Prentice – Hall of India, New Delhi.
11. Bolstad, P.: *GIS Fundamentals: A First Text on Geographic Information Systems*, Second Edition, White Bear Lake, MN: Eider Press, 2005.
12. Crampton, W. C.: *Mapping: A Critical Introduction to Cartography and GIS*, John Willy & Sons, New York, 2010.
13. Field, Kenneth, *Cartography*, Esri Press, 2018
14. Harvey, Francis: *A Primer of GIS, Fundamental Geographic and Cartographic Concepts*, The Guilford Press, 2008.
15. Heywood, I., Cornelius, S., and Carver, S.: *An Introduction to Geographical Information Systems*, Prentice Hall, 3rd Edition, 2006.
16. John Krygier and Denis Wood: *Making Maps: A Visual Guide to Map Design for GIS*, Guilford Publications, 2013.
17. Keates, J.S.: *Cartographic Design and Production*, Longman, London, 1998.
18. Misra, R.P. and Ramesh, A.: *Fundamental of Cartography*, Concept Publishing Company, New Delhi, 2014
19. Robinson, A.H. and Others: *Elements of Cartography*, John Wiley & Sons, New York, 6th Edition, 1992.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – I (Core Course - Practical)

Course Title: **INTRODUCTION TO FIELD STUDIES (Physical)**

Course Code: **PG-GG-P102**

Credits: **02**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ The primary aim of a field visit is to gather geographical details. Reinforcing experiential and relational learning is the key goal of conducting a field trip for students.
- ✓ The opportunity for students to have rich learning experiences on field trips and training can serve as the beginning of their interests in subject specific researches.
- ✓ To stimulate reasoning and critical thinking among students.

Course Learning Outcomes

- ✓ The students will learn various field observation, data collection skills.
- ✓ The students will know how the observational methods will be applied in geography.

COURSE CONTENT

This course is a field based minor project. Students are required to undertake a field study tour of a distant area or region to study certain aspects of physical landscape and on-spot observations under the supervision of teachers who will accompany the students.

COUSE CURRICULUM & INSTRUCTIONS

- Trace the prominent features of the area to be surveyed. Identify salient landform features of the selected area on topographical sheet or any specific map of the area.
- Identify the landforms on the surface, while in the field. Also note the agents of erosion, transportation and deposition associated with the landforms.
- Identify and classify the vegetation and biodiversity in the area (flora and fauna)
- Observe the relationship of various Landforms, flora and fauna with land-use, settlement pattern, house types and life style of the people.
- Based on observations of the above characteristics, prepare a field survey report. The report needs to be supplemented with maps, sketches, photographs.

SUGGESTED READINGS

1. Archeer, J.E. & Dalton, T.H. Fieldwork in Geography, London, 1968. Elhance, D.N. Fundamentals of Statistics, Allahabad, 1972.
2. Jones, P.A., Fieldwork in Geography, London, 1968.
3. Glodard, R.H., Field Techniques and Research Methods in Geography, Dubuque 1982. Wheeleso, K.S. & Harding, M., Geographical Fieldwork, London, 1965.
4. Mahmood. A., Statistical Methods in Geographical Studied, Rajesh Publication, Delhi, 1977.
5. Geogory, S., Statistical Methods and the Geographers, Longmans, London. Monkhouse, F.J., Maps and Diagrams, Methuen & Co., 1952.
6. Berry, B.J.L., & Marble, F., Spatial Analysis: A Reader in Statistical Geography, New Jersey, 1968.

Detailed Syllabus

for

M.A./M.Sc. Geography

SEMESTER - II

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – II (Core Course)

Course Title: *CLIMATOLOGY*

Course Code: **PG-GG-C201**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ To foster in depth study of Climatology and comprehensive understanding of atmospheric phenomena; their dynamics and global climates
- ✓ Knowledge of interrelationship between man and nature.

Course Learning Outcome

- ✓ The students will be able to explain basic principles climate and weather dynamics.
- ✓ Learn the techniques of climatological analysis.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Nature and Scope of Climatology and its relationship with Meteorology
- 1.2 Evolution of Earth's Atmosphere – Structure and its Role.
- 1.3 Insolation, Heat Budget and Latitudinal Heat Balance.
- 1.4 Atmospheric Moisture and Precipitation

Unit – II

15 Hours

- 2.1 Atmospheric Equilibrium: Stability and Instability.
- 2.2 Distribution of Atmospheric Pressure and Winds.
- 2.3 Jet Streams: their origin, types and distribution.
- 2.4 Air Masses: origin, growth and classification

Unit – III

15 Hours

- 3.1 Fronts: origin, growth and classification
- 3.2 Tropical Cyclone: origin, development and distribution.
- 3.3 Temperate Cyclone: origin, development and distribution.
- 3.4 Global Warming and Climate Change

Unit – IV

15 Hours

- 4.1 Koppen and Thornthwaites Climatic Classifications.
- 4.2 Major Climates of the World: Tropical, Temperate and Desert.
- 4.3 Climate, Soil and Agriculture.
- 4.4 Climate, Culture and Human Health

SUGGESTED READINGS

1. Barry, R.G. & Chorley, R.J.: *Atmosphere, Weather and Climate*, Methuen Co. Ltd., London, 5th Edition, 1987.
2. Barry, R.G. & Chorley, R.J.: *Atmosphere, Weather and Climate*, 9th Edition, Methuen Co. Ltd., London, 2009.
3. Bhutani, Smita: *Our Atmosphere*, Kalyani Publishers, Ludhiana, 2000.
4. Critchfield, H.J.: *General Climatology*, Prentice Hall, N.J., 1975.
5. Frederick K. Lutgens & Edward J. Tarbuck: *The Atmosphere: An Introduction to Meteorology*, Prentice Hall of India Pvt. Ltd., New Delhi, 2012.
6. Lal, D.S., *Climatology*, Sharda Pustak Bhaban, Allahabad, 2009.
7. Strahler, A.N.: *Modern Physical Geography*, John Wiley and Sons, New York, Singapore, 1987.
8. Strahler, A. and A. Strahler: *Introducing Physical Geography*, 6th Edition, John Wiley & Sons, Hoboken, New Jersey, 2013.
9. Strahler, A. and A. Strahler: *Physical Geography: Science and Systems of Human Environment*. 3rd Edition, John Wiley, Hoboken, New Jersey, 2005.
10. Trewartha, G.T.: *An Introduction to Climate*, McGraw Hill, New York, 1980, Fifth Edition (International Student Edition).
11. Trewartha: *Introduction to Climate*, 5th Edition, McGraw Hill, Auckland, 1980.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – II (Core Course)

Course Title: **URBAN GEOGRAPHY**

Course Code: **PG-GG-C202**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives:

- ✓ To critically understand the complexities of urban cities and the experience of living in these cities.
- ✓ To critically understand a broad range of issues that cities face today.
- ✓ To provide a basic social, cultural, political and economic understanding of cities.

Course Learning Outcomes:

- ✓ To understand the linkages between urban cities and the societal forces that shapes it.
- ✓ Critically analyse contemporary urban issues from a geographical perspective.
- ✓ Understand urban issues

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Meaning, scope and significance of Urban Geography.
- 1.2 Approaches and Recent Trends in Urban Geography.
- 1.3 Evolution of Urbanization process in India.
- 1.4 Growth and Development of Urbanization – Global & India (Trends & Patterns).

Unit – II

15 Hours

- 2.1 Theories/Models of Urban structure/growth – Concentric Zone Model, Sector Model, Multiple Nuclie Model.
- 2.2 Central Business District – Meaning, Characteristics and Delineation.
- 2.3 Concept of Primate City, Megalopolis and Development of Conurbation
- 2.4 Policies for Urban Development – Concept of Greenbelts, Satellite Towns and Smart Cities.

Unit – III

15 Hours

- 3.1 Functional Classification of Towns.
- 3.2 Urban Hierarchy and Spacing of Cities.
- 3.3 Christaller’s Central Place Theory.
- 3.4 Rural-Urban Fringe, Urban Sprawl.

Unit – IV

15 Hours

- 4.1 Problems and Issues of Urbanization – Slums, Congestion, Overcrowding.
- 4.2 Urban Environmental Problems – Pollution (Air, Water & Solid Waste).
- 4.3 Urban Planning in India with special reference to Delhi NCR and Chandigarh.
- 4.4 Sustainable Urban Development.

