

DEPARTMENT OF GEOGRAPHY  
RAJIV GANDHI UNIVERSITY



**Course Structure & Syllabus  
for M.Phil / Ph.D Geography  
w.e.f. 2020-21**

**M.PHIL / PH.D COURSE WORK W.E.F 2020-21 (CBCS)**

**The Course Content of M.Phil & Ph.D are same and duration of M.Phil is**

**M.Phil Course Work**

<b>Course</b>	<b>Seminar</b>	<b>Papers</b>		<b>Credit</b>
M.Phil. Minimum 24 Credits  Course Work : 12 Credits & Dissertation & Viva Voce : 12 Credits)	I	Paper – I Core paper Research Methodology	Research Methodology covering the areas such as quantitative methods, computer applications, review of published research in the relevant field, training, field work etc.	04 Credits
		Paper II Core Paper	Research & Publication Ethics	02 Credits
		Paper III Elective Paper S	GEOGO 501 Basic application of Remote Sensing & GIS GEOGO 502 - mountain ecology GEOGO 503 - understanding disaster management GEOGO 504 -Traditional ecological knowledge ( tek) and sustainable management of resources GEOGO 505 -Cultural and Space in Geography GEOGO 506 -Applied Agriculture Geography GEOGO 507 - Medical Geography GEOGO 508 - Geography of Tourism and Heritage GEOGO 509 - Urban Studies	02-04 Credits
		Paper IV Elective Paper B	GEOGE 601- Mountain Geography GEOGE 602- Geography of Social Wellbeing and community Development GEOGE 603-Traditional Ecological Management GEOGE 604-Research in Physical Geography GEOGE 605Regional Planning GEOGE 606- Research in Disaste Studies GEOGE 607- Applied Agriculture Geography GEOGE 608- Medical Geography GEOGE 609- Mountain Ecology and Sustainable Development GEOGE 610- Urban Studies	02-04 Credits
		A Research Scholar has to opt one paper each from Paper III and Paper IV with a total minimum of 6 credits.		
II, III & IV	Dissertation (8 Credit) Viva Voce (4 Credit)		12 Credits	

### Ph.D Course Work

Course	Seminar	Papers	Credit	
Ph.D Course work- 12 Credits	I	Paper – I Core paper Research Methodology	Research Methodology covering the areas such as quantitative methods, computer applications, review of published research in the relevant field, training, field work etc.	04 Credits
		Paper II Core Paper	Research & Publication Ethics	02 Credits
		Paper III Elective Paper S	GEOGO 501 Basic application of Remote Sensing & GIS GEOGO 502 - mountain ecology GEOGO 503 - understanding disaster management GEOGO 504 -Traditional ecological knowledge ( tek) and sustainable management of resources GEOGO 505 -Cultural and Space in Geography GEOGO 506 -Applied Agriculture Geography GEOGO 507 - Medical Geography GEOGO 508 - Geography of Tourism and Heritage GEOGO 509 - Urban Studies	02-04 Credits
		Paper IV Elective Paper B	GEOGE 601- Mountain Geography GEOGE 602- Geography of Social Wellbeing and community Development GEOGE 603-Traditional Ecological Management GEOGE 604-Research in Physical Geography GEOGE 605Regional Planning GEOGE 606- Research in Disaste Studies GEOGE 607- Applied Agriculture Geography GEOGE 608- Medical Geography GEOGE 609- Mountain Ecology and Sustainable Development GEOGE 610- Urban Studies	02-04 Credits
		A Research Scholar has to opt one paper each from Paper III and Paper IV with a total minimum of 6 credits.		

## PAPER –I: RESEARCH METHODOLOGY

End Term Exam	:Marks: 75	Time: 3 hrs
Seminar Presentation	:Marks: 25	
Total marks	:100	
Credits	:4	

Unit	Outline
<b>I</b>	<b>Quantitative Techniques</b> <ul style="list-style-type: none"><li>- Sampling and Data Collection</li><li>- Descriptive Statistics / Inferential statistics (Correlation)</li></ul>
<b>II</b>	<b>Computer Application</b> <ul style="list-style-type: none"><li>- Excel data analysis</li><li>- SPSS</li><li>- Spatial Analysis (ARCGIS, QGIS)</li></ul>
<b>III</b>	<b>Review of Published Research</b> <ul style="list-style-type: none"><li>- Physical Geography</li><li>- Human Geography</li><li>- Regional Planning</li><li>- Biogeography</li></ul>
<b>IV</b>	<b>Training and Field Work</b> <ul style="list-style-type: none"><li>- Interaction on preparation of questionnaires and schedule</li><li>- Pilot study on the proposed theme</li><li>- Seminar, Presentation and Discussion</li></ul>

### Reference

1. Corey, Stephen M. : *Action Research to improve School Practice*, New York, Bureau of Publication, Columbia University.
2. Beard, R. Bligh D. Harding, A (1978) *Research into Teaching Methods in Higher Education*, Guildford : Society for Research into higher Education.
3. Mackenzie, N. Eraut, M, Jones H. (1975) *Teaching and Learning: An introduction to New Methods and Resource in Higher education*, Paris : UNESCO and International Association of Universities.
4. Siegal, S. (1956) *Non-Parametric Statistics for the Behavioral Science*, New York: McGraw Hill.
5. Tuckman, B.W. (1978) *Conducting Educational Research*, New York: Harcourt Brace Jovanovich, Inc.

**Paper II Research and Publication Ethics (RPE)**  
**Credits 2**

**Objective:**

This course has total 6 units focusing on basics of philosophy of science and ethics research integrity, publication ethics. Hands on sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (citations, h-index, impact factor, etc) and plagiarism tools will be introduced in this course.

Paper code	Unit	Outline
RPE-01	I	<b>Philosophy and Ethics</b> Introduction to philosophy: Definition, nature and scope, concept branches: Ethics: Definition, moral philosophy, nature of moral judgements and reactions.
RPE-02	II	Scientific Conduct Ethics with respect to Science and Research, Intellectual honesty and Research integrity; Scientific misconducts Falsification, Fabrication and Plagiarism (FFP), Redundant publications: duplicate and overlapping publications, salami slicing; Selective reporting and misrepresentation of data.
RPE-03	III	Publication Ethics Publication ethics: definition, introduction and importance; Best practices / standards setting initiatives and guidelines: COPE, WAME, etc; conflicts of interest, publication misconduct: definition, concept,, problems that lead to unethical behaviour and vice-versa, types; Violation of Identification of Publication misconduct, complaints and appeals; predatory Publishers and journals.
<b>PRACTICE</b>		
RPE04	IV	Open Access Publishing Open access publication and initiatives; SHERPA/Romeo online resource to check publisher copyright & self-archiving policies: Software tool to identify predatory publications developed by SPPU; journal finder / journal suggestion tool viz. JANE, Elsevier Journal finder , Springer Journal Suggested. Etc.
RPE05	V	Publication Misconduct 1. Group Discussions (2hrs) subject specific ethical issues, FFP, authorship; Conflicts of interest: Complaints and appeals examples and fraud from India and abroad. 2. Software tools (2hrs): Use of Plagiarism software like Turnitin, Urkund and other Open source Software tools
RPE-06	VI	Databases and Research Metrics 1. Database (4hrs)- Indexing database, Citation databases: Web of Science, Scopus, etc. 2. Research Metrics (3hrs): Impact factor of journal as per journal citation report, SNIP, SJR, IPP, Cite Score, Metrics h-index, g-index, i10 index, altmetrics

**Reference:**

1. Bird, A. (2006) *Philosophy of Science* Routledge

2. Macintyre, Alasdair (1967) *A short History of Ethics* London
3. P. Chaddah, (2018) *Ethics in Competitive Research : do not get scooped ; do not get plagiarized*, ISBN: 9789387480865
4. National Academy of Sciences, National Academy of Engineering and Institute of Medicine (2009). *On being a Scientist: A Guide to Responsible conduct in Research* third Edition, National Academies Press.
5. Resnik, d. B. (2011) *what is Ethics in research & why is it important*. National institute of Environmental Health Sciences, 1-10. Retrieved from <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>
6. Geall, J. (2012) *Predatory publishers are corrupting open access*. *Nature*, 489 (7415), 179-179 <https://doi.org/10.1038/489179a>
7. Indian National Science Academy (INSA), *Ethics in Science Education, Research and Governance* (2019), ISBN: 978-81-939482-1-7 [http://www.insaindia.res.in/pdf/Ethics Book. Pdf](http://www.insaindia.res.in/pdf/Ethics%20Book.Pdf).

