

Department of Geography
University of Mumbai
Credit Course Based Syllabus, 2012-13

- Total No. of Credits offered: 96
- Electives on offer in a particular academic year in each group could vary.
- Semester is 15 weeks duration. Credit is defined for a semester

Semester I

Subject Code (326)	Course Title	Credits	No. of Hours
101	Fundamentals in Geomorphology	4+2= 6	60+60+ 120
102	Principles of Climatology	4+2= 6	60+60+ 120
103	Geography of Socio-Cultural and Political Processes	4+2= 6	60+60+ 120
104	Spatial Organisation of Economic Activities	4+2= 6	60+60+ 120
105	Tools and Techniques of Spatial Analysis - I	*	60+60+ 120
106	Tools and Techniques of Spatial Analysis- II	*	60+60+ 120
	Total	24	720

* Credits included in 4 Theory Papers as the respective part of the practical component

Semester II

Subject Code	Course Title	Credits	No. of Hours
201	Advances in Geomorphology	4+2= 6	60+60+ 120
202	Bio-geography	4+2= 6	60+60+ 120
203	Contemporary Human Geography	4+2= 6	60+60+ 120
204	Geography of World Economy	4+2= 6	60+60+ 120
205	Tools and Techniques of Spatial Analysis - III	*	60+60+ 120
206	Tools and Techniques of Spatial Analysis- IV	*	60+60+ 120
	Total	24	720

* Credits included in 4 Theory Papers as the respective part of the practical component

Semester III

Subject Code	Course Title	Credits	
301	Geography of South Asia with Special Reference to India	4+2= 6	60+60+ 120
302	Geo-informatics	4+2= 6	60+60+ 120
303	Elective	4+2= 6	60+60+ 120
304	Elective	4+2= 6	60+60+ 120
305	Tools and Techniques of Spatial Analysis - V	*	60+60+ 120
306	Tools and Techniques of Spatial Analysis- VI	*	60+60+ 120
	Total	24	720

* Credits included in 4 Theory Papers as the respective part of the practical component

Compulsory Courses

M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

301: Geography of South Asia

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours 120

I South Asian States as Territorial Entity

Contact Hours 15

- 1.1 Physiography-Relief and drainage
- 1.2 Climatic set up- Monsoon regime and its regional impact.
- 1.3 Soils and Vegetation, Environmental and ecological interrelations, regional variations
- 1.4 Resource base- Nature and patterns of distribution and exploitation of key resource types:
 - a. Land/Water/Mineral/and b. Energy Resources, Gaps in resource mobilisation

II Historical Context- Organisation of Society and Economy

Contact Hours 15

- 2.1 Evolution of the regional entity- Partition and impact- emergence of independent nation state- Regional Dynamics- Differences and Shared Characteristics
- 2.2 Demographic characteristics -Ethnicity, language and religion-Migration patterns- politics of cultural identity and its impact- issues of terrorism
- 2.3 Evolution of agricultural systems in South Asia- Technology and commercialization- Regional Patterns
- 2.4 Corporatisation- Agro marketing-Global food chains- Issues of food security and agricultural crisis- role of the State

III Industrialisation, Urbanisation and Development: Contemporary Trends

Contact Hours 15

- 3.1 Industrialization- Genesis and trends– New economic policy- Globalisation - Role of the MNCs
- 3.2 Contemporary growth in Infrastructure, Services, Trade and Retail sector- Sectoral links- Regional Specialisations
- 3.3 Urbanisation and economic growth- Contemporary urban systems- Globalising cities- Global capital regions and the urban crisis
- 3.4 Civil society and governance - Quality of life and index of socio-economic well-being – Regional variations

IV Regionalism – Co-operation and Geo-politics

Contact Hours 15

- 4.1 Regional Dynamics in South Asia- Historical trade patterns- Post independence trends-
- 4.2 Origin and Evolution of SAARC- Functioning of SAPTA- Contemporary trade policies- WTO regime and its impact.
- 4.3 The Challenge of regionalism – Intra and Inter-regional interaction-issues of the boarder states
- 4.4 Global powers – and geopolitics - Regional co-operation- Prospects and challenges

Reference Books:

1. Farmer, B. H., (1993): An Introduction to South Asia, (2nd edition), Routledge Publications, London.
2. Johnson, B. L. C., (1981): South Asia (2nd edition), Heinemann Educational Books Ltd., Exeter.
3. Spate, O. H. K. and Learmonth, A.T.A., (1967): India and Pakistan: Land, People and Economy, Methuen, London.
4. Stamp, L.D. (1958): Asia - A Regional and Economic Geography, Methuen & Co. Ltd., Essex Street - Strand, W. C. 2.
5. Tirtha, R. (1996): Geography of India, Rawat, Jaipur.
6. Singh, J., (1997): Agricultural Development in South Asia: A Comparative Study in the Green Revolution Experiences, National Books Organisation, New Delhi.
7. Dash Kishore, C., (2008), 'Regionalism in South Asia – Negotiating Co-operation, institutional structures', Routledge, London.
8. Gonsalves, F. and Jetiy, N, (1999): The Dynamics of South Asia: Regional Co- operation and SAARC, Sage, New Delhi.
9. Mollinga, P.A. (2000): Water for Food and Rural Development: Approaches and Initiatives in South Asia, Sage, New Delhi.
10. Sukhwal, B.L. (1971). India - A Political Geography! Allied Publishers, Bombay.
11. Vidyarthi, L.P. (1979), 'Patterns of Culture in Southern Asia'.
12. Srinivasan, K. and Vlanol, M. (2001). Population-Development Nexus in India: Challenges for the New Millenium, Tata McGraw.
13. Bjorkman, (1987): The Changing Division of Labour in South Asia, Manohar, New Delhi
14. Schwartzberg, J.E. (ed.), (1978): A Historical Atlas of South Asia, University of Chicago Press, Chicago.
12. Eric Gonsalves and Nancy Jetly (1999): The Dynamics of South Asia Regional Cooperation and SAARC,

Books for further reading:

1. Ahmed, K.S. (1964): Geography of Pakistan, Oxford University Press, Karachi.
2. Ahmed, K.S. (1975): An Economic Geography of Bangladesh, Vikas, New Delhi,
3. Cook. E. K. (1951): Ceylon: Its Geography, Its Resources and Its People, St. Martin, New York.

4. Baldwin, M.F. (1991): *Natural Resources of Sri Lanka: Condition and Trends*, Colombo.
5. C. Michael Hall and Stephen Page, (2000): *Tourism in South and South-East Asia- Issues and Cases*.
6. Burton Stein , Sanjay Subrahmanyam. (1996): *Institutions and Economic Change in South Asia*. Oxford University Press,Waltonn Street , Oxford , New York.
7. *South Asia Journal of South Asian Studies*, New Series, Vol. XXXII, no. 3 (December 2009)
8. Yogendra K. Malik, Charles H. Kennedy, Robert C. Oberst , Ashok Kapur , Mahendra Lawoti, Syedur Rahman (2009) (6th Edition): *Government And Politics In South Asia*, Westview Press Boulder , CO 80301
10. W. B. Stohr and D. R. Fraser Taylor, (1981): *Development from Above or Below*, John Wiley And Sons Ltd.
11. B. Ramesh Babu (1998): *Globalization And The South Asian State*. South Asian Publishers Pvt. Ltd. New Delhi.
12. Unesco French (Ed)., (1980): *Historical relations across the Indian Ocean , The general history of Africa Studies and documents 3*.
13. Dr. P. Thiagarajan., (March 2003): *Journal of the Institute of ASIAN STUDIES Vol. XX No.2*
14. Sanjeev Khagram., (2005): *Dams and Development Transnational struggles for Water and Power*, Oxford university press.
15. Milo Kearney.2004 (Series editor Peter N. Stearns): *Themes in World History- The Indian Ocean In World History*.
16. S. D. Muni. (ed): (Manohar 2006) : *Responding To Terrorism In south Asia*, Lordson Publishers Pvt.ltd., Delhi.
17. Rajesh M. Basrur. (series Editors Sumit Ganguly and Indiana University , Bloomington.) : *South Asia's Cold War Nuclear weapons and conflict in comparative perspective*, Routledge Publication, New York.
18. Ian Capland , Monash University (ed.) (2009): *South Asia Journal of South Asian studies , South Asian Studies Association, Monish University, Routledge, Tylor And Francis Group*.
19. Eric Gonsalves And Nancy Jetly (1999): *The Dynamics of South Asia Regional Cooperation and SAARC*, Sage Publication, New Delhi.

20. Imtiaz Alam. (ed),(2004): Journal South Asian Quarterly Magazine of South Asian Journalists and Scholars, April-June 2004. South Asian Economic Blues 4 177-A, Shadman –II, Pakistan.
 21. Uma Subramanian and John Arnold (2001): Forging Subregional Links in Transportation and Logistics in South Asia. United States of America.
 22. C. Michael Hall and Stephen Page (2000): Tourism in South and South east Asia Issues and Cases Printed and Bound In Replika Press Pvt. Ltd.
 23. Sugata Bose and Ayesha Jalal (1998): Modern South Asia History, Culture, Political Economy. Oxford University Press,
 24. Baburam Bhattarai (2003). : The Nature of Underdevelopment And Regional Structure of Nepal A Marxist Analysis. Adroit Publishers Delhi -110 053,
 25. Claude Markovits, Jacques Pouchepadass, Sanjay Subrahmanyam, (eds.): Society And Circulation- Mobile people and Itinerant Cultures in South Asia 1750-1950. Permanent Block 2003.
 26. Xinru Liu (1998): Ancient India And Ancient China Trade And Religious Exchanges AD 1-600.Oxford University Press.
 27. Sadiq Ahmed, Saman Kelegama, Ejaz Ghani (2010): Promoting Economy Cooperation In South Asia- Beyond SAFTA.
 28. Saman Kelegama, Institute of policy studies, Colombo, Nagesh Kumar , Research and Information System for the Non-Aligned and Other Developing Countries, New Delhi(ed) (2001): South Asia Economic Journal, Sage publication.
 29. K.M. Panikkar (This Special Indian Edition 1999) (Somaiya Publication): Asia And Western Dominance, Somaiya Publication.
 30. Barbara Harris –White (1996): A Political Economy Of Agricultural Markets In South India, Sage Publication.
 31. Gopal Singh (ed.) (1998): South Asia Democracy, Discontent and Societal Conflicts. Publishers Anamika and Distributors Ltd., Delhi
 32. Ashit K. Biswas, Olli varies, Cecilia Tortajada, (2005): Integrated Water Resource Management in South and South-East Asia, Oxford University Press.
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M.A. / M. Sc. Credit Based Grading System

Geography - Semester III

302: Geo-informatics

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours 120

I Introduction to Geoinformatics (Hours 15)

- 1.1 Basic Concepts, spatial information, features, variables: points, lines, areas
- 1.2 Fundamentals of Data Storage, Basic File Structures, Types of Database, Advantages of Database – spatial and non-spatial, SQL
- 1.3 Data Models - Entity Relationship model - Hardware and software requirements -Geographic data – significance of cartographic database and scale

II. Principals of Remote Sensing (Hours 15)

- 2.1 Types of remotely sensed data
- 2.2 Fundamentals of Photogrammetry
- 2.3 EMR concept, physical basis of remote sensing, Concept of TCC and FCC
- 2.4 Sensors and platforms
- 2.5 Interpretation and analysis of remotely sensed data – visual and digital

III. Geographical Information System (GIS) (Hours 15)

- 3.1 Definition and components of GIS
- 3.2 Development in computer systems and contemporary GIS
- 3.3 Spatial data and attribute data, scales of measurement
- 3.4 Topological Relationships, Creation of Topology
- 3.5 Map projections in GIS -- properties and choice
- 3.6 Database and data structures in GIS – raster and vector—geocoding
- 3.7 Data analysis and measurement, Boolean Algebra

IV Global Positioning System (Hours 15)

- 4.1 Basics, datum and co-ordinates
- 4.2 GPS and GDPS – Components of GPS, signals and accuracy - errors and correction, WAAS
- 4.3 Mobile mapping - web GIS – Virtual GIS – SDI and geoinformatics

Reference Books:

1. Agrawal, N.K.(2006), Essentials of GPS (Second Edition), Book Selection Centre, Hyderabad
2. American Society of Photogrammetry (1983): Manual of Remote Sensing, ASP Palis Church, V.A.
3. Barrett, E.G. and Curtis, L.F. (1992): Fundamentals of Remote Sensing in Air Photo-interpretation, McMillan, New York.

