



M.A./ M.Sc. Syllabus Department of Geography

Semester wise Course Distribution of M.A./MSc Geography Programme

Session: 2021-22

1. Applicability

These Regulations shall apply to the Master in Arts/Science in Geography Programme from the session 2021-22.

2. Minimum Eligibility for Admission:

Bachelors degree from a recognized University in concerned subject with a minimum of 45% marks in aggregate for General/OBC and 40% for SC/ST candidates.

3. Programme Objectives:

The objectives of the Course are aimed to develop the geographical skills, awareness and sensitivity towards the Society and Nation so that students can enrich themselves for carrier and impart their role to the sustainable development of the Nation. The major objectives are:

- Sustainable development
- This course offers a comprehensive understanding of the human aspects of understanding about the physical, regional, and economic features of the earth's geographical dimensions.
- The course focuses on both theoretical and practical knowledge and understanding.
- MA Geography program concentrates on the social science aspect of Geography. It involves the thorough study of Human Geography and exploring the relationship of human beings with the created environment, management and utility of the space.
- This course is essentially job oriented that incorporates an overall understanding of the discipline but from the perspective of social science.
- This course involves an advanced academic exploration of the earth's surface, essence and composition.
- This course offers a comprehensive understanding of the human aspects of understanding about the physical, regional, and economic features of the earth's geographical dimensions.
- Research and development
- Capacity building
- Skill development and enhancement
- Student centric and job-oriented courses

4. Program Outcomes:

The Program trains students to:

- Understand basic and advanced theoretical and practical knowledge in branches of Geography
- Develop advanced skill in one of the branches of Geography
- To convert theoretical knowledge and skills into practical skills.
- To gain the practical knowledge of GIS software like ARCGIS, QGIS, etc.



- Become responsible citizens with professional attitude.

5. Specific Programme Outcomes:

The courses focus on skill development and capacity building to empower women to initiate their own enterprise

- Courses aim at equipping the students with necessary proficiencies for a wide variety of career with geographical information systems skills and placement.
- This course aim at comprehensive understanding of the human aspects of understanding about the physical, regional, and economic features of the earth's geographical dimensions.
- The course focuses on both theoretical and practical knowledge and understanding.
- M.A./ M.Sc. Geography program concentrates on the social science aspect of Geography. It involves the thorough study of Human Geography and exploring the relationship of human beings with the created environment, management and utility of the space.
- This course is essentially job oriented that incorporates an overall understanding of the discipline but from the perspective of social science.
- This course involves an advanced academic exploration of the earth's surface, essence and composition.
- Students will get Practical training/exposure through internship, field visit, project work, expert lectures, demonstration, workshops and seminars
- Focus on updating with National & Global issues and concerns.
- Curriculum based capacity building through subject wise research methods and scientific writing.

LEARNING OUTCOMES:

Geography is enormously an important subject. Those who chose to study this are creating a huge difference in the world we live in. They bring together the physical dimensions of the world with the human side of things and thus help to minimize the negative human impact on the environment. Geographers are required to help find solutions to some of the biggest issues in the world, such as climate change, urban over-development, natural disasters, etc. With the development of human society, global issues are increasing and thus the employment opportunities are also growing exponentially. There is a broad range of career options after Masters in Geography like Geographic Information systems (GIS) analyst, Geographer, Cartographer, Marine Geologists, Oceanographer, Operations Manager, Senior executive assistant, etc. Some of the skills learned during the course are quite unique and can also be marketed on their own, like cartographic (maps), Geographic Information Systems (Google maps), and data presentation skills.

Geographers are expected to internalize the principle of a Geography, that is, to give back to the community from which they draw, for sustainable development.

- Identify the relative location, direction, size, and shape of locales, regions, and the world.
- Demonstrate knowledge of concepts, methods, and theories designed to enhance understanding of the natural world and human society.
- Demonstrate the ability to access, comprehend, compare, and evaluate contemporary scientific and social literature.
- Demonstrate an awareness of multiple world views, and how each is shaped by the interaction of physical and social factors.



- Classify processes of environmental change and evaluate the relationship between human beings and their surroundings, bringing to bear knowledge from many disciplines.
- Consider changing perceptions, definitions, practices and policies that shape environments and nature.
- Consider the ethical and physical ramifications of scientific decisions on society and the Environment.
- Evaluate causes, consequences, and possible solutions to persistent, contemporary, and emerging global issues.
- Understand and appreciate the role of interdisciplinary sciences in the development and well-being of individuals, families and communities
- Understand the sciences and technologies that enhance the quality of life of people.

6. COURSE STRUCTURE

The Course Structure of the Master in Geography Programme shall be as under:

COURSE STRUCTURE M.A. /M.SC. GEOGRAPHY

NOTE: The courses for M.A. and M.Sc. are identically the same

SEMESTER- I						
Paper Code	Paper	Title	Credit	Theory/ Practical Marks	Internal Assessment/ Sessional Marks	Marks
GRM 101	CC (T) 1	Physical Landscape and Hydrology	4	70	30	100
GRM 102	CC (T) 2	Geography of Resources	4	70	30	100
GRM 103	CC (T) 3	Advanced Geography of India	4	70	30	100
GRM 104	CC(P)4	Physical Diagrams, Hydrology and Map Projections	4	70	30	100
GRM 105	CC(P)5	Spatial Analysis: Locational and Network	4	70	30	100
GRM VAC 101	VAC 01	Understanding of Natural Hazard and Disaster	4	70	30	100
		TOTAL	24			600
SEMESTER – II						
Paper Code	Paper	Title	Credit			Marks
GRM 201	CC (T) 6	Advanced Geomorphology	4	70	30	100
GRM 202	CC (T) 7	Geography and Environmental Studies	4	70	30	100



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

One paper of the special group to be selected from the following:						
GRM 203A GRM 203B GRM 203C GRM 203D	CC (T) 8	Population Geography Resource Planning Advanced Cartography Gender Geography	4	70	30	100
GRM 204	CC(P) 09	Statistical Methods and Data Processing	4	70	30	100
The corresponding practical of special group to be selected from the following:						
GRM 205A GRM 205B GRM 205C GRM 205D	CC(P)10	Population Geography Resource Planning Advanced Cartography Socio-Economic Survey	4	70	30	100
GRM 206	CC (T)11	Fundamental of Remote Sensing & GIS	4	70	30	100
GRM VNC 201	VNC02	Land Surveying and GPS Practical	00			
TOTAL			24			600
SEMESTER – III						
Paper Code	Paper	Title	Credit			Marks
GRM 301	CC (T) 12	Emerging Geographical Thought	4	70	30	100
GRM 302	CC (T) 13	GIS and Its Application	4	70	30	100
One paper of the special group to be selected from the following:						
GRM 303A GRM 303B GRM 303C	CC (T) 14	Geography of Rural Settlements Regional Planning Aerial Photo Interpretation.	4	70	30	100
GRM 304A GRM 304B	CC(P)15	Remote Sensing and GIS; Soil, Water and Air Analysis	4	70	30	100
The corresponding practical of special group to be selected from the following:						
GRM 305A GRM 305B GRM 305C	CC(P)16	Geography of Rural Settlements Regional Planning Aerial Photo Interpretation and GIS	4	70	30	100
GRM 306	CC(P)17	Field Study and Geographical Excursion	4	70	30	100
TOTAL			24			600
SEMESTER – IV						
Paper Code	Paper	Title	Credit			Marks
GRM 401	CC (T) 18	Research Methods and Techniques	4	70	30	100
One paper of the special group to be selected from the following:						
GRM 402A GRM 402B GRM402C	CC (T) 19	Urban Geography Rural & Urban Planning Satellite Image Interpretation	4	70	30	100



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

GRM 403	CC (T) 20	Political Geography	4	70	30	100
GRM 404	CC (T) 21	Natural Hazards and Disaster Management	4	70	30	100
GRM 405	CC(P) 22	Dissertation and Viva Voce	8	140	60	200
TOTAL			24			600

• **EVALUATION**

Both theory and practical papers have equal weightage (100 marks/50 marks) which will be evaluated at as End Semester Examination (70/35)

QUESTION PAPERS UNDER CBCS PATTERN

End Semester Examination (70/35)

Course	Marks	Duration	Nature of Questions			Examiners (Internal/External)
			Short Type	Long Type		
Theory	70	03 hours	<u>SECTION A</u> Answer any 6 out of 08 Questions (6 X 5 Marks = 30 Marks).	<u>SECTION B</u> Answer all the 4 questions with one option in each question. 4 out of 8 Questions (4 X 10 marks = 40 Marks)	Internal and external 60/40 ratio is followed by the Department for paper setting as per appointed by the Head/ Incharge	
Course	Marks	Duration	Nature of Questions			Examiners (Internal/External)
Practical	70	3 hours	Short Type	Long Type	Viva & File work	Internal and external 50/50 ratio will be followed as per appointed by the Head/ Incharge
(Marks Distribution may vary according to the nature of Practical course)			20	30	20	

Internal Assessment (30/15) is categorized into three parts for **Theory and Practical** as follows

Sl. No.	Theory	Practical	Marks
---------	--------	-----------	-------



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

1	Sessional	Continuous evaluation	(10/05)
2	Assignment/ Tutorial	Seminar	(10/05)
3	Attendance	Attendance	(10/05)



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Master of Arts/Master of Science in Geography Programme (in Brief)

Title	The title of the Course shall be Master of Arts in Geography/Master of Science in Geography
Objective	The objective of the Course is to develop responsive and skillful, talented, productive citizens of the nation with high potential and professionalism by imparting knowledge in various areas of Geography and creating suitable attitude for the same.
Duration	The total duration of the Course shall be of two years, spread in four semesters.
Seats	The total number of students to be admitted in the Course shall be 30 each (or as decided by the university).
Eligibility	Bachelors degree from a recognized University in concerned subject with a minimum of 45% marks in aggregate for General/OBC and 40% for SC/ST candidates.
Fees	Fee will be charged as per University Fee Structure from time to time.
Admission Policy	Admissions shall be made on the basis of university norms. Reservation policy as per rules of KMCL University will be followed.
Course Content	<p>The two-year P.G. Course of Geography is divided into four semesters i.e. two each in M.A./ M.Sc. (Prev.) and M.A./ M.Sc. (Final). During these four semesters, knowledge enhancement of the students will be done through:</p> <ul style="list-style-type: none">• 14 (Fourteen) Core Courses of 04 credit each [14 x 4 = 56 Credits]• 04 (Four) Discipline Elective Courses of 04 credit [04 x 04 = 16 Credits]• 02 (two) Value Added Course (01 Credited + 01 Non-credited) of 04 credit each [01 x 04 = 04 Credits]• 01 (one) Inter-Departmental Course of 04 credits [01 x 04 = 04 Credits]• 01 (one) Internship of 04 credit (on any relevant Topic/Discipline) [01 x 04 = 04 Credits]• 01 (one) Dissertation of 04 credit (on a Topic based on one of the Elective disciplines adopted by the student) [01 x 04 = 04 Credits]• 01 (one) Intradepartmental Course of 04 credit [01 x 04 = 04 Credits]
Distribution of Marks	<ul style="list-style-type: none">• There theory papers will be each of 100 marks (70 marks for Written Examination + 30 marks for Internal Assessment) for each theory paper.• Practical work including Viva-Voce will be of 100 marks including 30 marks for Internal Assessment.• Dissertation will be of 100 marks.



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.	Year: I	Semester: I
Subject- Geography		
Course Code: GRM 101	Course Title: Physical Landscape and Hydrology	
Course outcomes: <ul style="list-style-type: none">• Develop an idea about geomorphology and different types of fundamental concepts.• Explain different types of geomorphic processes like weathering and mass wasting and cycle of erosion.• Understand the processes of erosion, deposition and resulting landforms.• Acquire knowledge about slope forms and processes.• Develop an idea about earth movements and the related topography.• Acquire knowledge about different types of rock and their origin. Influence of the rocks on land form and topography.• Getting familiar with the concept of hydrology• This course gives a holistic view of the water environments i.e., hydrology seen as a water carrier in nature with human influence.• Understanding the processes of Water Disposition.		
Credits: 4	Course Type-Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Bases of Physical Landscape: Concept and types of physical landscape; Significance of geomorphic processes including plate tectonics in landforms development; Geological structure and climatic factors in the development of landforms.	8
II	Landforms Development: Interruption in the evolution of landforms: tectonic, climatic, and base-level changes; Development of landforms in various areas: humid, coastal, karsts, and peri-glacial; River terraces: concept and types; Regional geomorphology: Indo-Gangatic plain, and Rajmahal Hills.	8
III	Bases of Hydrology: Meaning, scope and development of Hydrology; Hydrological cycle; Man's influence on the hydrological cycle; Precipitation types, characteristics and measurements; Evaporation: factors affecting evaporation from free water surface and soil; Evapotranspiration: estimation and its control.	8
IV	Water and Its Disposition: Soil moisture and its zones; Infiltration; Groundwater: occurrence, storage, recharge and discharge; Runoff: its sources and components, factors affecting	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

	runoff; Darcy's law, River regimes; Hydrograph: components and separation.	
Suggested Readings: <ol style="list-style-type: none">1. Bernhard, H. and James, M. A. (1944): Climatology. McGraw Hill Company, New York.2. Chorley, R. J. (1995): Atmosphere, Weather and Climate. Methuen and Company Ltd. and Company Ltd., London.3. Chow, V. T., (ed.) (1954): Handbook of Applied Hydrology: A Compendium of Water Resources Technology. McGraw Hill, New York.4. Critchfield, H. J. (2003): General Climatology. Prentice-Hall of India, New Delhi.5. Reddy, J. P. (1988): A Textbook of Hydrology. Laxmi Publication., New Delhi. 4th edition.6. Singh, S., (1998): Geomorphology. PrayagPustak Bhavan, Allahabad.7. Sparks, B.W., (1986): Geomorphology. Longman, London.8. Thornbury, W.D., (2005): Principles of Geomorphology. John Wiley and Sons, New York.9. Trewartha, G. T. (1980): An Introduction to Climatology. McGraw Hill Student edition, New York.10. Ward, R.C. and Robinson, M. (2000): Principles of Hydrology. McGraw Hill, New York.11. Weisberg, J. S. (1974): Meteorology. Houghton Mifflin Company, Boston.12. Wooldridge, S.W. and Morgan, R.S. (1959): The Physical Basis of Geography- An Outline of Geomorphology. Longmans Green, London.		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">• Test with multiple choice questions/short and long answer questions		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.		Year: I	Semester: I
Subject- Geography			
Course Code: GRM 102		Course Title: Geography of Resources	
Course outcomes: <ul style="list-style-type: none"> • Develop an idea about resource. • Understand the concept of different types of resources. • Acquire knowledge about different types of theories and models • Acquire knowledge about different types of power resources. • Students will demonstrate their knowledge of resource and environmental issues. Students will also be able to demonstrate their knowledge of the role that geography can play in analyzing resource / environmental degradation and improving resource / environmental management. 			
Credits: 4		Course Type-Core Course	
Max. Marks: 100(30+70)		Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60	
I	Introduction and Bases: Concept and scope of Resource Geography; World resources: distribution and pattern (Coal, Petroleum, Iron, Forest, Water); Non-conventional sources of energy; Human resources; Resource base and its dynamism as related to stages of cultural, technological and economic development.	8	
II	Resource Use: The limits to growth and critique; Resource scarcity hypothesis; World energy crisis; Resource conservation and management; Watershed management; Sustainable development; Resources, development and international politics.	8	
III	Theories and models: Theories of agricultural location Von Thunen's rent theory and Ricardian rent theory; Theories of Industrial location: Weber, and Losch and Christaller's Central Place theory and modification by Losch.	8	
IV	Regional Perspectives and Trade & Exchange. Resource regionalisation; World economic development; Concept of developed and developing nations; Concepts of North-South and First, Second, Third and Fourth Worlds Core-periphery concept in trade, Trade Blocs; the Enformation Economy-Spatial and transportation implications of e-commerce.	8	
Suggested Readings:			
<ol style="list-style-type: none"> 1. Burton, I. and Kates, R.W. (1978): Readings in Resource Management and Conservation. McGraw Hills, New York 2. Clark, G. L., Feldman, M.P. and Gertler, M.S. (eds.) (2000): The Oxford Handbook of Economic Geography. Oxford University Press, Oxford and New York. 			