## PAPER–III (COMMON ELECTIVE)

### Basic application of Remote Sensing & GIS Credits 2

Unit	Outline
Unit I-	<b>Remote Sensing</b> <ol style="list-style-type: none"><li>i. Concept, Historical background</li><li>ii. Types of Remote Sensing</li><li>iii. Data Products</li><li>iv. Visual Interpretation</li></ol>
Unit II-	<b>GIS &amp; GPS</b> <ol style="list-style-type: none"><li>i. Concepts and Data Capture</li><li>ii. Global Positioning System</li><li>iii. Data Model and Topology</li><li>iv. Application of Remote Sensing &amp; GIS</li></ol>

#### Suggested Readings:

1. Barret, E.C. and Curtis, L.F. (1976): *Introduction to Environmental Remote Sensing*, John Wiley and Sons, New York.
2. Camphell, J.B. (1983): *Mapping the land*, American Association of Geographers, Reprint in India, Scientific Publisher, Jodhpur.
3. Hyatt E: *Remote Sensing*
4. Kathuria C.D.: *Remote Sensing and Geographical Information System*
5. Luder, D. (1959): *Aerial Photography Interpretation: Principles and Applications*, Mc Graw Hill, New York
6. Markandey K: *Urban Environment and Geoinformatics*
7. Nag P: *Introduction to Geographical Information System.*
8. Ramaswamy SM: *Remote Sensing in Water Resources*
9. Robert: *Digital Cartography*
10. Sabins Flyed, F. (1978): *Remote Sensing: Principles and Interpretation*, San Francisco, WH France

## PAPER–III GEOGO 502 MOUNTAIN ECOLOGY

Credits 2

Unit	Outline
Unit I	i. Mountain Ecosystem ii. Human Adaptation and modification to Mountain Ecosystem
Unit II	Research on the constraints of Mountain Ecosystem i. Topography ii. Soil Erosion iii. Deforestation iv. Landslides v. Cloudbursts vi. Forest Fire

### Reference:

1. *Mountain Ecosystems: Studies in treeline Ecology* edited by Gabriel Broll, Beate Keplin, 2005,
2. *Mountain Biodiversity: A Global Assessment* edited by Eva M. Spehn, 2002, Google Book.
3. *Mountain Environments: By Romola Parish, 2002, Google Book.*
4. *Mountain Environment & Communities: by Don Funnell and Romola Parish, Google Book, 2001.*
5. *Mountain Geography: Physical & Human Dimensions* by Larry W.Price, Alton C. Byers, Thomas Kohler, Martin F. Price, 2013,Google Book.
6. *Mountain Weather and Climate: By Roger Graham Barry, 1981, Google Book.*



**PAPER–III**  
**GEOGO 503- UNDERSTANDING DISASTER MANAGEMENT**  
**Credits 2**

<b>Unit</b>	<b>Outline</b>
Unit I-	Types of Hazards i. Natural and Anthropogenic ii. Understanding the Dynamics of vulnerability and incidents of Disaster. iii. Risk analysis with respect to Human activities.
Unit II-	Disaster preparedness plan i. Stake holders in Disaster Mitigation. ii. Response to incidents and Relief management, Damage Assessment and Rehabilitation. iii. Scopes for building resilience.

**Reference:**

<i>Basics of safety &amp; disaster management</i>	<i>Madhani, r.p.</i>
<i>Beyond disaster</i>	<i>Dhir, k.c.</i>
<i>Biological disaster management &amp; information technology</i>	<i>Sharma, a.</i>
<i>Combating natural disaster</i>	<i>Tripathy, r.p.</i>
<i>Crisis communications</i>	<i>Banks, k.f.</i>
<i>Disaster management</i>	<i>Asthana</i>
<i>Disaster management</i>	<i>Narayan, b.</i>
<i>Disaster management</i>	<i>Singh, k.k.</i>
<i>Disaster management</i>	<i>Raut, c.i.</i>
<i>Disaster management</i>	<i>Khupse, m.h.</i>
<i>Disaster management</i>	<i>Gupta, m.</i>
<i>Disaster management &amp; climate change</i>	<i>Sharma, a.</i>
<i>Disaster management &amp; preparedness</i>	<i>David, k.k.</i>
<i>Disaster management (6 vols)</i>	<i>Ghosh, g.k.</i>
<i>Disaster management capacity building &amp; people's resilience</i>	<i>Saxena, a.k.</i>
<i>Disaster resilience</i>	<i>Saxena, a.k.</i>
<i>Drought mitigation &amp; management</i>	<i>Kumar, s.</i>
<i>Education for preparedness of disaster</i>	<i>Singh, a.</i>
<i>Ency. Of disaster management (2 vols)</i>	<i>Gaur, n.k.</i>
<i>Engineering for natural disaster management</i>	<i>Sharma, k.</i>
<i>Environmental disasters</i>	<i>Singh, k.k.</i>
<i>Environmental impact assessment (eia) &amp; disaster management</i>	<i>Satsangi, a.</i>
<i>H.b. of disaster management (2 vols)</i>	<i>Singh, r.</i>
<i>Management &amp; mitigation of tech. Disasters</i>	<i>Kamat, d.</i>
<i>Management of flood &amp; related disasters</i>	<i>Dewan, m.l.</i>
<i>Management of major disasters</i>	<i>Salpekar, a.</i>
<i>Natural calamities &amp; disaster management</i>	<i>Sharma, v.k.</i>
<i>Natural disaster management</i>	<i>Asthana, n.c.</i>
<i>Natural hazards &amp; disaster management</i>	<i>Tippal, b.s.</i>
<i>Strategies to combat disaster</i>	<i>Pani, n.</i>
<i>T.b. of disaster management</i>	<i>Sharma, a.</i>

### PAPER-III

## GEOGO 504-TRADITIONAL ECOLOGICAL KNOWLEDGE (TEK) AND SUSTAINABLE MANAGEMENT OF RESOURCES

### Credit 2

#### Objective:

To acquaint the students the importance of rich Traditional Ecological Knowledge for Sustainable Managements of Natural Resources

Unit	Outline
Unit: I	<b>Principle of TEK</b> <ul style="list-style-type: none"><li>i. The meaning, concept development of TEK</li><li>ii. Knowledge synthesis and its appropriation.</li><li>iii. The importance of TEK in present context.</li><li>iv. TEK and Seasonal behavior of Biotic life</li></ul>
Unit: II	<b>TEK and sustainable management of resources</b> <ul style="list-style-type: none"><li>i. TEK in agricultural practices</li><li>ii. TEK in collection of forest raw materials</li><li>iii. TEK in conservation of Biotic Life</li><li>iv. TEK in managing landscape ecology.</li></ul>

#### References:

1. *TEK: Learning from the Indigenous practices for environmental sustainability* Melissa K. Nelson, Daniel Shiulling, 2018, Google book
2. *TEK and Natural resources Management, 2006, Edited Charles Menzies*
3. *TEK : Concept and Cases, Edited Julian T. Inglis, International Development Research Center 1993*
4. *TEK of the Mountain People: Foundation for Sustainable Development in the Hindu Kush Himalaya, Reelendra K.Joshi and Vir Singh, 2010, Google Book*
5. *Wisdom of Elders by David Suzuki and Peter Knudtson, Bantam Book, New Yor- Toronto*
6. *Shifting Cultivation and Tribal Culture by Tomo Riba, 2013 Rubi Publication, Dhaka Bangladesh*

**PAPER–III**  
**GEOGO 505 CULTURE AND SPACE IN GEOGRAPHY**  
**Credits 2**

Basic objective of this course

This course provides an insight in to the, factors leading to origin and spatial variations among cultural groups and the special functioning of society, and the changing and multifaceted relationships between people and the environments in which they reside.