4. Bernhardsen, Tor (2002): Geographical Information Systems: An Introduction, Third Edition, John Wiley & Sons, Inc., New York.
5. Burrough, Peter A and McDonnell, R.A. (1998): Principles of Geographical Information Systems, Oxford University Press, Mumbai.
6. Campbell. J. (1989): Introduction to Remote Sensing, Guilford, New York.
7. Clarke, Keith C. (1998): Getting Started with Geographic Information Systems, Prentice-Hall Series in Geogl. Info. Science, Prentice-Hall, Inc. N.J.
8. Curran, Paul, J, (1988): Principles of Remote Sensing, Longman, London.
9. Heywood, I. et al (2002): An Introduction to Geological Systems, Pearson Education Limited, New Delhi.
10. Iliffe, J.C (2006), Datums and Map Projections for Remote Sensing, GIS and Surveying, Whittles Publishing, New York.
11. Jonson. R. J. (2003): Remote Sensing of the Environment-An Earth Resources Perspective, Pearson Education Series in Geographical Information Science, Keith C. Clarke (Series editor) Pearson Educators Private Limited. (Singapore), NewDelhi.
12. Lilles and Thomand and Relph Kiffer (1994). Remote Sensing and Image Interpretations, John Wiley and Sons, Inc., New York.
13. Parker, R, N. (2008), GIS and Spatial Analysis for the Social Sciences, Routledge, New York.
14. Paul Longley (2005), Geographic Information Systems and Science, John Wiley & Sons.
15. Pickles, John (2006), The Social Implications of geographic Information Systems, Rawat Publications, Jaipur.
16. Star, Jeffrey and John Estes (1996), Geographical Information Systems: An Introduction, Prentice-Hall, inc., N.J.
17. Shekar, S and Chawla, S, (2009), Spatial Databases: A Tour, Pearson Education, Delhi.

References for further reading:

1. Birkin, Mark et al (1996). Intelligent GIS GeoInformation International, Cambridge.
2. Chrisman, Nicholas (1997), Exploring Geographic Information Systems, John Wiley and Sons Inc, New York
3. Hard, R.M. (1989): Digital Image Processing of Remotely Sensed data, Academic Press, New York.
4. Lo, C.P (1986): Applied Remote Sensing, Longman, Scientific and Technical, Harlow, Essex.
5. Lunder, D. (1959): Aerial Photography Interpretation: Principles and Applications, McGrawHill, New York.

6. McCoy, Roger M. (2006), Field methods in Remote Sensing, Rawat Publications, Jaipur.
 7. Prater, W.K. (1978): Digital image Processing, John Wiley, New York.
 8. Rao, D.P. (eds.)(1988): Remote Sensing for Earth Resources, Association of Exploration Geologist, Hyderabad.
 9. Sabins, F. (1982): Remote Sensing: Principles and Applications, Freeman and Co., New York.
 10. Spencer, John (2003) Global Positioning System: A Field Guide for the Social Scientists, Blackwell Publishing, Malden, USA.
 11. Verrtappen, H., Th. (1977): Remote Sensing in Geomorphology, Elsevier Scientific Publication Company, Amsterdam.
 12. Warrin, R. Philipson (1997): Manual of Photographic Interpretations, American Society for Photogrammetry and Remote Sensing, Maryland, U.S.A.
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M.A./ M.Sc. Credit Based Grading System
Geography - Semester III
Two Electives: 303 and 304
From Group A, B, and C

M.A./ M.Sc. Credit Based Grading System
Geography - Semester III

305: Tools and Techniques of Spatial Analysis – V

No. of Credits: **4**

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I. Basics of Remote Sensing:

(Hours 30)

- 1.1 Aerial photography- types, identification of features, Stereogram and Stereo pairs
Photo scale, fiducial marks
- 1.2 Sensor devices and Signals, Types of Satellite,
- 1.3 EMR, FCC, Spectral signature of features, Spectral bands for features
- 1.4 Conjunctive exercises, interpretation, Benefits of satellite remote sensing,

II. Basics of Geographical Information System

(Hours 30)

2.1 Exposure to GIS software and their components:

- a. Base map compilation,
- b. Creation of Workflow of GIS,
- c. Manual GIS exercises

2.2. Data Types- generation, conversion and Digitisation- Layers

- a. Creation of Schema, Binary, decimal and Octal data conversion,

- b. Scanning, Geo-referencing, projection, on screen digitisation and preparation of vector and raster layers.
- c. Updating of spatial and attribute data
- d. Linking of Spatial and Attribute data

2.3 Thematic mapping techniques

- a. Symbolization -design principles of colour
- b. Typography and lettering; Representation of Qualitative data
- c. Point, line and Polygon analysis.

2.4 GIS analysis tools and significance –

- a. Overlay, buffer, extraction,
- b. Classification, dissolve, clip, split, erase,
- c. Point in polygon, line in polygon,
- d. Boolean logic,
- e. Query building

2.5 Report generation based on query

Marks: Section I - 35; Section II - 40; III Viva - 15; IV. Journal - 10

Reference Books:

1. Bhatta, Basudeb, (2008), Remote Sensing and GIS, Oxford University Press.
2. Jones, C. B., (1997), Geographical Information Systems and Computer Cartography, Addison, Wesley Longman Ltd., U.K.
3. Albrecht J. (2007), Key Concepts and Techniques in GIS, Sage.
4. Kemp Karen (ed.), (2008), Encyclopedia in Geographical Information Science, Sage.
5. Huxhold, W.E., (1991), An Introduction to Urban Geographical Information systems, Oxford University Press, New York.
6. Pickles, J., (1995), Ground Truth: The social Implications of Geographical Information Systems, The Guilford Press, New York.
7. Martin D., (1996), Geographical Information Systems: Socio-economic Applications, 2nd edition, Routledge, London, New York.
8. Morraine S. (1998), GIS Solutions in Natural Resource Management: Balancing The Technical-Political Equations, Onward Press, London.
9. Fazal Sahab, (2008), GIS Basics, New Age International Publishers Ltd, New Delhi
10. Petersen, G.N., (2009), GIS Cartography- A Guide to Effective Map Design, Taylor and Francis Group.
11. Vallentine G. Clifford N. (2010), Key Methods in Geography, Sage.

12. Birkin, Mark et al (1996). Intelligent GIS Geo Information International, Cambridge.
13. Chrisman, Nicholas (1997), Exploring Geographic Information Systems, John Wiley and Sons Inc, New York
14. Hard, R.M. (1989): Digital Image Processing of Remotely Sensed data, Academic Press, New York.
15. Lo, C.P (1986): Applied Remote Sensing, Longman, Scientific and Technical, Harlow, Essex.
16. Lunder, D. (1959): Aerial Photography Interpretation: Principles and Applications, McGrawHill, New York.
17. McCoy, Roger M. (2006), Field methods in Remote Sensing, Rawat Publications, Jaipur.
18. Prater, W.K. (1978): Digital image Processing, John Wiley, New York.
19. Rao, D.P. (eds.)(1988): Remote Sensing for Earth Resources, Association of Exploration Geologist, Hyderabad.
20. Sabins, F. (1982): Remote Sensing: Principles and Applications, Freeman and Co., New York.
21. Spencer, John (2003) Global Positioning System: A Field Guide for the Social Scientists, Blackwell Publishing, Malden, USA.
22. Verrtappen, H. Th., (1977): Remote Sensing in Geomorphology, Elsevier Scientific Publication Company, Amsterdam.
23. Warrin, R. Philipson (1997): Manual of Photographic Interpretations, American Society for Photogrammetry and Remote Sensing, Maryland, U.S.A.

M.A./ M.Sc. Credit Based Grading System
Geography - Semester III
306: Tools and Techniques of Spatial Analysis – VI

No. of Credits: **4**

Teaching Hours 60 + Notional Hours 60= Total hours **120**

Paper306- Tools and Techniques of Spatial Analysis-IV

I Quantitative Techniques and Spatial Analysis

(Hours 45)

- 1.1 Inferential statistics- basic principles - Testing of hypothesis main stages - Chi square, applications
- 1.2 Establishing and assessing Spatiality of Interrelations: Correlation as tests of significance – Partial, Stepwise
- 1.3 Linkage analysis– Applications
- 1.4 Simple regression derivation and interpretation of results – Regression residuals: mapping and interpretation.

II Field Trip and Preparing Field Trip Report.**(Hours 15)****Marks: Section I- 60; Section II- 15****III Viva- 15; IV Journal 10.****Reference Books:**

1. Berry, B.J.L. and Marble, D.F. (1968): Spatial Analysis – A reader in statistical Geography, Prentice Hall, Englewood Cliffs, New Jersey.
1. Yeates, M. (1974): An Introduction to Quantitative Analysis in Human Geography, McGraw Hill Book Co., New York.
2. Taylor, P. J. (1977): Quantitative Methods in Geography, Houghton and Mifflin Co., Boston.
3. King, L. J. (1969): Statistical Analysis in Geography, Prentice Hall, Inc., Englewood Cliffs, New Jersey.
4. Hammond, R. and McCullagh, P.S. (1974): Quantitative Techniques in Geography: An Introduction, Oxford University Press, London.
5. Mahmood Aslam (1977): Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi.
6. Cole, J.P. and King, C.A.M.(1968): Quantitative Geography, John Wiley and Sons, London.
7. Berry, B.J.L. and Marble, D.F. (1968): Spatial Analysis – A reader in statistical Geography, Prentice Hall, Englewood Cliffs, New Jersey.
8. Levin, J. (1973): Elementary Statistics in Social Research, Harper and Row, New York.
9. Norcliff, G. B. (1982), Inferential Statistics for Geographers, Hutchinson, London.
10. Wilson A. G. and Bennet, R. J., (1985), Mathematical Methods in Geography and Planning, John Wiley and Sons, New York.
11. Cressie, N., (1991), Statistics for Spatial Data, John Wiley and sons, New York.
12. Wicox, P.R. (2003), Applying Contemporary Statistical Techniques, Academic Press, Amsterdam
13. Crang M. and Cook, I. 2007, Doing Ethnographies, Sage.
14. Rogerson P.A. (2010), 3rd Ed. Statistical Methods for Geography, a Students Guide, Sage.
15. Vallentine G. Clifford N. (2010), Key Methods in Geography, Sage.

Books for further reading:

1. Kundu, A. (1975), Construction of Composite Indices for Regionalisation: An Enquiry into the Methods of Analysis, Geographical Review of India, Vol. 37, No. 1, March, 1975, 19-29.
2. Mather, P. M., (1976), Computational Methods of Multivariate Analysis in Physical Geography, John Wiley and Sons, London.
3. Bailey, K. D. (1987), Methods of Social Research, The Free Press, New York.
4. Delyser D., Herbert S., Aitken S. (eds.) (2010), The Sage Handbook of Qualitative Research, Sage.
5. Qualitative Research, Sage Journal, ISSN 1468-7941
6. Qualitative Inquiry, Sage Journal.

Elective Courses**M.A./ M.Sc. Credit Based Grading System****Geography - Semester III****303/ 304:A1- Tropical Geomorphology**No. of Credits: **4**Teaching Hours 60 + Notional Hours 60= Total hours **120**

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|---|-------------------|
| 1. Basics of Tropical Geomorphology: | (15 hours) |
| 1.1 Definition, scope and significance | |
| 1.2 Geomorphic processes in tropics | |
| 1.3 Factors - Climate, vegetation and others | |
| 1.4 Concept of morphogenetic regions | |
| 2. Structural landforms of tropics: | (15 hours) |
| 2.1 Types and processes | |
| 2.2 Formation of domes, tors, scarps, | |
| 2.2 Deccan Trap landforms – evolution and processes | |
| 3. Fluvial processes in the tropics: | (15 hours) |
| 3.1 Characteristics and rates | |
| 3.2 Valley forms in humid and arid areas of the tropics | |
| 3.3 Tropical deltas and estuaries | |
| 3.4 Fluvial landform characteristics of India. | |
| 4. Coastal processes in the tropics: | (15 hours) |
| 4.1 Erosional landforms | |
| 4.2 Depositional landforms | |
| 4.3 Coastal landform characteristics of India | |

Reference Books:

1. Garner, H.F.(1974): Origin of Landscapes - A synthesis in Geomorphology, Oxford University Press, New York.
2. Tricart, J. and Coilleux, A.(1972): Introduction to Climatic Geomorphology, Longman Green, London.
3. Faniran, A. and Jeje, L.K. (1983): Humid Tropical Geomorphology, Longman, London.
4. Thomas, M.F.(1974): Tropical Geomorphology: A Study of Weathering and Landform Development in Warm Climates, Macmillan, London.
5. Douglas, J. and Spencer, I.(1985): Environmental Change and Tropical Geomorphology, George Allen & Unwin, London.
6. Bombay Geographical Association (1970-71): Geddes Memorial Volume: Maratha Lands, Bombay.
7. Twidale, C.R. (1971): Structural Landforms, The MIT, Cambridge.
8. Birot, P. (1968): Cycle of Erosion in Different Climates, B.T. Batsford, London.
9. Huggett, R. (2007): Fundamentals of Geomorphology, Routledge, London

Books for further reading:

1. Mcfarlane, M.J.(1976): Laterite and Landscape, Academic Press, London.
 2. Dikshit, K.R., Kale, V.S. and Kaul, M.N.(1994): India – Geomorphological Diversity, Rawat, Jaipur.
 3. Sharma, H.S. (1986): Tropical Geomorphology, Concept, New Delhi.
 4. Sharma, H.S. (ed)(1991): Indian Geomorphology, Concept, New Delhi.
 5. Jog, S.R.(ed)(1995): Indian Geomorphology, Vols. I & II, Rawat, Jaipur.
 6. Sharma, A. (1993): Ecology of Landslide Damages, Pointer, Jaipur.
 7. Slaymaker, O. et al (2009): Geomorphology and Global Environmental Change, Cambridge University Press, UK.
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: A.2- Coastal Geomorphology

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours 120

1. Evolution of coasts: (15 hours)

- 1.1 Physical factors
- 1.2 Biotic factors
- 1.3 Anthropogenic factors

2. Sea level changes: (15 hours)

- 2.1 Mean sea level and changes, causes of sea level change
- 2.2 Late quaternary sea level changes
- 2.3 Recent Changes

3. Marine cycle of erosion: (15 hours)

- 3.1 Shorelines of submergence
- 3.2 Shorelines of emergence

4. Coasts and man: (15 hours)

- 4.1 Opportunities and constraints
- 4.2 Coastal development and management
- 4.3 Coastal management in India

Reference Books:

1. Ahmed, E. (1972): Coastal Geomorphology of India', Orient Longmans, Delhi.
2. Bird, E. C. F. (1984): Coasts – An Introduction to Coastal Geomorphology, Australian National University Press, Canberra.
3. Davies, J.L. (1972): Geographical Variation in Coastal Development, Oliver & Boyd, Edinburgh.
4. Fairbridge R (1968): Encyclopedia of Geomorphology.
5. Johnson, D.W. (1965): Shore Processes and Shoreline Development, Hanfer, New York.
6. King, C.A.M. (1972): Beaches and Coasts, Edward Arnold, London.
7. Pethik (1984): An introduction to coastal geomorphology, Edward Arnold Publishers, Baltimore.

8. Snead, R.E. (1982): Coastal Landforms and Surface Features, Hutchinson Ross, Stroudsburg, Pennsylvania.
9. Steers, J. A. (1971): Applied Coastal Geomorphology, MacMillan, London.
10. Steers, J. (1971): Introduction to Coastline Development' Macmillan, London.

Books for further reading:

1. Bird, E.C.F. (1985), 'Coastline Changes: A Review, John Wiley, Chichester.
2. Fisher, J. S. and Dolan, R.(1977): Beach Processes and Coastal Hydrodynamics, Dowden, Hutchinson & Ross Inc., Stroudsburg, Pennsylvania.
3. Dikshit, K.R. (1983): Contributions to Indian Geography – Geomorphology, Heritage, New Delhi.
4. Guilcher, A. (1988): Coral Reef Geomorphology, John Wiley, Chichester.
5. Steers, J.A. (1969): The Sea Coast: Oliver Boyd, London.
6. Guilcher, A. (1958): Coastal and Submarine Morphology, Methuen and Company Limited, London.

M.A. / M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: A.5- Climatology of the Tropics

No. of Credits: **4**

Teaching Hours 60 + Notional Hours 60= Total hours **120**

1. General circulation of the atmosphere:

- 1.1 Role of tropics
- 1.2 Driving forces
- 1.3 Heat Budget of the tropics

2. The Monsoon:

- 2.1 Genesis of monsoon
- 2.2 Distributional characteristics over time and space
- 2.3 Variability and predictability of monsoon

3. Tropical air-masses and fronts:

- 3.1 Their characteristics
- 3.2 Air masses over south Asia
- 3.3 Seasonal variations

4. Tropical disturbances:

- 4.1 Cyclones, thunderstorms, tornadoes – their characteristics
- 4.2 Frequencies and paths of disturbances
- 4.3 Cyclones in Bay of Bengal and Arabian Sea

Reference Books:

1. Garbell, M.A.(1947): Tropical and Equatorial Meteorology, Sir Isaac Pitman and Sons Ltd., U.S.
2. Lockwood, J.G.(1974): World Climatology, an Environmental Approach, Edward – Arnold, U.K.
3. Nieuwolt, S. (1977): Tropical Climatology, John Wiley & Sons Ltd., U.S.A.
4. Riehl, H. (1954): Tropical Meteorology, Mcgraw Hill Co., U.K.
5. Trewartha, G.T.(1962): The Earth's Problem Climates, Methun & Co. Ltd., London.
6. Pant, G.B. and Kumar K. R. (1997): Climates of South Asia, John Wiley and Sons, New York.

Books for further reading:

1. Barrett, E.G.(1974): Climatology from Satellites Methuen & Co.Ltd. , U.K.
 2. Barry, R.G. & Perry, A.H.(1973): Synoptic Climatology Methods and Applications, Methuen & Co.Ltd. U.K.
 3. Datype, V.S. et.al (ed) (1987): Explorations in the Tropics, Prof. K. R.Dikshit Fel.Vol.,Pune.
 4. Ramage, C.S.(1971): Monsoon Meterology, Academic Press, U.K.
 5. Subrahmanyam, V.P. (1983): Contributions to Indian Geography, Part III - General Climatology Heritage Publ., New Delhi.
 6. Subramaniam, A.R. (1992): Climatic Variability in India, Annals of NAGI, 12, 1-2.
 7. Thornthwaite, C.W. (1948): An approach towards a Rational Classification of Climate, Geographical Review, 38, 55-94.
 8. Yoshino, M.M. (ed) (1971): Water Balance of Monsoon Asia, University of Hawai Press.
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: A.7- Plant Geography with Special Reference to Tropics

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

1. Plant Geography as a discipline: (15 hours)

- 1.1 Evolution as a discipline, scope and content
- 1.2 Links with other disciplines
- 1.3 Relevance to Geography
- 1.4 Recent trends and need for phytogeographical research

2. Tropical vegetation (15 hours)

- 1.1 Distinguishing characteristics
- 1.2 Indigenous and exotic flora
- 1.3 Bio-diversity of the tropics

3. Major plant formations of the tropics: (15 hours)

- 3.1 Terrestrial - forests, grasslands, deserts
- 3.2 Marine and aquatic – mangroves, coastal
- 3.3 Vegetation types of India

4. Conservation and Management of tropical vegetation: (15 hours)

- 4.1 Degradation and depletion of tropical vegetation
- 4.2 Need for conservation and management
- 4.3 Methods - protected area network – effectiveness
- 4.4 Green belts and zones in urban areas

Reference Books:

1. Akin, W.E. (1991): Global patterns – Climate, vegetation soils, University of Oklahoma Press, U.S.A.
2. Ewusie, J.Y. (1980): Elements of Tropical Ecology, Heinemann Educational Books Inc. London.
3. Furley, P.A. and Newey, W.N. (1983): Geography of the biosphere, Butterworth & Co. Ltd., London.
4. Kellman, M.C. (1975): Plant Geography, Methuen & Co. Ltd., London.
5. Mani, M.S. (1974): Ecology and Biogeography in India. The Hague: Dr. W. Junk Publishers.
6. Pears, N. (1985): Basic Biogeography, Longman, London.
7. Slaymaker, O. and Spencer, T. (1998): Geography and Global Environment Change, Addison Wesley Longman Ltd., UK.
8. Smithson, P. et al (2002): The Fundamentals of The Physical Environment, Routledge,

London.

Books for further reading:

1. Ali, S. (1990): Notes on National Forest Policy 1988, *Encology*, 5(3), August, 1990, 20—22.
 2. Bharucha, F.R. (1983): A text-book of the plant geography of India, Oxford University Press, Bombay.
 3. Forest Survey of India (1987-1999): The State of Forest Reports, Dehradun.
 4. Dikshit, K.R. (1991): Environment, Forest Ecology and Man in the Western Ghats – The Case of Mahabaleshwar Plateau, Rawat Publ., New Delhi.
 5. Ganeshiah, K. N. et al (ed) (2001): Tropical Ecosystems – Structure, Diversity and Human welfare, Oxford & IBH Publ. Co., New Delhi.
 6. Geethakrishnan, K.P. (1994): National Forest Policy, 1988, *Encology*, 5(3), 15-20.
 7. Meher-Homji, V.M. (1987): Vegetation types of Peninsular India in relation to environment conditions, in *Explorations in the Tropics*, Prof. K.R. Dikshit Fel.Vol.Comm., Pune, 3-19.
 8. Meyers, A.A. and Giller, P.S. (1988): *Analytical Biogeography – An Integrated Approach to the Study of Animal and Plant Distribution*, Chapman and Hall, London, New York.
 9. O’riordan, T. et al (2002): *Biodiversity, Sustainability and Human Communities – Protecting beyond the Protected*, Cambridge Univ. Press, U.K.
 10. Puri, G.S. (1980): *Indian Forest Ecology*, Vols.2, New Delhi: Oxford.
 11. Sharma, N.P. (ed.) (1992): *Managing World’s Forests*, Kendall Hunt Publ. Co., Iowa.
 12. Walter, H. (1973): *Vegetation of the Earth in relation to climate and eco-physiological conditions*, English Univ. Press Ltd., London.
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M.A. / M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: A.8- Geography of Soils with Special Reference to Tropics

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours 120

1. Pedology:

(15 hours)

- 1.1 Scope and content
- 1.2 Significance in geographical studies
- 1.3 Multidisciplinary nature
- 1.4 Relevance in environmental geomorphology

2. Process of Soil formation: (15 hours)

- 2.1 Soil formers – Physical: parent rock, time, topography and climate
- 2.2 Role of biotic factors
- 2.3 Soil profile – idealized profile – soil profile of tropical soils
- 2.4 Concept of soil catena

3. Properties, characteristics and constituents of soils: (15 hours)

- 3.1 Texture, structure, pore space, bulk density, tilth
- 3.2 Soil constituents - organic and inorganic matter, soil organisms, soil air and water
- 3.3 Soil fertility in tropics – nutrients, soil capability, suitability and productivity

4. Conservation and management of tropical soils: (15 hours)

- 3.1 Soil degradation and erosion – causes and consequences
- 3.2 Methods of conservation
- 3.3 Trends in farming techniques – Vermiculture, organic fertilizers, bio-pesticides, drip irrigation

Reference Books:

1. Bridges, E.M. (1970): World Soils, Cambridge University Press, U.K.
2. Daji, J.A. (1970): A Text Book of Soil Science, Asia Publication House, Mumbai.
3. De, N.K. and Sarkar, H.K. (1993): Soil Geography, Sribhumi Publishing Company, Calcutta.
4. Dohahue, E.L., et. al., (1987): Soils: An Introduction to Soil and Plant Growth, Prentice Hall of India, New Delhi.
5. Foth, H.D. & Turk, L.M. (1972): Fundamentals of Soil Science, John Wiley & Sons, Inc., Canada.
6. Pitty, A.F. (1978): Geography and Soil Properties, Methuen and Co. Ltd., London.
7. Paton, T. R., Humphreys, G.S., Mitchell, P. B. (1995): Soils: A New Global View, U.C.L. Press, London.

Books for further reading:

1. Datye, V.S. et. al. (ed.) (1987): Explorations in the Tropics, Prof. K. R. Dikshit Fel. Vol., Pune.
 2. Foth, H.D. & Schafer, F.W. (1980): Soil Geography and Landuse, John Wiley & Sons, Inc., Canada.
 3. Raychaudhari, S.P. (1958): Soils of India, ICAR, New Delhi.
 4. U.S. Department of Agriculture (1957): Soil, The Year Book of Agriculture, New York.
 5. Miller, R.W. et. al., (1995): Soil in Our Environment, Prentice Hall, U.S.A.
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B Group
M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: B.1 - Regional Development and Planning

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

1 Regional Development (15 Hours)

- 1.1 Concept – intra and inter-regional dimensions
- 1.2 Role in national development
- 1.3 Factors influencing regional development: Diversity - physical and cultural
- 1.4 Regional disparities and their impact on regional development
- 1.5 Regional typology based on development.

2. Regional problem (15 Hours)

- 2.1 Varied dimensions: Physical, economic, social and environmental
- 2.2 Core and peripheral facets
- 2.3 Integrated nature of the problem
- 2.4 Examples: depressed, backward, potential and progressive regions
- 2.5 Spatial lags in regional problem – need for regional approach to development.

3 Regional development strategies (18 Hours)

- 3.1 Regional policy – its role in regional development
- 3.2 Regional planning – a strategy for regional development
- 3.3 Relevance of the above strategies in regional development
- 3.4 Spatial models: Central Place Theory and Growth Pole Models
- 3.5 Applicability of models to regional development: examples

4. Regional studies and planning (12 Hours)

- 4.1 Nature and relevance to regional planning
- 4.2 Regional concept and its significance to regional planning
- 4.3 Regionalisation for planning
- 4.4 Changes in perspective and current status
- 4.5 Regional hierarchy and its relevance to planning.