SUGGESTED READINGS

1. Michael.P. (2009). *Urban Geography: A Global Perspective*, Taylor & Francis, Great Britain.
2. Marcotullio, P. Mc Granahan. G. (2007). *Scaling Urban Environmental Challenges: From Local to Global and Back*, Earthscan, Great Britain.
3. Hardoy, J. E., Mitlin. D. Satterthwaite. D. (1992). *Environmental Problems in Third World Cities*, Earthscan, Great Britain.
4. Jensen, J.R. (2007). *Remote Sensing of the Environment: An Earth Resource Perspective*, Prentice-Hall, NJ, USA.
5. Goudie, A, (2000). *The Human Impact on the Natural Environment*, MIT Press, Great Britain.
6. Paul. K. Pinch. S. (2006). *Urban Social Geography: An Introduction*, NJ, USA.
7. *The Urban Environment: Twenty Sixth Report (2007)* Royal Commission on Environmental Pollution, Great Britain.
8. Hubbard, P.: *City*, Routledge, London and New York, 2006.
9. Ganeshwari, S. Kahlon and V. Chandel., *The City Alive: Humanising Urban Geographic Research in India*, *Population Geography*, Vol. 37 (1&2), 2015.
10. Hall, T.: *Urban Geography*, Routledge, London and New York, 2006.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – II (Core Course)

Course Title: ***ECONOMIC GEOGRAPHY***

Course Code: **PG-GG-C203**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ To impart the in-depth study of Economic Geography and the significance of social, cultural and political factors as central to the functioning of economies.
- ✓ The students will be exposed to contemporary themes in economic geography
- ✓ The students will realize the relevance of economic geography for analyzing contemporary societies and economies.

Course Learning Outcome

- ✓ The students will be able to appreciate that geography and space matter in economy.
- ✓ The students will be able to identify some key issues that economic geography engages with.
- ✓ The students will be able to comprehend and analyse the principal questions confronting the contemporary space-economy.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Meaning, Scope & Relation of Economic Geography with other disciplines.
- 1.2 Recent Trends and Approaches in Economic Geography.
- 1.3 Classification of Economic activities and growing role of tertiary and quaternary economic activities in the economic development of India.
- 1.4 Major Regions of the World with reference to economic activities and factors affecting its location.

Unit – II

15 Hours

- 2.1 Industries and its Classification
- 2.2 Models in Economic Geography: Least Cost and Profit Maximization.
- 2.3 Liberalization, Privatization and Globalization Models
- 2.4 Globalization and its impact on Indian economy.

Unit – III

15 Hours

- 3.1 Economic measures of development.
- 3.2 Economic development of India - Through five year plans and New Economic Policies.
- 3.3 Regional disparities in the levels of Economic development (India & World).
- 3.4 Human as a resource and Concept of Knowledge Economy.

Unit – IV

15 Hours

- 4.1 Space-Economy of International Systems: economic groupings
- 4.2 Economic Gravitations.
- 4.3 Progressions in Economic Cooperation and Integration.
- 4.4 Sustainable Development Goals.

SUGGESTED READINGS

1. Conkling, E. C. and Yeates, M. 1976. Man's Economic Environment. McGraw – Hill Book Company, New York.
2. Friedmann, J. and Alonso, W. 1964. Regional Development and Planning: A Reader. The M.I.T Press, Cambridge.
3. Gore, C. 1984. Regions in Question: Space, Development Theory and Regional Policy. Methuen, London.
4. Hartshorne, T. A. and Alexander, J. W. 1988. Economic Geography. Prentice Hall, New Delhi
5. Hurst, E. M. 1972. The Geography of Economic Behaviour: An Introduction. Duxbury Press, California.
6. Peat, W.N. and Constant, J. A. 1972. Zimmermann's World Resources and Industries. Harper and Row Publishers, London
7. Wheeler, J.O, Muller, O. M, Thrall, G.I. and Timothy, J. F. 1998. Economic Geography. John Wiley and Sons Inc., New York.
8. Hussain, M. 2008. Models in Geography. Rawat Publications.
9. Gautam, A. 2015. Geography of Resources: Exploitation Conservation and Management. Sharda Pustak Bhawan
10. Uma Kapila., Indian Economy Performance and Policies (16th edition), Academic Foundation, 2015.
11. T. C Sharma., Economic Geography of India, Rawat Publishers, 2013.
12. K. Siddhartha., Economic Geography; Kitab Mahal, 2016.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – II (Elective Course)

Course Title: **BIOGEOGRAPHY**

Course Code: **PG-GG-E201**

Credits: **02**

Contact Hours: **30** (2 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ To study of the geography of life, that has a long and distinguished history, and one interwoven with that of ecology and evolutionary biology.
- ✓ Modern biogeography now explores a great diversity of patterns in the geographic variation of nature — from physiological, morphological and genetic variation among individuals and populations to differences in the diversity and composition of biotas along geographic gradients.
- ✓ To enable students to develop more general theories of the diversity of life, and to conserve biological diversity.

Course Learning Outcome

- ✓ The students will be able to explain basic principles of biogeography and evolutionary biology.
- ✓ The students will be able to explore a great diversity of patterns in the geographic variation of nature.

COURSE CONTENT

Unit – I	06 Hours
1.1 Biogeography: Nature, Scope and Applications.	
1.2 Spatial Dimension in Biogeography.	
Unit – II	09 Hours
2.1 Niche Concepts in Biogeography.	
2.2 Species Distribution, Dispersal and Extinction.	
2.3 Factors Influencing the Distribution of Life; Biogeographical Regions.	
Unit – III	06 Hours
3.1 Habitat Fragmentation; Conservation of Biogeography.	
3.2 Biogeographical Consequences of Global Change.	
Unit – IV	09 Hours
4.1 Biogeography of Primates and the Early Hominids.	
4.2 Rise of Genus ‘Homo’ and global spread of Homo sapiens.	
4.3 Humans as evolutionary and extinction force.	

SUGGESTED READINGS

1. Mark Lomolino, Brett R. and Whittaker, R.J. Biogeography, 5th Edition, Sinauer. 2017
2. Wiens, J.A. et al. 2009. Niches, models and climate change: Assessing the assumptions and uncertainties. PNAS 106: 19729-19736.
3. Cox C.B., Moore P.D. and Ladle R.J.: Biogeography: An Ecological and Evolutionary Approach, 9 th edition, John Wiley & Sons, UK, 2016.
4. Nathan, R. et al. 2008. Mechanisms of long-distance seed dispersal. Trends in Ecology and Evolution 23: 638-647.
5. MacDonald, Glen.: Biogeography: Introduction to Space, Time, and Life, John Wiley, New York, 2003.
6. Heaney, L.R. 2007. Is a new paradigm emerging for oceanic island biogeography? Journal of Biogeography 34: 753-757.
7. Richard John Huggett: Fundamentals of Biogeography, Taylor and Francis: New York, 2004.
8. Robert H. MacArthur and Edward O. Wilson: The Theory of Island Biogeography, Princeton University Press: New Jersey, 1967. 6. Spellerberg, Ian F. and John W.D. Saw
9. Simmon, I.G., Biogeography: Natural and Cultural, Longman, London 1974. Watts, David, Principles of Biogeography, London.
10. Huggett, R.J., Fundamentals of Biogeography, Routledge, U.S.A, 1998.
11. Cox, C.B. and More, P.D., Biogeography: An Ecological and Evolutionary Approach, London, 2000.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – II (Elective Course)

Course Title: ***SOCIAL GEOGRAPHY***

Course Code: **PG-GG-E202**

Credits: **02**

Contact Hours: **30** (2 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ To familiarize the student with the theoretical and conceptual grounding of this branch
- ✓ To understand the formation of social groups, structure and its factors in India
- ✓ To sensitize the student about the process of social transformation and change and its interface with developmental and political aspects in India.

Course Learning Outcomes

- ✓ Knowledge of the geographic basis of socio-cultural regionalization in India and continuity and correspondence of socio- political and geographic boundaries.
- ✓ Knowledge the religious identity in regional context; geographic factors underlying patterning societal distribution.

COURSE CONTENT

Unit – I

09 Hours

- 1.1 Social Geography: Definition, scope and development.
- 1.2 Social Groups and Structure: Caste, Tribes, and Gender.
- 1.3 Concepts of Social Space and Place, Social Area analysis and Social Well Being.

Unit – II

06 Hours

- 2.1 Caste: Social and Spatial Organization, Social Hierarchy and Spatial Segregation in Indian Context.
- 2.2 Tribes: Their Habitat, Economy, and Distribution in India; Problems of Tribal Marginalization.

Unit – III

09 Hours

- 3.1 Processes and Problems of Social Transformation: Modernisation & Sanskritization.
- 3.2 Concept and Indicators of social wellbeing, Maslow's hierarchy and measurements.
- 3.3 Issues in Health care, Education and Social Security in India, and their impact on social wellbeing.

Unit – IV

06 Hours

- 4.1 Social Problems in India: Crime, Unemployment and Substance abuse.
- 4.2 Public policy, schemes and planning in social sectors in India.