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

3. Ehrlich, P.R., Ehrlich, R.H. and Holdren, J.P. (1998): Ecoscience: Population, Resources and Development. 2nd edition. Freeman and Company, San Francisco.
4. Sheppard E. and Treror I. B. (ed.) (2003): A Companion to Economic Geography, Blackwell Publication, U.K. and USA.
5. McCarty, H.M. and James B.L. (1976): A Preface to Economic Geography. Prentice Hall, New Jersey.
6. Mitra, A. (2000): Resource Studies; Shridhar Publishers., Kolkata.
7. Ramesh, A. (ed.) (1984): Resource Geography. Heritage Publishers, New Delhi.
8. Todaro M.P. and Smith S.C. (2004): Economic Development, Pearson Education, (Singapore) Private Ltd. Singapore

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.	Year: I	Semester: I
Subject- Geography		
Course Code: GRM 103	Course Title: Advanced Geography of India	
Course outcomes: <ul style="list-style-type: none">• They can know about their own countries land formation, climate and natural vegetation.• They understand the economic resources of India.• They understand the social distribution of population of their country.• Develop an idea about regionalisation of India.		
Credits: 4		Course Type-Core Course
Max. Marks: 100(30+70)		Total No. of Lectures-60
Unit	Topics	No. of Lectures Total=60
I	Introduction Making of India through geological times, structure and relief; Drainage systems and watersheds; Physiographic divisions; Climate characteristics: mechanism of the Indian Monsoon; Forests: types, distribution and utilisation.	8
II	Population Characteristics. Population growth: trends and pattern; Population: distribution and density; Ageing of population; Sex and literacy differentials; Ethnic groups; Trends of urbanisation; National population policy - 2000.	8
III	Agricultural Scene. Agricultural characteristics and trends; Land holdings, land tenure, land consolidation and land reforms; Infrastructure: irrigation, power, fertiliser, HYV seeds and farm technology; Green, white, blue and yellow revolutions	8
IV	Industrial Resource Base. Regional distribution and development potentials of mineral and power resources; New industrial policy: Globalisation and liberalisation; Industrial complexes and industrial regions; Transport development: rail and road; Geographical regions; Detailed study of the Middle Ganga plain and Karnataka plateau region.	8
Suggested Readings: <ol style="list-style-type: none">1. Chapman, G. and Baker, K.M. (eds.) (1992): The Changing Geography of Asia. Routledge, London.2. Farmer, B.H. (1983): Introduction to South Asia. Methuen and Company Ltd. and Company Ltd., London.3. Ganguly, S. and Neil, DeVotta (eds.) (2003): Understanding Contemporary India. Lynne Rienner Publishers., Boulder and London.4. Gole, P. N. (2001): Nature Conservation and Sustainable Development in India. Rawat		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

publications, Jaipur and New Delhi.

5. Johnson, B. L. C. (ed.) (2001): Geographical Dictionary of India. Vision Books, New Delhi.
6. Johnson, B.L.C. (1983): Development in South Asia. Penguin Books, Harmonsworth.
7. Khullar, D. R. (2006): India. A Comprehensive Geography. Kalyani Publishers., New Delhi.
8. Krishnan, M. S. (1968): Geology of India and Burma. 4th edition. Higgin Bothams Private. Ltd., Madras.
9. Nag, P. and Gupta S. S. (1992): Geography of India. Concept Publishing. Company, New Delhi.
10. Sharma, T. C. (2003): India: Economic and Commercial Geography. Vikas Publication., New Delhi.
11. Singh, J. (2003): India: A Comprehensive and Systematic Geography. GyanodayaPrakashan, Gorakhpur.
12. Singh, R. L. (ed.) (1971): India. A Regional Geography. National Geographical Society of India, Varanasi.
13. Spate, O.H.K., Learmonth, A.T.A. and Farmer, B. H. (1979): India and Pakistan. Methuen and Company Ltd. and Company Ltd., London.
14. Subbarao, B. (1959): The Personality of India. University of Baroda Press, Baroda.
15. Sukhwal, B.L. (1987): India. Economic Resource Base and Contemporary Political Patterns. Sterling Publication, New Delhi.
16. Tirtha, R. (2002): Geography of India. Rawat Publications., Jaipur and New Delhi.
17. Tiwari, R. C. (2007): Geography of India, PrayagPustak Bhawan, Allahabad
18. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras. Student edition.
19. Ahmed, Waquar, Amitabh Kundra and Richard Peet (eds.) 2010. India's New Economic Policy: A Cractical Analysis, Jaipur/ Dew Delhi: Rawat Publications

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions

Programme/Class: M.A./M.Sc.	Year: I	Semester: I
Subject- Geography		
Course Code: GRM 104	Course Title: Practical: Physical Diagrams and Hydrology	
Course outcomes: <ul style="list-style-type: none"> • Getting familiar with underlying structures with the help of geological maps. • Apply the water balance equation to various hydrological problems in time and space. • Learn the techniques of geographical analysis. • Analyse hydro-meteorological data for better water resource management in an area. • To develop an understanding of how this knowledge may be applied in practice in an economic and environmentally sustainable manner. 		
Credit:4	Course Type- General Elective 1	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	1. Physical Diagrams: Advanced exercises on geological maps:	16



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

	folded and faulted structures, unconformable rock series; Hypsographic and clinographic curves	
II	2. Hydrology: Drainage basin analysis; Drawing of climatological water balance graph and determination of the components; Calculation of climatic indices: rainfall-runoff relationship; Hydrographs: components and separation; Unit hydrograph.	16
Suggested Readings:		
<ol style="list-style-type: none"> 1. Chow, V. T., (ed.) (1954): Handbook of Applied Hydrology: A Compendium of Water Resources Technology. McGraw Hill, New York. 2. Reddy, J. P. (1988): A Textbook of Hydrology. Laxmi Publication., New Delhi. 4th edition. 3. Singh, S., (1998): Geomorphology. PrayagPustak Bhavan, Allahabad. 4. Sparks, B.W., (1986): Geomorphology. Longman, London. 5. Thornbury, W.D., (2005): Principles of Geomorphology. John Wiley and Sons, New York. 6. Ward, R.C. and Robinson, M. (2000): Principles of Hydrology. McGraw Hill, New York. 		
Suggested Continuous Evaluation Methods:		
<ul style="list-style-type: none"> • Test with multiple choice questions/short and long answer questions 		

Programme/Class: M.A./M.Sc.	Year: I	Semester: I
Subject- Geography		
Course Code: GRM 105	Course Title: Practical: Spatial Analysis: Locational and Network	
Course outcomes:		
<ul style="list-style-type: none"> • Learn the significance of statistics in geography. • Understand the importance of use of data in geography • Gain knowledge about association and correlation. • They can know about transport network analysis. • Gain knowledge about representation of state wise variation in occupational structure and work participation rate using proportional circles and proportional divided circles and also composite index. • This course must train the student about the need, purpose, and advantage of regression models over other crude methods. • Students should be well conversant with different families of regression models, its underlying assumptions, data requirements, interpretation of regression results, and able to apply the diagnostic test to check the model fit. 		
Credit:4		Course Type - Core Course
Max. Marks: 100 (30+70)		Total No. of Lectures-60
Unit	Topics	No. of Lectures Total=60
I	Measurement of Geographical Patterns: Near Neighbour	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

	Analysis, Gini's Co-efficient, Lorenz curves, Location quotient, Rank size rule	
II	Network Analysis. Topologic structures: branching, circuit and barrier networks; Geometric structures: Networks shape and density, pattern and order; Flow and network efficiency; Location of network routes and boundaries; Pattern of spatial evolution and network transformation	8
III	Locational Analysis. Absolute and relative location: spacing, indices of randomness, deviation and nature of dispersion; Nodes-population clusters: the size continuum, size and shape; Hierarchies: functional hierarchy of settlements and ordering; Interaction: movement and distance models; Service area and territory; Case of agricultural and industrial location.	8
IV	Measurement of Disparities: Kandall's Ranking Method, Combination analysis of Weaver's. S.M. Rafiullah method	8
Suggested Readings: <ol style="list-style-type: none">1. Bhagwathi, V. and Pillai, R.S.N. (2003): Practical Statistics, Sultan Chand and Company, New Delhi2. Ebdon, D. (1977): Statistics in Geography: A Practical Approach, Blackwell Publishers Inc., Massachusetts3. Gregory, S. (1973): Statistical Methods and the Geographer, Longman, London.4. Gupta, S.P. (1998): Advanced Practical Statistics, Sultan Chand and Company, New Delhi5. Mahmood, A. (1986): Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi6. Zamir, A. (2002): Statistical Geography: Methods and Applications, Rawat Publications, Jaipur.		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">• Test with multiple choice questions/short and long answer questions		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.	Year: I	Semester: I
Subject- Geography		
Course Code: GRM VAC 101	Course Title: Understanding of Natural Hazard and Disaster	
Course outcomes: <ul style="list-style-type: none">• The course begins with a discussion on alternative concepts of disasters, calamity, risk and hazard.• The course then proceeds to aggregate the models used to benchmark disasters• In the final it de-myths that disasters are natural and lays bare the role of vulnerability in creating disasters and what needs to be managed.		
Credit:4	Course Type- Value added Course 1	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Concepts and definitions of hazard, disaster, vulnerability and risk, disaster risk reduction, Various disaster in India, Natural & human induced hazards & disasters.	8
II	Geological hazard: Earthquakes, landslides & tsunami; Hydro metrological : Floods, cyclone, drought, avalanches extreme event of rains & heat, Forest fire ; Biological hazards, Technological hazard	8
III	Geo-informatics in Disaster Management (RS & GIS, GPS), Emergency communication system (early warning and its communication)	8
IV	Land use planning and development for mitigating disaster	8
Suggested Readings: <ol style="list-style-type: none">1. An overview on natural & man-made disasters and their reduction, R K Bhandani, CSIR, New Delhi2. Coppola D P, 2007. Introduction to International Disaster Management, Elsevier Science (B/H), London.3. Disasters in India Studies of grim reality, Anu Kapur& others, 2005, 283 pages, Rawat Publishers, Jaipur4. Disaster Mitigation in Asia & Pacific, Asian Development Bank5. Disaster Management and education in India (http://www.chillibreeze.com/articles/variou/disaster_management.asp)6. Encyclopedia of disaster management, Vol I, II and III. Disaster management policy and administration, S L Goyal, Deep & Deep, New Delhi, 20067. Encyclopedia of Disasters ó Environmental Catastrophes and Human Tragedies, Vol. 1 & 2, Angus M. Gunn, Greenwood Press, 2008		



ख़्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

8. Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi
9. Management of Natural Disasters in developing countries, H.N. Srivastava & G.D. Gupta, Daya Publishers, Delhi, 2006, 201 pages
10. National Disaster Management Plan (NDMP), and National Disaster Management Authority (NDMA) Govt. of India , NDMA Bhawan, New Delhi

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 201	Course Title: Advanced Geomorphology	
Course outcomes: <ul style="list-style-type: none">• Develop an idea about geomorphology and different types of fundamental concepts.• Explain different types of geomorphic processes like weathering and mass wasting and cycle of erosion.• Understand the processes of erosion, deposition and resulting landforms.• Acquire knowledge about slope forms and processes		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Concepts. A critique on fundamental concepts of geomorphology; Concept of time: cyclic, graded and steady state; Concept of morphogenetic region; Concept of dynamic equilibrium; Recent trends in geomorphology.	8
II	Drainage Basin and Related Aspects. Drainage basin as a geomorphic unit: morphometric laws; Denudation and morpho-chronology and dating of landscapes; Soil erosion and its measurement.	8
III	Theories and Techniques. Theories of hill-slope evolution; Erosion surfaces; Geomorphic mapping techniques; Systems in geomorphology; Models in geomorphology.	8
IV	Applied Geomorphology. Geomorphic hazards and mitigation measures; Geomorphology and economic deposits; Geomorphology in engineering construction; Geomorphology in groundwater studies; Soils and geomorphology. Watershed Management.	8
Suggested Readings: <ol style="list-style-type: none">1. Ahmed, E. (1985): Geomorphology. Kalyani Publishers, New Delhi.2. Bloom, A. L. (1998/ 2001): Geomorphology. 3rd edition. Prentice Hall of India, New Delhi.3. Chorley, R.J., Schumm S A and Sugden D E. (1984): Geomorphology. Methuen and Company		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