Reference Books

1. Alden, J. and Morgan, R.(1974), “ Regional Planning: A Comprehensive View”, Leonard Hill Books, Beds.
2. Ardill, J. (1974), “ New Citizen’s Guide to Town and Country Planning”, Charles Knight and Company Ltd. , London.
3. Cook, P. (1983), “Theories of Planning and Spatial Development”, Hutchinson and Company Ltd., London.
4. Diamond, D. (ed) (1982), “Regional Disparities and Regional Policies”, Pergamon Press, Oxford.

5. Glassen, J. (1983), "An Introduction to Regional Planning", Hutchinson Educational, London.
6. Hall, P. (1996), "Cities of Tomorrow", Updated Edition, Blackwell Publishers Ltd., Oxford.
7. Holland, S. (1978), "Regional Problem", MacMillan, London.
8. O.E.C.D. (1970), "The Regional Factor in Economic Development", Paris.
9. Sundaram, K. V. (1985), "Geography and Planning", Concept Publishing Company, New Delhi.
10. Subrahmanya, K. N. (ed)(1985), "Economic Development and Planning in India", Publications, New Delhi.
11. Sundaram, K.V., Misra, R.P. and Prakasarao, V.L.S. (1971), "Spatial Planning for a Tribal Region", Institute of Development Studies, Mysore.
12. Sundaram, K.V., Misra R.P. and Prakasa Rao, V.L.S. (1978), "Regional Development Planning in India", Vikas Publishers, New Delhi.
13. Vanhove, N. and Klassen, L.H. (1980), "Regional Policy – A European Approach", Saxon House, Hants (England).

Books for further reading

1. Boyd, A. (1991): 'An Atlas of World Affairs', Ninth Edition, Routledge, London.
- Chambers, R. (2003), "Rural Development: Putting the Last First", Pearson Education Pvt. Ltd., Delhi.
2. Gilbert, A.G. (1976), "Development Planning and Spatial Structure", John Wiley & Sons, New York.
3. Pathak, C. R. (1995), "Essays on Regional Science: Regional Development and Planning", Regional Science Association, India, IIT, Kharagpur.
4. Prasad, K. V. (1988), "Planning at the Grass Roots", Sterling Publishers Pvt. Ltd., New Delhi.
5. Regional Science Association- Papers and Proceedings.
6. Syms, P. (2002), "Land, Development and Design", Blackwell Science Ltd., Oxford.
7. U.N. (1959), "Regional Planning: Housing, Building and Planning", Nos. 12 & 13", New York.
8. U.N. (1967), "Planning of Metropolitan Areas and New Towns", New York.
9. U.N. (1971), "Planning for Urban and Regional Development in Asia and The Far East", New York.
10. Yiftachel, O., Little, J. Hedgcare, D. and Alexander, I. (2001), "The Power of Planning: Spaces of Control and Transformation", Kluwer Academic Publishers, London.

M.A. / M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: B.2- Urban Geography

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I Urbanisation Process, Capitalism and development (15 Hours)

1.1 The bases of urbanisation- Demographic, economic and social aspects- Origins of the cities- Urbanisation Trends

1.2 Capitalism and urban development - Urbanisation in the industrialised world -Political economy of urbanisation.

1.3 Urbanisation in the Third World - Concept of peripheral urbanisation - Salient characteristics- slums and Urban poverty- Globalisation and Third World urbanism.

1.4 Urban System- Evolution, growth and organisation - Primacy, hierarchy and balance - Globalisation and world city system – Urban systems in the periphery- Global and local.

II Urban Economic Base- (15 Hours)

2.1 Colonial and post-colonial structure – Concepts of dualism.

2.2 Intersection of global processes - Flexibilised urban economy- Urban informal sector in Indian cities.

2.3 Global city and changing urban functions- production of urban space-

2.4 Urban morphology and landuse- Critical perspective.

III Urban Expansion and Space 15 Hours

3.1 Processes and patterns of urban renewal- Contemporary urban frontiers- Fragmented city spaces

3.2 Globalisation and the urban spatial order- Crisis in urban space- Gentrification and other Emerging issues.

3.3 Suburbanisation and urban sprawl- the transformation of the peri-urban regions of the Global South- Strategy of SEZ

3.4 Impact on society, economy, culture and environment- Indian examples.

III Urban planning 15 Hours

3.1 Perspective in urban planning - Review of India's 5 Year Plans

3.2 Centralisation and dispersal–Neo-liberalism and the role of the State

3.3 Globalisation and contemporary issues of urban governance- unequal citizenship status

3.4 Frontiers in urban management and planning - Social, economic and environmental parameters.

IV Mega City Growth of Mumbai and Issues of Urban development

In Depth Study of any two of the following 15 Hours

4.1 Gentrification in the Mill-land of Mumbai and the plight of the textile workers

4.2 Slum redevelopment in Mumbai- the case of Dharavi

4.3 Issues of urban planning and environment in Vasai- Virar Subregion or

4.4 Mumbai a reclaimed city and challenges in urban planning.

4.5 The Proposed Mumbai- Delhi Industrial Corridor: Policy and Implications

4.6 The Planned City of New Mumbai: A Critical Perspective

Reference Books:

1. Carter, H (1972): *The Study of Urban Geography*, Edward Arnold.
2. A. Latham, D. McCormack, K. McNamara, D. McNeill (2009): *Key Concepts in Geography*, Sage.
2. Knox, P.L. and Taylor. P.J.(1995): *World Cities in a World System*, Cambridge University Press, U.K.
3. Harvey, D.(1973): *Social Justice and the City*, Arnold
4. Abu-Lughod, J. and Hay, R. Jr. (1977): *Third World Urbanisation*, Maarouta Press.
5. Gugler. J. (ed.)(1988): *The Urbanisation of the Third World*, O.U.P
6. Sassen, S. (1991): *The Global City*, Princeton University Press.
7. Clarke, D. (1982): *Urban Geography: An Introductory Guide*, Groom Helm.
8. Marcuse, P. and Kempen, R.V. (eds.),(2000): *Globalizing Cities: A New Spatial Order*, Blackwell,
9. Short, J. R. (1996): *The Urban Order*, Basil Blackwell.
- 10 Smith, N. (1996): *The New Urban Frontier*, Routledge
11. King A. D. (1990): *Global Cities*, Routledge.
12. Simmonds, R. and Hack, G. (2000): *Global City Regions*, Spon Press.
13. Markusen, A.R., et al. (1991): *Second Tier Cities- Rapid Growth beyond the Metropolis*, University of Minnesota Press.
14. Allen J. Scott (ed.), (2001): *Global City Regions, Trends, Theory & Policy*, Oxford University Press.
15. David Harvey (1985): *The Urbanization of Capital*, John Hopkins University Press.
16. Edward Soja (2000): *Postmetropolis, Critical Studies of cities and Regions*, Blackwell Publisher Ltd.
17. G. P. Chapman, A.K. Dutt and R.W. Bradnock (ed.) (1999): *Urban growth & Development in Asia, Vol.2: Living in the Cities*, Ashgate Publishing Ltd.
18. G. P. Chapman, A.K. Dutt and R.W. Bradnock (ed.) (1999): *Urban growth & Development in Asia, Vol.1: Making the Cities*, Ashgate Publishing Ltd.
19. Edgar Pieterse, (2008), *City Futures- Confronting the Crisis of Urban development*, Zed Books, London.
20. R. Paddison, Bill Lever, and J.Money, (eds.) (1993): *International Perspective in Urban Studies* , Jessica Kingsely Publicaton, London and Philadelphia.
21. Brenner N. and Keil R, (ed). (2006), 'The Global Cities Reader' Routledge.
22. R. J. Johnston, Derek Gregory, Geraldine Pratt, and Michael Watts, (eds.), 5th edition, (2005): *The Dictionary of Human Geography*, Blackwell Publishing.

23. Massey D. (2005): *For Space*, Sage Publications, London, Thousand Oaks, New Delhi.
 24. Carmona M. and Wunderlich F. (2012): *Capital Spaces, The Multiple complex Public Spaces of a Global City*, Routledge, Taylor and Francis Group, London and New York.
 25. Oatley N (ed.) (1998): *Cities, Economic Competition and Urban Policy*, Paul Chapman Publishing Ltd, London.
 26. Pieterse E, (2008): *City Futures, Confronting the Crisis of Urban Development*, Zed Books Ltd, London and New York.
 27. Latham A, et.al. (2009): *Key Concepts in Urban Geography*, Sage, Los Angeles, London, New Delhi, Singapore, Washington.
- Books for further reading:**
1. P. Hall (1996): *Cities of Tomorrow*, Basil Blackwell.
 2. Walton, J. (ed.), (1985): *Capital and Labour in the Urbanised World¹*, Sage.
 3. Szelenyi, J. (ed.), (1984): *Cities in Recession*, Sage.
 4. Cox, K. and Johnston, R.J. (eds.)(1982): *Conflict, Politics and Urban Scene*, Longman.
 5. McGee, T.G. (1975): *The Urbanisation Process in the Third World*, G. Bell & Sons.
 6. Saunders, P. (1981): *Social Theory and the Urban Question*, Unwin Hymer.
 7. Castells. M, (1977): *The Urban question*, Edward Arnold
 8. Castells, M., (1983): *The City & the grassroots, A Cross-Cultural Theory of Urban Social Movements*, Edward Arnold Publisher Ltd.
 9. Castells, M., (1989): *The Informational City, The information technology, Economic Restructuring and the Urban Regional Process*, Blackwell Publication Ltd.
 10. R. Paddison, Bill Lever, and J.Money (edi.) (1993): *International Perspective in Urban Studies* , Jessica KingselyPublicaton, London and Philadephia.
 11. Raymonds Williams (1985): *The Country and the City*, The Hogarth Press, London.
 12. Diddee, J. and Rangaswamy, V. 1993): *Urbanisation: Trends Perspectives and Challenges*, Rawat Publications.
 13. Dunleavy, P. (1980): *Urban Political Analysis*, Macmillan.
 14. Patel, S. and Thorner, A. (eds.) (1995): *Bombay: Metaphor for Modern India*, Oxford University Press.
 15. Watson, S. & Gibson, K.(1995): *Postmodern Cities and Spaces*, Basil and Blackwell.
 16. Amin, A. and Thrift, N.(2000):*Cities: Reimagming the Urban*, Polity Press.
 17. A.R. Cuthbert, (edi.) (2003): *Designing Cities, Critical Reading in Urban Design*, Blackwell Publication Ltd.

18. Allen J. Scott (2000): *The Cultural Economy of Cities, Essays on the Geography of image Producing industries*, SAGE Publication Ltd.
19. Dunleavy, P. (1980): *Urban Political Analysis*, Macmillan.
20. Misra, R.P. (ed.), (2013): *Urbanisation in South Asia- Focus on Mega Cities*, Foundation Books
21. Waquar Ahmad, Amitabh Kundu, Richard Peet, (eds.), (2010).: *India's New Economic Policy, A Critical Analysis*, Rawat
22. Oatley, Nick (ed.) (1998): *Cities, Economic Competition and Urban Policy*, Paul Chapman Publishing Ltd.
23. Hazareesingh Sandip, 2007.:. *The Colonial City and the Challenge Modernity- Urban Hegemonies and the Civi Contestations in Bombay (1099-1925)*, Orient Longman.
24. Nandarajah M., Ann Tomoko Yamamoto, (eds.), (2007), *Urban Crisis- Culture and the Sustainable Cities*, Rawat.
25. Sujata Patel, Kushal Deb, (eds.), (2006): *Urban studies*, Oxford.
22. Rod Burgess, Marisa Carmona and Theo Colstee (eds.), (1997): *The Challenge of Sustainable Cities*, Zed Books, London.
23. David Pinder, (2005): *Visions of the City*, Edinburgh
24. John Eade and Christopher Mele, (eds.), (2002): *Understanding the City- Contemporary and future Prospectives*, Blackwell Publishing.
26. L. Hoffman, S. Fainstein and Dennis R. Judd (edi.),(2003): *Cities and Visitors, Regulating People, Markets and City space*, Blackwell Publishing Ltd.
27. S. Watson & K. Gibson (1995): *Postmodern Cities and Spaces*, Blackwell Oxford UK and Cambridge USA.
28. Tim Hall (2006): *Urban Geography (3rd Edn.)*, Routledge Contemporary Human Geography Series, Routledge Talyor and Francis Group, London and New York.
- 29 Amar Farooqui, 2006: *Opium City The making of early Victorian Bombay*, Three Essays collective.
30. Banerjee-Guha, S., (1985), 'From Colonial Dual Economy to Modern Bi-polar Economy - Some Thoughts on Third World Urbanisation', in Sen, P.K. (ed.), 'The Concepts and Methods in Geography', Institute of Geography, University of Burdwan.
31. Deshpande, S. and Deshpande, L. (1991), 'Problems of Urbanisation and Growth of Large Cities in Developing Countries, A Case Study of Bombay', Population and Labour Policies Programme, Working Paper No. 177, World Employment Programme Research, ILO, Geneva.
32. Janaki Nair, (2007): *The Promise of the Metropolis Bangalore's Twentieth Century*, Oxford university press.