Course Objectives: 1) to enhance the understanding of culture using key concepts of geography 2) To develop analytical skills to relate in contextual situation

Course Learning Outcomes: 1) critical understanding of the contemporary issues of culture 2) understanding geographic epistemologies for analysing culture 3) Develop analytical capability to read contemporary issues of culture

<b>Unit</b>	<b>Outline</b>
Unit I:	<p>Concept of culture in Geography</p> <ul style="list-style-type: none"> <li>i. Development of cultural geography, Nature, scope, approaches and perception</li> <li>ii. Cultural-areas, cultural landscape, cultural assimilation and diffusion.</li> <li>iii. Various Production processes and formation of Cultural practices</li> <li>iv. Geographical factors in growth and formation of cultural regions.</li> </ul>
Unit II	<p>Evolution and Growth of Cultural Groups</p> <ul style="list-style-type: none"> <li>i. Beginning of Cultural Practices, Origin of bases of cultural diversity; Race, language, Religion, ethnicity.</li> <li>ii. Identity formation and Cultural Adaptation,</li> <li>iii. Impact of Globalization and Cultural continuity, Concept of Modernization and Transformations,</li> <li>iv. Spatial Patterns of world cultural regions.</li> </ul>

Suggested Readings:

1. Anderson, K., Domosh, M., Pile, S., & Thrift, N. (eds.). 2002. *Handbook of cultural geograph.,. Sage.*
2. Blunt, A. 2005. *Cultural geography: cultural geographies of home. Progress in human geography, 29(4), 505-515.*
3. Cavallaro, D. 2001. *Critical and Cultural Theory: Thematic Variations, Athlone Press, London and New Brunswick, NJ.*

4. Cosgrove, D. 1984. *Social Formation and Symbolic Landscape*, London: Croom Helm.
5. Cosgrove, D., & Daniels, S. (Eds.), 1988. *The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments*, Cambridge University Press.
6. Duncan, J. S. 2005. *The city as Text: The Politics of Landscape Interpretation in the Kandyan Kingdom*, Cambridge University Press.
7. Hirsch, E and Hanlon, M. 2003. *The Anthropology of Landscape: perspectives on space and Place*, Oxford: Clarendon press Page 30 of 184
8. Lorimer, H. 2005. *Cultural geography: the busyness of being more-than representational*. *Progress in human geography*, 29(1), 83-94
9. Mitchell, D. 1996. 'California: The Beautiful and the Damned' from the 'Lie of the Land: Migrant Workers and the California Landscape, 13-35, Minneapolis: University of Minnesota Press
10. Mitchell, D. 2000. *Cultural Geography: A Critical Introduction*, Blackwell
11. Rose, G. 2008. *Looking at Landscape: The Uneasy Pleasures of Power*. In *The Cultural Geography Reader* (pp. 183-187), Routledge.

### PAPER–III

## GEOGO 506 APPLIED AGRICULTURE GEOGRAPHY

Credits 2

Unit	Outline
Unit I	<ol style="list-style-type: none"><li>i. Concepts of Agriculture Geography</li><li>ii. Geographical factors &amp; Agricultural Development</li><li>iii. Regional Distribution of Agriculture Practices</li><li>iv. Crop Diversification, Combination &amp; Commercialization</li></ol>
Unit II	<ol style="list-style-type: none"><li>i. Agricultural Transformation in India since post Independence</li><li>ii. Modernization of Agriculture, Green Revolution, Structural Adjustment Programme (SAP) and its impact and consequences</li><li>iii. Advanced Technologies in Agriculture (irrigation, fertilizer, HYV &amp; Crop protection)</li><li>iv. New Agricultural policies</li></ol>

### Reference

1. Bayliss Smith, T.P. : *The Ecology of Agricultural Systems*. Cambridge University Press, London, 1987
2. Berry, B.J.L. et. al. : *The Geography of Economic Systems*. Prentice Hall, New York, 1976
3. Brown, L.R. : *The Changing World Food Prospects – The Nineties and Beyond*. World Watch Institute, Washington D.C., 1990
4. Cantor L.M. : *A World Geography of Irrigation*. Oliver and Bord, London, 1967.
5. Desai G.N. and Vaidhanathan A : *Strategic Issues in Future Growth of Fertilizer Use in India*. McMillan Pub., New Delhi, 1998.
6. Gregor, H.P. : *Geography of Agriculture*. Prentice Hall, New York, 1970
7. Grigg D.B. : *The Agricultural Systems of the World*. Cambridge University Press, New York, 1974.
8. Morgan W.B. and Norton, R.J.C. : *Agricultural Geography*. Mathuen, London, 1971.
9. Nelson, Paul : *Greenhouse Operation and Management*. Reston Publishing, Virginia, 1985.
10. Sarkar, A.K. : *Practical Geography : A Systematic Approach*. Oriental Longman, Calcutta, 1997.
11. Sauer, C.O. : *Agricultural Origins and Disparities*. M.I.T. Press, Mass, U.S.A., 1969.
12. Singh, J and Dhillon, S.S. : *Agricultural Geography*. Tata McGraw Hill Pub., New Delhi, 1988.

**PAPER–III**  
**GEOGO 507 MEDICAL GEOGRAPHY**  
**Credits- 2**

Unit	Outline
<b>Unit I</b>	Introduction to Medical Geography; <ol style="list-style-type: none"> <li>i. Definition and concept of Medical Geography,</li> <li>ii. Climate and Health (micro climatic realities, development and health)</li> <li>iii. Topography and Health</li> <li>iv. Geographical distribution of major diseases in India (communicable and non-communicable)</li> <li>v. Epidemics and Pandemics with special reference to COVID-19</li> </ol>
<b>Unit II</b>	Health Care Delivery Systems: <ol style="list-style-type: none"> <li>i. Impact of Geographical factors in Health Delivery Systems</li> <li>ii. Structure of health care services in India</li> <li>iii. Health inequality</li> <li>iv. Problem of access and utilisation</li> <li>v. Investment in Health</li> <li>vi. Public and Private Initiatives in health-care provisions</li> <li>vii. Health Policy in Pre-independence &amp; Post Independence India</li> </ol>

**Suggested Readings**

1. Bonita, R., Beaglehole, R., Kjellstrom, T. (2006) [Basic epidemiology \(link is external\)](#), 2nd Ed. World Health Organization (WHO), Geneva, Switzerland. Pp 219
2. Choudhary, B.K., *Tuberculosis in India: A Political Ecology Approach*, VDM Verlag, 2008
3. Clark, M., Riben, P. & Nowgesic, E., *The association of housing density, isolation and tuberculosis in Canadian First Nations communities*, *International journal of epidemiology*, vol. 31, no. 5, pp. 940-936. 2002
4. Cohen, M.L., *Changing patterns of infectious disease*, *Nature*, vol. 406, no. 6797, pp. 762-767. 2000
5. Cromley, E.K. & McLafferty, S.L. (2012) *GIS and Public health. 2nd Edition*. Guilford Press. New York. pp 503. ISBN 978-1-60918-750-7. Available from the vendor of your choice or from [Amazon.com - GIS and Public Health \(link is external\)](#).  
(This textbook will also be readily available through the Penn State Libraries E-Book program at no cost to the student. Students do not need to purchase a physical copy of the book.)
6. Elliott, P., Wakefield, J., Best, N., and D. Briggs, *Spatial Epidemiology: Methods and Applications*, Oxford University Press, 2000
7. Eyles, J. & Litva, A., *Coming out: exposing theory in medical geography*, *Health and Place*, vol. 1, pp. 5–14. 1993
8. Farmer, Paul. *Infections and Inequalities: the Modern Plagues*. Berkeley: University of California Press. 1999
9. Kalipeni, E., Craddock, S., Oppong, J.R., Ghosh, J., ed), *HIV and AIDS in Africa: Beyond Epideminology*, Blackwell Publishing Ltd, Oxford, 2004,
10. Kearns, R. & Moon, G., *From medical to health geography: novelty, place and theory after a decade of change*, *Progress in Human Geography*, vol. 26, no. 5, pp. 605-625. 2002
11. Lankinen, S.K. (ed) et. al, *Health and Disease in Developing Countries*, Macmillan Education Ltd, London and Oxford, 1994
12. McMichael, A.J., *Environmental and social influences on emerging infectious diseases: past, present and future*, *Philosophical transactions of the Royal Society of London. Series B: Biological sciences*, vol. 359, no. 1447, pp. 1049-1058. 2004
13. Meade, M.S., Earickson, R.J, *Medical Geography, 2nd Edition*, The Guilford Press, London, UK, 2000.
14. Naidoo, J., Wills, J., *Introduction To Health Studies*, Pal grave New York, 2001
15. Phillips, D.R., Varhasset, Y. eds), *Health and Development*, Routledge, London, 1994

16. Quammen, D. (2012) Spillover: Animal Infections and the Next Human Pandemic. 1st Edition. ISBN-13: 978-0393346619. Available from the vendor of your choice or from [Amazon.com - Spillover: Animal Infections and the Next Human Pandemic](https://www.amazon.com/Spillover-Animal-Infections-and-the-Next-Human-Pandemic/dp/9780393346619) (link is external).

