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जननायक चंद्रशेखर विश्वविद्यालय, बलिया  
Jananayak Chandrashekhar University, Ballia



**JANANAYAK CHANDRASHEKHAR  
UNIVERSITY, BALLIA**

**COURSE STRUCTURE FOR**

**M.A./M.Sc.**

**DEPARTMENT OF GEOGRAPHY AND  
GEOINFORMATICS**

भूगोल एवं भू-सूचना विभाग

**UNDER SEMESTER SYSTEM**

**ACADEMIC SESSION : 2022-23**

New

**Jananayak Chandrashekhar University, Ballia**

**भूगोल-विभाग**

**DEPARTMENT OF GEOGRAPHY**

**Faculty of Science : M.A./M.Sc. Geography Syllabus 2022-23**

**Semester Based Syllabus**

**Programme Structure :-** The Programme structure of Post-Graduation in Geography is as follows -

- The post-graduation programme in Geography of this University will comprise of four semesters.
- Every semester will have 5 (4 theory and 1 practical) papers of 4 credits each.
- In 1<sup>st</sup> or 2<sup>nd</sup> semester, the student will have to opt for a **minor elective paper** of 4 credits from a faculty other than his main faculty.
- In every semester, the student has to do a **research project** of 4 credits (thus, a total of 16 credits in 4 semesters) under the supervision of a supervisor as nominated by the head of the department.
- There may be a co-supervisor also from any industry, company, technical or research institute.
- These projects may be inter-disciplinary or multi-disciplinary and may be in the form of research project/industrial training/internship/survey work etc.
- The reports of the projects carried out in 1<sup>st</sup> and 2<sup>nd</sup> semesters will be compiled together and submitted in the form of one PROJECT REPORT at the end of first year. It will be evaluated out of 100 marks (8 credits) at the end of the first year jointly by the supervisor and the external examiner appointed by the University.
- Similarly, the reports of the projects carried out in 3<sup>rd</sup> and 4<sup>th</sup> semesters will also be compiled together and submitted in the form of another PROJECT REPORT at the end of the second year. It will also be evaluated out of 100 marks (8 credits) at the end of the second year jointly by the supervisor and the external examiner appointed by the University.

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- If a student publishes a research paper out of his research project in a UGC-CARE listed journal, he may be given up to 25 additional marks, provided the maximum marks of the project will remain 100. The marks of the research projects will be converted into grades that will be incorporated in the final calculation of CGPA too. The final result of M.A./M.Sc. (Geography) programme will be declared on the basis of CGPA.
- The courses to be taught in these semesters are given below.

Sem.	Paper	Teching Hours	Credit	Marks
1 <sup>st</sup>	i-GR501 : Geomorphology	60	4	100
	ii-GR502 : Advanced Geography of India	60	4	100
	iii-GR503: Economic Geography	60	4	100
	v-GR504 : Environmental Geography	60	4	100
	v-GR505 : Practical Work	60		-
	Part A : Cartographic Work -I	60	2	50
	Part B : Field Cum - Lab Work	60	2	50
	vi-GR506 : Project - 1	60	2	To be evaluated at the End of 2 <sup>nd</sup> Sem.
	One Minor Elective Paper (Subject) from other faculty in 1 <sup>st</sup> or 2 <sup>nd</sup> Semester	60	4	100
	<b>Total</b>		<b>24</b>	<b>600</b>
	i-GR507 : Climatology	60	4	100
	ii-GR508: Basics of Remote Sensing	60	4	100
	iii-GR509: Geography of Resources	60	4	100
	iv-GR510 : Disaster Management	60	4	100
	v-GR511 : Practical Work	60		-
	Part A : Cartographic Work - II	60	2	50
	Part B : Field Cum - Lab Work	60	2	50
	vi- GR512 : Porject - 2	60	2+2=4	(Project 1 + Project 2 in the form of Dissertation) 100
	<b>Total</b>		<b>24</b>	<b>600</b>
	<b>Sub Grand Total of M.A./M.Sc. Previous-</b>		<b>48</b>	<b>1200</b>