33. Jeremy Seabrook, (1987): Life and labour in a Bombay Slum, Quartet books, London.
34. Jutta k. Dikshit, (2011): The Urban Fringe of Indian Cities , Rawat Publication.
35. M. Gottdienter and Leslie Budde, (2005): Key Concepts in Urban Studies, Sage publication.
36. Mark Abrahamson, 2004: Global cities, Oxford University Press.
37. Neuwirth R. (2005), 'Shadow Cities: A Billion Squatters, A New Urban World', Routledge.
38. Nicholas R. Fyfe and Judith T. Kenny, 'The Urban Geography Reader' The Routeledge Urban Reader Series.
39. Oberai, A.S. (1993), 'Population Growth, Employment and Poverty in Third World Mega Cities, Analytical and Policy Issues', St. Martin's Press, New York, ILO, Geneva.
40. T. S. Papola, 1986: Urban Informal Sector in a Developing Economy, Vikas Publishing house
41. David Atkinson, Peter Jackson, David Sibley and Neil Washbourne, (2005): Cultural geography: A Critical Dictionary of Key Concepts, I.B. Taurus
42. Moss Pamela, (ed.), (2002): Feminist Geography in Practice- Research and Methods, Blackwell Publishers
43. Robin Flowerdew and David Martin, (eds.) (1997): Methods in Human Geography- A Guide for Students doing research Project, Longman

M.A. / M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: B. 3- Social Geography

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I Society and Space: Perspective and approach

15 Hours

- 1.1. Key concepts in social thought and their relevance in social geography
- 1.2 Evolution of perspective in social geography.
- 1.3 Social relations, Spatial diversity and differentiation
- 1.4 Social processes and spatial form- Spatiality of society and economy.

II Social groups, social identity and space

15 Hours

- 2.1 Social groups - Primary and secondary groups- Interaction, Processes and patterns of socialisation and segregation
- 2.2 Ethnicity, language and religion as basic parameters- social class- spatiality of social identity.
- 2.3 Towards a social geography of India – Social differentiation and regional formations Caste and clan territories - Tribes and spatial variations.
- 2.4 Concept of social well-being - Indicators of social and economic well-being - Spatial pattern of well being with special reference to India- age and gender as factors.

III Social stratification and Urban Social Order**15 Hours**

- 3.1 Social stratification and Urban Social Order- Urban space and polarisation in post-industrial cities- Globalisation and rise of network society.
- 3.2 Social geography of Contemporary Third World Cities- Impact of globalization-
- 3.3 Fragmentation, segregation and crisis of local and global Modernity- Post-modernity and related issues.
- 3.4 Concept of Social planning and politics of space- concept of social justice- Planning with a welfare approach - People's participation.

IV In Depth Study of any one of the following concepts**15 Hours**

- 4.1 Slums – Ethnic/ religious /linguistic identity and negotiation of economic and political space in Mumbai
- 4.2 Social spaces in Geography post graduate class
- 4.3 Reproduction, sexuality and contemporary gender issues- Role of media.
- 4.4 Malls as inclusive and/or exclusive spaces.

Reference Books

1. Eyles, J. (1974): Social Theory and Social Geography, in Progress in Geography, Vol.6, pp 2788.
2. Gregory, D. and Urry, J. (1985): Social Relations and Spatial Structure, Macmillan.
3. Pacione, M. (ed) (1987): Social Geography: Progress and Prospect, Croom Helm.
4. Jones, E. and Eyles, J.(1977); Introduction to Social Geography, Oxford University Press.
5. Sassen, S. (1994): Cities in a World Economy Pine Forge Press.
6. Smith, D. M. (1979): Where the grass is Greener, Croon Helm.
7. Ahmad, A. (1999): Social Geography, Rawat Publishers.
8. Daniels, S. and Lee, R. (eds.)(1996): Exploring Human Geography, Arnold.
9. Castells, M., (1996): The Rise of the Network Society, Basil Blackwell, 1996.
10. Dear, M.J. and Flusty, S. (2000): The Spaces of Postmodernity, Blackwell.
11. Vincent J. Del Casino, (2009): Social Geography- Critical Introduction to Geography, Wiley- Blackwell.
12. Chris Hamnett (ed.), (1996): Social Geography A Reader, Arnold.
13. R. J. Johnston, Derek Gregory, Geraldine Pratt, and Michael Watts, (eds.), 5th edition, (2005): The Dictionary of Human Geography, Blackwell Publishing.

Books for further reading:

1. Lefebvre, H. (1991): The production of Space¹ (Translated by Donald Nicholson), Basil Blackwell.
 2. Maheu, L. (1995): Social Movements and Social Classes, Sage
 3. J. O'Loughlin and Friedrichs, J. (1996): Social Polarization in Post-Industrial Metropolises, Water de Gruyter.
 4. Peet, R. (1977): Radical Geography, Maaroufa Press.
 5. Harvey, D. (1996): Justice, Nature and the Geography of Difference, Basil Blackwell.
 6. Thorns, D.C. (1992): Fragmenting Societies, Routledge,
 7. Babcock, B (1984): Unfairly Structured Cities, Basil Blackwell.
 8. Castells, M. (1988): Information Technology: Economic Restructuring and Urban Development, Basil Blackwell.
 9. Harvey, D. (1989): The Condition of Post Modernity, Basil Blackwell.
 10. Sibley, D. (1995): Geographies of Exclusion, Routledge.
 11. David Atkinson, Peter Jackson, David Sibley and Neil Washbourne, (2005): Cultural geography: A Critical Dictionary of Key Concepts, I.B. Taurus
 12. Moss Pamela, (ed.), (2002): Feminist Geography in Practice- Research and Methods, Blackwell Publishers
 13. Robin Flowerdew and David Martin, (eds.) (1997): Methods in Human Geography- A Guide for Students doing research Project, Longman
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M.A./ M.Sc. Credit Based Grading System**Geography - Semester III****303/ 304: B.4- Population Geography**

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120****I Geographical context of Population****15 Hours**

- 1.1 Population in environment, economy and society- People as players- Acts of knowledge- Positions.
- 1.2 Changing approaches to Population Geography- - Contemporary trends
- 1.3 Population- Demographic characteristics- reproduction, health and education- Challenges for developed and developing countries-
- 1.4 Critical review of population growth theories and models – demographic transition and demographic dividend- critic.

II Space, environment and place interrelations**15 Hours**

- 2.1. Concentration of people in space – Density variations and impact – Rural and urban dimensions
- 2.2. Population- resource relations – Capitalist mode of production
- 2.3 Livelihood responses- Role of technology- nature of economy and environmental aspects.
- 2.4 Issues of degradation – displacement – placelessness- Indian examples.

III Population and Social Relations**15 Hours**

- 3.1 People, society and culture - Early migration and evolution of cultural hearths
- 3.2. People as social groups- Ethnicity, race, caste, religion and language – identity issue
- 3.3 Dimension of gender and related aspects – Relevant examples.
- 3.4. People and economy- Population as a resource- Economic and occupational characteristics - Spatial patterns- Changing status of labour -Recent trends.

IV Migration and mobility**15 Hours**

- 4.1. Factors, processes and typology – Contemporary trends in developed and developing countries - Rural and urban dimensions
- 4.2. Population, social organisation and governance -People as communities and citizens - People's rights and protection in contemporary societies
- 4.3. Population dynamics and development processes- Population as social capital- Status of developed and developing countries.
- 4.4 Study of any of the community spaces in Mumbai- Socio-cultural, Economic and Political context

Reference Books:

1. Trewartha, G.T. (1969): A Geography of Population: World Patterns, New York
2. Zelinsky, W (1965): A Prologue to Population Geography, Prentice Hall, London.
3. Clarke, J.I. (1972): Population Geography, Pergamon, Oxford.
4. Hornby, W.E. and Jones, M. (1980): An Introduction to Population Geography, Cambridge University, Cambridge.
5. Beaujeau-Garnier, J. (1966): Geography of Population, St. Martin's Press, New York.
6. Zelinsky, W., Kosinski, LA, Prothero, R.M. (eds.)(1970) Geography and a Crowding World, Oxford University Press, London.
7. Demko, G, J., Rose, H.M., Schnell, G.A. (1970): Population Geography: A Reader, McGraw Hill, New York
8. Clarke, J.I. (1971): Population Geography and the Developing Countries .
9. Harper, C.L. (2001): Environment and Society, Human Perspectives on Environmental Issues, Prentice Hall, New Jersey.
10. Ehrlich. P.R., and Ehrlich, A.M.(1992): Population Explosion, Doomsday, New York.
11. Saare, P. and Blunder, J. (eds.) (1995): An Overcrowded World? Population, Resources and Environment, The Open University, Oxford.
12. Johnston, R.J. and Taylor, P. (eds.): The World in Crisis, Oxford: Blackwell.

13. Potter, R.B., Binns, T., Elliott, J.A. and Smith, D. (1999): *Geography of Development*, Longman.

14. Srinivas, K. and Vlanol, M, (2001): *Population, Development Nexus in India: Challenges for the New Millenium*, Tata McGraw Hill, New Delhi.

Books for further reading:

1. Ackermann, E.A. (1959): *Population and Natural Resources in Hauser, P.M. and Duncan, O.D,(eds.) The Study of Population*, Chicago.

2. Kosinski, L.A., Prothero, R.M. (eds.): *People on the Move, Studies on International Migration*, Methuen, London.

3. Boserup, E. (1981): *Population and Technological Change: A Study of Long-Terms Trends*, Chicago University Press, Chicago.

4. Cairo Demographic Centre, (1984): *Aspects of Population Change and Development in Some African and Asian Countries*, Research Monograph Series No.9, Cairo.

5. Jones, G.W. (ed.)(1984): *Demographic Transition in Asia*, Maruzen Asia, Singapore

6. Royal Society of London and the U.S. National Academy of Sciences (NAS), (1992): *Population Growth, Resource Consumption and a Sustainable World*, Washington D.C., National Academy Press.

7. Redcliff, M. (1987): *Sustainable Development: Exploring the Contradictions*, Methuen, London.

8. Adams, W.M. (2001): *Green Development, Environmental and Sustainability in the Third World*, Routledge, London.

9. Vivel, F.R (1978): *Cultural Anthropology*, McGraw Hill, U.S.A.

10. Gould, W.T. S. and Findlay, A.M.(1994): *Population Migration and the Changing World Order*, Chichester, John Wiley and Sons.

11. Munck, R. (2003): *Globalisation and Labour*, Zed Books, London.

12. Simai. M. (ed.(1995): *Global Employment: An International Investigation into the Future of Work*, Zed Books, London.

13. Sengupta, R. and Sinha, A.K. (2003): *Challenges of Sustainable Development*, I.I.M and Manak Publication, New Delhi.

14. Dreze. J. and Sen, A (1995): *India: Economic Development and Social Opportunity*, O.U.P, New Delhi.

15. Prem. M.K. (1991): *India's Population: Heading Towards a BHI. on*, B. R. Publishing Corporation, New Delhi

M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: B.7- Political Geography

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I. Introduction to Political Geography

- 1.1 Relevance of Space in political Geography -Territoriality in land, water and air
- 1.2 State and nations - Concept of nation-state - Territorial state and international Relations
- 1.3 Global strategic views - Functional approach – Unified Field theory – Rimland theory
- 1.4. Geopolitics of capitalism and contemporary role of the heartland

II. Relevance of world systems approach

- 2.1. Neocolonialism and economic independence - New world order - Role of international organisations- Political geography of foreign aid and debt.
- 2.2. Geography of Power and Conflict Superpowers and the changing global order
- 2.3 Old and new geopolitics of superpower - Cold war and geopolitical transition.
- 2.4. Worldwide struggle for expansion and domination - Role of third world countries

III. Boundaries and Frontiers

- 3.1. Boundary concepts - Factors of boundary formation - Role of religion, culture and language in the formation of boundaries -Associated cleavages - Selected examples.
- 3.2. Concept of Frontier - Issues Examples
- 3.3. Electoral geography - Nature and content - Spatial organisation - Social theory and electoral geography
- 3.4. Geography of elections with special reference to India.

IV. Geopolitics and Spatial Approach

- 4.1. Geopolitics of war - World tension zones
- 4.2. Geography of international terrorism - Contemporary examples.
- 4.3. Integration treaties and alliance patterns -Significance of North-North, North- South and South-South treaties in political and economic integration
- 4.4. Politics of the environment- Water wars in India

Reference Books:

1. Taylor, P.J., (1985): Political Geography; World Economy, Nation-State and Locality, Longman.
2. Kasperson. R E. and Minghi, J.V. (1969):The Structure of Political Geography, University of London Press.
3. De Blij. H.J. (1967): Systematic Political Geography, John Wiley and Sons.
4. Jackson, W. A. D. (1964): Politics and Geographic Relationships, Prentice Hall.
5. Nijman Airman, J. (1993): The Geopolitics of Power and Conflict, Belhaven Press.
6. Dikshit, S.K. (1994); Geography of Elections, Rawat Publishers.
7. Amin, S. (1980): Class and Nation, Monthly Review Press.