SUGGESTED READING

1. Ahmed, A. (1999), Social Geography, Delhi: Rawat Publications
2. Smith S. J et al. (2009), The SAGE handbook of social geographies, New York, US: SAGE Publications Ltd
3. Vincent J. Del Casino Jr. (2009), Social Geography: A Critical Introduction, New Jersey, US: Wiley Blackwell Ltd
4. Hamnett, Chris (1996), Social Geography: A Reader (Introductory part), London: Arnold.

5. Beteille, Andre (2004) *Society & Politics in India*, Oxford University Press, Delhi
6. Jones, Emrys & John Eyles (1977), *Introduction to Social Geography*, Oxford: Oxford University Press.
7. Knox, P. and S. Pinch (2010), *Urban Social Geography*, 6th Edition, Prentice Hall, England
8. Buttimer, Anne (1968) 'Social Geography' in David L. Shills & Robert K. Merton (Eds.) *International Encyclopedia of Social Sciences*, New York.
9. Sidhwani, P. (2015), "Spatial Inequalities in Big Indian Cities", *EPW*, Vol 50, pp. 55-62
10. Soja, E.W. (2011), 'Response to Kurt Iveson: 'Social or Spatial Justice? Marcuse and Soja on the Right to the City'', *City*, Vol. 15, No.2, pp. 250-259.
11. Hubbard, P., Kitchin, R., Bartley, B., & Fuller, D. (2002). *Geographies of the Body. Thinking geographically space, theory, and contemporary human geography* (pp. 97-123). London: Continuum.
12. Singer, Milton & Bernard S. Cohn (1968) *Structure and Change in Indian Society*, Indian Reprint by Rawat, Jaipur
13. Raju, S. (2010). *Doing gender, Doing Geography: emerging research in India*. New Delhi: SAGE. Sibley, D. (1995), *Geographies of Exclusion*, Routledge, London
14. Harvey, D. (1973), *Social Justice and the City*, Revised Edition, The University of Georgia Press, London.
15. Harvey, D. (1989), *The Urban Experience*, John Hopkins University Press, Baltimore (USA).
16. Roy, A. (2009), 'Why India Cannot Plan its Cities: Informality, Insurgence and the Idiom of Urbanization', *Planning Theory*, Vol. 8, No. 1, pp. 176-187.
17. Banerjee-Guha, S. (2009), 'Neoliberalising the 'Urban': New Geographies of Power and Justice in Indian Cities', *Economic and Political Weekly*, Vol. 44, No. 22, pp. 95-107.
18. Bhan, G. (2013), 'Planned Illegalities- Housing and the 'Failure' of Planning in Delhi: 1947-2010', *Economic and Political Weekly*, Vol. 48, No. 24.
19. Brenner, N. and S. Elden (2001), 'Henri Lefebvre in Contexts: An Introduction', *Antipode*, Vol. 33, No. 5, pp. 763-768.
20. Brenner, N., P. Marcuse and M. Mayer (2010), 'Cities for People, not for profit', *City*, Vol. 13, No. 2-3, pp. 176-184.
21. Vithayathi, T. and G. Singh, 2012 "Spaces of Discrimination: Residential Segregation in Indian Cities", *Economic and Political Weekly*, Vol. 47, pp. 60- 66

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – II (Core Course - Practical)

Course Title: **ADVANCED STATISTICAL TECHNIQUES**

Course Code: **PG-GG-P201**

Credits: **04**

Contact Hours: **120** (8 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ This course studies the concept of statistics and its geographical applications.
- ✓ It lays the foundation of quantitative techniques to the students for spatial analysis.
- ✓ It will enhance the ability to interpret data statistically.

Course Learning Outcomes

- ✓ The students will learn various statistical skills.
- ✓ The students will know how the statistical theories and functions will be applied in geography.
- ✓ The students will learn about the significance test to strengthen their argument with facts and represent data.

COURSE CONTENT

Unit – I

30 Hours

- 1.1 Significance of Statistical Techniques in Geography.
- 1.2 Data: meaning, types and sources.
- 1.3 Collection and Tabulation of Data
- 1.4 Graphic Representation of Data: Histogram, Frequency Distribution and Frequency Polygon.

Unit – II

30 Hours

- 2.1 Measures of Central Tendency: Mean, Median and Mode
- 2.2 Measures of Variation: Crude Range, Quartile Deviation and Standard Deviation
- 2.3 Correlation Analysis: Karl Pearson's Product Moment
- 2.4 Spearman's Rank Correlation Method.

Unit – III

30 Hours

- 3.1 Simple Linear Regression Analysis
- 3.2 Multiple Regression Analysis
- 3.3 Coefficient of Determination
- 3.4 Principal Component Analysis

Unit – IV

30 Hours

- 4.1 Spatial Sampling: Types and techniques.
- 4.2 Standard Error and Sample Size.
- 4.3 Hypothesis and its Types.
- 4.4 Hypothesis Testing: T -Test, Z Test, Chi -Square Test

SUGGESTED READINGS

1. Johnson. R.A. Bhattacharyya. G.K. (2009). *Statistics: Principles and Methods*, John Wiley and Sons, USA.
2. Micheal C.J. (2005). *Statistics: An Introduction. R*, John Wiley and Sons, USA.
3. Norcliff, G.B., (1977). *Inferential Statistics for Geographers: An Introduction*, Hutchinson, London.
4. David. E. (1985). *Statistics in Geography*, Basil Blackwell Ltd, Oxford.
5. Johnston, R.J. (1978). *Multivariate Statistical Analysis in Geography*, Longman Group Limited, London.
6. Burt J.E. Barber. G.E. Rigby D.L. (2009). *Elementary Statistics for Geographers*, Guilford Press, New York.
7. Rogerson, Peter. A.: *Statistical Methods for Geography: A Student's Guide*, Sage Publications, London, 2015.
8. Sarkar, Ashis: *Quantitative Geography: Techniques and Presentations*, Orient Blackswan, United States, 2013.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – II (Core Course - Practical)

Course Title: ***INTRODUCTION TO FIELD STUDIES (Human)***

Course Code: **PG-GG-P202**

Credits: **02**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ The primary aim of a field visit is to gather geographical details. Reinforcing experiential and relational learning is the key goal of conducting a field trip for students.
- ✓ The opportunity for students to have rich learning experiences on field trips and training can serve as the beginning of their interests in subject specific researches.
- ✓ To stimulate reasoning and critical thinking among students.

Course Learning Outcomes

- ✓ The students will learn various field observation, primary data collection skills.
- ✓ The students will know how the statistical methods will be applied in geography.

COURSE CONTENT

Unit – I

- 1.1 Objective, Scope and Methods of Field Enquiry
- 1.2 Preparation of Questionnaire
- 1.3 Sampling Techniques for Data Collection
- 1.4 Collection Processing and Presentation of Data
- 1.5 Preparation and Organization of Field Report

Unit – II

- Students are required to undertake a field study tour of a distant area or region to study certain aspects of social, cultural landscape and on-spot observations under the supervision of teachers who will accompany the students.
- A comprehensive tour report on the area / region shall be submitted by the students within two weeks on their return from the tour. The report shall be sent to the examiner for evaluation, and subsequently the students have to appear for viva – voce examination.

SUGGESTED READINGS

7. Archeer, J.E. & Dalton, T.H. Fieldwork in Geography, London, 1968. Elhance, D.N. Fundamentals of Statistics, Allahabad, 1972.
8. Jones, P.A., Fieldwork in Geography, London, 1968.
9. Glodard, R.H., Field Techniques and Research Methods in Geography, Dubuque 1982. Wheleso, K.S. & Harding, M., Geographical Fieldwork, London, 1965.
10. Mahmood, A., Statistical Methods in Geographical Studied, Rajesh Publication, Delhi, 1977.
11. Geogory, S., Statistical Methods and the Geographers, Longmans, London. Monkhouse, F.J., Maps and Diagrams, Methuen & Co., 1952.
12. Berry, B.J.L., & Marble, F., Spatial Analysis: A Reader in Statistical Geography, New Jersey, 1968.

Detailed Syllabus

for

M.A./M.Sc. Geography

SEMESTER - III

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Core Course)

Course Title: ***REGIONAL PLANNING & DEVELOPMENT***

Course Code: **PG-GG-C301**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ The aim is to understand and evaluate the concept of region in geography and its role and relevance in regional planning.
- ✓ To identify the issues relating to the development of the region through the process of spatial organization of various attributes and their interrelationship.
- ✓ The course also intends to help students in identifying the causes of regional disparities in development, perspectives and policy imperatives.