- Ltd., London.
- Dayal, P. (1994): A Text Book of Geomorphology. Kalyani Publishers, New Delhi.
 - Fairbridge, R.W. (ed.) (1968): Encyclopaedia of Geomorphology, Reinhold Book Corporation., New York
 - Gregory, K.J. and Walling, D.E. (1973): Drainage Basin Form and Process. Edward Arnold, London.
 - Jog, S. R. (ed.) (1995): Indian Geomorphology (2 vols.). Rawat Publications, Jaipur
 - Kale, V. and Gupta, A. (2001): Introduction to Geomorphology. Orient Longman, Hyderabad.
 - King, C.A.M. (1966): Techniques in Geomorphology. Edward Arnold, London.
 - Pethick, J. (1984): An Introduction to Coastal Geomorphology. Arnold, Indian reprint 2000.
 - Sharma, P. R. (ed.), (1993): Applied Geomorphology in Tropics. Rishi Publications, Varanasi.
 - Singh, S. (2004): Geomorphology. PrayagPustak Bhawan, Allahabad.
 - Sparks, B.W. (1986): Geomorphology. Longmans, London.
 - Thornbury, W.D. (2005): Principles of Geomorphology. John Wiley and Sons, New York.
 - Wooldridge, S.W. and Morgan, R.S. (1959): The Physical Basis of Geography- An Outline of Geomorphology. Longman, London.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 202	Course Title: Geography and Environmental Studies	
Course outcomes: <ul style="list-style-type: none">Understand structure composition of Environment.Study about nutrient cycling.Understand the value of resources.Make awareness about conservation of resources.Understand environmental problem their cause, effects and remedies.Get the knowledge about environmental hazardous and management.Understand the various environmental protection acts.The students will learn various issues related to environmental impact assessment and its importance.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Bases. Meaning and scope of environmental geography; Approaches to study of environment; Types of environments, Environment and society, Environment and development, Environmental perception and cognitive maps.	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

II	Ecology and Ecosystem. Definition, scope and significance of ecology; Basic ecological principles; Geo-biochemical cycles: carbon, nitrogen, oxygen and phosphorus cycles; Ecosystems, Biomes and biomass; Biodiversity: depletion and conservation.	8
III	Hazards and Changes. Environmental hazards; Natural hazards: landslides, soil erosion, droughts and floods, earthquakes; Man-made hazards: technological hazards, global climatic changes, global warming, green house effects, ozone depletion, sedimentation in rivers and reservoirs.	8
IV	Pollution and Management. Environmental pollution: pollutants, sources and types of pollution; Water, soil, air, and noise pollution; Solid waste disposal; Environmental pollution and health; Environmental education; Environmental impact analysis; Environmental monitoring and standards; Environmental policy and legislation; Environmental management.	8

Suggested Readings:

1. Anjuneyulu, Y. (2002): Environmental Impact Assessment Methodologies. B. S. Publications, Hyderabad.
2. Anjuneyulu, Y. (2004): Introduction to Environmental Science. B. S. Publications, Hyderabad.
3. Athavale, R. N. (2003): Water Harvesting and Sustainable Supply in India. Rawat Publications., Jaipur.
4. Bilas, R. (1988): Rural Water Resource Utilization and Planning. Concept Publishing Company, New Delhi.
5. Blaikie, P., Cannon, T. and Davis, I. (eds.) (2004): At Risk: Natural Hazards, Peoples Vulnerability and Disasters. Routledge, London.
6. Clarke, J. I., Curson, P., Kayastha S. L. and Nag P. (eds.) (1991): Population and Disaster. Basil Blackwell, USA
7. Gautam, A. (2007): Environmental Geography, Sharda Pustak Bhawan, Allahabad
8. Huggett, R. J. (1998): Fundamental of Biogeography. Routledge, London.
9. Kayastha, S.L. and Kumra V.K. (1986): Environmental Studies. Tara Book Agency, Varanasi.
10. Khoshoo, T. N. (1981): Environmental Concerns and Strategies. Ashish Publishing House, New Delhi
11. Kumra, V.K. (1982): Kanpur City. A Study in Environmental Pollution. Tara Book Agency, Varanasi.
12. Mathur, H. S. (2003): Essentials of Biogeography. Pointer Publication, Jaipur.
13. Nag, P., Kumra, V.K. and Singh, J. (1990): Geography and Environmental Issues at Local, Regional and National Levels. (in 3 vols.), Concept Publishing Company, New Delhi.
14. Odum, E.P. (1975): Ecology. Rowman and Littlefield, Lanham USA.
15. Rajagopalan, R. (2005): Environmental Studies: From Crisis to Cure, Oxford University Press, New Delhi.
16. Reddy, M. A. (2004): Geoinformatics for Environmental Management. B. S. Publishers., Hyderabad.
17. Saxena, K.K. (2004): Environmental Studies. University Book House Private Ltd., Jaipur
18. Saxena, H. M. (1999): Environmental Geography. Rawat Publications., Jaipur and New Delhi.



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

19. Saxena, H. M. (2000): Environmental Management. Rawat Publications., Jaipur and New Delhi.
20. Singh, A.K., Kumra, V.K. and Singh, J. (1986): Forest Resource, Economy and Environment. Concept Publishing. Company, New Delhi.
21. Singh, D.N., Singh, J. and Raju, K.N.P. (eds.) (2003): Water Crisis and Sustainable Management, Tara Book Agency, Varanasi
22. Singh, O., Nag P., Kumra V.K. and Singh J. (eds.) (1993): Frontier in Environmental Geography. Concept Publishing Company, New Delhi.
23. Singh, R. B. (ed.) (1990): Environmental Geography. Heritage Publication, New Delhi.
24. Singh, R. B. (ed.) (1995): Studies in Environment and Development. Rakesh Prakashan, Varanasi.
25. Singh, Rana P.B. (ed.) (1993): Environmental Ethics: Discourses and Cultural Traditions. National Geographical Society of India, BHU, Varanasi.
26. Singh, S. (2006): Environmental Geography. PrayagPustak Bhawan, Allahabad.
27. Singh, S. N. (1993): Elements of Environmental Geography and Ecology in Hindi), Tara Book Agency, Varanasi
28. Wrigley, N. (1985): Categorical Data Analysis for Geographers and Environmental Scientists. Longman, London.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 203A	Course Title: Population Geography	
Course outcomes: <ul style="list-style-type: none">• Understand the nature of population. Know about composition of population, like- age, sex marital status, family, economic composition and language.• Analyze the global trend and patterns of population growth in developing countries, and migration patterns.• Evaluate the population growth theory and migration theories.• Understand the Population resource regions of the world.• Understand the population policies in policies in India		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Bases: Concepts, scope and methodology of population geography; Approaches to Population Geography, Data sources; Population dynamics: fertility, mortality and migration; Concepts of ageing: young, stationary and stable population.	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

II	Theories: Theories of Population Growth: Malthus, Marx, Optimum and Demographic transition; Migration theories: Ravenstien and Everetts Lee.	8
III	Population Dynamics: Population change and growth, Historical trends of Population growth, trends and pattern of fertility, trend and pattern of mortality, trend and pattern of child mortality, Migration: types, patterns, causes and consequences, Population resource regions of the world.	8
IV	Case of India: population: a problem (liability) or resource (assess), Characteristics of population: age-sex structure, rural-urban, literacy, work force and occupational structure; Problem of Aging, health care and food security, Critical appraisal of Population Policy, population in the context of environmental crises.	8
Suggested Readings: <ol style="list-style-type: none">1. Bhende, A. A. and Kanetkar T. (2003): Principles of Population Studies, Himalaya Publishing House, Mumbai.2. Bose, A. (ed.) (2001): Population in India & Development, 1947-2000. Vikas Publications, New Delhi.3. Champion, T. (ed.) (1993): Population Matters. Paul Chapman, London.4. Chandna, R. C. (2006): Geography of Population. Kalyani Publishers., New Delhi.5. Clark, J. I. (1972): Population Geography. Pergamon Press, Oxford.6. Ehrlich, P.R. and Ehrlich, A.H. (1996): Ecoscience: Population, Resources, Environment. 6th ed. W.H. Freeman and Company, San Francisco.7. Garnier, B.J. (1993): Geography of Population. 3rd edition. Longman, London.8. Jones, H. R. (2000): Population Geography. 3rd edition. Paul Chapman, London.9. Pathak, L. P. (ed.) (1998): Population Studies. Rawat Publications., Jaipur and New Delhi.10. Peters, G. L. and Larkin, R.P. (1983): Population Geography. Problems, Concepts and Prospects. Kendall/Hunt, Dubuque, IA.11. Poston, D. L. and Michael, M. (2005): Handbook of Population, Springer Heidelberg, Germany.12. Ross, John A. (ed.) (1982): International Encyclopaedia of Population. Free Press, New York.13. Singh, K.N. and Singh, D.N. (eds.) (1992): Population Growth, Environment and Development. EDSC, Varanasi.14. Srinivasan, K, and Vlassoff, M. (2001): Population Development Nexus in India: Challenges for the New Millennium. Tata McGraw Hill, New Delhi.15. Trewartha, G.T. (1985): A Geography of Population. World Patterns. John Wiley and Sons, New York.16. Woods, R. (1979): Population Analysis in Geography. Longman, London.		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">• Test with multiple choice questions/short and long answer questions		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 203B	Course Title: Resource Planning	
Course outcomes: <ul style="list-style-type: none">To provide a contemporary and forward-looking on the theory and practice of Resource Planning.To focus on a strong emphasis upon Resource ConservationTo train the students to develop the basic understanding of how Resource Planning enriches a country in achieving a multidimensional growth.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Basic Framework. Meaning, purpose and scope of resource planning; Methods and techniques of resource appraisal; Concepts and approaches of sustainable development; Human resource development.	8
II	Resource Conservation. Principles of resource conservation; Resource management; Conservation and planning of resources: land, water, forest, and minerals (with special reference to India).	8
III	Indian Perspective. Resource utilisation and development; Impact of resource utilisation on environment; Environmental planning and policy in India; Resource potentials and resource regions; Agriculture regions; Population resource regions.	8
IV	Case Study of India. Resource planning units and development strategies: Damodar Valley and National Capital Region(NCR).	8
Suggested Readings: <ol style="list-style-type: none">Adam, M.G.(2000a): Kumasi Natural Resources Management, Final Technical Report, Natural Resources Institute, University of Greenwich-UKAlam, S. Manzoor and Kidwai, Atiya Habib (eds.) (1987): Regional Imperatives in Utilization and Management of Resources: India and the U.S.S.R. Concept Publishing. Company, New Delhi.Burton, I. and Kates, R.W. (1978): Readings in Resource Management and Conservation. McGraw Hills, New York.Freeman, T.W. (1972): Geography and Planning. Freeman and Company, New York.Gupta, P., and Sdasyuk, G. (1968): Economic Regionalization of India: Problems and Prospects. Census of India, New DelhiMitchell, B. (1979): Geography and Resource Analysis. Longman, London		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(F) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

7. Mitchell, B. (1997): Geography and Environmental Management. Longman, Harlow and London.
8. Mitra, A. (1999): Resource Studies; Shridhar Publications., Calcutta.
9. Preston, P. W. (1996): Development Theory: An Introduction. Blackwell Publications, Oxford.
10. Rao, P. K. (2001): Sustainable Development: Economics and Policy. Blackwell Publications., Oxford.
11. Rees, J. (1985): Natural Resources: Allocation, Economics and Policy. Methuen and Company Ltd., London.
12. Simon, D. (ed.) (2005): Fifty Key Thinkers on Development. Routledge, London.
13. Singh, M. B. et. al. (eds.) (2005): Sustainable Management of Natural Resources. Tara Book Agency, Varanasi.
14. Sundaram, K.V., (1983): Geography of Under Development. Concept Publishing Company, New Delhi.
15. Trivedi, P.R., Singh, U.K., Sudershan, K., Tuteja, T.K. (1994): International Encyclopedia of Ecology and Environment. Vol. 5: National Resource Conservation, Indian Institute of Ecology and Environment, New Delhi.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 203C	Course Title: Advanced Cartography	
Course outcomes: <ul style="list-style-type: none">• To learn the basic concept of Measuring the Earth• Students will learn different techniques of Survey• Understand and prepare different kinds of Map Projections.• Recognize basic themes of map making.• Science of Cartography		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Measuring the Earth. Properties of sphere; The Earth: its shape and size; Coordinate reference system on the sphere; Celestial coordinates: Equatorial system, Horizon system; Geographical co-ordinates and grid system; UTM grids.	8
II	Survey. Curvature of the earth and its effect on survey and levelling; Geographical Positioning System (GPS); Trigonometrical surveying; Calculation of height by Levelling.	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

III	Map Projections. Choice and classification of map projections; Derivations of formulae for construction of: Conical equal area with One and Two standard parallels (Lambert's and Alberø); International Map projection.	8
IV	Science of Cartography. History and development of Cartography; Science of cartography and communication theory; Sources of cartographic data; Cartographic techniques and methods in preparation of diagrams and maps; Thematic mapping; soil and vegetation maps, Environmental maps and Population maps (rural and urban); Atlas Mapping; Pre- and - post census mapping; Automation and computer cartography.	8

Suggested Readings:

1. Aylmer Johnson. 2004 Plane and Geodetic Surveying. CRS Press
2. Dorling, D. and Fairborn, D. (1997): Mapping. Ways of Representing the World. Longman, Harlow.
3. Fraser Taylor, D.R. (1980): The Computer in Contemporary Cartography. John Wiley and Sons, New York.
4. Fraser Taylor, D.R. (ed.) (1983): Graphic Communication and Design in Contemporary Cartography. John Wiley and Sons, New York.
5. Griffith, D. A. and Amehein (1997): Statistical Analysis for Geographers. Prentice Hall, Englewood Cliffs, New Jersey.
6. Gupta K.K and Tyagi, V.C., 1992: Working with Map, Survey of India, DST, New Delhi
7. Kanetkar, T.P. and Kulkarni, S.V. (1967): Surveying and Levelling, Part II, A.V.G. Prakashan, Poona.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM203D	Course Title: Gender Geography	
<p>Course outcomes:</p> <ul style="list-style-type: none"> • 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. 		
Credit:4	Course Type - Core Course	