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3 <sup>rd</sup>	i-GR513 : Hydrology and Oceanography	60	4	100
	ii-GR514 : Geographic Information system (GIS) and Applications	60	4	100
	iii- GR515 : Students are required to opt. any <u>One</u> of the following	60	4	100
	GR515 A : Population Geography			
	GR 515 B : Urban Geography			
	GR515C : Transport Geograhya			
	iv-GR516 : Students are required to opt. any <u>One</u> of the following	60	4	100
	GR516 A : Geography of Rural Settlements			
	GR 516 B : Geography of Rural Development			
	GR 516 C : Industrial Geography			
	v-GR517 : Practical Work (Surveying)	60	4	100
	vi-GR518 : Project - 3	60	2	To be evaluated at the End of 4 <sup>th</sup> Sem.
	<b>Total</b>		<b>20</b>	<b>500</b>
4 <sup>th</sup>	i- GR519 : Geographical Thoughts	60	4	100
	ii-GR520 : Research Methods and Techniques	60	4	100
	iii- GR521 : Students are required to opt. any <u>One</u> of the following	60	4	100
	GR521A : Political Geography			
	GR 521B : Resource Planning			
	GR 521 C : Regional Development and Planning			
	iv- GR522 : Students are required to opt. any <u>One</u> of the following	60	4	100
	GR522 A : Geography of Tourism			
	GR522 B : Agricultural Geography			
	GR 522 C : Population and Development			
	v- GR523 : Project Work and Study Tour (Geographical)	60	4	100
	vi- GR524 : Project -4	60	2+2=4	(Project 3 + Project 4 in the form of Dissertation) 100
	<b>Total</b>		<b>24</b>	<b>600</b>
	<b>Grand Total</b>		<b>100</b>	<b>2300</b>

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# भूगोल

## DEPARTMENT OF GEOGRAPHY

JAN NAYAK CHANDRASHEKHAR UNIVERSITY, BALLIA

M.A./M.Sc.

### First Semester

#### Paper I GR

#### 501: Geomorphology

#### Objectives -

- Detailed exposure of concepts of Geomorphology.
- Students will be able to understand landforms and other Geomorphological features.
- Students will be able to apply knowledge for logical explanation of landform development.
- Students will be able to identify and calculate rate of various process working in landform development.
- Students will be able to compute landform development of entire region by studying Geomorphological features.
- Students will be able to evaluate Geomorphological process working in area being studied.

#### Unit-I:

Meaning and scope of geomorphology, Fundamental Concepts, Modern geomorphologists - Hutton, Strahler, King. Concept of Cycle of Erosion - Davis and Penck

#### Unit-II:

Endogenetic process- Plate tectonic, Mountain Building, Volcanicity, Seismicity, Earthquakes, tsunami, Isostasy

#### Unit-III :

Geomorphometric Analysis- Drainage density, Drainage Frequency, Bifurcation ratio, Drainage Frequency, Bifurcation ratio, Slope types and analysis.

#### Unit-IV:

Development of Geomorphology in India, Recent trends in Geomorphology Applied Geomorphology, Regional geomorphology of Indo- Gangetic plain, Rajasthan Desert & Chhota Nagpur Plateau.

Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.

#### Books Recommended

1. Ahmed, E. (1985): Geomorphology, Kalyani Publishers New Delhi.

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2. Bloom, A.L.(1998/2001): Geomorphology. 3rd edition. Prentice Hall of India, New Delhi.
3. Chorley, R.J., Schumm] S-A and Sugden, D.E.(1984): Geomorphology. Methuen and Company Ltd., London.
4. Dayal, P.(1994): A Text Book of Geomorphology. Kalyani Publishers, New Delhi.
5. Fairbridge, R.W.(ed.) (1968): Encyclopedia of Geomorphology, Reinhold Book Corporation., New York.
6. Gregory, K.J. and Walling, D.E.(1973): Drainage Basin Form and Process. Edward Arnold, London.
7. Jog, S.R.(ed.) (1995): Indian Geomorphology (2 vols.). Rawat Publications] Jaipur
8. Kale, v. and Gupta, A.(2001): Introduction to Geomorphology. Orient Longman, Hyderabad.
9. King, C.A.M.(1966): Techniques in Geomorphology. Edward Arnold, London.
10. Pethick, J.(1984): An Introduction to Coastal Geomorphology. Arnold, London. Indian reprint 2000.
11. Sharma, P.R.(ed.),(1993): Applied Geomorphology in Trophies. Rishi Publications, Varanasi.
12. Singh, S.(2004): Geomorphology. Prayag Pustak Bhawan, Allahabad.
13. Sparks, B.W.(1986): Geomorphology. Longmans, London.
14. Thornbury, W.D.(2005): Principles of Geomorphology. John Wiley and Sons, New York.
15. Wooldridge, S.W. and Morgan, R.S.(1959): The Physical Basis of Geography- An Outline of Geomorphology. Longman, London.