**PAPER-III**  
**GEOGO 508 GEOGRAPHY OF TOURISM AND HERITAGE**  
**Credits- 2**

<b>Unit</b>	<b>Outline</b>
<b>Unit I</b>	Development of the Geography of Tourism and Heritage: <ol style="list-style-type: none"> <li>i. Basic Concepts and Principles of Tourism</li> <li>ii. Determinants of Development of Tourism (Physical &amp; Socio Culture)</li> <li>iii. Geographical Factors that determine the Development of Tourism; Tourism infrastructure</li> <li>iv. Alternative tourism and Prospects: Ecotourism, Sustainable tourism, Heritage Tourism</li> <li>v. Tourism Management, heritage issues and prospects: policy and planning - global and national</li> </ol>
<b>Unit II</b>	Indian Scenario: <ol style="list-style-type: none"> <li>i. Tourism and Heritage resources</li> <li>ii. Tourism as an industry and economy; national, state and local contexts</li> <li>iii. Types of tourism: domestic, international, local, pilgrimages</li> <li>iv. Tourism policies, perspectives, and plans.</li> </ol>

**Suggested Readings**

1. Aitchison, Cara; MacLeod, Nicola E. and Shaw, Stephen J. 2000. *Leisure and Tourism Landscape: Social and Cultural Geographies*. Routledge, London.
2. Ashworth, G.J. and Dietvorst, A.G.J. (eds.) 1995. *Tourism and Spatial Transformations: Implications for Policy and Planning*. CAB International, Warwick UK.
3. Ateljevic, Irena; Morgan, Nigel and Pritchard, Annette (eds.) 2011. *The Critical Turn in Tourism Studies: Creating an Academy of Hope*. Routledge, London.
4. Coles, Tim; Duval, David Timothy and Shaw, Gareth 2011. *Student's Guide to Writing Dissertations and Theses in Tourism Studies and Related Disciplines*. Routledge, London.
5. Collins-Kreiner, Noga 2006. *Christian Tourism to the Holy Land: Pilgrimage during Security Crises*. Ashgate Publ., Farnham U.K.
6. Girard, Luigi F. and Nijkamp, Peter (eds.) 2009. *Cultural Tourism and Sustainable Local Development*. Ashgate Publ., Farnham U.K.
7. Gössling, Stefan; Hall, C. Michael and Weaver, David (eds.) 2008. *Sustainable Tourism Futures: Perspectives on Systems, Restructuring and Innovations*. Routledge, London.
8. Hall, C. M. and Page, S.J. 2008. *The Geography of Tourism and Recreation: Environment, Place and Space*. Routledge, London. 4<sup>th</sup> Ed.
9. Henderson, Carol and Weisgrau, Maxine (eds.) 2007. *Raj Rhapsodies: Tourism, Heritage and Seduction of History*. Ashgate Publ., Farnham U.K.
10. Higham, James 2007. *Critical Issues in Ecotourism: understanding a complex tourism phenomenon*. Butterworth-Heinemann, Oxford.
11. Honey, Martha 2008. *Ecotourism and Sustainable Development*. Island Press, Seattle.
12. Jamal, Tazim and Robinson, Mike (eds.) 2009. *The SAGE Handbook of Tourism Studies*. Sage, London.

**PAPER-III**  
**GEOGO 509 URBAN STUDIES**  
**Credits- 2**

<b>Unit</b>	<b>Outline</b>
<b>Unit I</b>	Conceptual Issues in Urban Studies: i. Theories and Approaches of urban studies (locational, regional, spatio-structural) ii. Rural- urban linkages iii. Trends and Patterns of Urbanization in India
<b>Unit II</b>	Urban Issues and Challenges: i. Urban society, social Structure and Space ii. Urban Crisis (pollution, congestion, crime, slum and heat island) iii. Urban Governance: Implications of 74 <sup>th</sup> CAA on urban governance iv. Future governance structure PPP, capacity building for better service delivery

**Suggested Readings:**

1. Dutt, Ashok et. al. 1994. *The Asian Cities: Processes of Development, Characteristics and Planning*. GeoJournal Library, London.
2. Fyfe, Nicholas R. and Kenny, Judith T. (eds.) 2005. *The Urban Geography Reader*. Routledge, London.
3. Gallien, A.B. and S. Eisner 1963. *Urban Pattern*, New York.
4. HUDCO-HSMI. 2001. *The States of Indian Cities*, HUDCO HSMI, New Delhi.
5. Jha, R. and Nasreen Siddiqui 2000. *Towards People Friendly Cities*, UNICEF Maharashtra State Office, Mumbai.
6. Knox, Paul and Pinch, Steven 2006. *Urban Social Geography*. Pearson Prentice-Hall, Englewood Cliffs NJ. 5<sup>th</sup> Ed.
7. Kumar, B. and R.B. Singh 2003. *Urban Development and Anthropogenic Climatic Change*. Manak Publications, New Delhi.
8. Kundu, A. 2005. *Urban Development and Urban Research in India*, Khama Publishers, New Delhi.
9. Mathur, M.P. 2007. *Norms and Standards of Municipal Basic Services in India*, National Institute of Urban Affairs, New Delhi available on [www.niua.org](http://www.niua.org) accessed on 1<sup>st</sup> June 2010.
10. Pacione, Michael 2005. *Urban Geography: A Global Perspective*. 2<sup>nd</sup> ed. Routledge, London.
11. Prakasa Rao, V.L.S. 1983. *Urbanisation in India: Spatial Dimensions, Concept*, New Delhi.
12. Misra, R.P. and Misra, K. (eds.) 1998. *Million Cities of India Vol.I/II Sustainable Foundation*, New Delhi.
13. Ramachandran, R. 1989. *Urbanisation and Urban System in India*, Oxford University Press, New Delhi.
14. Singh, R.L. 1955. *Banaras: A Study in Urban Geography*, Nand Kishor and Brothers, Banaras.
15. Sivaramakrishnan, K.C. et al. 2005. *A Hand Book of Urbanisation in India*, Oxford University Press, New Delhi.
16. UNCHS-UN HABITAT 2001. *Cities in a Globalising World. Global Report on Human Settlement*, Earthscan, London and Sterling, VA.
17. UN-HABITAT 2003. *Water and Sanitation in World Cities: Local Action for Global Goals*, Earthscan London.
18. Vaidya, Chetan 2009. *Urban Issues, Reforms and Way Forward in India* working paper No. 4/2009-DEA available on [www.niua.org](http://www.niua.org) accessed on 1<sup>st</sup> June 2010.