Course Learning Outcome

- ✓ The students will learn about basic principles of regional planning.
- ✓ The students will study about the different theoretical background and structure of the regional planning process.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Regional Concept in Geography and its application to Planning
- 1.2 Basic Principles and Objectives of Regional Planning
- 1.3 Types of Region: Formal & Functional, Uniform & Nodal, Single Purpose & Composite Region
- 1.4 Methodologies and Techniques of Regional Planning

Unit – II

15 Hours

- 2.1 Theories and models of the regional development: Hirschman's model
- 2.2 Growth centers and Growth pole theory of Perroux.
- 2.3 Rostow's Model of Growth and Development.
- 2.4 Gunnar Myrdal Model of Cumulative Causation.

Unit – III

15 Hours

- 3.1 Planning Regions of India (Macro, Meso & Micro).
- 3.2 Regional Planning in India through Five Year Plans.
- 3.3 Area Development Programmes for Tribal, Hilly, Drought Prone, Desert and Border Areas.
- 3.4 Panchayati Raj Institutions, Multi-level Planning, Decentralized Planning

Unit – IV

15 Hours

- 4.1 Regional Development in India: Problems and Prospects
- 4.2 Concept and Indicators of Development, Levels of Regional Development and Disparities in India
- 4.3 Case Studies: Regional Planning in USA (TVA) and Regional Planning in India (DVC)
- 4.4 Environmental Issues in Regional Planning and Development

SUGGESTED READINGS

1. Mishra. R. P. (1992). Regional planning: concepts, techniques, policies and case studies.
2. Bhat. L. S. (1972) Regional planning in India.
3. Chaudhary. J.R. (2001) Introduction to Development and Regional Planning: With Special Reference to India.
4. Mishra. J. Sinha. C. (1985) Planning and regional development in India.
5. Prasad B.K. (2005) India's development agenda: issues, challenges and policies.
6. Nath V. Aggarwal S.K. (2009) (Edited), Regional Development and Planning in India selected Essays Concept Publishing Company.
13. Glasson John and Marshall Tim, 2007. Regional Planning, Taylor and Francis, London and New York.
14. Hall Peter and Tewdwr-Jones Mark, 2010. Urban and Regional Planning, Routledge, London and New York.
15. Kulshreshta S. K. 2012. Urban and Regional Planning in India: A Handbook for Professional Practice, Sage, Newm Delhi.
16. Lichfield N., Kettle P. and Whitbread M. 2016. Evaluation in the Planning Process: The Urban and Regional Planning Series (Volume 10), Elsevier.
17. RahmaanA. U. 2011. The Imperatives of Urban and Regional Planning: Concepts and Case Studies from the Developing World, Xlibris Corporation.
18. Stiffler B. and Watson V. 2005. Dialogues in Urban and Regional Planning, Psychology Press.
19. Siddhartha, K., Models in Regional Planning, Kasalaya Publications, New Delhi, 2008.
20. Siddhartha, K., Regional Planning of India, Kasalaya Publications, New Delhi, 2007.
21. Singh, R.L., India- A Regional Geography, National Geographical Society of India, Varanasi, 2003.
22. Todara, Michel P., and Smith, Stephen, C. Economic Development (12th ed.), Pearson Publishers, 2014.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Core Course)

Course Title: **RESEARCH METHODOLOGY IN GEOGRAPHY**

Course Code: **PG-GG-C302**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ This course attempts to introduce the students to the basic knowledge related to geographical field research design.
- ✓ The course examines the questions related to data collection, methods and its analysis.
- ✓ It also critically evaluates the dissertation based on field survey.

Course Learning Outcomes

- ✓ The students will be able to understand basic concepts of field research methods and research design in geography.
- ✓ 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.
- ✓ The students will be able to write dissertation based on field work on given topic.

COURSE CONTENT

Unit – I **15 Hours**

- 1.1 Introduction to Geographical Research: Meaning, objectives and significance.
- 1.2 Research Process and Approaches to Research in Geography.
- 1.3 Literature survey; Research Ethics and Limitations.

Unit – II **15 Hours**

- 2.1 Research problem: Selection and techniques.
- 2.2 Research Design, meaning, need and features of a good design.
- 2.3 Research questions; Aims and Objectives.

Unit – III **15 Hours**

- 3.1 Data Sources and Methods of Data Collection
- 3.2 Measurements in research, scales; techniques of developing measurement tools.
- 3.3 Processing, Analysis and Presentation of data.

Unit – IV **15 Hours**

- 4.1 Hypotheses Formulation & Testing.
- 4.2 Interpretation and Report Writing.
- 4.3 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. Creswell, J. W. 2009. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, Sage, California, USA
3. Gopal, Krishan and Singh, Nina, 2016. *Researching Geography: The Indian Context*. Routledge, Delhi.
4. Harris, C. 2001. Archival Fieldwork, *Geographical Review*, 91 (1-2), 328-334
5. Hart, C. 1999. *Doing Literature Review: Releasing the Social Science Research Imagination*, Sage, London.
6. Hay. I. 2010. *Qualitative Research Methods in Human Geography*, 3rd ed. Oxford University Press, South Melbourne, Australia,
7. Lunsbury J.F. and Aldrich, F.T. 1979. *Introduction to Geographic Field Methods and Techniques*, Charles E. Meriall Publishing Company, Columbus.
8. Misra, R. P. 2015. *Research Methodology: A Handbook*, Concept Publishing Company, New Delhi.
9. Montello, Daniel R. and Sutton, P.C. 2006. *An Introduction to Scientific Research in Geography*, Sage Publications, London.
10. Oliver, Paul, 2004. *Writing Your Thesis*, Vistaar Publications, New Delhi
11. Preece, R. 1994. *Starting Research: An Introduction to Academic Research and Dissertation Writing*, Continuum, London.
12. Sharma, P.R., R. S. Yadava and Sharma, V.N. 2011. *Research Methodology: Concepts and Studies*, R. K. Books, New Delhi.
13. Stoddard, Robert H. 1982. *Field Techniques and Research Methods in Geography*, Kendall/Hunt for National Council for Geographic Education.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Core Course)

Course Title: **REMOTE SENSING & GIS**

Course Code: **PG-GG-C303**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

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

Course Learning Outcomes

- ✓ Overall understanding of potential of Remote Sensing and GIS
- ✓ Understanding of GIS analysis workflow and integrated applications in various domains of Geography

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Remote Sensing: Meaning, Definition, significance and utility of remote sensing in Geography.
- 1.2 History and Development of Remote Sensing.
- 1.3 Fundamentals of Remote Sensing –EMR & EMS.
- 1.4 Interaction of EMR with the Atmosphere & Earth Surface Features; Spectral Signature.

Unit – II

15 Hours

- 2.1 Sensors and Platforms: Their Types and Characteristics.
- 2.2 Aerial Photography; its Fundamentals, Classification & Utility.
- 2.3 Aerial Photo Interpretation & its Elements, Multi Concept in Remote Sensing.
- 2.4 Satellite series: IRS, SPOT, IKONOS and Quick bird.

Unit – III

15 Hours

- 3.1 Digital Image Processing – Data Formats.
- 3.2 Image Restoration: Geometric, Radiometric and Atmospheric Corrections.
- 3.3 Image Enhancement: Linear and Non-linear Contrast Stretch.
- 3.4 Image Classifications: Supervised and Unsupervised.

Unit – IV

15 Hours

- 4.1 Definition, Scope and Development of GIS.
- 4.2 Components of GIS; Geographic Data: Types and Characteristics.
- 4.3 Data Models: Raster and Vector, Processing and Analysis.
- 4.4 GIS DBMS: Concepts, Components and Quality.

SUGGESTED READINGS

1. Campbell, J.B., Introduction to Remote Sensing, (2nd ed.), Taylor and Francis, London, 1996.
2. Curran, P., Principles of Remote Sensing, Longman, London, 1985.
3. Fazal S. and Rahman A., GIS Terminology, New Age International Publishing, New Delhi, 2007.
4. Jenson, J.R., Remote Sensing and Environment. Pearson India, 2013.
5. Joseph George., Fundamentals of Remote Sensing, (2nd ed.) University Press, Hyderabad, 2005.
6. Kumar, S., Basics of Remote Sensing and GIS, Laxmi Pub, 2005.
7. Lo, C.P. and Yeung AKW., Concepts and Techniques of GIS (2nd ed.), Prentice Hall of India, New Delhi, 2006
8. Leick. A., GPS Satellite Surveying (2nd ed.), John Wiley and Sons, New York, 2003.
9. Lillesand T.M and Keifer R.W., Remote Sensing and Image Interpretation (6th ed.) John Wiley and Sons, New York, 2008.
10. N. K. Agarwal., Essentials of GPS, Spatial Network Pvt. Ltd, 2004.
11. Sabins, J.F.F., Remote Sensing: Principles and Interpretation, W.H. Freeman & Co., New York, 1997
12. Sabins, F.F., Remote Sensing: Principles and Interpretation. Freeman, New York, 1986.
13. Siegal, B.S. and A.R Gillespie., Remote Sensing in Geology, Wiley, New York, 1980.
14. Campbell, J. B. and R.H. Wynne: Introduction to Remote Sensing, 5th Ed., Guilford Press, 2012.
15. Gomasasca, Mario A, Basics of Geomatics, Springer: Heidelberg, 2009.
16. Joseph, G.: Fundamentals of Remote Sensing, Universities Press, 2005.
17. Rees, W.G.: Physical Principles of Remote Sensing, 3rd Ed., Cambridge University Press, 2012.
18. Schowengerdt, Robert A.: Remote Sensing: Models and Methods for Image Processing, Second Edition, Academic Press: San Diego, 2017.
19. Srivastava, G.S.: An Introduction to Geoinformatics, McGraw Hill Edu., India, New Delhi, 2014.
20. Dong, P and Qi Chen: LiDAR Remote Sensing and Applications, CRC Press, Taylor & Francis, Boca Raton, 2018

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Elective Course)

Course Title: **ENVIRONMENTAL GEOGRAPHY**

Course Code: **PG-GG-E301**

Credits: **02**

Contact Hours: **30** (2 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ To familiarize the student with the theoretical and conceptual grounding of Environmental Geography.
- ✓ To understand and sensitize the students about the processes and causes of environmental degradation.
- ✓ To develop the knowledge of methods and approaches to environmental management.