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

Max. Marks: 100(30+70)		Total No. of Lectures-60
Unit	Topics	No. of Lectures Total=60
I	Conceptualizing Gender within Geography: Social construction of the feminine and masculine, Development of and theoretical approaches to the study of Gender in geography; Analysing gender and space in India.	8
II	Examining Gender in relation to space: Division of space in to private and public spaces, Gendered environments, gendered access to and experience of space; Spatial variations in the construction of gender.	8
III	Spatial Patterns and Bases of Gender inequalities: Patriarchy, son preference, social value; new reproductive technology, skewed sex ratios, gender disparities in social wellbeing, gendered patterns of crime and violence.	8
IV	Gender and “other spaces”: Representations of gender in media space, the commodification of feminine and masculine- reassertion of indigenous gender identities. Gender, Power and Policy: Concept of gender relations, strategic and practical needs; Gender and Development, Policy analysis from a gendered perspective.	8
Suggested Readings: <ol style="list-style-type: none">1. Agarwal B. (1994) <i>'A Field of One's Own: Gender and Land Rights in South Asia'</i>, Cambridge University Press. Blackwell Publishers, Oxford.2. Bano S. (2014) <i>'Women and Development in Urban India: A Study in Gender Geography'</i> Lambert Academic Publication, Germany3. Boserup, E. (1970) <i>Women's role in Economic Development</i>. St. Martin's Press, New York.4. Braidotti R. and Hausler, S. (1994) <i>Women, the Environment and Sustainable Development</i>. Zed Books, London.5. Butler, J. (1990) <i>Gender Trouble: Feminism and the Subversion of Identity</i>. Routledge, London.6. Engels, F. (1942) <i>The origins of the family, private property and the state</i>. International Publishers, New York.7. Hanson, S. and G. Pratt. (1995) <i>Gender, Work and Space</i>. Routledge, New York.8. hooks, b. (1984) <i>Feminist Theory: From Margin to Centre</i>. South End Press, Boston..9. Kabeer, N. (1994) <i>Reversed realities: Gender Hierarchies in Development Thought</i>. Landon and New York: Verso Press; Kali Press for Women, New Delhi.10. Karve I. (1968), <i>Kinship Organization in India</i>, Asia Publishing House, Bombay.11. Kolenda P. (1987), <i>Regional Differences in Indian Family Structure</i>, Rawat Publications, Jaipur.12. Krishnaraj M, R Sudarshan and A. Shariff (1998) <i>Gender, Population and Development</i>13. Loyd, B. (1975) <i>Women's Place, man's place</i>. <i>Landscape</i>, vol. 20: 10-13.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

14. Lund R, 1993, Gender and Place: Towards a Geography Sensitive to Gender, Place and Social Change-Vols I and II, Department of Geography, University of Trondheim, Norway.
15. Mackenzie, S. (1989a) Women in the city. In R. Peet and N. Thrift (ed.), *New Models in Geography*. vol. 2, Unwin Hyman, London, 109-26.
16. March C, I. Smyth and M. Mukhopadyay (1999) *A Guide to Gender Analysis* Frameworks Oxfam, Great Britain.
17. Massey D. (1994) *Space, Place and Gender*, University of Minnesota Press, Minneapolis.
18. Mazumdar V and N Krishnaji (eds) (2001) *Enduring Conundrum: India's Sex Ratio & Centre for Women & Development Studies*, Rainbow Publishers, Delhi.
19. McDowell L, 1999, *Gender, Identity and Place: Understanding Feminist Geographies*,
20. McDowell, L. and Sharp, J., eds. 1999. *A Feminist Glossary of Human Geography*. London, Arnold
21. Moser, C.O.N.(1993) *Gender Planning and Development*. Routledge, New York.Oxford University Press New Delhi.
22. Raju, S. and Bagchi, D. (ed.) (1994) *Women and Work in South Asia: Regional Patterns and Perspectives*, Routledge Publication, London and New York.
23. Rose, G. (1993) *Feminism and Geography: The Limits of Geographical Knowledge*. University of Minnesota Press, Minneapolis. Sage Publications, New Delhi, Thousand Oaks, London.
24. Shiva, Vandana, (1988) *Staying Alive: Women, Ecology and Development*. Zed Books, London.
25. Women and Geography Study Group (1984) *Geography and Gender: An Introduction to Feminist Geography*. Hutchinson, London.
26. Women and Geography Study Group (1997) *Feminist Geographies: Explorations in Diversity and Difference*. Longman, Harlow.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 204	Course Title: Practical: Statistical Methods and Data Processing	
Course outcomes: <ul style="list-style-type: none">• 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.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

Unit	Topics	No. of Lectures Total=60
I	Statistical Methods. The normal frequency distribution curve and its characteristics; Curve fitting; Sampling procedures: random, stratified random, systematic and cluster; Test of significance: Chi-square test, Student's t-test, F-test, Analysis of variance; Analysis of time series.	16
II	Data Processing. Collection of data: methods, sources and types; Classification and tabulation of data; Computer languages; Excel and SPSS	16
Suggested Readings: 7. Bhagwathi, V. and Pillai, R.S.N. (2003): Practical Statistics, Sultan Chand and Company, New Delhi 8. Ebdon, D. (1977): Statistics in Geography: A Practical Approach, Blackwell Publishers Inc., Massachusetts 9. Gregory, S. (1973): Statistical Methods and the Geographer, Longman, London. 10. Gupta, S.P. (1998): Advanced Practical Statistics, Sultan Chand and Company, New Delhi 11. Mahmood, A. (1986): Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi 12. Zamir, A. (2002): Statistical Geography: Methods and Applications, Rawat Publications, Jaipur.		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">• Test with multiple choice questions/short and long answer questions.		

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 205A	Course Title: Practical: Population Geography	
Course outcomes: <ul style="list-style-type: none">• The students will be able to understand and analyse the role of population and migration in regional economic analysis.• The students will be able to appreciate and analyse the implications of regional economic analysis in regional studies.• The students will be able to comprehend and analyse the significance of decision analysis and spatial statistics.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Unit	Topics	No. of Lectures Total=60
I	Population growth of India and the world using arithmetic and semi-log scales; Population distribution map of India using dot and sphere/circle, cubes, combined; Density map of India by Choropleth; Age-sex structure of rural-urban population of India by Superimposed pyramid; Literacy Level by Compound pyramid; Occupational structure of India by Divided rectangle; Fertility, mortality and natural growth of population by Polygraph.	16
II	Population potential map by Isoleths; Scatter diagram; Life table calculation; Computation of HDI for India; Migration by Flow diagram; Centographic analysis of population growth; Measurement of population concentration by cumulative curve.	16
1. Suggested Readings: <ol style="list-style-type: none">Bhende, A. A. and Kanetkar T. (2003): Principles of Population Studies, Himalaya Publishing House, Mumbai.Bose, A. (ed.) (2001): Population in India & Development, 1947-2000. Vikas Publications, New Delhi.Champion, T. (ed.) (1993): Population Matters. Paul Chapman, London.Chandna, R. C. (2006): Geography of Population. Kalyani Publishers., New Delhi.Clark, J. I. (1972): Population Geography. Pergamon Press, Oxford.Ehrlich, P.R. and Ehrlich, A.H. (1996): Ecoscience: Population, Resources, Environment. 6th ed. W.H. Freeman and Company, San Francisco.Garnier, B.J. (1993): Geography of Population. 3rd edition. Longman, London.Jones, H. R. (2000): Population Geography. 3rd edition. Paul Chapman, London.Pathak, L. P. (ed.) (1998): Population Studies. Rawat Publications., Jaipur and New Delhi.Peters, G. L. and Larkin, R.P. (1983): Population Geography. Problems, Concepts and Prospects. Kendall/Hunt, Dubuque, IA.Poston, D. L. and Michael, M. (2005): Handbook of Population, Springer Heidelberg, Germany.Ross, John A. (ed.) (1982): International Encyclopaedia of Population. Free Press, New York.Singh, K.N. and Singh, D.N. (eds.) (1992): Population Growth, Environment and Development. EDSC, Varanasi.Srinivasan, K, and Vlassoff, M. (2001): Population Development Nexus in India: Challenges for the New Millennium. Tata McGraw Hill, New Delhi.Trewartha, G.T. (1985): A Geography of Population. World Patterns. John Wiley and Sons, New York.Woods, R. (1979): Population Analysis in Geography. Longman, London.		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">Test with multiple choice questions/short and long answer questions		

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
-----------------------------	---------	--------------



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Subject- Geography		
Course Code: GRM 205B		Course Title: Practical: Resource Planning
Course outcomes: <ul style="list-style-type: none">To provide a contemporary and forward-looking on the theory and practice of Resource Planning.To train the students to develop the basic understanding of how Resource Planning enriches a country in achieving a multidimensional growth.To aim at preparing the students technological competitive and make them ready to self-upgrade with the higher technical skills.		
Credit:4		Course Type - Core Course
Max. Marks: 100(30+70)		Total No. of Lectures-60
Unit	Topics	No. of Lectures Total=60
I	Population Resource region ó a case study; Computation of human development Index: a case study;	8
II	Demographic transition model: a case study;	8
III	Agricultural productivity; Agricultural efficiency and Delineation of crop combination regions:	8
IV	National Capital Region:A resource appraisal planning unit; Relationship between energy, human resource and economic development.	8
Suggested Readings: <ol style="list-style-type: none">Adam, M.G.(2000a): Kumasi Natural Resources Management, Final Technical Report, Natural Resources Institute, University of Greenwich-UKAlam, S. Manzoor and Kidwai, Atiya Habeeb (eds.) (1987): Regional Imperatives in Utilization and Management of Resources: India and the U.S.S.R. Concept Publishing. Company, New Delhi.Burton, I. and Kates, R.W. (1978): Readings in Resource Management and Conservation. McGraw Hills, New York.Freeman, T.W. (1972): Geography and Planning. Freeman and Company, New York.Gupta, P., and Sdasyuk, G. (1968): Economic Regionalization of India: Problems and Prospects. Census of India, New DelhiMitchell, B. (1979): Geography and Resource Analysis. Longman, LondonMitchell, B. (1997): Geography and Environmental Management. Longman, Harlow and London.Mitra, A. (1999): Resource Studies; Shridhar Publications., Calcutta.Preston, P. W. (1996): Development Theory: An Introduction. Blackwell Publications, Oxford.Rao, P. K. (2001): Sustainable Development: Economics and Policy. Blackwell Publications., Oxford.Rees, J. (1985): Natural Resources: Allocation, Economics and Policy.Methuen and Company Ltd., London.		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">Test with multiple choice questions/short and long answer questions		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 205C	Course Title: Practical: Advanced Cartography	
Course outcomes: <ul style="list-style-type: none">• Understand and prepare different kinds of maps.• Recognize basic themes of map making.• Development of observation skills.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Survey and Map Projections. Calculation of height by levelling and Theodolite; Contour planning; Construction of map projections (mathematical method):	8
II	Conical equal area with one and two standard parallels (Lambert's and Albers), International and Gnomonic Equatorial.	8
III	Cartographic Methods. Computer aided cartography; Designing and preparation of a map on various scales;.	8
IV	Representation of statistical data by various cartographic methods; Preparation of one general purpose map and one special purpose map	8
Suggested Readings: <ol style="list-style-type: none">8. Aylmer Johnson. 2004 Plane and Geodetic Surveying. CRS Press9. Dorling, D. and Fairborn, D. (1997): Mapping. Ways of Representing the World. Longman, Harlow.10. Fraser Taylor, D.R. (1980): The Computer in Contemporary Cartography. John Wiley and Sons, New York.11. Fraser Taylor, D.R. (ed.) (1983): Graphic Communication and Design in Contemporary Cartography. John Wiley and Sons, New York.12. Griffith, D. A. and Amehin (1997): Statistical Analysis for Geographers. Prentice Hall, Englewood Cliffs, New Jersey.13. Gupta K.K and Tyagi, V.C., 1992: Working with Map, Survey of India, DST, New Delhi		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(F) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

14. Kanetkar, T.P. and Kulkarni, S.V. (1967): Surveying and Levelling, Part II, A.V.G. Prakashan, Poona.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM 206	Course Title: Fundamental of Remote Sensing & GIS	
Course outcomes: <ul style="list-style-type: none">• To develop an understanding of remote sensing, GIS and GPS technologies and their potential applications• They can know about concepts, components, development, platforms and types of remote sensing• They can know about concept and components of Geographical Information System.• They understand the Global Positioning System.		
Credit:4	Course Type ó Core Course (Theory)	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Fundamentals of Remote Sensing: Definition and scope; Electromagnetic Radiation: Characteristics, interaction with matter, Remote sensing regions and bands, Spectral signature; Types of Remote sensing. Aerial Photographs: definition, types and uses.	8
II	Platforms and Sensors: Remote sensing sensors: Passive and Active; Platforms; Types of Satellite; Remote sensing data products; Satellite image interpretation Remote Sensing in India.	8
III	Definition and scope of GIS; Components of GIS; Recent trends and application of GIS; Mobile GIS; Digital representation of geographic data; Data model: raster and vector models; Spatial Analysis: Spatial overlay Operations; 3D models; TIN, Digital Elevation Model (DEM), DTM.	8
IV	GPS: Introduction to Global Positioning System: GPS Receivers, GPS Satellite Constellations, GPS Segments: Space, Control, User, Antennas, Accuracy of GPS measurements; Types of GPS;	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Application of GPS.	
Suggested Readings: <ol style="list-style-type: none">1. Aylmer Johnson. 2004 Plane and Geodetic Surveying. CRS Press2. Bhatta, B. (2008) Remote Sensing and GIS, Oxford University Press, New Delhi3. Bonham, Carter G.F. (1995): Information Systems for Geoscientists ó Modelling with GIS. Pergamon, Oxford.4. Burrough, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford.5. Campbell. J. B.(2002): Introduction to Remote Sensing. 5th edition. Taylor and Francis, London.6. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi.7. Curran. P. J. (1985): Principles of Remote Sensing, Longman, London8. Dorling, D. and Fairborn, D. (1997): Mapping. Ways of Representing the World. Longman, Harlow.9. Fraser Taylor, D.R. (1980): The Computer in Contemporary Cartography. John Wiley and Sons, New York.10. Fraser Taylor, D.R. (ed.) (1983): Graphic Communication and Design in Contemporary Cartography. John Wiley and Sons, New York.11. Griffith, D. A. and Amehein (1997): Statistical Analysis for Geographers. Prentice Hall, Englewood Cliffs, New Jersey.12. Gupta K.K and Tyagi, V.C., 1992: Working with Map, Survey of India, DST, New Delhi13. Kanetkar, T.P. and Kulkarni, S.V. (1967): Surveying and Levelling, Part II, A.V.G. Prakashan, Poona.14. Lillesand T.M. Kiefer R. W. and Chipman J.W , 2004: Remote Sensing and Image Interpretation, Wiley15. Nag P., and Kundra, M. 1998: Digital Remote Sensing, Concept, New Delhi	
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">• Test with multiple choice questions/short and long answer questions.	