**Paper – IV (DEPARTMENTAL ELECTIVE)**

**GEOGE601 MOUNTAIN GEOGRAPHY**

Total Marks : 100  
Internal Exam Marks : 25 Time: 1 hr  
End Term Exam Marks : 75 Time: 3 hrs  
Lecture : 3 Credits Practical: 0 Credits Tutorial: 1 Credits

<b>Unit</b>	<b>Outline</b>
<b>I</b>	<b>Introduction to Mountains:</b> i. Origin and Distribution of Major Mountains of the World ii. Mountain Landforms and Geomorphic Processes iii. Mountain Climate iv. Mountain Soil, Vegetation and Wildlife
<b>II</b>	<b>People in the Mountains:</b> i. Physiological Adaptation ii. Agriculture and Pastoralism iii. Settlements and Housing iv. Food habits and Dressing
<b>III</b>	<b>Constraints of the Mountains:</b> i. Inaccessibility ii. Landslides and Avalanches iii. Deforestation and Soil Erosion iv. Impact of Climate Change
<b>IV</b>	<b>Sustainable Mountain Development:</b> i. Attitude towards the Mountains ii. Natural Resource Management iii. Economic Opportunities iv. Mountain Policies and Governance

**Suggested Readings:**

1. Jina, P. S. (1996). *Ladakh: The Land and the People*. Indus Publishing Company, New Delhi.
2. Messerli, B. and Ives, J. D. (1997). *Mountains of the World: A Global Priority*. Parthenon Publishing, New York and Carnforth.
3. Price, M. F., Byers, A. C., Friend, D. A., Kohler, T. and Price, L. W. (2013). *Mountain Geography: Physical and Human Dimensions*. University of California Press, Berkeley, Los Angeles and London.
4. Price, M. F., Jansky, L. and Latsenia, A. A. (2004). *Key Issues for Mountain Areas*. United Nations University Press, Tokyo.
5. Rawat, A. S. (2002). *Alternative Farming system in Dry Temperate Zone of Himachal: A case study of Kinnaur District*. Indus Publishing Company, New Delhi.
6. Singh, V. and Sharma, M. L. (1998). *Mountain Ecosystem: A scenario of Unsustainability*. Indus Publishing Company, New Delhi.
7. Stocking, M., Helleman, H. and White, R. (2005). *Renewable Natural Resources Management for Mountain Communities*. International Centre for Integrated Mountain Development (ICIMOD), Kathmandu.

**Paper – IV**

**GEOGE602- GEOGRAPHY OF SOCIAL WELLBEING AND COMMUNITY  
DEVELOPMENT WITH SPECIAL REFERENCE TO INDIA  
(Credits 4)**

**Full Marks 100**

**End term 75**

**Internal (Seminar/Tutorials -25)**

Basic objectives:

The course is aimed at addressing human problems which continue to afflict the society at large. It is an attempt to understand socially relevant welfare issues which provided a new framework for micro-level enquiries. Micro level spatial analysis in turn enhances the role of geography in framing of developmental planning. Through this course Students will learn the basic geographical tools and concepts needed to understand the intricacy of spaces and areas and to appreciate the interconnections between their lives and those of people.

<b>Unit</b>	<b>Outline</b>
Unit I:	Geography and Social Wellbeing: i. Concept of Social Wellbeing in Geography, development, nature, scope and approaches, ii. Issues of human wellbeing; Needs and wants: understanding through Maslow; Quality of life iii. Concept deprivation, Social differentiation, Discrimination, iv. Absolute and relative Deprivation and exclusion, patterns of rural and urban poverty
Unit II:	Indicators of Social Well-being, i. Economic, Social, Cultural and Emotional. ii. Changing Social Priorities, Social Reporting and Planning iii. social conflict and Spatial distribution of well-being, iv. Human resource development and social wellbeing.
Unit III:	Community Development and Social Wellbeing i. concept of social wellbeing in larger community concept, Bottom-up approach, ii. Tribal development approaches in India Health, Education, Poverty and Employment iii. Development induced displacement of community, Issues and policy, Forest right and tribal livelihood change. iv. Globalization Impact ,social change and wellbeing
Unit IV:	Social Wellbeing in the Indian Context i. Social and spatial disparity in literacy, housing, health and health care systems (public and private) Disease, disease prevalence with special reference to Covid-19 Pandemic, ii. Occupational Risk, Poverty induced Crimean welfare measures. iii. SDG goals and inclusive development; Understanding through empirical study of any community center/village in fulfilling of SDG goals iv. Report writing and seminar/discussion on empirical study.

### Suggested Readings:

1. Behera, D. K., Pfeffer, G., (eds) (1999): *Contemporary Society: Tribal Studies, Vol- III*, Concept Publishing Company, New Delhi.
2. Chaudhuri, B., (ed.) (1992): *Socio-Economic and Ecological Development, Inter-India Publications, New Delhi.*
3. Das, B. K., Das R.K., (eds) (2017): *Rethinking Tribe in Indian Context*, Rawat Publications, Jaipur.
4. Dasgupta, P. (1993): *An enquiry into wellbeing and destitution*, Oxford University Press, New York
5. Desai, Vandana and Robert B. Potter eds(2008) *The Companion to Development Studies*.Routledge.
6. Freudenberg K. S., *Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA)-A manual for CRS field works and partners*, Maryland.
7. Friedman, M. (1962): *Capitalism and Freedom*, University Press, Chicago
8. Harvey, D. (1973): *Social Justice and the City*, Edward Arnold, London
9. Narayan, S. (2002): *The Dynamics of Tribals Development- Issues and Challenges*, Gyan Publishing House, Delhi.
10. Nathan, D., Xaxa, V., (eds) (2017): *Social Exclusion and Adverse Inclusion-Development and Deprivation of Adivasis in India*, Oxford Press.
11. Peet, R., Hartwick, E. (2015) *Theories of Development, Third Edition*, Guilford Press
12. Pfeffer, G., Behera, D. K. (eds) (1997): *Contemporary Society: Tribal Studies, Vol-II*, Concept Publishing Company, New Delhi.
13. Potter, R.,et. all (2017) *Geographies of Development*. London: Routledge.
14. Raha M. K., Coomar P. C. (eds) (1989): *Tribal India: Problem development Prospect. Vol- I & II*, Gian Publishing House, New Delhi.
15. Rath, G.C (ed.) (2006): *Tribal Development in India- The Contemporary Debate*, Sage Publications, New Delhi.
16. Rose, H.M. (1971): *The Black Ghetto: A Spatial Behavioral Perspective*, McGraw Hill, New York
17. Roy, K. (ed.) (2008): *Education and Health Problems in Tribal Development- A Study of National Integration*, Concept Publishing Company, New Delhi.
18. Sadanandan S., Natarajan P., et al (2007): *Data Tools: Participatory Rural Appraisal Techniques*, Cochin.
19. Smith D. M. (1973): *The geography of social well-being in the United States: an introduction to territorial social indicators*, McGraw-Hill, London
20. Smith D. M. (1977): *Human geography: A welfare approach*, St. Martin's Press, London
21. Smith D. M. (1979): *Where the Grass is Greener: Geographical Perspectives on Inequality*, Croom Helm, London
22. Smith, N. (2010) *Uneven Development: Nature, Capital, and the Production of Space*, University of Georgia Press
23. Tripathy S.N. (2013): *Tribal Development-Issues and Policy Options*, Abhijeet Publications, New Delhi.

**Paper – IV**  
**GEOGE603- TRADITIONAL ECOLOGICAL KNOWLEDGE**  
**Credits 4**

Objective:

To acquaint the students the importance of rich Traditional Ecological Knowledge for sustainable managements of natural resources.