Course Learning Outcomes

- ✓ The students will be able to explain the basic subject matter and importance of environmental geography in present times.
- ✓ Knowledge of environmental management and environmental impact assessment.

COURSE CONTENT

Unit – I

09 Hours

- 1.1 Meaning and Scope of Environmental Geography.
- 1.2 Meaning, component and types of Environment.
- 1.3 Ecosystems, meaning and types

Unit – II

09 Hours

- 2.1 Components and Functions of ecosystem.
- 2.2 Ecological pyramid and flow of energy.
- 2.3 Bio-Geo-Chemical Cycles-Nitrogen cycle, Carbon cycle and Hydrological cycle.

Unit – III

06 Hours

- 3.1 Environmental Degradation and Pollution: concept and types and causes of Environmental Degradation
- 3.2 Environmental management – methods and approaches.

Unit – IV

06 Hours

- 4.1 Survey, evaluation, preservation and conservation of resources.
- 4.2 Environmental impact Assessment.

SUGGESTED READINGS

1. Chandna, R.C., 1998, Environmental Awareness, Kalyani Publishers, New Delhi.
2. Gaur, S., and Chandrashekhar, T., 2006, Global Environmental Crisis, Book Enclave, Jaipur.
3. Gupta, P.D., 2003, Environmental Issues for the 21st Century, Mittal Publications, New Delhi.
4. Morris, D., Freeland, J., Hinchliff, S., Smith, S. (ed.), 2003, Changing Environments, Pd. John Wiley and Sons Ltd., The Open University, U.K.

5. Park, C.C., 1980, Ecology and Environmental Management, Butterworths, London.
6. Radha, S., and Sankhyan, A.S., (ed.), 2004, Environmental Challenges of the 21st Century, Deep Publications, New Delhi.
7. Rasure, K.A., 2007, Environment and Sustainable Development, Serials Publications, New Delhi.
8. Saxena, H.M., 2006, Environmental Studies, Rawat Publications, Jaipur.
9. Singh, S., 1991, Environmental Geography, Prayag Publication, Allahabad.
10. Strahler, A.N., and Strahler, A.M., 1997, Geography and Man's Environment, John Wiley and Sons, New York.
11. Taj, B., Murphy, P. and Rana, P.S., 2007, Environmental Impact Assessment, An Indo – Australian Perspective, Bookwell New Delhi.
12. Verma, S. B. and Shiva, K.S.,(ed.), 2005, Environmental Protection and Development, Deep Publications, New Delhi.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Elective Course)

Course Title: ***CLIMATE CHANGE & EARTH SYSTEM***

Course Code: **PG-GG-E302**

Credits: **02**

Contact Hours: **30** (2 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ To promote inclusive knowledge of conceptual, philosophical and methodological issues of climate change and earth system.
- ✓ To foster comprehensive understanding of climate and climate change dynamics with a focus on changing relationships between human and nature.
- ✓ To understand climate change in light of environmental crisis and sustainability issues.

Course Learning Outcomes

- ✓ The students will be able to explain the conceptual, philosophical and methodological issues of climate change and earth system.
- ✓ Knowledge of climate and climate change dynamics with a focus on changing relationships between human and nature.

COURSE CONTENT

Unit – I **03 Hours**

- 1.1 Climate Change: Concept and Basic Facts.
- 1.2 Natural and Anthropogenic Causes of Climate Change.

Unit – II **09 Hours**

- 2.1 Global Changes during Precambrian Scenario (4.6 bya to 542 mya).
- 2.2 From Paleozoic Era to Mesozoic Era (542 mya to 65 mya).
- 2.3 Changes During Cenozoic Era (65 mya to Present).

Unit – III **09 Hours**

- 3.1 Projected Climatic Changes: Trends and patterns.
- 3.2 Intergovernmental Panel on Climate Change (IPCC).
- 3.3 UNFCCC, Kyoto Protocol and Paris Agreement.

Unit – IV **09 Hours**

- 4.1 Climate Change Issues: Carbon Cycle, Sea Level Change.
- 4.2 Climate Change and Weather extremes.
- 4.3 Impacts of Climate Change on Water Resources, Biodiversity and Agriculture.

SUGGESTED READINGS

1. Flannery, T. *The Weather Makers: The History and Future Impact of Climate Change*. Allen Lane. London, 2005.
2. Mannion, A.M.: *Natural Environmental Change*. Routledge, London, 1999.
3. Mannion, A.M.: *Global Environmental Change*, Routledge, New York, 2014.
4. Parkinson, Claire L.: *Coming Climate Crisis? Consider the past, beware the big flux*. Rowman & Littlefield Publishers, INC. Lanham, Maryland, 2010.
5. Richard W. Battarbee and Heather A.: Binney. *Natural Climate Variability and Global Warming: A Holocene Perspective*. John Wiley & Sons, 2008.
6. Romm, Joseph: *Climate Change- What Everyone Needs to Know*. 2nd Edition, Oxford University Press, USA, 2018.
7. Sarah E., I. Colin Prentice, Joanna I. House and Catherine J. Downy: *Understanding the Earth System: Global Change Science for Application*. Cambridge University Press, UK, 2012.
8. Stepardson, D.P.: Anita Roychoudhury and A.S. Hirsch. *Teaching and Learning about Climate Change- A framework for Educators*. Routledge, New York, 2017.
9. William K.: *Climate Change: A Natural Hazard*. Multi-science publishing, UK. P. 207, 2004.
10. Erle C. Ellis, Kees Klein Goldewijk, Stefan Siebert, Deborah Lightman and Navin Ramankutty: *Anthropogenic transformation of the biomes, 1700 to 2000*. *Global Ecology and Biogeography*, 19, 589–606, 2010.
11. Kevin Anderson and Alice Bows: *Beyond ‘dangerous’ climate change: emission scenarios for a new world*. *Phil. Trans. R. Soc. A*, 369, 20–44, 2011.
12. M. G. Sanderson, D. L. Hemming and R. A. Betts. *Regional temperature and precipitation changes under high-end ($\geq 4^{\circ}\text{C}$) global warming*. *Phil. Trans. R. Soc. A*, 369, 85–98, 2011.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Elective Course)

Course Title: **AGRICULTURAL GEOGRAPHY**

Course Code: **PG-GG-E303**

Credits: **02**

Contact Hours: **30** (2 Hrs./week)

Max. Marks: **50**

Course Objectives:

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

Course Learning Outcomes:

- ✓ The students will be able to understand and analyze the historical perspective of agriculture.
- ✓ They will be able to analyze the agriculture development and productivity; its impacts on various sectors
- ✓ The students will be able to get updated knowledge of contemporary issues and strategies.

COURSE CONTENT

Unit – I

06 Hours

- 1.1 Nature, scope and significance of Agricultural geography
- 1.2 Factors affecting Agricultural patterns: Physical, Socioeconomic, Environmental, Technological and institutional.

Unit – II

09 Hours

- 2.1 Agricultural concepts and their measurements: Cropping Pattern, Crop Concentration, Crop Intensity and Crop Diversification.
- 2.2 Crop combination, Agricultural efficiency and productivity.
- 2.3 Concept of Land use and Land use classification.

Unit – III

09 Hours

- 3.1 Von Thunen Model of Agricultural location and its relevance
- 3.2 Whittlessey's classification of agricultural systems of the world
- 3.3 Regional pattern of agricultural productivity in India and its determinants.