Programme/Class: M.A./M.Sc.	Year: I	Semester: II
Subject- Geography		
Course Code: GRM VNC 201	Course Title: Land Surveying and GPS Practical	
Course outcomes: <ul style="list-style-type: none">• Learn the usages of survey instruments.• Brings direct interaction of different types of surveying instruments like Dumpy level and Theodolite with environment.• Develop an idea about GPS Surveying and Mapping using Hand held GPS• Develop an idea about different types of thematic mapping techniques.		
Credit:00	Course Type –Value Added Course	



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Max. Marks: 100(30+70)		Total No. of Lectures-60
Unit	Topics	No. of Lectures Total=60
I	Theory and Principles: Surveying: Definition, Classification, objectives, Principles, Plane Table and Geodetic surveys, Triangulation: Principles, Base line measurement, extension of Base	8
II	Field Work: Levelling by Dumpy level; Resection: (two point and three point problem) by plane table.	8
III	GPS Theory: Overview of Global Positioning System : GPS Receivers, Satellite Constellations, Segments, Antennas, Signal Codes and errors; Accuracy of GPS measurements; Application of GPS	8
IV	Field Work: GPS Surveying and Mapping: Field exercise using Hand held GPS	8
Suggested Readings: 15. Aylmer Johnson. 2004 Plane and Geodetic Surveying. CRS Press 16. Dorling, D. and Fairborn, D. (1997): Mapping. Ways of Representing the World. Longman, Harlow. 17. Fraser Taylor, D.R. (1980): The Computer in Contemporary Cartography. John Wiley and Sons, New York. 18. Fraser Taylor, D.R. (ed.) (1983): Graphic Communication and Design in Contemporary Cartography. John Wiley and Sons, New York. 19. Griffith, D. A. and Amehein (1997): Statistical Analysis for Geographers. Prentice Hall, Englewood Cliffs, New Jersey. 20. Gupta K.K and Tyagi, V.C., 1992: Working with Map, Survey of India, DST, New Delhi 21. Kanetkar, T.P. and Kulkarni, S.V. (1967): Surveying and Levelling, Part II, A.V.G. Prakashan, Poona.		
Suggested Continuous Evaluation Methods: • Test with multiple choice questions/short and long answer questions.		

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM 301	Course Title: Emerging Geographical Thought	



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

Course outcomes: <ul style="list-style-type: none">• Gain knowledge about development of geographical thought.• Develop an idea about evolution of geographical thinking and disciplinary trends in Germany, France, Britain, and United States of America.• Build an idea about between environmental determinism and possibilism, systematic and regional.• Know about the trends of geographical thoughts.		
Credit:4		Course Type - Core Course
Max. Marks: 100(30+70)		Total No. of Lectures-60
Unit	Topics	No. of Lectures Total=60
I	Origin and development of philosophy of Geography: Scientific Character of Geography in the Classical Greek Period. Contributions of Thales, Anaximander, Hecataeus, Herodotus, Eratosthenes, Strabo and Ptolemy, Contribution of Arabs: Al Khwarizmi, Al Masudi, Al Biruni and Ibn Khaldun	8
II	Man-environment interaction: New environmentalism; Development of Dualism in Geography, geography as chorological science, as science of relationship and science of distribution. Concepts: space, place, environment, time, and spatial organisation; Region and regional typology; Culture and cultural landscape.	8
III	Philosophy and geography: Contributions of German, French, Arab and American Schools of thought; Humanistic and phenomenological geography: contributions of Yi-Fu Tuan	8
IV	Quantitative and Qualitative paradigms; Quantitative revolution and challenges Behavioural approach in Geography: perception and cognition, mental maps; Marxism; Postmodernism and feminist Geography	8
Suggested Readings: <ol style="list-style-type: none">1. Adams, P., Steven, H. and Karel, T. (eds.) (2001): Texture of Place. Exploring Humanistic Geographies. University of Minnesota Press, Minneapolis.2. Anderson, K., Domosh, M., Pile, S. and Thrift, N. (eds.) (2003): Handbook of Cultural Geography. Sage Publications, London.3. Barnes, T. and Gregory, D. (eds.) (1997): Readings in Human Geography: The Poetics and Politics of Inquiry. Arnold, London.4. Bunk-e, E. V. (2004): Geography and the Art of Life. John Hopkins University Press, Baltimore.5. Buttimer, A. (1971): Society and Milieu in the French Geographic Tradition. Rand McNally, Chicago.6. Daniels, P., Bradshaw, M., Shaw, D. and Sidaway, J. (2000): An Introduction to Human Geography. Issues for the 21st Century. Prentice Hall, London.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

7. Dear, M. J. and Flusty, S. (2002): The Spaces of Postmodernity: Readings in Human Geography. Blackwell Publishers, Oxford.
8. Dikshit, R. D. (2004): Geographical Thought. A Critical History of Ideas. Prentice-Hall of India, New Delhi. (in English and Hindi).
9. Doel, M. (1999): Poststructuralist Geographies. The Diabolical Art of Spatial Science. Edinburgh University Press, Edinburgh
10. Gaile, G. and Wilmott, C. (eds.) (2003): Geography in America at the Dawn of the 21st Century. Oxford University Press, Oxford and New York.
11. Harvey, D. (1969): Explanation in Geography. Arnold, London.
12. Harvey, M. E. and Holly, P.B. (2002): Themes in Geographic Thought. Rawat Publications., Jaipur and New Delhi.
13. Hubbard, P., Kitchin, R., Bartley, B. and Fuller, D. (2002): Thinking Geographically: Space, Theory and Contemporary Human Geography. Continuum, London.
14. Hussain, M. (1999) Human geography, Second Edition, Rawat Publication, Jaipur
15. Johnston, R, Gregory D, Pratt G, Watts M. and Whatmore S. (2003): The Dictionary of Human Geography. Blackwell Publishers, Oxford. 5th edition.
16. Johnston, R.J. (1985): The Future of Geography, Methuen and Company Ltd., New York. (2003 edition published).
17. Johnston, R.J. and Sidaway, J.D. (2004): Geography and Geographers. 6th edition, Edward Arnold, London.
18. Kapur, A. (ed.) (2001): Indian Geography ó Voice of Concern. Concept Publishing. Company, New Delhi.
19. Martin, G. (2005): All Possible Worlds. A History of Geographical Ideas. 4th edition, Oxford University Press, New York.
20. Mathews, J. A. and Herbert, D. T. (eds.) (2004): Unifying Geography. Common Heritage, Shared Future. Routledge, London.
21. Peet, R. (1998): Modern Geographical Thought. Blackwell Publishers Inc, Massachusetts.
22. Sack, R. D. (ed.) (2002): Progress. Geographical Essays. John Hopkins University Press, Baltimore.
23. Sauer, C. O. (1963): Land and Life. University of California Press, Berkeley.
24. Soja, E. (1989): Post-modern Geographies. Verso Press, London. Reprinted 1997: Rawat Publications, Jaipur and New Delhi.
25. Taylor, G. (ed.) (1953): Geography in the Twentieth Century. Methuen and Company Ltd. and Company, London.
26. Tuan, Yi-Fu (1977): Space and Place. The Perspective of Experience. Edward Arnold, London.
27. Singh, Ravi S (ed.) 2009. Indian Geography: Perspectives, Concerns and Issues. Jaipur/New Delhi: Rawat Publications
32. Singh, Ravi S (ed.) 2009. Indian Geography in the 21st Century: The Young Geographers Agenda. New Castle upon Tyne, UK: Cambridge Scholars Publishing

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Course Code: GRM 302		Course Title: GIS and Its Application
Course outcomes: <ul style="list-style-type: none">• They can know about concept and components of Geographical Information System.• They understand the Global Positioning System.• They understand the GIS Data Structures.• Develop an idea about GIS Data Analysis.• Know about application of GIS.		
Credit:4		Course Type - Core Course
Max. Marks: 100(30+70)		Total No. of Lectures-60
Unit	Topics	No. of Lectures Total=60
I	Definition and Evolution of GIS; Components of GIS; Issues in GIS: user, technology, data and application; Recent trends in GIS; Mobile GIS	8
II	Geographical data: types and characteristics; Spherical and plane coordinate systems in GIS; Implications of earth's shape and datum in geo-referencing,	8
III	Digital representation of geographic data: Data structure, spatial data model, raster and vector models; GIS data standards: concepts and components; Digital Elevation Model (DEM): characteristics and applications.	8
IV	Integration of Remote sensing and GIS; GIS project design and planning methodologies; GIS data base management systems; GIS information products; Applications of GIS.	8
Suggested Readings: <ol style="list-style-type: none">1. Bonham, Carter G.F. (1995): Information Systems for Geoscientists ó Modelling with GIS. Pergamon, Oxford.2. Burrough, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford.3. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi.4. Chauniyal, D. D. (2004): Remote Sensing and Geographic Information Systems. (in Hindi). Sharda Pustak Bhawan, Allahabad.5. Demers, M. N. (2000): Fundamentals of Geographic Information Systems. John Wiley and Sons, Singapore.6. ESRI (1993): Understanding GIS. Redlands, USA7. Fraser Taylor, D.R. (1991): Geographic Information Systems. Pergamon Press, Oxford.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

8. George, J. (2003): Fundamentals of Remote Sensing. Universities Press Private Ltd, Hyderabad.
9. Girard, M. C. and Girard, C. M. (2003): Processing of Remote Sensing Data. Oxford and IBH, New Delhi.
10. Glen, E. M. and Harold, C. S. (1993): GIS Data Conversion Handbook. Fort Collins, Colorado, GIS Word Inc.
11. Goodchild, M.F.; Park, B. O. and Steyaert, L. T. (eds.) (1993): Environmental Modelling with GIS. Oxford University Press, Oxford.
12. Guptill, S.C., and Morrison, J.L. (1995): Elements of Spatial Data Quality. Elsevier/ Pergamon, Oxford.
13. Heywood, I. (2003): An Introduction to Geographical Information Systems. 2nd edition, Pearson Publishing Company, Singapore.
14. Korte, G. M. (2002): The GIS Book. On Word Press: Thomson Learning, New York and Singapore.
15. Lo, C.P. and Yeung, A. K. W. (2002): Concepts and Techniques of Geographic Information Systems. Prentice Hall of India, New Delhi.
16. Longley, P. and Batty, M. (eds.) (1996): Spatial Analysis: Modelling in a GIS Environment. GeoInformation International, Cambridge.
17. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley and Sons, New York.
18. Maguire, D. J.; Michael F. G. and David W. R. (1999): Geographical Information Systems: Principles and Application. Geo Information International, Vol.2, Longman Publication., New York.
19. Martin, D. (1996): Geographic Information Systems: Socioeconomic Implications. Routledge, London.
20. Michael F. G. and Karan K. K. (ed.) (1990): Introduction to GIS. NCGIA, Santa Barbara, California.
21. Ralston, B. A. (2002): Developing GIS Solutions with Map Objects and Visual Basic. OnWord Press: Thompson Learning, New York and Singapore.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM 303A	Course Title: Geography of Rural Settlements	
Course outcomes: <ul style="list-style-type: none">• They can know about concept, basic elements, and measures of level of rural• Settlement development.• They understand the paradigms of rural development.• They understand the area based approach to rural development.• Develop an idea about target group approach to rural development.• Gain knowledge about rural governance.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Bases, Evolution and Models. Nature, scope, definition and significance of Rural Settlement Geography; Human settlement as a system; Concepts and characteristics of rural settlements; Theories and models of settlement diffusion: Eric Bylund (Sweden), Gunnar Olsson (Sweden), David Grossman (Nigeria), John Hudson (USA), Contributions of Banaras School.	8
II	Spatiality and Histogenesis. Evolution and growth of rural settlements and their causes: Old and New Worlds; Siting and location of rural settlements; Distribution, spacing, and nature of dispersion; Types and patterns; Morphology of village: examples from Germany, Japan, Israel, African countries; Rural-service centres: nature, hierarchy, service area, and interaction.	8
III	Rural Dwellings. Traditional and folk rural house types: origin, evolution and characteristics; Typology based on building materials, plans, uses and architectural style; House types and their characteristics in different geographical environments: Monsoon Asia and Arid zone.	8
IV	Indian Village. Evolution and multiplicity; Regional morphological characteristics; Morphological interaction models: religio-ritual, secular-economic, and sacred-economic interlocking system; Transformation and planning of Indian village: models and plans.	8
Suggested Readings: <ol style="list-style-type: none">1. Daniel, P. (2002): Geography of Settlement. Rawat Publications., Jaipur and New Delhi.2. Eidt, R. C., Singh, K. N. and Singh, Rana, P.B., (eds.) (1977): Man, Culture and Settlement. Kalyani Publishers., New Delhi.3. Ghosh, S. (1999): A Geography of Settlements. Orient Longman, Kolkata.4. Hudson, F. S. (1976): A Geography of Settlements. MacDonald and Evans, New York.5. Mitra, A. (1960): Report on House Types and Village Settlement Patterns in India. Publication Division, Govt. of India, New Delhi.6. Mosley, M.J. (2005): Rural Development: Principles and Practice. Sage Publication, London.7. Oliver, P. (1987): Dwellings. The House across the World. University of Texas Press, Austin.8. Rapoport, A. (1969): House, Form and Culture. Prentice-Hall, Inc., Englewood Cliffs, NJ.9. Rykwert, J. (ed.) (2004): Settlements. University of Pennsylvania Press, University Park, USA.10. Singh, R.L. (eds.) (1973): Rural Settlements in Monsoon Asia, National Geographical Society of India, Varanasi.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

11. Singh, R.Y. (2005): Geography of Settlements. Rawat Publications, Jaipur and New Delhi.
12. Singh, S.B. (1977): Rural Settlement Geography. U.B.B.P., Publications, Gorakhpur.
13. Tiwari, R. C. (2000): Settlement Geography; in Hindi. PrayagPustak Bhawan Allahabad.
14. Wanmali, S. (1983): Service Centres in Rural India. B.R. Publications Corporation, New Delhi.
15. Wood, M. (2005): Rural Geography: Processes, Responses and Experiences of Rural Restructuring. Sage Publication, London.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM303 B	Course Title: Regional Planning	
Course outcomes: <ul style="list-style-type: none">• Gain knowledge about definition of region, evolution and types of regional planning.• Develop an idea about choice of a region for planning.• Build an idea about theories and models for regional planning.• Know about measuring development indicators.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Fundamental concept: Concept, nature and scope of Regional Planning; Different approaches to regional planning; Planning regions: concept and types; Planning regions of India; Regional policies in India, Regional disparities in India.	8
II	Approaches. Regional planning and national development, Approaches to integrated regional planning at different levels: local, regional and national; Multi-level planning in India: State, District and Block level planning; Planning for tribal, agricultural, industrial and urban (metropolitan) regions.	8
III	Theories and Models: Theories and Models of Regional Development: Hirschman's model, Perroux's Growth Pole, Rostow's Model, Gunnar Myrdal Model.	8
IV	Planning and Region: Five Years Plan: Command area development, planning for backward area, desert drought prone, hill and tribal area development, Decentralized Planning, Watershed management, regional economic complexes, regional economic imbalances and inequalities in India, SEZs in Regional Development.	8