<b>Unit</b>	<b>Outline</b>
<b>Unit: I:</b>	<b>Principle of TEK</b> <ul style="list-style-type: none"> <li>i. The meaning and concept of TEK</li> <li>ii. Development of TEK</li> <li>iii. The importance of TEK in present context.</li> <li>iv. TEK and Seasonal behavior of Biotic life</li> </ul>
<b>Unit: II</b>	<b>TEK and sustainable management of resources</b> <ul style="list-style-type: none"> <li>i. TEK in agricultural practices</li> <li>ii. TEK in collection of forest raw materials</li> <li>iii. TEK in conservation of Biotic Life</li> </ul>
<b>Unit: III:</b>	<b>TEK and material life</b> <ul style="list-style-type: none"> <li>i. Traditional food habits</li> <li>ii. Traditional healing practices</li> <li>iii. Architecture and craft</li> <li>iv. Hunting and fishing.</li> </ul>
<b>Unit:IV:</b>	<b>Application of TEK</b> <ul style="list-style-type: none"> <li>i. Visit to nearby traditional settlement to assess human dependencies on biotic resource.</li> <li>ii. Seminar &amp; Discussion</li> </ul>

**References:**

1. *TEK: Learning from the Indigenous practices for environmental sustainability* Melissa K. Nelson, Daniel Shiulling, 2018, Google book
2. *TEK and Natural resources Management, 2006, Edited Charles Menzies*
3. *TEK : Concept and Cases, Editred Julian T. Inglis, International Development Research Center 1993*
4. *TEK of the Mountain People: Foundation for Sustainable Development in the Hindu Kush Himalaya, Reelendra K.Joshi and Vir Singh, 2010, Google Book*
5. *Wisdom of Elders by David Suzuki and Peter Knudtson, Bantam Book, New Yor- Toronto*
6. *Shifting Cultivation and Tribal Culture by Tomo Riba, 2013 Rubi Publication, Dhaka Bangladesh*

**PAPER IV: GEOGE604**  
**RESEARCH IN PHYSICAL GEOGRAPHY**  
**Credits 4**

Unit	Details
I	Themes of Research in Physical Geography 1. Geomorphology: Watershed characterization; Topographic Data from Satellites; Geomorphological Mapping; River Bank erosion 2. Hydrology: Watershed hydrology, Extreme events, River Management, water budgeting, Water indices 3. Climatology: Climate change and its impacts, Land Surface Temperature, Drought
II	Recent Trends: Understanding global, regional and local level issues from recent publications in the field of Physical Geography
III	Analytical Methods in Physical Geography: 1. Hydrological Data analysis: Base-flow separation, Overland flow measurement, Hydrograph analysis 2. Spatial Interpolation: Trend Surface Analysis, IDW 3. Weighted Overlay analysis of geo-environmental parameters 4. Image data derivatives: NDVI, NDWI, NDPI, LST
IV	Data Collection and Analytical Techniques (Practical) 1. Topographic data collection; Terrain Analysis; River Morphological analysis; spatial modeling techniques 2. River data collection; techniques for Sediment Flux analysis; Extreme event analysis, Flood frequency and Return Period analysis. 3. Climate Data Collection Methods; Daily-Monthly-Annual data variability: ARIMA and seasonal decomposition; Spatial Interpolation

**Reading List:**

- Easter, K. W., Dixon, J. A., & Hufschmidt, M. M. (Eds.). (1991). *Watershed resources management: studies from Asia and the Pacific*. Institute of Southeast Asian Studies.
- Gregersen, H. M., Ffolliott, P. F., & Brooks, K. N. (Eds.). (2007). *Integrated watershed management: Connecting people to their land and water*. CABI.
- Goudie, A. (Ed.). (2003). *Geomorphological techniques*. Routledge.
- Heathcote, I. W. (2009). *Integrated watershed management: principles and practice*. John Wiley & Sons.
- Mitchell, C. W. (2014). *Terrain evaluation*. Routledge.
- Randhir, T. (2006). *Watershed management*. IWA Publishing.
- Smith, M. J., Paron, P., & Griffiths, J. S. (2011). *Geomorphological mapping: methods and applications (Vol. 15)*. Elsevier.
- Westervelt, J. (2001). *Simulation modeling for watershed management*. Springer Science & Business Media.
- Peckham, R. J., & Gyoza, J. (2007). *Digital terrain modelling*. Springer-Verlag Berlin Heidelberg.
- Zhou, Q., Lees, B., & Tang, G. A. (Eds.). (2008). *Advances in digital terrain analysis*. Springer Science & Business Media.
- Teegavarapu, R. S., Salas, J. D., & Stedinger, J. R. (Eds.). (2019, April). *Statistical Analysis of Hydrologic Variables: Methods and Applications*. American Society of Civil Engineers.

- Naghattini, M. (Ed.). (2017). *Fundamentals of statistical hydrology*. Switzerland: Springer International Publishing.
- Machiwal, D., & Jha, M. K. (2012). *Hydrologic time series analysis: theory and practice*. Springer Science & Business Media.
- Anbazhagan, S., Subramanian, S. K., & Yang, X. (Eds.). (2011). *Geoinformatics in applied geomorphology*. CRC Press.
- Hipel, K. W. (1995). Stochastic and statistical methods in hydrology and environmental engineering. *Stochastic Hydrology and Hydraulics*, 9(1), 1-11.

**Journals:**

- Geomorphology*: <https://www.journals.elsevier.com/geomorphology>
- Earth Surface Processes and Landforms*: <https://onlinelibrary.wiley.com/journal/10969837>
- Zeitschrift für Geomorphologie*: <https://www.schweizerbart.de/journals/zfg>
- Journal of Indian Geomorphology*: <https://indiageomorph.org/journal>
- Computer and Geosciences*: <https://www.journals.elsevier.com/computers-and-geosciences>
- Journal of Hydrology*: <https://www.journals.elsevier.com/journal-of-hydrology>
- Hydrology*: <https://www.mdpi.com/journal/hydrology>
- Hydrological Sciences Journal*: <https://www.tandfonline.com/toc/thsj20/current>
- Water Resource Journal*: <https://agupubs.onlinelibrary.wiley.com/journal/19447973>
- Journal of Climatology*: <https://www.hindawi.com/journals/jcli/>
- International Journal of Climatology*: <https://rmets.onlinelibrary.wiley.com/journal/10970088>
- Mausam*: <https://metnet.imd.gov.in/indmausam/>
- Journal of the Indian Society of Remote Sensing*: <https://www.springer.com/journal/12524/>

**Paper – IV**  
**GEOGE605- REGIONAL PLANNING**  
**Credits 4**

<b>Unit</b>	<b>Outline</b>
<b>Unit I</b>	Concept and nature of Regional Planning, i. Types of Planning, Principles and Objectives of Regional Planning; ii. Approaches of Regional Planning. iii. Methods and techniques used in the regionalization iv. Planning Region of India
<b>Unit II</b>	Theories of Regional Development i. Albert O. Hirschman, Gunnar Myrdal, John Friedman, W.W Rostow, Dependency Theory of Underdevelopment ii. Planning for Sustainable Development, Environmental issues in Regional Planning. iii. Sectoral, temporal and spatial dimensions of planning iv. Indicators of development and their data sources, measuring levels of development
<b>Unit III</b>	Measures of variability and inequalities: i. coefficient of variation ii. Lorenz curve iii. Ginni coefficient iv. Bivariate analysis: scatter diagram, simple linear regression analysis with standard error and coefficient of determinant and students “t” test Spearman Rank and product moment correlation with significance tests
<b>Unit IV</b>	Field Study Report writing Seminar Presentation Discussion

**Recommended Books:**

1. Bhat, L.S., 1973, *Regional Planning in India*, Statistical Publishing Society, Calcutta.
2. Chandana, R.C., 2000, *Regional Planning*, Kalyani Publishers Ludhiana.
3. Chand, M., Puri, & V.K., 1983, *Regional Planning in India*, allied Publishers, New Delhi.
4. Friedman, J., & Alonso, W., 1967 *Regional Development and Planning-A Reader*, MIT Press, Cambridge Mass.
5. Glasson, 1980, *Regional Planning*, Hutchinson, London
6. Glikson, A., 1955, *Regional and Development*, Netherlands, Universities Foundation of International Corp, London.
7. Mishra, R.P, 1969, *Regional Planning Concepts, Techniques and Policies*, University of Mysore, Mysore.
8. Mishra R.P, et al., 1974, *Regional Development and Planning in India*, Institute of Development Studies, Mysore.
9. Rao, V.L.B., 1960, *Regional Planning*, Asia Publishing House, New Delhi.
10. Kant Surya et al (eds).: *Reinventing Regional Development*, Rawat Publication, Jaipur and New Delhi.
11. Amedeo, D. and Golledge, A.G.: *An Introduction to Scientific Reasoning in Geography*, John Wiley and Sons, New York, 1975.
12. David, Ulwin: *Introductory Spatial Analysis*, Methuen, London, 1981.
13. Duncun, O.D. et al.: *Statistical Geography*, Free Press of Glenco, New York, 1961.
14. Gregory, S.: *Statistical Methods and the Geographers*, Longman's, London, 1963.
15. King, L.J.: *Statistical Analysis in Geography*, Prentice Hall, Englewood Cliffs, N.J.
16. Lewia, Peter: *Maps and Statistic*, Methuen & Co., London, 1967.
17. Mahmood, Aslam: *Statistical Methods in Geographical Studies*, Rajesh, New Delhi, 1997.
18. Mathewa, J.A.: *Quantitative and Statistical Approaches to Geography*, Rawat, Jaipur, 1981.