Unit – IV

06 Hours

- 4.1 Problems and Prospects of Indian Agriculture
- 4.2 Concept of Sustainable Agriculture and National Agriculture Policy

SUGGESTED READINGS

1. Hussain, M., Systematic Agricultural Geography, Rawat Publications, Jaipur, 1996.
2. Ilbery. B. W., Agricultural Geography, Oxford University Press, Oxford, 1985.
3. Singh, J. and Dhillon, S.S., Agricultural Geography, Tata McGraw Hill, New Delhi, 1984.
4. Singh, Jasbir., Agricultural Geography, 3rd edition, Oxford, New Delhi, 2003.

5. Symons, L., *Agricultural Geography*, G. Bells, London, 1967.
6. Grigg, D.B., *The Agricultural Systems of the World: An Evolutionary Approach*, Cambridge University Press, Cambridge, 1978.
7. Morgan, B.W. and Munton, J.C., *Agricultural Geography*, Methuen, London, 1971.
8. Shafi, M., *Agricultural Productivity and Regional Imbalances*, Concept, New Delhi, 1984.
9. Singh, Jasbir., *Dynamics of Agricultural Change*, Oxford, New Delhi, 1990.
10. Tarrant, J.R., *Agricultural Geography*, Davis and Charles, Newton Abbot, 1974.
11. Whealler, K.E., Ladley, A.M. and Leong, F.C., *Studies in Agricultural Geography*, Bland Educational, London, 1970.
12. Pacione, Michael: *Progress in Agricultural Geography*, Routledge Revivals, 2013.
13. Shafi Mohammad, *Agricultural Geography*, Dorling Kindersley (India) Delhi, 2006.
14. Swaminathan, M.S.: *50 Years of Green Revolution, An Anthology of Research Papers*, M S Swaminathan Research Foundation, India <https://doi.org/10.1142/10279> 2017

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Core Course - Practical)

Course Title: **REMOTE SENSING & DIP**

Course Code: **PG-GG-P301**

Credits: **04**

Contact Hours: **120** (8 Hrs./week)

Max. Marks: **100**

Course Objectives

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

Course Learning Outcomes

- ✓ Overall understanding of potential and methodological models of Remote Sensing and DIP.
- ✓ Understanding of DIP analysis workflow and integrated applications in various domains of Geography

COURSE CONTENT

Unit – I

30 Hours

- 1.1 Photography vs Imaging: Comparison of images with various resolution concepts.
- 1.2 Visual Interpretation of Aerial Photographs.
- 1.3 Calculation of scale, height of objects on aerial photographs.
- 1.4 Introduction to Remote Sensing Software, Image visualization

Unit – II

30 Hours

- 2.1 Layer stacking and visual interpretation of satellite images from FCC.
- 2.2. Atmospheric correction: Haze & noise reduction.
- 2.3 Geometric and Radiometric Correction: reproject, histogram equalization, high and low pass filters.
- 2.4 Geo-referencing (Image to map and Image to Image): Referencing layout and indent of Landsat TM/ETM+/OLI and IRS imageries.

Unit – III

30 Hours

- 3.1 Preparing Image Subset and Mosaic.
- 3.2 Image Classification: Supervised classification.
- 3.3 Image Classification: Unsupervised classification.
- 3.4 Land Use/Land Cover Classification using IRS Data.
- 3.5 LULC Change Detection.

Unit – IV

30 Hours

- 4.1 Calculation of Spectral Indices: NDVI, NBDI, NDWI & NDMI.
- 4.2 Calculation of advance spectral indices: MNDWI, SAVI, EBBI & NDSI
- 4.3 Calculation of fractional vegetation cover (FVC)

SUGGESTED READINGS

1. Campbell, J. B. and R.H. Wynne: *Introduction to Remote Sensing*, 5th Ed., Guilford Press, 2012.
2. Gomarasca, Mario A, *Basics of Geomatics*, Springer: Heidelberg, 2009.
3. Joseph, G.: *Fundamentals of Remote Sensing*, Universities Press, 2005.
4. Rees, W.G.: *Physical Principles of Remote Sensing*, 3rd Ed., Cambridge University Press, 2012.
5. Schowengerdt, Robert A.: *Remote Sensing: Models and Methods for Image Processing*, Second Edition, Academic Press: San Diego, 2017.
6. Srivastava, G.S.: *An Introduction to Geoinformatics*, McGraw Hill Edu., India, New Delhi, 2014.
7. Dong, P and Qi Chen: *LiDAR Remote Sensing and Applications*, CRC Press, Taylor & Francis, Boca Raton, 2018
8. Jensen, J.R.: *Introductory Digital Image Processing: A Remote Sensing Perspective*, Pearson Prentice Hall, 2005.
9. Lillesand, T.M., R.W. Kiefer and J.W. Chipman: *Remote Sensing and Image Interpretation*, 5th Edition, John Wiley and Sons, 2004.
10. Mather, P.M. and M.G. Koch: *Computer Processing of Remotely-Sensed Images: An Introduction*, John Wiley & Sons, 2011.
11. Nag, P. and M. Kudrat: *Digital Remote Sensing*, Concept Publishing Company, New Delhi, 1998.
12. Njoku, E.G.: *Encyclopaedia of Remote Sensing*, Springer, New York, 2014

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – III (Core Course - Practical)

Course Title: ***GEOGRAPHICAL INFORMATION SYSTEM***

Course Code: **PG-GG-P302**

Credits: **02**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **50**

Course Objectives

- ✓ To develop an understanding of remote GIS technologies and their potential applications.
- ✓ To develop basic skills of mapping through remote sensing images for various applications in geography.
- ✓ To develop basic skills to use GIS environments for various applications in geography.

Course Learning Outcomes

- ✓ Overall understanding of potential and methodological models of GIS softwares.
- ✓ Understanding of GIS analysis workflow and integrated applications in various domains of Geography

COURSE CONTENT

Unit – I

30 Hours

- 1.1 User interface with GIS software: Arc View, Geo- media, ILWIS and Arc GIS.
- 1.2 Data input: spatial and non-spatial, Data import and export.
- 1.3 Projection and datum; Coordinate transformation; Geo-referencing
- 1.4 Digitization and Data Joining

Unit – II

30 Hours

- 2.1 Vector & raster conversion, Geo-processing tools
- 2.2 Spatial analysis: overlay, buffer and proximity, network analysis.
- 2.3 Creation of DEM: Determination of slope, aspect and hill shading.
- 2.4 Data interpolation: point and line data.
- 2.5 Morphometric Analysis: Watershed Delineation, Stream Order, Drainage Density etc.

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. Heywood, I., Cornelius, S., Carver, S. 2011. An Introduction to Geographic Information Systems, 4th Edition, Pearson Education.
5. DeMeers, Michael N.: Fundamentals of Geographic Information Systems, 4th. ed., John Wiley and Sons, Toronto, 2008.
6. Fazal, S.: GIS Basics, New Age International Publishers, New Delhi, 2008.
7. Fazal, S. and Rahman, A.: Geographic Information System (GIS) Terminology, New Age International Publishers, New Delhi, 2007.

Detailed Syllabus

for

M.A./M.Sc. Geography

SEMESTER – IV

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – IV (Core Course)

Course Title: ***GEOGRAPHY OF HEALTH & HEALTHCARE***

Course Code: **PG-GG-C401**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ This course intends to reorient the students towards interdisciplinary perspectives on population health issues at different geographical scales.
- ✓ 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.
- ✓ Students shall be able to understand the interplay of social environment, global environmental changes and its association with population health.

Course Learning Outcomes

- ✓ Students would be acquainted with the basic concepts of population health from geographical perspectives.
- ✓ 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.
- ✓ Further, the linkages between global environmental changes and population health should be well understood.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Introduction to Geography of Health: fundamental concepts, Significance & Scope
- 1.2 Approaches to the Study of Health Geography.
- 1.3 Concept of Health and its Dimensions.
- 1.4 Physical, Socio-cultural, and Economic factors affecting Health.

Unit – II

15 Hours

- 2.1 Concept of Disease and its Classification.
- 2.2 Geography of Epidemics and Pandemic with special reference to COVID – 19.
- 2.3 Global Health Transition: the epidemiological transition, its drivers, and regional patterns.
- 2.4 Health inequalities across global, regional, and neighborhood scales.

Unit – III

15 Hours

- 3.1 Health care systems and inequalities in health care services.
- 3.2 Global Environmental Change and Health: air quality; contamination of food, and water.
- 3.3 Global Environmental Change and Health: climate change, temperature extremes, natural hazards.
- 3.4 Emerging Health Challenges with Special Focus on Gender, age and Lifestyle.

Unit – IV

15 Hours

- 4.1 Health Care Planning; International and national: Role of WHO, UNICEF and Red Cross.
- 4.2 Indian Health Care Planning: Child and Family Health Welfare.
- 4.3 National Health Care Infrastructure and Health Policies/Programmes in India.
- 4.4 Health GIS.