8. Agnew, J. and Corbridge, S. (1995): *Mastering Space*, Routledge.
9. Thorns, D. C. (1992): *Fragmenting Societies*, Routledge.
10. Bhambhri, C. P. (1991): *Elections 1991; An Analysis*, B. R. Publishers.
11. Prescott, J R V. (1967): *Geography of Frontiers and Boundaries*, Hutchinson & Co.
12. Johnston, R J. (1982): *Geography and the State*, MacMillan.
13. Norris, R. E. and Haring, L.L. (1980); *Political Geography*, Bell and Howell.
14. Painter Joe and Alex Jeffrey (2009) *Political Geography an Introduction to Space and Power*, Sage, London.
15. Agnew John, (2002) *Making Political Geography*, Arnold, London.
16. Parker Geoffrey (1998): *Geopolitics- Past, Present and Future*, Pinter
17. Dodds Klaus, (2000), *Geopolitics in a Changing World*, Prentice Hall.
18. Barnett C. and Low M., (2004): *Spaces of Democracy, Geographical Perspectives on Citizenship, Participation and Representation*, Sage Publications, London, Thousand Oaks, New Delhi.

Books for further Reading:

1. Schulze, H. (1994): *States, Nations and Nationalism*. Basil Blackwell.
 2. Dikshit, R. D. (1993): *Electoral Geography of India*, Vishwavidyalaya Prakashan Varanasi.
 3. Glassner. M. I., de Blij, H.J. and Yacher, L. (1980). *Systematic Political Geography*, John Willey.
 4. Amin, S. (1985); *Delinking towards a Polycentric World*, O.U.P.
 5. Cohen, S.B. (1975): *Geography and Politics in a World Divided*, O.U.P.
 6. Prescott, J.R.V. (1972): *Political Geography*, Hutchinson & Co.
 7. Sukhwal, B.I. (1971): *India -A Political Geography*, Allied Publishers.
 8. Taylor, P. J. and Johnston, R. J. (1979); *Geography of Elections*, Harmono's worth.
 9. Tavlор, P.J. (1996): *The Way the Modern World Works: World Hegemony to World Impasse*, John Willey
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: B.8- Cultural Geography

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I Evolution and growth of cultural geography 10 Hours

- 1.1 Significance of a spatial perspective in cultural studies
- 1.2 Attributes of culture- spatio-social context
- 1.3 Contemporary approaches- Cultural Turn in Geography

II Culture Hearths 10 Hours

- 2.1 Evolution of culture hearths
- 2.2 Culture realms and regions
- 2.3. Early migration and interaction in culture realms
- 2.4. Convergence and divergence processes and Cultural changes.

III Ethnicity, Language and Identity 15 Hours

- 3.1. Race and ethnicity - People as racial groups, classification and distribution, racial regions , process of acculturation
- 3.2 Caste and structuring of cultural space in India- Identity politics based on caste
- 3.3. Cultural Geography of language, Language as a basis of nations and states - Language and dialects. Diversity of language groups in India
- 3.4. Evolution of linguistic states -Cohesion and integration - Relevant issues.

IV Culture, Knowledge and Production of Space 15 Hours

- 4.1. Geography of religion , evolution of major world religions- Spatial spread
- 4.2 Religion and colonialism , role of religion in the formation of nations and states, Culture and religion.
- 4.3. Major and minor religious groups in India, distribution and spatial attributes, Multi-religious Diversity
- 4.4. Culture- Knowledge and politics in India -Contemporary issues- Political economy of culture , Patterns of dominance and dependence , India as a land of multicultural.

Reference Books :

1. De Blij, H.J. and Muller, P.O. (1977): Human Geography: Culture, Society and Space, John Wiley & Sons.
2. Steve, P. and Michael, K. (1993): Places and the Politics of Identity, Routledge, U.K.
3. Dohr, F.E. and Sommers, LM, (1967): Cultural Geography: d Readings, Thomas Y, Crowell Company.
4. Sopher, D. E. (ed)(1980): Explorations of India: Geographical Perspective on Society and Culture, Longman.
5. Faruqi, I.R. and Sopher, D.E. (1974): Historical Atlas of Religions of the World, Macmillan.

6. Bose, N.K. (1967): Culture and Society in India, Asia Publishing House.
7. Mitchell, D. (2000): Cultural Geography: A Critical Introduction, Oxford: Blackwell, U.K.
8. Nobal, A. G. and Dutt, A. K. (end.) (1982): India: Cultural patterns and processes, West view press, U.S.A.
9. Spencer, J.E. and Thomas, W.L. (1973): Introducing Cultural Geography, John Wiley & Sons.
- 10 Cook, I. et. al., (2000): Cultural Turns/Geographical Turns, Prentice Hall, U.K.

Books for further Reading:

1. Harper, R.A. and Schmudde, T.M. (1978): Between the Two Worlds, Houghton Mifflin.
 2. Beteille, A. (1969): Social Inequality, Selected Readings, Harrnondsworth.
 3. Bose, N.K. (1969): Problems of Indian Nationalism, Allied Publishers.
 4. Sinha, S.C. (ed.), (1976): Cultural Anthropology, Anthropological Survey of India.
 5. Smart, N. (ed.), (1999): Atlas of the World's Religion, O.U.P, New York.
 6. Polgar, S, (1975): Population, Ecology and Social Evolution, The Hague Mouton Publishers
 7. Forde, D. (1963): Habitat, Economy and Society, Methuen.
 8. Open University Series (1980): Conflict and Stability in the Development of Modern Europe, 1789- 1970, O.U.P.
 9. Habib, Irfan, (1982): An Atlas of the Mughal Empire, O.U.P., New Delhi.
 10. Singh, K.N. (ed.) (1992): People of India: An Introduction, Seagull Books,
 11. Adorno, T.W. (1991): The Culture Industry, Roultedge.
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: B.10- Industrial Geography

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I Industrialisation- Space and Geography – 15 Hours

- 1.1 Factors and processes in industrial location – Fordist and Post- Fordist Form
- 1.2 Technological changes and their impact on the factors - A temporal review
- 1.3 International division of labour – and Changing perspectives in industrial location.

II Industrial Location Theories 15 Hours

- 2.1 Theories and models of industrial location and growth –
- 2.2 Critique of industrial location theories.
- 2.3 Industrial linkages and industrial regions - Growth and decline of industrial regions and industries
- 2.4 Nature of industries and territorial division of labour - Patterns in national space.

III Industrial structure and organization

- 3.1 Models of growth of firms - Characteristics of industrial development in various political systems
- 3.2 Patterns in international space - Mobility of capital and restructuring of world Industrial space
- 3.3 Models of corporate growth - Vertical and horizontal integration
- 3.4 Transnational corporations, industrial development and the new international division of labour.

IV Industrialisation in India

- 4.1 Historical review of Indian industrialisation since 1947 – Evolution of industrial regions in India – Select Case Study
- 4.2 Inter-industry linkage -Role of small scale and cottage industries.
- 4.3 Multinational corporations and India's industrial scenario -Impact on economy, society and environment.
- 4.4 Problems of industrial development - Contemporary scenario - Inter-regional disparities - Issue of dispersal and regional development - Role of MNCs - Role of State

Reference Books:

1. Pacione, M. (1985): Progress in Industrial Geography, Groom Helm
2. Bale, J. (1981): The Location of Manufacturing Industry, Oliver and Boyde, (2nd ed.)
3. Hamilton, F.E.I. (1974): Spatial Perspectives on Industrial Organisation and Decision Making, John Wiley.
4. Lloyd, P. E. and Dicken, P. (1972): Location in Space--A Theoretical Approach to Economic Geography, Harper and Row.

5. Smith, D. M. (1982): *Industrial Location - An Economic Geographic Analysis*, John Wiley and Sons.
6. Massey, D. (1984): *Spatial Divisions of Labour*, Macmillan, U.K.
7. Dunning, J.H. (1981): *international Production and the Multinational Enterprise*.
8. Clarke, I.M. (1985): *The Spatial Organisation of Multinational Corporations*, Groom, Helm, U.K.
9. Banerjee-Guha, S. (1997): *Spatial Dimensions of International Capital: Study of Multinational Corporations in India*, Orient Longman.
10. Knox Paul, Agnew John and McCarthy Linda, (2008): *The Geography of the World Economy*, Hodder Education, UK.
11. Bryson John, Henry Nick, Keeble David and Martin Ron, (eds.) (1999): *The Economic Geography Reader- Producing and Consuming Global Capitalism*, John Wiley and Sons Ltd., New York.
12. Sheppard Eric and Barnes Trevor J., (eds.) (2000): *A Companion to Economic Geography*, Blackwell, Massachusetts.
13. Wood Andrew and Roberts Susan, (2011): *Economic Geography- Places, network and flows*, Routledge, London and New York.
14. Hartshorn A. Truman and Alexander W. John, Third edition, (2010): *Economic Geography*, PHI Learning Private Ltd., New Delhi
15. Liemt van Gijsbert, (eds.) (1992): *Industry on the move- Causes and consequences of International Relocation in the Manufacturing Industry*, International Labour Office, Geneva.
16. Harrington J.W. and Warf Barney, (1995): *Industrial Location- Principle, Practice and Policy*, Routledge, London and New York.

Books for further reading:

1. Watts, H. D. (ed.) (1980): *Large Industrial Enterprise; Some Spatial Perspectives*, Groom Helm.
2. Chaudhuri, M. R. (1976): *Indian, Industries*, Oxford Book House.
3. Hamilton, F.E.I. & Lingo, G.J.R. (ed)(1979): *Spatial Analysis, Industry and Industrial Environment*, Vol.1 & 11, John Wiley.
4. Radice, H. (1975): *International Firms and Modern Imperialism*, Harmondsworth, U. K.
5. Seth, V.K (1987): *Industrialization in India - Spatial Perspective*, Delhi Commonwealth Publications.

6. Saxena, A. N, (1985): Planning and Promotion of Production - The Indian Experience, Vol.I and II, New Delhi, National - Productivity Council.
 7. Harvey, D. (1982): Limits to Capital, Basil Blackwell.
 8. Harvey D., (2001), Spaces of Capital, Towards a Critical Geography, Edinburgh University Press.
 9. Benko,G. and Strohmayer, U. (2004), Human Geography, a History for the 21st Century, Arnold,
 10. Johnston R.J., Taylor, P.J. and Watts, M.J. (2002), Geographies of Change, Remapping the World, Blackwell.
 11. Tharakan, M. (1980): The New International Division of Labour and Multinational Corporations, Saxon House.
 12. Scott J. Allen, (2006): Geography and Economy- The Clarendon Lecture in Geography and Environmental Studies, Clarendon Press, Oxford, New York.
 13. Castree Noel, Coe M. Neil, Ward Kevin and Samers Michael, (2004): Spaces of Work: Global Capitalism and the Geographies of Labour, Sage, London.
 14. Brakman Steven, Garretsen Harry and Marrewijk van Charles, (2009): The New Introduction to Geographical Economics, Cambridge University Press, UK.
 15. Desai Vandana and Potter B. Robert, (eds.) (2011): The Companion to Development Studies, A Hodder – Viva Edition, London.
 16. Kitchin R., Thrift, N, (eds.) (2009), The International Encyclopedia of Human Geography, Elsvier.
 17. Cloke, Paul, Crang Philip, Goodwin Mark, (1999): Introducing Human Geographies, Arnold
 18. Raju Saraswati, Satishkumar M., Corbridge Stuart, (2006), colonial and Post-colonial Geographies of India, Sage, New Delhi
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: B.13- Geography of Tourism and Recreation

No. of Credits: **4**

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I Tourism- Space Interrelations

15 Hours

- 1.1 Leisure, recreation and tourism - definitions and relationships- Tourist Mobility and Gazes- Space and Place Context
- 1.2 Evolution of Tourism- historical origins- modernisation- mass tourism- Globalisation and Tourism- opportunities, risks and constraints
- 1.3 Contemporary world patterns- core regions in Global North and South
- 1.4 Tourism and Tourism Spaces- Approaches- areas of research- Role of tourism in development.

II Tourism as Service Industry

15 Hours

- 2.1 The nature of tourism production- Tourism capitalist relationships and regulation theory- Dynamics of globalization
- 2.2 Organisation – Models of production- micro firms and MNCs-Spatial fixity and factors of supply- Infrastructure, services and marketing
- 2.3 Tourism labour process-flexibilisation- spatio-social context
- 2.4 Tourism consumption-motivational factors- commodification of tourists' experiences- typologies of tourists' consumptions– Spatial context.