19. Maurice Y.: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hills, New York, 1974.

20. Pal, S.K.: *Statistics for Geoscientists: Techniques and Applications*, Concept, New Delhi, 1999.

**Paper – IV**

**GEOGE606- RESEARCH IN DISASTER STUDIES**

**Credits 4**

<b>Unit</b>	<b>Outline</b>
<b>Unit I</b>	<b>Understanding Disasters:</b> i. Natural Disaster, Manmade Disasters ii. Dynamics of Hazards, leading to Disasters. iii. Categories and Cases
<b>Unit II</b>	i. Vulnerability Assessment ii. Risk analysis, Stake holders and Personnel iii. Disaster Resilience
<b>Unit III</b>	i. Response to Disasters ii. Disaster Medicine iii. Relief and Rehabilitation
<b>Unit IV</b>	<b>Field Observations</b> i. Fire Services and Aviation Centers ii. Epidemiology studies and Trauma iii. NDRF, RAF, BRO Police Fire Services and Local Administration Interaction.

**Reference:**

<i>Basics of safety &amp; disaster management</i>	<i>Madhani, r.p.</i>
<i>Beyond disaster</i>	<i>Dhir, k.c.</i>
<i>Biological disaster management &amp; information technology</i>	<i>Sharma, a.</i>
<i>Combating natural disaster</i>	<i>Tripathy, r.p.</i>
<i>Crisis communications</i>	<i>Banks, k.f.</i>
<i>Disaster management</i>	<i>Asthana</i>
<i>Disaster management</i>	<i>Narayan, b.</i>
<i>Disaster management</i>	<i>Singh, k.k.</i>
<i>Disaster management</i>	<i>Raut, c.i.</i>
<i>Disaster management</i>	<i>Khupse, m.h.</i>
<i>Disaster management</i>	<i>Gupta, m.</i>
<i>Disaster management &amp; climate change</i>	<i>Sharma, a.</i>
<i>Disaster management &amp; preparedness</i>	<i>David, k.k.</i>
<i>Disaster management (6 vols)</i>	<i>Ghosh, g.k.</i>
<i>Disaster management capacity building &amp; people's resilience</i>	<i>Saxena, a.k.</i>
<i>Disaster resilience</i>	<i>Saxena, a.k.</i>
<i>Drought mitigation &amp; management</i>	<i>Kumar, s.</i>
<i>Education for preparedness of disaster</i>	<i>Singh, a.</i>
<i>Ency. Of disaster management (2 vols)</i>	<i>Gaur, n.k.</i>
<i>Engineering for natural disaster management</i>	<i>Sharma, k.</i>
<i>Environmental disasters</i>	<i>Singh, k.k.</i>
<i>Environmental impact assessment (eia) &amp; disaster management</i>	<i>Satsangi, a.</i>
<i>H.b. Of disaster management (2 vols)</i>	<i>Singh, r.</i>
<i>Management &amp; mitigation of tech. Disasters</i>	<i>Kamat, d.</i>
<i>Management of flood &amp; related disasters</i>	<i>Dewan, m.l.</i>
<i>Management of major disasters</i>	<i>Salpekar, a.</i>



Natural calamities & disaster management  
 Natural disaster management  
 Natural hazards & disaster management  
 Strategies to combat disaster

Sharma, v.k.  
 Asthana, n.c.  
 Tippal, b.s.  
 Pani, n.

**Paper – IV**  
**GEOGE607- APPLIED AGRICULTURAL GEOGRAPHY**  
**Credits 4**

<b>Unit</b>	<b>Outline</b>
<b>Unit I</b>	Principles of Applied Agricultural Geography i. Concepts and Approaches of Applied Agricultural Geography ii. Geographical Determinants & Agricultural Development (Topography, Soil, Drainage & Climate) iii. Concentration & Diversification
<b>Unit II</b>	Concept of Regions and Crop Combination Region i. Classification of region ii. Agricultural Regions iii. Location Quotient Concept of Location Agricultural Activities i. Models to determine the use of land ii. Game Theory and Decision-Making
<b>Unit III</b>	Land Classification and Land Capability Survey i. The Concept of Command Area Development ii. The Concept of Potential Production Unit iii. Land Capability Survey & Land Classification in India iv. Problems of Indian Agriculture: Management, Planning and Policies
<b>Unit IV</b>	Practical: : Crop classification and concentration : Crop diversification and specialisation Report writing Discussion

**Reference**

1. Bayliss Smith, T.P. : *The Ecology of Agricultural Systems*. Cambridge University Press, London, 1987
2. Berry, B.J.L. et. al. : *The Geography of Economic Systems*. Prentice Hall, New York, 1976
3. Brown, L.R. : *The Changing World Food Prospects – The Nineties and Beyond*. World Watch Institute, Washington D.C., 1990
4. Cantor L.M. : *A World Geography of Irrigation*. Oliver and Bord, London, 1967.
5. Desai G.N. and Vaidhanathan A : *Strategic Issues in Future Growth of Fertilizer Use in India*. McMillan Pub., New Delhi, 1998.
6. Gregor, H.P. : *Geography of Agriculture*. Prentice Hall, New York, 1970
7. Grigg D.B. : *The Agricultural Systems of the World*. Cambridge University Press, New York, 1974.
8. Morgan W.B. and Norton, R.J.C. : *Agricultural Geography*. Mathuen, London, 1971.
9. Nelson, Paul : *Greenhouse Operation and Management*. Reston Publishing, Virginia, 1985.
10. Sarkar, A.K. : *Practical Geography : A Systematic Approach*. Oriental Longman, Calcutta, 1997.

11. Sauer, C.O. : *Agricultural Origins and Disparities*. M.I.T. Press, Mass, U.S.A., 1969.  
 12. Singh, J and Dhillon, S.S. : *Agricultural Geography*. Tata McGraw Hill Pub., New Delhi, 1988.

**Paper – IV**  
**GEOGE608 MEDICAL GEOGRAPHY**  
**Credits- 4**

<b>Unit</b>	<b>Outline</b>
Unit I	Introduction to Medical Geography; i. Definition and concept of Medical Geography, ii. Climate and Health, Topography and Health, iii. Geographical distribution of major diseases in India (communicable and non-communicable) iv. Epidemic and Pandemic Issues
Unit II	Health Care Delivery Systems: i. Impact of Geographical factors in Health Delivery Systems; ii. Structure of health care services in India; Health inequality; Problem of access and utilisation; iii. Investment in Health; Public and Private Initiatives in health-care provisions; iv. Health Policy in Pre-independence & Post Independence India.
Unit III	<b>Drivers of Health Disorders</b> i. Poverty, Hunger, Food Insecurity ii. Population: Crowding, Congestion, Age and Sex Structure; Literacy and educational levels; iii. Social and Economic Security; Hygiene; Basic Facilities and Amenities.
Unit IV	<b>Measurement of Health and Health Disorders</b> Poverty and Hunger; Hunger Index, SNU and ICMR scale of nutrition, Morbidity, Mortality, BMI, WBI, HDI; Health GIS; Disease Mapping; Geo-statistical methods of Health issues.