SUGGESTED READINGS

1. Anthamatten, P. and Hazen, H. 2011. *An introduction to the Geography of Health*, Routledge, New York.
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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.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – IV (Elective Course)

Course Title: **POPULATION GEOGRAPHY**

Course Code: **PG-GG-E401**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ This course intends to orient the students towards interdisciplinary perspectives on population issues at different geographical scales.
- ✓ It will acquaint the candidate to appreciate the role of spatial perspectives towards showcasing population changes and its impact on the economy, society and environment.

Course Learning Outcomes

- ✓ After taking this course, a candidate should be able to appreciate the active role of population geography as a distinct field of human geography.
- ✓ The student should be conversant with different sources of demographic data.
- ✓ Students should be able to examine the different components of population change, its drivers, and their consequences upon contemporary socio-economic and environmental changes.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Population Geography and Demography – Concepts and Significance
- 1.2 Sources of Population Data: The Census, Vital Registration and other Sources
- 1.3 Population Dynamics: Growth, fertility and mortality measurement.
- 1.4 Factors affecting Population distribution, density and growth.

Unit – II

15 Hours

- 2.1 Theories of Growth: Malthusian Theory, Social Capillarity and Demographic Transition Theory.
- 2.2 Optimum Theory of population – Carr Saunders and its criticism.
- 2.3 Migration: Types, determinant and consequences.
- 2.4 Theories of Migration: Zelinsky, Ravenstein and Lee’s Laws.

Unit – III

15 Hours

- 3.1 Population Composition/ Characteristics: Age and Sex
- 3.2 Urbanization: Trends in India and the World
- 3.3 World population-resource regions: Ackerman’s scheme
- 3.4 Prospects of habitation of non- ecumene regions.

Unit – IV

15 Hours

- 4.1 Population: a problem (liability) or resource (asset).
- 4.2 Problem of Aging, Health –care and Food Security;
- 4.3 Critical appraisal of population policy of India and China
- 4.4 Population in the context of environmental crises.

SUGGESTED READINGS

1. Bhende, A.A. & Kanitkar, (2014), Principles of Population Studies, Himalayan Pub. H., Mumbai,
2. Bogue, D. J., Principles of Demography, New York, 1969.
3. Clarke, J.I. Population Geography, Oxford, 1981.
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5. Garnier, B.J., Geography of Population, Longman Group Limited, London, 1966.
6. Jones, H.R., A Population Geography, London, 1981.
7. Jhingan M.L. Bhatt B.K. and Desai, J.N. Demography, Vrid Pub. Delhi, 2006.
8. Khan, J.H. Socio-Economic and Structural Analysis of Internal Migration, New Delhi, 2010.
9. Khullar D.R., India: A comparative Geography, Kalyan Pub. Ludhiana, 2014.
10. Shamshad, Houseless: People on the Road, Academic Publication, 2015.
11. Chandna, R.C.: Geography of Population (10th Edition) Kalyani Publishers, Ludhiana, 2016.
12. Maurya, S.D.: Population Geography, Pravalika Publication, Allahabad, 2018
13. Newbold, K. Bruce, Population Geography, Rawat Publications, 2017.
14. Siddiqui. F.A. Regional Analysis of Population Ststructure, new Delhi, 1984.
15. Smith, T., Fundamentals of Population Study, New York, 1960.
16. Trewartha, G.T., A Geography of Population: World pattern, New York, 1969.
17. United Nations, The Determinants and Consequences of Population Trends, Population Studies, 17 Un, New York, Revised Edition.
18. White. P. and Wood. R. The Geographical Impact of Migration, Longman, Inc, New York, 1980.
19. Wood, R. Population Analysis in Geography, Longman, London, 1979.
20. Zelinsky, W. A Prolong to Population Geography, Prentice Hall, New Jersey, 1966.
21. Ackerman, E.A. (1967). Population, Natural Resources and Technology. Annals of the Academy of Political and Social Science, 369: 84-97.
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Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – IV (Elective Course)

Course Title: ***GENDER, SPACE & SOCIETY IN INDIA***

Course Code: **PG-GG-E402**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives:

- ✓ To enable students to understand the relevance of and developments in the subfield of geography of gender in India.
- ✓ To equip students with an understanding of regional variations in construction of gender through the frame of genderscapes.
- ✓ To provide an understanding of spaces of indigenous feminisms in the Indian context.

Course Learning Outcomes:

- ✓ Understanding the emergence of the subfield of geography of gender as well its trajectory of growth in India.
- ✓ Understanding gendered implications of public and private spaces and spatial variations in construction of gender in India.
- ✓ Understanding the concept of a genderscape and appreciating regional genderscapes in India

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Meaning, scope and significance of Gender Geography.
- 1.2 Understanding Sex and Gender as contested terms.
- 1.3 Development of and Theoretical Approaches to the study of Gender in Geography.
- 1.4 Contextualizing growth and development of the sub field in India.

Unit – II

15 Hours

- 2.1 Gender and Space: Division of space into private and public spaces, Gendered spaces.
- 2.2 Spatial variations in the construction of gender in India: New reproductive technology and skewed sex ratios
- 2.3 Gendered patterns of crime and violence.
- 2.4 Gender disparities in selected indicators of social wellbeing.

Unit – III

15 Hours

- 3.1 Differential access and control over resources- Environment, technology, livelihood- Regional context of genderscapes in India.
- 3.2 Genderscapes of violence and well-being in India
- 3.3 Indigenous Feminisms and Spaces of Resistance.

Unit – IV

15 Hours

- 4.1 Gender Policy and practice in India
- 4.2 Problems of empowerment of women in India
- 4.3 Gender development and empowerment- Regional trends, spatio-social gaps in India.

SUGGESTED READINGS

1. Women and Geography Study Group. (1984). Geography and gender: an introduction to feminist geography. London: Hutchinson Education
2. Gillian, Rose. (1993). Feminism and Geography: the limits of geographical knowledge. Minnesota: University of Minnesota Press
3. McDowell, Linda. (1999). Gender, identity and place: Understanding feminist geographies. Minnesota: University of Minnesota Press
4. McDowell, Linda. (1992). "Doing gender: feminism, feminists and research methods in human geography." Transactions of the institute of British Geographers: 399-416.
5. Raju, Saraswati. (2011). Gendered Geographies: Space and Place in the South Asia, (ed.). New Delhi: Oxford University Press.
6. Raju, Saraswati, and Kuntala Lahiri-Dutt. (2011). Doing gender, doing geography: emerging research in India, (ed.). London: Routledge
7. Agarwal, Bina. (1994). A field of one's own: Gender and land rights in South Asia. Vol. 58. Cambridge: Cambridge University Press
8. Ghadially, Rehana, (2007). Urban women in contemporary India: a reader,(ed.) .New Delhi: Sage Publications.
9. Mies, Maria. (1998). Patriarchy and accumulation on a world scale: Women in the international division of labour. New York: Palgrave Macmillan.
10. Nongbri, Tiplut. (2003). Development, ethnicity and gender: select essays on tribes in India. Jaipur: Rawat Publications

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – IV (Elective Course)

Course Title: ***GEOGRAPHY OF RURAL DEVELOPMENT***

Course Code: **PG-GG-E403**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ This course intends to orient the students towards interdisciplinary perspectives on rural issues and development at different geographical scales.
- ✓ It will acquaint the candidate to understand the role of spatial perspectives towards rural society and its impact on the economy and environment.

Course Learning Outcomes

- ✓ After taking this course, a candidate should be able to appreciate the active role of this discipline as a distinct field of human geography.
- ✓ Students should be able to examine the different programmes and policies in force for the overall development of rural society in India.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Nature, Scope and Significance of Geography of Rural Development
- 1.2 Approaches to Rural Development in India.
- 1.3 India's Rural Economic Structure and Transformation.
- 1.4 Strategies and Programmes for Rural Development: IRDP, WEP & EAS.

Unit – II

15 Hours

- 2.1 Role of Agriculture in Rural Economy, Water Resources and Management.
- 2.2 Agricultural Finance: Need for and Sources of Agricultural Finance Kisen Credit Card.
- 2.3 Role of NABARD in Rural Development.
- 2.4 Rural Industries and its importance for Rural Development.

Unit – III

15 Hours

- 3.1 Land reforms in India and its impact on rural development.
- 3.2 Role of Panchayati Raj Institutions for Rural Development in India.
- 3.3 Decentralized Governance and Women Empowerment, SHG, & Community Organisation.
- 3.4 Special Area Development: Tribal Area, Hill Area.

Unit – IV

15 Hours

- 4.1 Spatial Technologies and Rural Development: GIS, GPS & Remote Sensing.
- 4.2 Recent Development of Science and Technology in Rural Development.
- 4.3 Role of ICTs for Rural Development with special reference to India.
- 4.4 Need for Environmental awareness in Rural Areas.