Suggested Readings:

1. Chandna, R. C. (2000): Regional Planning: A Comprehensive Text. Kalyani Publishers., New Delhi.
2. Chaudhuri, J. R. (2001): An Introduction to Development and Regional Planning with special reference to India. Orient Longman, Hyderabad.
3. Cowen, M.P. and Shenton, R.W. (1996): Doctrines of Development. Routledge, London.
4. Doyle, T. and McEachern, D. (1998): Environment and Politics. Routledge, London.
5. Friedmann, J. (1992): Empowerment: The Politics of Alternative Development. Blackwell, Cambridge MA and Oxford.
6. Friedmann, J. and Alonso, W. (ed.) (1973): Regional Development and Planning. The MIT Press, Mass.
7. Hettne, B.; Inotai, A. and Sunkel, O. (eds.) (1999 ó 2000): Studies in the New Regionalism. Vol. I-V. Macmillan Press, London.
8. Isard, W. (1960): Methods of Regional Analysis. MIT Press, Cambridge, MA.
9. Kuklinski, A. R. (1972): Growth Poles and Growth Centres in Regional Planning. Mouton and Co., Paris.
10. Kuklinski, A.R. (ed.) (1975): Regional Development and Planning: International Perspective, Sijthoff-Leydor.
11. Leys, C. (1996): The Rise and Fall of Development Theory. Indian University Press, Bloomington, and James Curry, Oxford.
12. Mahapatra, A.C. and Pathak, C. R. (eds.) (2003): Economic liberalisation and Regional Disparities in India. Special Focus on the North Eastern Region. Star Publishing House, Shillong.
13. Kane, M. and William M.K.T.(2007): Concept Mapping for Planning and Evaluation, Sage Publications, London.
14. Misra, R. P. (ed.) (1992): Regional Planning: Concepts, Techniques, Policies and Case Studies. 2nd edition. Concept Publishing Company., New Delhi.
15. Misra, R.P. and Natraj, V.K. (1978): Regional Planning and National Development. Vikas, New Delhi.
16. Misra, R.P., Sundaram, K. V. Pradasa Rao, V. L. S. (1976): Regional Development Planning in India. Vikas Publishers, New Delhi.
17. Moseley, M.J., (1974): Growth Centres in Spatial Planning. Pergamon Press, Oxford.
18. Närman, A. and Karunanayake, K. (eds.) (2002): Towards a New Regional and Local Development Research Agenda. Dept. of Geography, Göteborg University (Sweden), series B, No100 and Centre for Development Studies, University of Kelaniya (Sri Lanka), No. 1.
19. Norgaard, R. B. (1994): Development Betrayed. The End of Progress and a Coevolutionary Revisioning of the Future. Routledge, London.
20. Pathak, C. R. (2003): Spatial Structure and Processes of Development in India. Regional Science Association., Kolkata.
21. Sanyal, B. M. (2001): Decentralised Planning: Themes and Issues. Concept Publishing. Company, New Delhi.
22. Sharma, P. V., Rao, V. L., and Pathak, C. R. (eds.) (2000): Sustainable Regional Development (with special reference to Andhra Pradesh). Regional Science. Association, Kolkata and School of Economics, Andhra University, Vishakapatnam.
23. Sen, A. (1999): Development as Freedom. Oxford University Press, Oxford.
24. Sen, A. and Dreze, J. (eds.) (1996): Indian Development: Selected Regional Perspectives. Oxford University Press, Oxford.
25. Smith, D. and Närman, A. (eds.) (1999): Development Theory and Practice: Current Perspectives on Development and Development Co-operation. Longman, London.
26. Stöhr, W. B. and Taylor, D.F.R. (eds.) (1981): Development from Above and Below? The Dialectics of Regional Planning in Developing Countries. John Wiley and Sons, Chichester.
27. Sundaram, K. V. (1997): Decentralized Multilevel Planning: Principles and Practice (Asian and



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

- African Experiences). Concept Publishing Company, New Delhi.
28. Sundaram, K. V. (2004): The Trodden Path: Essays on Regional and Micro Level Planning. Anaanya Publications., New Delhi.
 29. Toye, J. (1987): Dilemmas of Development. Reflections on the Counterrevolution in Development Theory and Policy. Basil Blackwell, Oxford.
 30. Verhelst, T. (1990): No Life Without Roots ó Culture and Development. Zed Books, London.
 31. World Bank (2000): Attacking Poverty. World Development Report 2000-01. The World Bank and Oxford University Press, New York; see website: www.worldbank.org/poverty/wdrpoverty/

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM303C	Course Title: Aerial Photo Interpretation	
Course outcomes: <ul style="list-style-type: none"> • To develop understanding about basic concepts of Aerial Photo geometry and measurement of aerial photograph. • To get acquainted with image interpretation and information extraction • Introduce students to the principles, equipment, and techniques used for Aerial Photo Interpretation • interpret aerial photographs and digital imagery • obtain reliable measurements and maps from aerial photographs and digital imagery, • practically implement aerial photointerpretation in various disciplines. 		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Relief displacement; Stereoscopic parallax; Parallax equation and its approximation; Digital photogrammetry and orthophotos.	8
II	Qualitative information, philosophy and sequence in air photo interpretation; Elements of air photo pattern : landforms, drainage, erosion details, gray-tones, vegetation; Elements of image interpretation.	8
III	Interpretation keys and their types; Aerial mosaics; Multi-spectral aerial photographs; Ground control for mapping from aerial photos; Rectification methods in aerial photos.	8
IV	Aerial photo interpretation in general resource evaluation; Geomorphic studies and mapping. Land use/Land cover mapping; Hydro-geomorphic mapping; Environmental monitoring and mapping.	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Suggested Readings:

1. Cracknell, A. and Ladson, H (1990): Remote Sensing Year Book. Taylor and Francis, London.
2. Curran, P.J. (1988): Principles of Remote Sensing. ELBS Longman, Essex, U.K.
3. Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): Remote Sensing. Indian Academy of Science, Bangalore.
4. Floyd, F. S. Jr. (1997): Remote Sensing: Principles and Interpretation. W.H. Freeman, New York.
5. Hallert, B. (1960): Photogrammetry. McGraw Hill Book Company. Inc. New York
6. Leuder, D.R. (1959): Aerial Photographic Interpretation: Principles and Application, McGraw Hill, New York.
7. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York.
8. Rampal, K.K. (1999): Handbook of Aerial Photography and Interpretation. Concept Publishing. Company, New Delhi.
9. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing. Vols. 1 and 2, American Society of Photogrammetry and Remote Sensing, Falls Church, Virginia.
10. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology. John Wiley and Sons, New York.
11. Spurr, R. (1960): Photogrammetry and Photo Interpretation. The Roland Press Company, London.
12. Survey of India, (1973): Photogrammetry. Survey of India, Dehradun.
13. Swain, P.H. and Davis, S.M. (ed.) (1978): Remote Sensing: The Quantitative Approach. McGraw- Hill, New York.
14. Wolf P.R. and Dewitt, B. A. (2000): Elements of Photogrammetry with Applications in GIS. McGraw-Hill, New York.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.

Year: II

Semester: III

Subject- Geography

Course Code: **GRM 304 A**

Course Title: **Practical**

Remote Sensing and GIS; Soil, Water and Air Analysis

Course outcomes:

- To develop an understanding of remote sensing and GIS technologies and their potential applications
- Students will demonstrate their knowledge of physical geography and the methods and techniques for observing, measuring, recording and reporting on geographic phenomena.
- Students will demonstrate their competence to work individually and as a team to develop and present a client-driven GIS solution.
- Student will be familiar with modern techniques in Geography.
- Students will be prepared to apply their skills in professional careers.

Credit:4

Course Type - Core Course

Max. Marks: 100(30+70)

Total No. of Lectures-60

Unit

Topics

**No. of
Lectures**



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

		Total=60
I	Stereoscopic test; Interpretation of stereograms and stereopairs; Mapping for land use/ land cover; Determination of photoscale; Border information on Landsat/ IRS Images; Visual interpretation of satellite images (Landsat/ IRS); Scanning, digitisation and editing; Base map preparation.	8
II	Soil analysis: texture and structure;	8
III	Water analysis: physical and chemical characteristics;	8
IV	Air analysis: estimation of SPM.	8
Suggested Readings: <ol style="list-style-type: none">1. Cracknell, A. and Ladson, H (1990): Remote Sensing Year Book. Taylor and Francis, London.2. Curran, P.J. (1988): Principles of Remote Sensing. ELBS Longman, Essex, U.K.3. Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): Remote Sensing. Indian Academy of Science, Bangalore.4. Floyd, F. S. Jr. (1997): Remote Sensing: Principles and Interpretation. W.H. Freeman, New York.5. Hallert, B. (1960): Photogrammetry. McGraw Hill Book Company. Inc. New York6. Leuder, D.R. (1959): Aerial Photographic Interpretation: Principles and Application, McGraw Hill, New York.7. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York.8. Rampal, K.K. (1999): Handbook of Aerial Photography and Interpretation. Concept Publishing. Company, New Delhi.9. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing. Vols. 1 and 2, American Society of Photogrammetry and Remote Sensing, Falls Church, Virginia.10. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology. John Wiley and Sons, New York.11. Spurr, R. (1960): Photogrammetry and Photo Interpretation. The Roland Press Company, London.12. Survey of India, (1973): Photogrammetry. Survey of India, Dehradun.13. Swain, P.H. and Davis, S.M. (ed.) (1978): Remote Sensing: The Quantitative Approach. McGraw- Hill, New York.14. Wolf P.R. and Dewitt, B. A. (2000): Elements of Photogrammetry with Applications in GIS. McGraw-Hill, New York.		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">• Test with multiple choice questions/short and long answer questions.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM 305	Course Title: Practical: Geography of Rural Settlement	
Course outcomes: <ul style="list-style-type: none">• The students will get the basic ideas about the rural settlements, historical development during ancient, medieval and modern times, morphology of rural settlements, functions and rural settlement planning in India.• The knowledge of students about the historical development, patterns, types and functional systems of rural settlements.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	1.Spatial Systems. Size classification of rural settlements by scatter diagrams; Rural settlement distribution and types in India; Density function and pattern analysis of distribution of settlements: randomness and spacing indices, Testing Christaller's theory; Theoretical models of rural settlements and testing of different models.	16
II	2.Studies from India. Typological classification of rural settlements from maps; Rural service centres: indices, hierarchy, classification and ordering; Mapping the morphology of Indian villages; Planning of Indian villages: models, plans and case studies.	16
Suggested Readings: <ol style="list-style-type: none">16. Daniel, P. (2002): Geography of Settlement. Rawat Publications., Jaipur and New Delhi.17. Eidt, R. C., Singh, K. N. and Singh, Rana, P.B., (eds.) (1977): Man, Culture and Settlement. Kalyani Publishers., New Delhi.18. Ghosh, S. (1999): A Geography of Settlements. Orient Longman, Kolkata.19. Hudson, F. S. (1976): A Geography of Settlements. MacDonald and Evans, New York.20. Mitra, A. (1960): Report on House Types and Village Settlement Patterns in India. Publication Division, Govt. of India, New Delhi.21. Mosley, M.J. (2005): Rural Development: Principles and Practice. Sage Publication, London.22. Oliver, P. (1987): Dwellings. The House across the World. University of Texas Press, Austin.23. Rapoport, A. (1969): House, Form and Culture. Prentice-Hall, Inc., Englewood Cliffs, NJ.24. Rykwert, J. (ed.) (2004): Settlements. University of Pennsylvania Press, University Park, USA.25. Singh, R.L. (eds.) (1973): Rural Settlements in Monsoon Asia, National Geographical Society of India, Varanasi.26. Singh, R.Y. (2005): Geography of Settlements. Rawat Publications, Jaipur and New Delhi.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

27. Singh, S.B. (1977): Rural Settlement Geography. U.B.B.P., Publications, Gorakhpur.
28. Tiwari, R. C. (2000): Settlement Geography; in Hindi. PrayagPustak Bhawan Allahabad.
29. Wanmali, S. (1983): Service Centres in Rural India. B.R. Publications Corporation, New Delhi.
30. Wood, M. (2005): Rural Geography: Processes, Responses and Experiences of Rural Restructuring. Sage Publication, London.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM 305	Course Title: Practical: Regional Planning	
Course outcomes: <ul style="list-style-type: none">• Understand the concepts of Regional planning.• Understand the regional development of India.• To know the problem and prospects of planning and policies of India.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Regional planning of a given area: District planning;	8
II	Service centre planning: Micro level planning;	8
III	Central place hierarchy and growth centre in regional development;	8
IV	Delineation of city region/ Umland: a case study; Identification and demarcation of axial growth: a case study.	8
Suggested Readings: <ol style="list-style-type: none">1. Chandna, R. C. (2000): Regional Planning: A Comprehensive Text. Kalyani Publishers., New Delhi.2. Chaudhuri, J. R. (2001): An Introduction to Development and Regional Planning with special reference to India. Orient Longman, Hyderabad.3. Cowen, M.P. and Shenton, R.W. (1996): Doctrines of Development. Routledge, London.4. Doyle, T. and McEachern, D. (1998): Environment and Politics. Routledge, London.5. Friedmann, J. (1992): Empowerment: The Politics of Alternative Development. Blackwell, Cambridge MA and Oxford.6. Friedmann, J. and Alonso, W. (ed.) (1973): Regional Development and Planning. The MIT Press, Mass.7. Hettne, B.; Inotai, A. and Sunkel, O. (eds.) (1999 ó 2000): Studies in the New Regionalism. Vol.		