III Tourism Impacts and Relationships

15 Hours

- 3.1 Impact of tourism- Changing perspective- Commodification of places- Environmental dimension
- 3.2 Economic impact-Employment, labour, Sectoral linkages and hierarchy
- 3.3 Social construction of tourism places- Commodification of culture- Stages; Structuring of tourists' gazes and place image- Tourists- community relationships
- 3.4 Tourism impact assessment

IV Tourism Planning and Development

15 Hours

- 4.1 Urban and rural dimensions – Alternative Tourism praxis- Community participation critical perspectives.
- 4.2 Tourism development in India – Evolution- Contemporary trends –Core areas and regional policies-
- 4.3 Tourism development in Maharashtra – Policy perspective- the case study of Sindhudurga district
- 4.4 Production of Tourism and Recreational Spaces in MMR- contestation and conflicts.

Reference Books:

1. Cosgrove, I. And Jackson, R. (1972): The Geography of Recreation and Leisure, Hutchinson, London.
2. Robinson, H. (1976): Geography of Tourism, Macdonald and Evans, London.
3. Kaul, R.K. (1985): Dynamics of Tourism and Recreation, Inter India, New Delhi.
4. Pearce, D. (1987): Tourism Today-- A Geographical Analysis, Longman Scientific and Technical, New York.
5. Bhatia, A.K. (1989): Tourism Development, Principles and Practices, Sterling, Bangalore.
6. Pearce, D. (1989): Tourist Development, Longman Scientific and Technical, New York.
7. Bhatia, A.K. (1991): International Tourism: Fundamentals and Practices, Sterling, New Delhi.
8. Chris Ryan. (1991): Recreational Tourism, a Social Science Perspective, Routledge, London.
9. Hunter, C. and Green, H. (1995): Tourism and the Environment, A Sustainable Relationship.
10. Shaw, G. and Williams, A.M. (1994): Critical Issues in Tourism, a Geographical Perspective, Blackwell, Oxford, U.K.
11. Shaw, G. and Williams, A.M. (2004): Tourism and Tourism Spaces, Sage.
12. Hall, C.M. and Page, S. J. (1999): The Geography of Tourism and Recreation, Environment, Place and Space, Routledge, London.
13. Hall, C.M. and Page, S.J. (2001): Tourism in South and South-east Asia: Issues and Cases, Butterworth, Heinemann, Oxford.
14. Banerjee-Guha, S. (2003): Contemporary Tourism Policy and Coastal Districts of Maharashtra: A Critique, unpublished report, Equations. Bangalore, on project conducted at the Department of Geography, University of Mumbai.
15. Garg, N.K. (1996): Tourism and Economic Development. Avishkar, Jaipur.
16. Sinha, P.C. (1997): International Encyclopedia of Tourism Management, Vol. 1-12, Anmol, New Delhi.
17. Bhardwaj, D. S. and Chaudhary, M. (1997): Contemporary issues in Tourism, Himalaya, Mumbai

Books for further reading:

1. Neumeier, M.H. and Neumeier, E.S. (1949): Leisure and Recreation, A. S. Barner and Company, New York.
2. Foster, D. (1986): Travel and Tourism Management, Macmillan, Hampshire.
3. Modi, S. (2002): Tourism and Society, Rawat, Jaipur.
4. Batra, G.S. and Donghal, R.C. (2002): Tourism promotion and Development, Deep and Deep, New Delhi
5. Lavery, P. (1971): Recreational Geography, Donglas David and Charles Ltd., Vancouver.
6. Singh, S.N.(1986):Geography of Tourism and Recreation, Inter India, New Delhi
7. Fesenmaker, L. (1986): Recreation Planning and Management, Venture Publications, U.S.A.
8. Kaiser, C, Jr., Helber, L.E. (1977): Tourism Planning and Development, CBI Publishing Co. Inc. Boston.
9. Mill R.C, and Morrison, A.M. (1985): The Tourism System: An introductory Text, Prentice Hall International Englewood Cliff, New Jersey.
10. Baggio R. and Klobas J. (2011): Quantitative Methods in Tourism, A Handbook. Aspects of Tourism. Channel View Publications, UK, USA, Canada.
11. Holden A and Fennell D. (ed.) (2013): The Routledge Handbook of Tourism and the Environment, Routledge, Taylor and Francis Group, London and New York.
12. Newsome D and Dowling R. (ed.) (2010): Geotourism: The Tourism of Geology and Landscape, Goodfellow Publishers Ltd, Oxford.
13. Yeoman I., et. al. (2012): 2050 – Tomorrow’s Tourism, Aspects of Tourism, Channel View Publications, Bristol, Buffalo, Toronto.
14. Becken S. and Hay J., (2012): Climate Change and Tourism, From Policy to Practice, Earthscan, Routledge, Tourism Environment and Development Series, London and New York.
15. Fullagar S., Markwell K., Wilson E., (2010): Slow Tourism, Experiences and Mobilities, Aspects of Tourism. Channel View Publications, Bristol, Buffalo, Toronto.
16. Kaur, J.(1985):Himalayan Pilgrimages and New Tourism, Himalayan Books, New Delhi
17. Kumar, R.B. (1995): Coastal Tourism and Environment, Avishkar, Jaipur.

18. Singh, S.(1995): Profile of Indian Tourism, Avishkar, Jaipur
19. Chattopadhyay, K. (1995): Economic Impact of Tourism Development, Avishkar, Jaipur.
20. Yadav, Hrishikesh, (ed.) (1995): Sangati Sahyadrichai, Sahyadri Prakashan, Murnbai.

M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: C. 3 Thematic Cartography

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours 120

Total Marks: 100. The Paper consists of **Theory: 60 Marks (external)** and **Mapping Project : 20 Marks (internal)**

The mapping project is devoted to preparation of thematic maps which will be submitted for assessment as part of the paper at the Final University Examination.

I Development of the field of Cartography: 15 hours

- 1.1 Historical perspective - Conceptual, technological and institutional changes during the post World War period
- 1.2 Status of Cartography in India: contemporary and future developments
- 1.3 Conceptual bases of Cartography: map as miniature model of reality
- 1.4 Changing role of maps - Map projections: properties and choice.

II Sources of data for mapping 15 hours

- 2.1 Traditional sources
- 2.2 Primary and secondary data, nature, processing and applications
- 2.3. Modern sources: remote sensing and GPS technologies- principles, systems and applications - Digital graphic data vector and raster formats
- 2.4. Various GIS databases - Internet and World Wide Web.

III Data processing and representation 15 hours

- 3.1. Characteristics of data and levels of measurement
- 3.2. Concept of statistical surface, Statistical diagrams and maps interrelation.
- 3.3 Basic statistical and cartographic techniques of representing different features in thematic maps.

IV Production of maps: 15 hours

- 4.1 Techniques - Characteristics of map image -Drawing instruments, equipment and base materials
- 4.2. Map design and layout, Cartographic generalisation , Designing cartographic symbols , Colour use and specification
- 4.3. Computer cartography and automation: development of digital computers

4.4. Geographical Information Systems - Nature, structure and components of GIS database
- Applications in cartography

Mapping Project: Internal (20)

Reference Books:

1. Crone, G. R. (1968): Maps and their Makers: An Introduction to the History of Cartography, Hutchinson University Library, London.
 2. Cuff, D. J. and M.T. Mattson (1982): Thematic Maps: Their design and Production, Methuen and Company, New York.
 3. Dickinson, G.C. (1977): Statistical Mapping and Presentation of Statistics, Edward Arnold limited, London.
 4. Heywood, Ian et al (1998) .An Introduction to Geographical Information Systems, Addison Wesley Longman, Limited, England.
 5. Keates. J S (1973): Cartographic Design and Production, 2 nd edn., Longman Group Limited, London.
 6. Keates, J.S. (1996): Understanding Maps, 2^{na} Edn., Longman Group Limited, London.
 7. Kraak, Menno-Jan and Ferjan Ormeling (1996), Cartography Visualization of Spatial Data, Addison Wesley Longman Limited, England.
 8. McDonnell. P. W. Jr. (1979): Introduction to Map Projections, Marcel Dekker, Inc New York and Basel.
 9. Monmonier, Mark S. (1982), Computer-Assisted Cartography Principles and Prospects, Prentice-Hall, Inc, London
 10. Robinson, A.H. et al. (1995): Elements of Cartography, Vol.VI, John Wiley & Sons, New York.
 11. Sabins, Floyd F. (978): Remote Sensing: Principles and Interpretation, W.H. Freeman & Co., San Francisco.
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: C. 6 Geography of Resources

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I Resources - Links and Flows among Environment, Economy and Society

1.1 Resource definitions - Changing perceptions - socio-spatial and political ecology perspective

1.2 Typology of Resources- Characteristics and interrelations- Scarcity and potentiality-

1.3 Resources as inputs – Organization in economy and society- a historical perspective

1.4 Resource ownership and control- across diverse value systems and culture – Role of market and the State - resource governance.

II Resources, People and Development: Theoretical Framework

2.1 Resource organisation in pre-industrial society- Colonisation, trade and resource transfer.

2.2 Industrialisation, urbanization and growth- Classical and neoclassical approaches to resource organization.

2.3 Organised capitalism and stages of economic development -advances in technology, transport and communication

2.4 Structuring of spatial fixity and resource transfer- carrying capacity - Limits to growth.

III Contemporary Patterns of Resource Distribution and Exploitation

3.1 Expansion of international capital - Globalisation- MNCs and restructuring of production - Gaps and imbalances

3.2 Issues and challenges in distribution and use of key resource types - Land / forests / water / energy/ minerals / ocean resources.

3.3 Related dynamics - implications on resource ownership, accessibility and patterns of livelihood –

3.4 Resource organization - Structuring of world economy as core and periphery- imbalances in resource use and organisation - Global and local issues –Engendering resource.

IV Resources Development Choices and Emerging Issues

4.1 Resource depletion, degradation and emerging crisis- Desertification, deforestation and losses in bio-diversity.

4.2 Politics of global warming - Increasing water scarcity and conflicts – Indian examples

4.3 Energy crisis – Issues of sharing, alternate sources- Resource conservation and creation. – Challenges for the Global South .

4.4 Sustainable development and conservation of resources- Critical Perspective- Emergence of global environmentalism

Reference Books:

1. Mather, A.S. and Chapman, K. (1995): Environmental Resources, Longman Scientific and Technical, London.

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5. Hampel, L.C. (1996): *Environmental Governance, the Global Challenge*, Island Press, Washington D.C.
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7. Redcliff, M. (1996): *Wasted: Counting the Cost of Global Consumption*, Earthscan, London.
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9. Elliott, J.A. (1999): *An Introduction to Sustainable Development*, Routledge.
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21. Riccardo Petrella , Translated by Patrick Camiller, (2001): *The Water Manifesto Arguments For A World Water Contract*, Books for Change, Bangalore, India.

22. Ann-Christin Sjolander Holland (2005) :The Water Business corporation versus people Books for Change , Bangalore, India.

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1. Brundtland, H. (1987): Our Common Future, Oxford University Press, Oxford for the World Commission on Environment and Development.

2. Dasgupta, P. and Karl-Goran, M.(eds.)(1997): The Environment and Emerging Development Issues, Vol. 1 and 2, Clarendon Press, Oxford.

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4. Gadgil, M. and Guha, R. (1995): Ecology and Equity: The Use and Abuse of the Nature Contemporary India, Routledge, London.

5. Baraenclough, S.L. and Ghimir, K.B. (1995): Forests and Livelihoods. The Social Dynamics of Deforestation in Developing Countries, MacMillan, London.

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14. Pereira, W. (1993): Tending the Earth, Traditional Sustainable Agriculture in India, Earthcare Books, Bombay.

15. McCormick, J.S. (1992): The Global Environmental Movements: Reclaiming Paradise, Bethaven, London.

16. Middleton, N. (1999): The Global Casino: An Introduction to Environmental Issues, Arnold, London 2nd Edition.

17. Berustein, H., Crow. B., Mackintosh, M. and Martin, C. (1990): The Food Question - Profits versus People, Earthscan, London.

18. Sachs, W. (eds.) (1992): The Development Dictionary: A Guide to Knowledge as Power, Zed Books, London.

M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: C. 7 Geography of Water Resources

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours 120

I Water Resources: Environment, Society and Space Interrelations 15 Hours

- 1.1 Significance of water to human society - Hydrological cycle - Basic elements and processes
- 1.2 Structuring of Waterscapes- Dynamics of culture-technology, capital and power relations- Production of water spaces - Hierarchy and gaps
- 1.3 Water scarcity and renewability – Creation and regulation- relevance for water management and conservation
- 1.4 Social Justice and Mobilisation Water resources- Reconciling scarcity and conflicts- Water and development and well being

II Organisation of Water resources 15 Hours

- 2.1 Evolution of demand profile for water and systems of supply.
- 2.2 Wisdom of water harnessing in traditional societies- Intercultural practices- Contemporary relevance
- 2.3 Traditions of water wisdom and water spaces in India- aspects of inclusion and exclusion.
- 2.4 Water in modern society- Changing profiles of demand and systems of supply – Comparative placement of the Global South

III Water Uses: Sectoral Patterns and Spatio-social Implications 15 Hours

- 3.1 Water uses in agriculture –diversity of climate- soil- crop and culture interrelations- Typology of irrigation systems
- 3.2 Modern irrigation practices and resulting problems - Dryland agriculture and sustainability of livelihoods - Management of wetlands – Indian examples
- 3.3 Use of water for industry, services and leisure- Domestic consumption- patterns of inequality - Water economics and management
- 3.4 Demand and Supply of water in urban areas -Socio-political context- Poverty- water availability, quality health syndrome in Indian cities.