SUGGESTED READINGS

1. Sahu, B.K. (2003). Rural Development in India; Anmol Publishers, Delhi.
2. Jha, U.M. (1995) Rural Development in India: Problems and Prospects.
3. Mathew, T. (1981). Rural Development in India: Papers Presented at National Conference.
4. Madan, G.R. (2010). Indian Rural Problems, Radha Publications, New Delhi.
5. Garg, A. (1992). Working and Impact of Integrated Rural Development Programme; Deep and Deep Publishers, New Delhi.
6. Das, K.D. 2007. Dynamics of Rural Development; Deep and Deep Publishers, New Delhi.
7. Sinha, S.P. & Singh, S. 2007. Strategies for Sustainable Rural Development; Deep and Deep Publishers, New Delhi.
8. Armendera, 1998. Poverty Rural Development and Public Policy; Deep and Deep Publishers, New Delhi.
9. Sinha, R.N.P., Geography and Rural Development; Manohar Publishers and Distributors, New Delhi.
10. Satendra and Sharma, V.K. 2004. Sustainable Rural Development for Disaster Mitigation, Concept, New Delhi.
11. Nath, V. 2010. Rural Development and Planning in India, Concept, New Delhi
12. Nikkiran, S. and Ramesh, G. 2010. Research Methods in Rural Development, Deep and Deep Publications, New Delhi.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – IV (Elective Course)

Course Title: ***POLITICAL GEOGRAPY***

Course Code: **PG-GG-E404**

Credits: **04**

Contact Hours: **60** (4 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ The aim of this course is to familiarize the student with the idea of geographical influences on political landscape of A country.
- ✓ To train the students to look at world and Indian political scenario, issues and challenges from geographical lenses.

Course Learning Outcome

- ✓ The students will learn in depth about the role of geography in the political landscape.
- ✓ The students will study about the Indian political scenario and geopolitics with reference to its geographical attributes.

COURSE CONTENT

Unit – I

15 Hours

- 1.1 Meaning, Nature, Scope and Importance of Political Geography.
- 1.2 Approaches Recent developments in Political Geography.
- 1.3 Study of different geographical-political schools of thought.
- 1.4 Geopolitics, Theories – Heartland and Rimland.

Unit – II

15 Hours

- 2.1 Concept of Nation, State and Nation-State, Modern State
- 2.2 Geographical Factors of State: Physical, spatial, human & Economic
- 2.3 Resource development & Power Politics.
- 2.4 Frontier, and Boundaries, Buffer States and Enclaves

Unit – III

15 Hours

- 3.1 India's Neighbors & Geopolitical study of Indian Ocean.
- 3.2 Economic and Strategic Alliances: SAARC region.
- 3.3 Emergence of New states & their demands.
- 3.4 Geography and Elections, Geographical influence on voting pattern.

Unit – IV

15 Hours

- 4.1 Federalism: Definition, Characteristics and Types.
- 4.2 Colonialism: Factors and Pattern.
- 4.3 Neo-Imperialism: Political, Economic and Cultural Mechanism
- 4.4 Politico-geographical implications of Space Research & Supranationalism.

SUGGESTED READINGS

1. Alexander, L.M. (1963). World Political Patterns. Ran McNally, Chicago.
2. D Blij, H. J. and Glassner, M. (1968) Systematic Political Geography, John Wiley, New York.
3. Dikshit R.D. (1996) Political Geography; A Contemporary Perspective, Tata McGraw Hill, New Delhi.
4. Taylor, P. (1985) Political Geography, Longman, London. 30
5. Fisher, C. A. (1968), Essays in Political Geography, Methuen, London.
6. Pounds, N.J.G. (1972), Political Geography Tata McGraw Hill, New York.
7. Short, J.R. (1982), An Introduction to Political Geography, Routledge, London.
8. Deshpandey, C.D. (1992) India –a Regional Interpretation, Northern Book Centre, New Delhi.
9. Panikkar, K.M. (1959) Geographical Factors in Indian History; II Volumes – Asia Publishing House, Bombay.
10. Martin Jones, Rhys Jones, Michael Woods (2004) An Introduction to Political Geography: Space, Place and Politics, Routledge
11. William B. Wood, George J. Demko (1999) Reordering the World: Geopolitical Perspectives on the Twenty-First Century : Westview Press.
12. Husain, Majid (1994); Political Geography; Anmol, New Delhi.
13. Adhikari,S (2010); Political Geography; Rawat, New Delhi
14. Houston, Edwin. J.: The Elements of Physical Geography, Forgotten Books, 2017.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – IV (Core Course - Project)

Course Title: **PROJECT (DISSERTATION)**

Course Code: **PG-GG-P401**

Credits: **08**

Contact Hours: **120** (08 Hrs./week)

Max. Marks: **200**

Course Objectives

- ✓ To acquaint the student with the importance of field work as one of the methodologies in Geography.
- ✓ To sensitize the student about pre-field work preparations, conduct of the field work, post field work based analysis and interpretation
- ✓ To acquaint the student with the requirements of the writing of a field work report.

Course Learning Outcomes

- ✓ 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 code: PG-GG-C302).

COURSE CONTENT

Since this paper is of practical nature only, therefore contents of syllabus need not to be organized into units. Students must prepare a project report on a theme that involves field investigation and data collection.

Field Based Project Report in Geography: The project report will involve:

- Statement of objectives and scope of field investigation;
- Methods of field work for studies of different scales (macro, meso, and micro)
- Preparation of a questionnaire; sampling techniques, data collection tools and procedure
- Processing and analysis of collected data
- Representation and interpretation of data/information.
- Writing a project report on assigned problem involving field investigations

Note

1. The candidates are required to submit their project reports one week before the commencement of end semester examination.
2. Assessment of practical record and viva voce on it will be done by a Board of Examiners, consisting of external examiner, internal examiner and the chairperson of the department.
3. Improvement/repeat cases must prepare either an improved form of their earlier practical record or prepare a new one. They must get it approved and signed by the faculty member teaching the course at their parent department.
4. Internal assessment may include written assignments, snap tests, participation in discussion in the class, term papers, attendance etc.

SUGGESTED READINGS

1. Archer, J.E. and Dalton, T.H.: Field Work in Geography, E.T. Bastaford Ltd., London, 1968.
2. Creswell, John W., Research Design; Qualitative, Quantitative and Mixed Methods Approach, SAGE Publications, Los Angeles, 2008.
3. Flick, U. An Introduction to Qualitative Research, 5th Edition, SAGE, 2014.
4. Jones, P.A.: Field Work in Geography, Longman, London, 1968.
5. Kothari, C. R., Research Methodology, Methods & Techniques, New Age International Publisher, N. Delhi, 2008.
6. Kumar Ranjit, Research Methodology: A step-by-step Guide for Beginners, SAGE Publications, Ltd. London (Third Edition), 2010.
7. Montello, D. and P. Sutton, An Introduction to Scientific Research Methods in Geography and Environmental Studies, SAGE, 2012.

Department of Geography
University of Ladakh
Syllabus of M.A/M.Sc. Semester – IV (Core Course - Practical)

Course Title: ***FIELD TRAINING & TOUR***

Course Code: **PG-GG-P402**

Credits: **04**

Contact Hours: **120** (8 Hrs./week)

Max. Marks: **100**

Course Objectives

- ✓ The primary aim of a field visit is to gather geographical details. Reinforcing experiential and relational learning is the key goal of conducting a field trip for students.
- ✓ The opportunity for students to have rich learning experiences on field trips and training can serve as the beginning of their interests in subject specific researches.
- ✓ To stimulate reasoning and critical thinking among students.

Course Learning Outcomes

- ✓ The students will learn various field observation, primary data collection skills.
- ✓ The students will know how the statistical methods will be applied in geography.

COURSE CONTENT

Since this paper is of practical nature only, therefore contents of syllabus need not to be organized into units. Students must prepare a tour report on the basis of field investigation and data collection from the visited areas.

The students of MA./M. Sc. (Final) IV Semester are required to study and submit their tour reports for evaluation and viva voce examination. The duration of the main fieldwork will be up to two weeks. The fieldwork will cover the following region/ regions of India assigned by the department during the academic year. The class room teaching would include preliminaries of survey to equip the students for the field work and tour report.

1. The Deccan Region
2. The Konkan / Malabar Coast
3. The Sunder Ban Delta
4. The Mahanadi Delta
5. The Krishna Delta
6. The Cauvery Delta
7. The North Eastern States
8. The North / North Western States
9. The Central India.

Note: A comprehensive tour report on the area / region shall be submitted by the students within two weeks on their return from the tour. The report shall be sent to the examiner for evaluation, and subsequently the students have to appear for viva – voce examination.