- I-V. Macmillan Press, London.
8. Isard, W. (1960): *Methods of Regional Analysis*. MIT Press, Cambridge, MA.
 9. Kuklinski, A. R. (1972): *Growth Poles and Growth Centres in Regional Planning*. Mouton and Co., Paris.
 10. Kuklinski, A.R. (ed.) (1975): *Regional Development and Planning: International Perspective*, Sijthoff-Leydor.
 11. Leys, C. (1996): *The Rise and Fall of Development Theory*. Indian University Press, Bloomington, and James Curry, Oxford.
 12. Mahapatra, A.C. and Pathak, C. R. (eds.) (2003): *Economic liberalisation and Regional Disparities in India. Special Focus on the North Eastern Region*. Star Publishing House, Shillong.
 13. Kane, M. and William M.K.T.(2007): *Concept Mapping for Planning and Evaluation*, Sage Publications, London.
 14. Misra, R. P. (ed.) (1992): *Regional Planning: Concepts, Techniques, Policies and Case Studies*. 2nd edition. Concept Publishing Company., New Delhi.
 15. Misra, R.P. and Natraj, V.K. (1978): *Regional Planning and National Development*. Vikas, New Delhi.
 16. Misra, R.P., Sundaram, K. V. Pradasa Rao, V. L. S. (1976): *Regional Development Planning in India*. Vikas Publishers, New Delhi.
 17. Moseley, M.J., (1974): *Growth Centres in Spatial Planning*. Pergamon Press, Oxford.
 18. Närman, A. and Karunanayake, K. (eds.) (2002): *Towards a New Regional and Local Development Research Agenda*. Dept. of Geography, Göteborg University (Sweden), series B, No100 and Centre for Development Studies, University of Kelaniya (Sri Lanka), No. 1.
 19. Norgaard, R. B. (1994): *Development Betrayed. The End of Progress and a Coevolutionary Revisioning of the Future*. Routledge, London.
 20. Pathak, C. R. (2003): *Spatial Structure and Processes of Development in India*. Regional Science Association., Kolkata.
 21. Sanyal, B. M. (2001): *Decentralised Planning: Themes and Issues*. Concept Publishing. Company, New Delhi.
 22. Sharma, P. V., Rao, V. L., and Pathak, C. R. (eds.) (2000): *Sustainable Regional Development (with special reference to Andhra Pradesh)*. Regional Science. Association, Kolkata and School of Economics, Andhra University, Vishakapatnam.
 23. Sen, A. (1999): *Development as Freedom*. Oxford University Press, Oxford.
 24. Sen, A. and Dreze, J. (eds.) (1996): *Indian Development: Selected Regional Perspectives*. Oxford University Press, Oxford.
 25. Smith, D. and Närman, A. (eds.) (1999): *Development Theory and Practice: Current Perspectives on Development and Development Co-operation*. Longman, London.
 26. Stöhr, W. B. and Taylor, D.F.R. (eds.) (1981): *Development from Above and Below? The Dialectics of Regional Planning in Developing Countries*. John Wiley and Sons, Chichester.
 27. Sundaram, K. V. (1997): *Decentralized Multilevel Planning: Principles and Practice (Asian and African Experiences)*. Concept Publishing Company, New Delhi.
 28. Sundaram, K. V. (2004): *The Trodden Path: Essays on Regional and Micro Level Planning*. Anaunya Publications., New Delhi.
 29. Toye, J. (1987): *Dilemmas of Development. Reflections on the Counterrevolution in Development Theory and Policy*. Basil Blackwell, Oxford.
 30. Verhelst, T. (1990): *No Life Without Roots ó Culture and Development*. Zed Books, London.
 31. World Bank (2000): *Attacking Poverty*. World Development Report 2000-01. The World Bank and Oxford University Press, New York; see website: www.worldbank.org/poverty/wdrpoverty/

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM 305C	Course Title: Practical:Aerial Photo Interpretation and GIS	
Course outcomes: <ul style="list-style-type: none">• Getting to know superficially about remote sensing and aerial photo interpretation with the help of pocket stereoscope and lens stereoscope• Identifying of objects and features on single photographs• The students will be to Determine height of objects from single photograph• The students will be able to know the GIS software• Students will demonstrate knowledge of the foundations and theories of geographic information systems (GIS) and use the tools and methods of GIS.		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Identification of objects and features;	8
II	Determination of height of objects from single photographs;	8
III	Preparation of thematic maps on lithology and structure, Land use/ Land cover, Forest types, soil and soil erosion, Hydrogeomorphic mapping.	8
IV	GIS: Geo-referencing; creation of PGDB, creation of shape files; on-screen digitization of polygons, points and lines and adding attributes	8
Suggested Readings: <ol style="list-style-type: none">15. Cracknell, A. and Ladson, H (1990): Remote Sensing Year Book. Taylor and Francis, London.16. Curran, P.J. (1988): Principles of Remote Sensing. ELBS Longman, Essex, U.K.17. Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): Remote Sensing. Indian Academy of Science, Bangalore.18. Floyd, F. S. Jr. (1997): Remote Sensing: Principles and Interpretation. W.H. Freeman, New York.19. Hallert, B. (1960): Photogrammetry. McGraw Hill Book Company. Inc. New York20. Leuder, D.R. (1959): Aerial Photographic Interpretation: Principles and Application, McGraw Hill, New York.21. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th ed. John Wiley and Sons, New York.22. Rampal, K.K. (1999): Handbook of Aerial Photography and Interpretation. Concept Publishing. Company, New Delhi.23. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing. Vols. 1 and 2, American Society of Photogrammetry and Remote Sensing, Falls Church, Virginia.24. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology. John Wiley and Sons, New York.		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

25. Spurr, R. (1960): Photogrammetry and Photo Interpretation. The Roland Press Company, London.
26. Survey of India, (1973): Photogrammetry. Survey of India, Dehradun.
27. Swain, P.H. and Davis, S.M. (ed.) (1978): Remote Sensing: The Quantitative Approach. McGraw- Hill, New York.
28. Wolf P.R. and Dewitt, B. A. (2000): Elements of Photogrammetry with Applications in GIS. McGraw-Hill, New York.

Suggested Continuous Evaluation Methods:

- Testwithmultiplechoicequestions/shortandlonganswerquestions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM 306	Course Title: PracticalField Study and Geographical Excursion	
Course outcomes: <ul style="list-style-type: none">• Learn the significance of field work in geographical studies.• Understand the meaning of field and identifying the case study.• Know about different types of field techniques.• Develop an idea about research problems.		
Credit:4	Course Type óPractical(Field Study)	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. ofLecturesTotal=60
I	Fieldwork: Meaning, types and objectives of fieldwork; Field Work In Geographical Studies ó Role, Value, Data and Ethics of Field-Work	8
II	Defining the Field and Identifying the Case Studyó Rural/Urban/Physical/Human/Environmental. Fieldwork methods and techniques; Importance of fieldwork in Geography.	8
III	Use of Field ToolsóCollection of Material for Physical and	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

	Socio-Economic Surveys.	
IV	Designing the Field Report ó Aims and Objectives, Methodology, Analysis, Interpretation and Writing the Report.	8
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Creswell J., 1994: Research Design: Qualitative and Quantitative Approaches Sage Publications. 2. Dikshit, R. D. 2003. The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi. 4. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. Concept Pubs. Co., New Delhi. 5. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Pubs. Co., New Delhi 6. Robinson A., 1998: "Thinking Straight and Writing That Way", in Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles. 7. Special Issue on óDoing Fieldworkö The Geographical Review 91:1-2 (2001). 8. Stoddard R. H., 1982: Field Techniques and Research Methods in Geography, Kendall/Hunt. 10. Wolcott, H. 1995. The Art of Fieldwork. Alta Mira Press, Walnut Creek, CA. 		
<p>Suggested Continuous Evaluation Methods:</p> <ul style="list-style-type: none"> • Test with multiple choice questions/short and long answer questions. 		
Programme/Class: M.A./M.Sc.	Year: II	Semester: III
Subject- Geography		
Course Code: GRM 308	Course Title: Digital Cartography (AECC)	
<p>Course outcomes:</p> <ul style="list-style-type: none"> • To enable students to use GIS as a decision support system for different geographical applications • Students will learn about Modern science and technology that have made tremendous progress in all possible fields. • Geospatial technology has been emerged a new spatial information technology. • Digital Cartography is a newly emerged field in Geospatial Technology. • Students will get adequate professional knowledge and computer skills so as to enable the students to take up career in the field of Geospatial Technology. • The students will be able to understand and prepare thematic maps using digital platform. 		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Digital Cartography: History and Development of Digital Cartography, Cartographic and GIS Software, Digital Cartography,	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

	Web Cartography, Computer Aided Design (CAD), Spatial registration; spatial and spatial data entry	
II	Digital Mapping: Land use mapping (choropleth mapping), Terrain mapping (isoline); urban land use mapping (Choropleth); Dot Mapping	8
III	Digital Map Analysis: Overlay Analysis; Buffer analysis; Network analysis; near neighbour analysis; 3 D Modeling	8
IV	Map Designing: Map Designing and layout creation	8
Suggested Readings: 1. Cromley, R.G 1992 Digital Cartography, Englewood cliff, New Jersey, Prentice Hall 2. Monmonier, M. 1982 Computer Assisted Cartography: Principles and Prospects, Englewood Cliffs, New Jersey, Prentice Hall 3. LO and YEUNG 2009 Concept and techniques of Geographic Information Systems, 2 nd Ed. PHL Learning, Pvt Ltd, New Delhi 4. Robinson (2003) Elements of Cartography, Wiley India Pvt. Ltd New Delhi 5. Monkhouse, F.J and Wilkinson H.R. (1999) Maps and Diagrams. Methuen, London 6. Raize, E. 1962 Principles of Cartography, Mc Graw Hill, New York		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none"> • Test with multiple choice questions/short and long answer questions. 		

Programme/Class: M.A./M.Sc.	Year: II	Semester: IV
Subject- Geography		
Course Code: GRM 401	Course Title: Research Methods and Techniques	
Course outcomes: <ul style="list-style-type: none"> • The students will be able to understand basic concepts of field research methods and research design in geography. • Learn the significance of field work in geographical studies. • Understand the meaning of field and identifying the case study. • Know about different types of field techniques. • Develop an idea about research problems. • 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. 		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

		Total=60
I	Introduction to research in Geography: Concept and significance of research in geography; Philosophy and methods; Naturalism and anti-naturalism; realism and idealism.	8
II	Scientific Research; Inductive and deductive approaches; Research design; Formulation of research problem; Development and testing of hypothesis; Techniques of data collection; Sampling and field survey.	8
III	Qualitative research: Qualitative research design; Case study; Ethnography; Phenomenology and participatory research.	8
IV	Data Analysis, interpretation and report writing: Data classification and tabulation; Data analysis and interpretation; Writing thesis, project report and research paper.	8

Suggested Readings:

1. Ahuja, R. (2001): Research Methods, Rawat Publications, Jaipur and New Delhi.
2. Bhattacharyya, D. K. (2005): Research Methodology, Excel Books, New Delhi
3. Blackburn, J. and Holland, J. (eds.) (1998): Who Changes? Institutionalising Participation in Development. IT Publications, London.
4. Blaxter, L.; Hughes, C. and Tight, M. (1996): How to Research. Open University Press, Buckingham.
5. Crang, Mike 1999. Cultural Geography. Routledge, London.
6. Daniels, P., Bradshaw, M., et al. (2000): Human Geography: Issues for the 21st Century. Prentice Hall, London, and Pearson Publishers., Singapore. Indian reprint, 2003.
7. Denzin, N. K. and Lincoln, Y.S., (eds.) (2000): Handbook of Qualitative Research. Thousand Oaks CA. Sage Publications.
8. Dikshit, R. D. (2003): The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
9. Dorling, D. and Simpson, L. (eds.) (1999): Statistics in Society. Edward Arnold, London.
10. Fisher, P. and Unwin, D., (eds.) (2002): Virtual Reality in Geography. Taylor and Francis, London.
11. Flowerdew, R. and Martin, D. (eds.) (1997): Methods in Human Geography. A Guide for Students Doing a Research Project. Longman, Harlow.
12. Hay, I. (ed.) (2000): Qualitative Research Methods in Human Geography. Oxford University Press, New York.
13. Henn, M., Mark W., and Nick F. (2006): A Short Introduction to Social Research, Vistaar Publications, New Delhi
14. Eyles J. and Smith D. M. (1988): Qualitative Methods in Human Geography, Polity Press, Dales Brewer Cambridge.
15. Kitchin, R. and Tate, N., (2001): Conducting Research into Human Geography. Theory, Methodology and Practice. Prentice-Hall, London.
16. Limb, M. (2001): Qualitative Methodologies for Geographers. Issue and Debates. Edward Arnold, London.



17. Lofland, J. and Lofland, L.H. (1995): Analysing Social Setting. A Guide to Qualitative Observation and Analysis. Wadsworth, Belmont, CA.
18. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley and Sons, New York.
19. Maso, I., Atkinson, P.A. Delamont, S. and Verhoeven, J.C. (eds.) (1995): Openness in Research. The Tension between Self and Other. Van Gorcum, Assen, Netherlands.
20. Mikkelsen, B. (2005): Methods for Development Work and Research: A New Guide for Practitioners. Sage Publications, London.
21. Mukherjee, N. (1993): Participatory Rural Appraisal: Methodology and Application. Concept Publishing Company, New Delhi.
22. Mukherjee, N. (2002): Participatory Learning and Action: with 100 Field Methods. Concept Publishing Company, New Delhi.
23. Oø Leary, Z. (2005): The Essential Guide in Doing Research, Vistaar Publications, New Delhi
24. Pacione, M., (ed.) (1999): Applied Geography: Principle and Practice. Routledge, London.
25. Parsons, T. and Knight, P. G., (1995): How to Do Your Dissertation in Geography and Related Disciplines. Chapman and Hall, London.
26. Patrick M. and Chapman S. (1990): Research Methods(Third Edition), Routledge, London
27. Peet, R. and Thrift, N. (ed.) (1989/ 2002): New Models in Geography (2 vols.). Rawat Publishers., Jaipur and New Delhi.
28. Rachel, P. et al. (2001): Introducing Social Geographies. Arnold Hodder Group, London, and Oxford University Press, Oxford.
29. Robson, C. (1993): Real World Research. A Resource for Social Scientists and Practitioners-Researchers. Blackwell Publishers, Oxford.
30. Rogers, A. and Viles, H. A. (2003): The Studentø Companion to Geography. Blackwell Publishers, Oxford. Indian reprint available.
31. Sheskin, Ira, M. (1987): Survey Research for Geographers, Scientific Publishers, Jodhpur.
32. Silverman, D. (1993): Interpreting Qualitative Data. Methods for Analysing Talk, Text and Interaction. Sage Publications, London.
33. Singh, R. L. and Singh, Rana P.B. (1993): Elements of Practical Geography. Kalyani Publishers, Ludhiana and New Delhi. (English and Hindi editions).
34. Singh, Rana P.B. and Singh, R. B. (1981): Changing Frontiers of Indian Village Ecology.National Geographical Society of India, BHU, Varanasi, Publication number 27.
35. Turkle, S. (1996): Life on the Screen: Identity in the Age of Internet. Weidenfeld and Nicolson, London.
36. Wolcott, H. (1995): The Art of Fieldwork. AltaMira Press, Walnut Creek, CA. .
39. Sharma, P.R., Yadava, R.S. ans Sharma, V.N., (2011), Interdisciplinary Research Methods: Concepts and Studies, R.K. Books Publishers, New Delhi.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: IV
Subject- Geography		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Course Code: GRM 402		Course Title: Urban Geography	
Course outcomes: <ul style="list-style-type: none">• Students can explain the town and cities in India and World perspective.• Gain knowledge about the history of urbanization in the developed and developing countries.• They can understand the functional differences between rural and urban settlements.• Students can define the problems of urban area. And try to solve them.• They will know the characteristics of urban settlement.• To be able to identify the urban environmental problem and how to solve those problem.			
Credit:4		Course Type - Core Course	
Max. Marks: 100(30+70)		Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60	
I	Bases. Meaning, scope and recent trends in Urban Geography; Different Approaches, Development and recent trends in Urban Geography: Methodology in urban studies.	8	
II	Characteristics. Evolution of towns during Ancient, Medieval and Modern periods, Functions and functional classification of towns; Urban transportation; Contributions of Banaras School.	8	
III	Spatiality and Models. Size and spacing of cities: Rank-size rule; Law of the primate city; Urban hierarchies; Central Place Theory (Christaller and Lösch); Urban land use and functional morphology: functional areas and peri-urban areas; Theories of urban structure (Burgess, Hoyt, Harris and Ullman, Mann, White).	8	
IV	Issues and Planning. Urban problems: environmental, poverty, slums, transportation, housing, crime; Planned cities: Chandigarh and Jaipur; National Urban Policy and Urban land use planning, Master Plans: A case study of Lucknow city.	8	
Suggested Readings: <ol style="list-style-type: none">1. Bridge, B. and Watson, S. (eds.) (2000): A Companion to the City. Blackwell, Oxford.2. Carter, H. (1995): The Study of Urban Geography. 4th ed. Reprinted in 2002 by Rawat Publications, Jaipur and New Delhi.3. Dubey, K.K. (1976): Use and Misuse of Land in KAVAL Towns. National Geographical Society of India, Varanasi.4. Dubey, K.K. and Singh, A.K. (1983): Urban Environment in India. Deep and Deep, New Delhi.5. Dutt, A. Allen, K, Noble, G., Venugopal G. and Subbiah S. (eds.) (2003): Challenges to Asian Urbanisation in the 21st Century. Kluwer Academic Publishers, Dordrecht and London.6. Hall, P. (1992): Urban and Regional Planning. Routledge, London.7. Hall, T. (2001): Urban Geography. 2nd edition. Routledge, London.8. Haughton, G and Hunter, C. (1994): Sustainable Cities. Jessica Kingsley, London.			