IV Contemporary issues of water management 15 Hours

- 4.1 Controversy of large dams, Environmental, economic and social dimension - Issues of displacement- Relevant Indian examples.
- 4.2 Ownership of water, water rights- privatization and commodifications- policy perspective and issues of water governance – Global to local context.
- 4.3 Contemporary water wars – Global and Indian context- water politics in Maharashtra
- 4.4 Negotiating water rights- Role of people's movements and NGOs –A Critical perspective

Reference Books:

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3. Michael, A.M. (1978): Irrigation: Theory and Practice, Vikas Publishing Home Private Limited, New Delhi.
4. Todd, D.K. (1959): Ground Water Hydrology, John Wiley, New York.
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7. International Water Resource Association and Central Board of Irrigation and Power (1975): Water for Human Needs, Vol. I to IV, Proceedings of Second World Congress on Water Resources, 12-16 December, New Delhi.
8. Singh, R.A. and Singh, S. K. (1979): Water Management: Principles and Practice, Tara Publications, Varanasi.
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15. Mishra, A. (1993): Aaj Bhi Khare Hai Talab, Gandhi Peace Foundation, New Delhi.
16. Peet, R. Watts, M. (eds.)(1996): Liberation Ecologies: Environment, Development, Social Movements, Routledge, London.
17. Thomas, D.S.G. and Middleton, T. (1994): Desertification: Exploding the Myth, Wiley and Sons, Chichester.
18. Smitu Kothari, Imtiaz Ahmad, Helmut Reifeld (ed) (2003): The Value Of Nature-Ecological Politics In India. Rainbow Publishers, Noiada, U. P. , India.

19. Amita Baviskar (ed.) (2007): *Waterscapes The Cultural Politics of a Natural Resource*, Permanent Black Himalaya , Ranikhet , Uttaranchal, India.
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21. Sanjay Sangvai (ed) (2000): *The River and Life- People's Struggle in the Narmada Vally* Earthcare Books, Mumbai.
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23. Riccardo Petrella, (Translated by Patrick Camiller), (2001): *The Water Manifesto Arguments For A World Water Contract*, Books for Change, Bangalore, India.
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Books for Further Reading:

1. Gulhati, N. O. (1972): *Development of Interstate Rivers: Law and Practice in India*, Allied Publishers, Mumbai.
2. Jones, J.A. (1997): *Global Hydrology: Processes, Resources and Environmental Management*, Longman, London.
3. Tebbutt, T.H.Y. (ed.) (1985): *Advances in Water Engineering*, Elsevier Applied Science Publications, London,
4. Rao, K.L. (1979): *India's Water Wealth*, Orient Longman, New Delhi.
5. Mujumdar, O.K. (2002): *Irrigation Water Management: Principles and Practice*, Prentice Hall of India Private Limited, New Delhi.
6. Newson, M. (1992): *Land Water and Development, River Basin Systems and their Sustainable Management*, Routledge, London.
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: C. 8 Geography of Energy Resources

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours 120

I Role of energy in society and economy and space

15 Hours

- 1.1 Sources of energy - Definition, and typology – conventional and non-conventional- Changing perspective
- 1.2 Energy systems – Evolution- Role of capital, technology, power structure trade links.
- 1.3 Commercial energy systems- structural components- Environmental, economic and spatio-social context.
- 1.4 Dynamics of energy and development- Aspects of mobilisation, security and social well being

II Production, Transfer and trading of energy resources

15 Hours

- 2.1 Uneven distribution and localization of energy resources- production and consumption of major types- multiscalar, spatio-social gaps
- 2.2 Organisation of energy production and flows –Variation in volume and direction – Examples of Conventional and non conventional energy resources-
- 2.3 Structuring of production and consumption spaces- footloose capital and Spatial fixity- Role of MNCs, and the State- WTO and the trade blocks.

2.4 Environmental and spatio-social implications- Energy profiles of the Global North and the South

III Energy crisis

15 Hours

3.1 Localisation impact - dominance and dependence- Sectoral links

3.2 Energy resources- capitalist development- conflicting demands- contestation in space-displacement and deprivation

3.3 Environmental concerns- pollution and global climate change- Carbon credits and trading-dilemma of the Global south

3.4 Energy security -Policies of conservation, renewal and sustainable use of energy

IV State of energy and power sector in India

15 Hours

4.1 Resource types and evolution of energy systems - Impact of urban and industrial growth –

4.2 Regional dimensions - Privatisation of energy production and power supply

4.3 Energy profile and security issues- Gaps in resource mobilisation

4.4 Critical issues of governance -Availability and use of sustainable energy resources - Future trends.

Reference Books:

1. Chapman, J. D. (1989): Geography and Energy .Commercial Energy Systems and National Policies, Longman Scientific and Technical

2. Guyel, N.B. (1971): Energy in the Perspective of Geography, Prentice Hall, Englewood Cliffs.

3. Manners, G. (1964): The Geography of Energy, Hutchinson University, London.

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Books for further reading:

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 2. U.N. (1993): Energy, Environment and Sustainable Development, Series NO. 34, 35 and 36.
 3. Luten, D.B. (1971): The Economic Geography of Energy' in Scientific American, 224, No, 3, pp-165-175.
 4. Conant, Melvin, A. and Gold Firm Racine (1978): The Geopolitics of Energy, Westview press, Colorado.
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 6. United Nations (1991): Energy System, Environment and Development, U. N. New York.
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 10. Monga, G.S. and Sanctis, V.J.(1994); India's Energy Prospects, Vikas Deihi.
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M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: C. 16 Advanced Quantitative Techniques in Geography

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I. Scientific method in geographical explanation 10 Hours

- 1.1 What is explanation?
- 1.2 Routes to explanation
- 1.3 Inferential statistics and its significance in spatial explanation
- 1.4 Testing of hypotheses: problems involved
- 1.5 Typology of tests: parametric and non-parametric

2. Spatial applications of test results 10 Hours

- 2.1 Chi square
- 2.2 Correlation analysis
- 2.3 Regression analysis
- 2.4 Linkage analysis
- 2.5 Analysis of variance

3. Multivariate techniques of analysis and synthesis 15 Hours

- 3.1 Factor analysis: basic concepts
- 3.2 Derivation of factors and their labelling
- 3.3 Interpretation of factor extracts
- 3.4 Derivation of factor scores
- 3.5 Mapping and interpretation of the scores

4. Multivariate techniques of analysis and synthesis 15 Hours

- 3.1 Cluster analysis: basic concepts
- 3.2 Derivation of clusters
- 3.3 Interpretation of cluster results
- 3.4 Mapping of clusters
- 3.5 Interpretation of the cluster maps

5. Spatial efficiency 10 Hours

- 5.1 concept and need
- 5.2 Linear programming and its utility in achieving the efficiency
- 5.3 Location allocation algorithm: concept and applications
- 5.4 Graphical Quantitative techniques

Reference Books

1. Burt, J. E. and Barber, G.M. (1996): "Elementary Statistics for Geographers", The Guilford Press, New York.
2. Clark, W.A.V. and Hosking, P.C. (1986): "Statistical Methods for Geographers", John Wiley and Sons, New York.
3. Ebdon, D. (1977): "Statistics in Geography", Basil Blackwell, London.

4. Gregory, S. (1963): "Statistical Methods and the Geographer", Longman Group Ltd., London.
5. Killen, J. (1983): "Mathematical Programming Methods for Geographers and Croom Helm, London.
6. Levin, J. (1973), "Elementary Statistics in Social Research", Harper & Row, New York.
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9. Taylor, P.J. (1977), "Quantitative Methods in Geography", Houghton Mifflin Company, Boston.
10. Watson, G. and McGraw, D. (1980), "Statistical Inquiry", John Wiley & Sons, New York.
11. Yeates, M. (1974), "An Introduction to Quantitative Analysis in Human Geography", McGraw Hill, New York.

Books for further reading

12. Cressie, N. (1991): "Statistics for Spatial Data", John Wiley and Sons, New York.
13. Duncan, O.D., Cuzzort, R.P. and Duncan, B. (1961): "Statistical Geography: Problems in Analysing Spatial Data", The Free Press of Glenco, Illinois.
14. Hammerton, M. (1975): "Statistics for the Human Sciences", Longman Group Ltd., Barlow.
15. Till, R. (1974): "Statistical Methods for the Earth Scientist", The MacMillan Press Ltd., London.
16. Wicox, R. R. (2003), "Applying Contemporary Statistical Techniques", Academic press, Amsterdam.
17. Wilson, A.G. and Bennet, R. J. (1985), "Mathematical Methods in Human Geography and Planning", John Wiley & Sons, New York.

M.A./ M.Sc. Credit Based Grading System

Geography - Semester III

303/ 304: C.20- GEOGRAPHY OF HAZARD AND DISASTER MANAGEMENT

No. of Credits: 4

Teaching Hours 60 + Notional Hours 60= Total hours **120**

I FUNDAMENTALS OF DISASTER

12 HOURS

- 1.1 Understanding Disasters, Definition & Terminology of Disasters, Causation of disasters
- 1.2 Understanding Natural Disasters – Types, Causes and Effects
- 1.3 Understanding Man-Made Disasters – Types, Causes and Impacts
- 1.4 Risk Assessment and Vulnerability Analysis

II Environmental Hazards and Disasters.**15 HOURS**

- 2.1 Concept of Environmental Hazards, Environmental Risk and Environmental Disasters.
- 2.2 Human ecology geography and its application in geographical research in hazards and disasters.
- 2.3. Different approaches and relation with human ecology
- 2.4 Landscape Approach, - Ecosystem Approach, - Perception approach

**III Environmental Hazards & Disasters: Typology, Mitigation and Preparedness
15 HOURS**

- 3.1 Natural hazards and Disasters - Natural Disaster Reduction & Management
- 3.2 Man induced hazards & Disasters, Social Aspect, Economic Aspect
- 3.3. Prediction of Hazards & Disasters, Measures, Use of Technology in Disaster Management
- 3.4. Disaster Management- An integrated approach for disaster preparedness, mitigation & awareness

IV DISASTER MANAGEMENT PERSPECTIVE: INDIA AND WORLD**18 HOURS**

- 4.1. Disaster Management in India, Global Perspective on Disaster Management
- 4.2. A regional survey of Cyclonic Disaster, Disaster in Hills, Urban Disaster with reference to India,.
- 4.3 Environmental policies and programmes in India- Institutions, Environmental Legislations in India, Awareness, Conservation Movement, Education and training
- 4.4. Ecological planning for sustainability and sustainable development in India
- 4.5. Integrating Disaster Management and Development, Gender Perspective in Disaster Management

Reference Books:

1. Disaster Management(6 volumes); Ghosh G. K (2001), Saujanya Distributors, Delhi
2. Disaster Management, Gaur, Ramakant,(2006)
3. Disaster Management, Gulia, K S(2008)
4. Disaster Management Goel, S. L, Et al.
5. Disaster Management in the 21st Century, Bose, B.C.(2008)
6. Natural Disaster Reduction: Global Perspectives, South East Asian Realities and Global Strategies (Anthem Press India) [ILLUSTRATED] (Hardcover)-Dilip Kumar Sinha(2007)
7. Disaster Management, Singh, S.R.(2008)
8. Natural Hazards and Disaster Management: Vulnerability and Mitigation/edited by R.B. Singh. New Delhi, Rawat, 2006,

Books for Further Reading:

1. Disaster Management- N.C Mahanti (2006) Narosa Publishing House

2. Encyclopedia of Disaster management(10 volumes)-Talwar, Arun Kumar, Juneja and Satish(2008) Saujanya books,Delhi
 3. Environmental Hazards: Assessing Risk and Reducing Disaster. Contributors: Keith Smith - author. Publisher: Routledge. Place of Publication: New York. Publication Year: 2004.
 4. Earthquakes: Disaster & Survival(2005) –Jennifer Reed
 5. Trivedi, Priyaranjan (ed.), (2007), Encyclopedia of disaster management (12 volumes) Delhi,
 6. Damon P. Coppola (2007), Introduction to International Disaster Management-Introduction to Emergency Management- George D. Haddow, Published by Butterworth-Heinemann.
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