**Suggested Readings**

1. Bonita, R., Beaglehole, R., Kjellstrom, T. (2006) [Basic epidemiology\(link is external\)](#), 2nd Ed. World Health Organization (WHO), Geneva, Switzerland. Pp 219
2. Choudhary, B.K., *Tuberculosis in India: A Political Ecology Approach*, VDM Verlag, 2008
3. Clark, M., Riben, P. & Nowgesic, E., *The association of housing density, isolation and tuberculosis in Canadian First Nations communities*, *International journal of epidemiology*, vol. 31, no. 5, pp. 940-936. 2002
4. Cohen, M.L., *Changing patterns of infectious disease*, *Nature*, vol. 406, no. 6797, pp. 762-767. 2000
5. Cromley, E.K. & McLafferty, S.L. (2012) *GIS and Public health. 2nd Edition*. Guilford Press. New York. pp 503. ISBN 978-1-60918-750-7. Available from the vendor of your choice or from [Amazon.com - GIS and Public Health\(link is external\)](#).  
 (This textbook will also be readily available through the Penn State Libraries E-Book program at no cost to the student. Students do not need to purchase a physical copy of the book.)
6. Elliott, P., Wakefield, J., Best, N., and D. Briggs, *Spatial Epidemiology: Methods and Applications*, Oxford University Press, 2000
7. Eyles, J. & Litva, A., *Coming out: exposing theory in medical geography*, *Health and Place*, vol. 1, pp. 5–14. 1993
8. Farmer, Paul. *Infections and Inequalities: the Modern Plagues*. Berkeley: University of California Press. 1999
9. Kalipeni, E., Craddock, S., Oppong, J.R., Ghosh, J., ed), *HIV and AIDS in Africa: Beyond Epideminology*, Blackwell Publishing Ltd, Oxford, 2004,

10. Kearns, R. & Moon, G., *From medical to health geography: novelty, place and theory after a decade of change*, *Progress in Human Geography*, vol. 26, no. 5, pp. 605-625. 2002
11. Lankinen, S.K. (ed) et. al, *Health and Disease in Developing Countries*, Macmillan Education Ltd, London and Oxford, 1994
12. McMichael, A.J., *Environmental and social influences on emerging infectious diseases: past, present and future*, *Philosophical transactions of the Royal Society of London. Series B: Biological sciences*, vol. 359, no. 1447, pp. 1049-1058. 2004
13. Meade, M.S., Earickson, R.J, *Medical Geography*, 2nd Edition, The Guilford Press, London, UK, 2000.
14. Naidoo, J., Wills, J., *Introduction To Health Studies*, Palgrave New York, 2001
15. Phillips, D.R., Varhasset, Y. eds), *Health and Development*, Routledge, London, 1994
16. Quammen, D. (2012) *Spillover: Animal Infections and the Next Human Pandemic*. 1st Edition. ISBN-13: 978-0393346619. Available from the vendor of your choice or from [Amazon.com - Spillover: Animal Infections and the Next Human Pandemic\(link is external\)](#).

**Paper – IV**

**GEOGE609 MOUNTAIN ECOLOGY AND SUSTAINABLE DEVELOPMENT**

**Credits 2**

<b>Unit</b>	<b>Outline</b>
<b>Unit I</b>	Mountain Ecosystem Human Adaptation to Mountain Ecosystem
<b>Unit II</b>	Constraints of Mountain Ecosystem i. Topography ii. Deforestation iii. Soil Erosion and Landslides iv. Cloudbursts v. Forest Fire
<b>Unit III</b>	Sustainable Development of Mountain Ecosystem i. Agriculture ii. House Pattern iii. Transport & Communication System iv. Managing of Water Resources v. Other forest resources
<b>Unit IV</b>	Assessment of Sustainable Management of Mountain Ecosystem i. Field visit to a Mountain settlement ii. To study Human Adjustment to it iii. Presentation of Field Report & Discussion

**Reference:**

1. *Mountain Ecosystems: Studies in treeline Ecology* edited by Gabriel Broll, Beate Keplin, 2005,
2. *Mountain Biodiversity: A Global Assessment* edited by Eva M. Spehn, 2002, Google Book.
3. *Mountain Environments: By Romola Parish, 2002, Google Book.*
4. *Mountain Environment & Communities: by Don Funnell and Romola Parish, Google Book, 2001.*
5. *Mountain Geography: Physical & Human Dimensions* by Larry W.Price, Alton C. Byers, Thomas Kohler, Martin F. Price, 2013,Google Book.
6. *Mountain Weather and Climate: By Roger Graham Barry, 1981, Google Book.*

**Paper – IV**  
**GEOGE610 URBAN STUDIES**

**Credits- 4**

<b>Unit</b>	<b>Outline</b>
Unit I	<b>Basic Concept and Approaches</b> <ol style="list-style-type: none"> <li>i. Concept of Urban Area,</li> <li>ii. Urban Environment and Smart City;</li> <li>iii. Approaches of Urban Studies;</li> <li>iv. Approaches to the study of Urban Environment.</li> </ol>
Unit II	<b>Emerging Issues and Research Trends</b> <ol style="list-style-type: none"> <li>i. Trends and Patterns of Urbanization in India: Post Independence Period;</li> <li>ii. Functional Classification of Towns;</li> <li>iii. Urban Problems and Environmental Degradation in India; Micro Climate of Cities;</li> <li>iv. Urban Pollution (Air, Water and Noise) and Health Impacts; Urban Social Space and Urban crime.</li> </ol>
Unit III	<b>Urban and Environmental Planning</b> <ol style="list-style-type: none"> <li>i. Techniques of Town Planning: Delhi or Chandigarh;</li> <li>ii. Urban Transport Planning; Basis of EIA ;</li> <li>iii. Concept of Urban Sustainability and Urban Environmental Conservation Strategies: International and National Conventions;</li> <li>iv. Urban Governance Programmes in India; Implications of 74<sup>th</sup> CAA on urban governance; Future governance structure PPP.</li> </ol>
Unit IV	<b>Research Methodology</b> <ol style="list-style-type: none"> <li>i. Models for Internal Structure, Hierarchy and Spacing of Cities;</li> <li>ii. Urban Sprawl; Urban Poverty and Slums;</li> <li>iii. Use of Remote Sensing Data for Urban Land uses and Change Detection; GPS and GIS for Urban Mapping;</li> <li>iv. Socio-economic and Environmental Surveys for Urban Themes.</li> </ol>

**Suggested Readings**

1. Dutt, Ashok et. al. 1994. The Asian Cities: Processes of Development, Characteristics and Planning. GeoJournal Library, London.
2. Fyfe, Nicholas R. and Kenny, Judith T. (eds.) 2005. *The Urban Geography Reader*. Routledge, London.
3. Gallien, A. B. and S. Eisner 1963. *Urban Pattern*, New York.
4. HUDCO-HSMI. 2001. *The States of Indian Cities*, HUDCO HSMI, New Delhi.
5. Jha, R. and Nasreen Siddiqui 2000. *Towards People Friendly Cities* ,UNICEF Maharashtra State Office, Mumbai.
6. Knox, Paul and Pinch, Steven 2006. *Urban Social Geography*. Pearson Prentice-Hall, Englewood Cliffs NJ. 5<sup>th</sup> Ed.
7. Kumar, B. and R. B. Singh 2003. *Urban Development and Anthropogenic Climatic Change*. Manak Publications, New Delhi.
8. Kundu, A. 2005. *Urban Development and Urban Research in India*, Khama Publishers, New Delhi.
9. Mathur, M. P. 2007. *Norms and Standards of Municipal Basic Services in India*, National Institute of Urban Affairs, New Delhi available on [www.niua.org](http://www.niua.org) accessed on 1<sup>st</sup> June 2010.
10. Pacione, Michael 2005. *Urban Geography: A Global Perspective*. 2<sup>nd</sup> ed. Routledge, London.
11. Prakasa Rao, V. L. S. 1983. *Urbanisation in India: Spatial Dimensions*, Concept, New Delhi.
12. Misra. R.P. and Misra, K. (eds.) 1998. *Million Cities of India Vol.I/II Sustainable Foundation*, New Delhi.

13. Ramachandran, R. 1989. Urbanisation and Urban System in India, Oxford University Press, New Delhi.
14. Singh, R.L. 1955. Banaras: A Study in Urban Geography, Nand Kishor and Brothers, Banaras.
15. Sivaramakrishnan, K. C. et al. 2005. A Hand Book of Urbanisation in India, Oxford University Press, New Delhi.
16. UNCHS-UN HABITAT 2001. Cities in a Globalising World. Global Report on Human Settlement, Earthscan, London and Sterling, VA.
17. UN-HABITAT 2003. Water and Sanitation in World Cities: Local Action for Global Goals, Earthscan London.
18. Vaidya, Chetan 2009. Urban Issues, Reforms and Way Forward in India working paper No. 4/2009-DEA available on [www.niua.org](http://www.niua.org) accessed on 1<sup>st</sup> June 2010.