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
 (Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

9. Jacquemin, A. (1999): Urban Development and New Towns in the Third World ó A Lesson from the New Bombay Experience. Ashgate, Aldershot, UK.
10. Johnson, J.H. (1981): Urban Geography, Pergaman Press, Oxford.
11. Mayer, H. and Cohn, C. F. (1959): Readings in Urban Geography, University. of Chicago Press, Chicago.
12. Paddison, R. (ed.) (2001): Handbook of Urban Studies. Sage, London.
13. Pacione, M. (2005): Urban Geography: A Global Perspective, Routledge, London and New York.
14. Ramachandran, R., (1991): Urbanisation and Urban Systems in India. Oxford University Press, Delhi.
15. Singh, K. and Stainberg, F. (eds.) (1998): Urban India in Crisis. New Age International, New Delhi.
16. Singh, R.L. (1955): Banaras. A Study in Urban Geography. Nand Kishore and Brothers, Banaras.
17. Singh, Rana P.B. and Rana, P.S. (2002): Banaras Region. Indica Books , Varanasi.
18. Singh, S. B. (ed.) (1996): New Perspectives in Urban Geography. M.D. Publications, New Delhi
19. Stanley, B., Jack, W. and Donald, Z. (eds.) (2003): Cities of the World. Rowman and Littlefield, New York and Oxford.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: IV
Subject- Geography		
Course Code: GRM 403	Course Title: Political Geography	
<p>Course outcomes:</p> <ul style="list-style-type: none"> • Students become familiar with key concepts in contemporary political geography, including the state, the nation, territory, boundaries, power, and scale; • Use geographic concepts to critically analyze how human agency interacts with the physical environment to shape and reshape political geographic outcomes; • Advance your understanding of the political geography literature; • Engage quality information about political issues contemporary political issues and explore your role within them; • Use the ideas of political geography to develop a position on a contemporary issue and take a public stance on that issue. 		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Introduction: Nature and Scope of Political Geography; Recent development in Political Geography; Approaches to study of Political Geography; 1. Whittlesey's Law Landscape Approach, 2. Hartshorne's Functional Approach 3. Jones's Unified Field Theory: Idea- area Chain. 4. Political Systems Model,	8



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

II	Geographic Elements and State: State, Nation, Nation-State and Nation-Building; Physical, Human, and Economic Elements; State and Environment Inter- face.	8
III	Themes in Political Geography: Frontiers and Boundaries; Colonialism, Decolonization, Neo-colonialism, Federalism; Perspectives on core periphery concepts, Aggression, conflicts and cooperation	8
IV	Regional Political Issues: Geopolitical Significance of Indian Ocean; Political geography of any one of the following regions; SAARC region, South East Asia, West Asia, East Asia. Political Geography of contemporary India	8
Suggested Readings: <ol style="list-style-type: none">1. Adhikari, S. (2010): Political Geography, Rawat Publication, New Delhi2. Cohen, Samuel (1964): Geography and Politics in Divided World. Random House, New York.3. De Blij, H. J. and Glassner, M. (1968): Systematic Political Geography. John Wiley and Sons, New York.4. Dikshit, R.D. (1987): Political Geography and Geopolitics. Tata McGraw Hill, New Delhi.5. Dikshit, R.D. (2000): Political Geography: A Contemporary Perspective. Prentice-Hall, New Delhi.6. Siddiq, M. (1997): Indian in the Indian Ocean: A Geopolitical Study, Rawat Publications, Jaipur7. Moddie, A.E. (1961): Geography Behind Politics. Hutchinson, London.8. Pannikar, K.M. (1959): Geographical Factors in Indian History. 2 vols. Asia Publishing House, Bombay.9. Percy, G. E. and Fifield, R. (1948): World Political Geography, Thomas Y Crowell, New York10. Pounds, N.J.G. (1972): Political Geography. McGraw Hill Publication., New York.11. Short, John R. (1982): An Introduction to Political Geography. Routledge, LondonSukhwal. B.L. (1987): Modern Political Geography of India. Sterling Publication, New Delhi		
Suggested Continuous Evaluation Methods: <ul style="list-style-type: none">• Test with multiple choice questions/short and long answer questions.		

Programme/Class: M.A./M.Sc.	Year: II	Semester: IV
Subject- Geography		
Course Code: GRM404	Course Title: Natural Hazards and Disaster Management	



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

Course outcomes: <ul style="list-style-type: none">• Understand the definition, classification of hazards and disasters• Gain knowledge about approaches to hazard study.• Develop an idea about factors, consequences and management of earthquake, landslide, flood and riverbank erosion.• Acquire knowledge about human induced disaster.• Develop an idea about Mitigation and Management about human induced and natural disasters		
Credit:4	Course Type - Core Course	
Max. Marks: 100(30+70)	Total No. of Lectures-60	
Unit	Topics	No. of Lectures Total=60
I	Concepts and definitions of hazard, disaster, vulnerability and risk, disaster risk reduction, Various disaster in India, Natural & human induced hazards & disasters.	8
II	Regional Dimension of Hazard: Occurrence and trends, Methods of identifying hazard prone regions, Geological hazard: Earthquakes, landslides & tsunami Hydro metrological : Floods, cyclone, drought, avalanches extreme event of rains & heat, Forest fire, Biological hazards, Technological hazard,	8
III	Sendai framework for disaster risk reduction 2015-2030, Disaster management Act , 2005, National policy on disaster management, 2009, National institutional framework (NDRF, NDMA & NIDM), Role of NGOs at local, state and national level.	8
IV	Mitigation and Management: Plans and Policies, Geo-informatics in Disaster Management (RS & GIS, GPS), Emergency communication system (early warning and its communication)	8
Suggested Readings: <ol style="list-style-type: none">1. An overview on natural & man-made disasters and their reduction, R K Bhandani, CSIR, New Delhi2. Coppola D P, 2007. Introduction to International Disaster Management, Elsevier Science (B/H), London.3. Disasters in India Studies of grim reality, Anu Kapur& others, 2005, 283 pages, Rawat Publishers, Jaipur4. Disaster Mitigation in Asia & Pacific, Asian Development Bank5. Disaster Management and education in India (http://www.chillibreeze.com/articles/variou/disaster management .asp)6. Encyclopedia of disaster management, Vol I, II and III Disaster management policy and administration, S L Goyal, Deep & Deep, New Delhi, 20067. Encyclopedia of Disasters ó Environmental Catastrophes and Human Tragedies, Vol. 1 & 2, Angus M. Gunn, Greenwood Press, 20088. Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi		



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

9. Management of Natural Disasters in developing countries, H.N. Srivastava & G.D. Gupta, Daya Publishers, Delhi, 2006, 201 pages
10. National Disaster Management Plan (NDMP), and National Disaster Management Authority (NDMA) Govt. of India, NDMA Bhawan, New Delhi

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.

Programme/Class: M.A./M.Sc.	Year: II	Semester: IV
Subject- Geography		
Course Code: GRM405	Course Title: Dissertation and Viva Voce	
Course outcomes: <ul style="list-style-type: none">• 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.		
Credit:8	Course Type - Core Course	
Max. Marks: 200(60+140)	Total No. of Lectures-120	
Unit	Topics	No. of Lectures Total=120
I	Socio-Economic Survey: Concept and utility, Hypothesis and research question, sampling techniques	60
II	Developing research design and questionnaire, Conducting village and household survey and report writing.	60
Suggested Readings: <ol style="list-style-type: none">1. Ahuja, R. (2001): Research Methods, Rawat Publications, Jaipur and New Delhi.2. Bhattacharyya, D. K. (2005): Research Methodology, Excel Books, New Delhi3. Blackburn, J. and Holland, J. (eds.) (1998): Who Changes? Institutionalising Participation in Development. IT Publications, London.4. Blaxter, L.; Hughes, C. and Tight, M. (1996): How to Research. Open University Press, Buckingham.5. Crang, Mike 1999. Cultural Geography. Routledge, London.6. Daniels, P., Bradshaw, M., et al. (2000): Human Geography: Issues for the 21st Century. Prentice Hall, London, and Pearson Publishers., Singapore. Indian reprint, 2003.		



7. Denzin, N. K. and Lincoln, Y.S., (eds.) (2000): Handbook of Qualitative Research. Thousand Oaks CA. Sage Publications.
8. Dikshit, R. D. (2003): The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
9. Dorling, D. and Simpson, L. (eds.) (1999): Statistics in Society. Edward Arnold, London.
10. Fisher, P. and Unwin, D., (eds.) (2002): Virtual Reality in Geography. Taylor and Francis, London.
11. Flowerdew, R. and Martin, D. (eds.) (1997): Methods in Human Geography. A Guide for Students Doing a Research Project. Longman, Harlow.
12. Hay, I. (ed.) (2000): Qualitative Research Methods in Human Geography. Oxford University Press, New York.
13. Henn, M., Mark W., and Nick F. (2006): A Short Introduction to Social Research, Vistaar Publications, New Delhi
14. Eyles J. and Smith D. M. (1988): Qualitative Methods in Human Geography, Polity Press, Dales Brewer Cambridge.
15. Kitchin, R. and Tate, N., (2001): Conducting Research into Human Geography. Theory, Methodology and Practice. Prentice-Hall, London.
16. Limb, M. (2001): Qualitative Methodologies for Geographers. Issue and Debates. Edward Arnold, London.
17. Lofland, J. and Lofland, L.H. (1995): Analysing Social Setting. A Guide to Qualitative Observation and Analysis. Wadsworth, Belmont, CA.
18. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley and Sons, New York.
19. Maso, I., Atkinson, P.A. Delamont, S. and Verhoeven, J.C. (eds.) (1995): Openness in Research. The Tension between Self and Other. Van Gorcum, Assen, Netherlands.
20. Mikkelsen, B. (2005): Methods for Development Work and Research: A New Guide for Practitioners. Sage Publications, London.
21. Mukherjee, N. (1993): Participatory Rural Appraisal: Methodology and Application. Concept Publishing Company, New Delhi.
22. Mukherjee, N. (2002): Participatory Learning and Action: with 100 Field Methods. Concept Publishing Company, New Delhi.
23. Oø Leary, Z. (2005): The Essential Guide in Doing Research, Vistaar Publications, New Delhi
24. Pacione, M., (ed.) (1999): Applied Geography: Principle and Practice. Routledge, London.
25. Parsons, T. and Knight, P. G., (1995): How to Do Your Dissertation in Geography and Related Disciplines. Chapman and Hall, London.
26. Patrick M. and Chapman S. (1990): Research Methods(Third Edition), Routledge, London
27. Peet, R. and Thrift, N. (ed.) (1989/ 2002): New Models in Geography (2 vols.). Rawat Publishers., Jaipur and New Delhi.
28. Rachel, P. et al. (2001): Introducing Social Geographies. Arnold Hodder Group, London, and Oxford University Press, Oxford.
29. Robson, C. (1993): Real World Research. A Resource for Social Scientists and Practitioners-Researchers. Blackwell Publishers, Oxford.
30. Rogers, A. and Viles, H. A. (2003): The Student's Companion to Geography. Blackwell Publishers, Oxford. Indian reprint available.
31. Sheskin, Ira, M. (1987): Survey Research for Geographers, Scientific Publishers, Jodhpur.
32. Silverman, D. (1993): Interpreting Qualitative Data. Methods for Analysing Talk, Text and Interaction. Sage Publications, London.
33. Singh, R. L. and Singh, Rana P.B. (1993): Elements of Practical Geography. Kalyani Publishers, Ludhiana and New Delhi. (English and Hindi editions).



ख्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)

U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE))

34. Singh, Rana P.B. and Singh, R. B. (1981): Changing Frontiers of Indian Village Ecology. National Geographical Society of India, BHU, Varanasi, Publication number 27.
35. Turkle, S. (1996): Life on the Screen: Identity in the Age of Internet. Weidenfeld and Nicolson, London.
36. Wolcott, H. (1995): The Art of Fieldwork. AltaMira Press, Walnut Creek, CA. .
39. Sharma, P.R., Yadava, R.S. and Sharma, V.N., (2011), Interdisciplinary Research Methods: Concepts and Studies, R.K. Books Publishers, New Delhi.

Suggested Continuous Evaluation Methods:

- Test with multiple choice questions/short and long answer questions.