## **GR 502 :**

### **Advanced Geography of India**

#### **Objectives -**

- Detailed exposure of advance Geography of India.
- Students will be able to understand various aspects of Geography of India.
- Students will be able to make conclusion regarding various physical and human issues.
- Students will be able to analyse cause of various physical and human aspects of Geography of India.
- Students will be able to make plans and strategies for addressing various issue related to subject.
- Students will be able to evaluate physical structures and human aspects of Indian Geography.

#### **Unit — I:**

Making of India through geological times, Structure and Relief regions, Drainage, Physiographic division soil types.

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## **Unit — II:**

Climatic characteristics, Mechanism of Indian Monsoon, Climatic Regions, Natural Vegetation & wild life, vegetation regions.

## **Unit - III :**

Agricultural Characteristics and Trends, Crop Combination regions, Green, White, Blue, and Yellow revolutions.

## **Unit — IV:**

Industrial region Transport — rail, road, air. Population growth trends and patterns, distribution density & national population policy.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

## **Books Recommended.**

1. Chapman, G. and Baker, K.M. (eds.) (1992): The Changing Geography of Asia. Routledge, London.
2. Farmer, B.H. (1983): Introduction to South Asia. Methuen and Company Ltd. and Company Ltd., London.
3. Ganguly, S. and Neil, DeVotta (eds.) (2003): Understanding Contemporary India. Lynne Rienner Publishers., Boulder and London.
4. Gole, P. N. (2001): Nature Conservation and Sustainable Development in India. Rawat Publications, Jaipur and New Delhi.
5. Johnson, B. L. C. (ed.) (2001): Geographical Dictionary of India. Vision Books, New Delhi.
6. Johnson, B.L.C. (1983): Development in South Asia. Penguin Books, Harmondsworth.
7. Khullar, D. R. (2006): India. A Comprehensive Geography. Kalyani Publishers., New Delhi.
8. Krishnan, M. S. (1968): Geology of India and Burma. 4th edition. Higgin Bothams Private Ltd., Madras.
9. Nag, P. and Gupta, S. S. (1992): Geography of India. Concept Publishing. Company, New Delhi.

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10. Sharma, T. C. (2003): India: Economic and Commercial Geography. Vikas Publication., New Delhi.
11. Singh, J. (2003): India: A Comprehensive and Systematic Geography. Gyanodaya Prakashan, Gorakhpur.
12. Singh, R. L. (ed.) (1971): India. A Regional Geography. National Geographical Society of India, Varanasi.
13. Spate, O.H.K., Learmonth, A.T.A. and Farmer, B. H. (1979): India and Pakistan. Methuen and Company Ltd. and Company Ltd., London.
14. Subbarao, B. (1959): The Personality of India. University of Baroda Press, Baroda.
15. Sukhwai, B.L. (1987): India. Economic Resource Base and Contemporary Political Patterns. Sterling Publication, New Delhi.
16. Tirtha, R. (2002): Geography of India. Rawat Publications., Jaipur and New Delhi.
17. Tiwari, R. C. (2007): Geography of India, Prayag Pustak Bhawan, Allahabad
18. Wadia, D. N. (1959): Geology of India. MacMillan and Company, London and Madras. Student edition.

### **GR 503 : Economic Geography**

#### **Objectives -**

- Detailed exposure economics and economics Geography of India.
- Students will be able to understand various economic activities and its role in Indian Economy.
- Students will be able to apply knowledge gained from Economics Geography and Economic models to solve problem like least transport cost, industrial location etc.
- Students will be able to analyse trends and prospects of economic growth of region.
- Students will be able to make plans for sustainable economic growth.
- Students will be able to evaluate cause of economic activities and future

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## **Unit — I:**

Meaning, scope, evolution and recent trends of economic geography, Fundamental concepts. Relation of Economic geography with economics and other branches of social sciences.

## **Unit — II:**

Classification of industries: Iron & steel, textile, sugar & Petro-Chemical; Elements and. Theories of Industrial location -Weber, Losch, Isard & Hoover.

## **Unit — III:**

Case studies of selected industries — Iron & steel, textile, sugar & Petro-chemicals. Industrial regions — delimitation and structural factors; Industrial regions of world.

## **Unit — IV:**

Theories of transport development, Economic regions and their salient features. Impact of WTO, globalization, Liberalization, Economy of developing world.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

## **Books Recommended :**

- 1- Alexander, J.W., Economic Geography, Prentice- hall, New Delhi.
- 2- Robinson A.H., Jones, C.F. and Darkenwarld G.G., Principles of Economic Geography.
- 3- Boesh Hans, A Geography of World Economy, Von Nostrand, New York.
- 4- Bengston and Royen, Fundamentals of Economic Geography.
- 5- Zimmerman, E.W., Introduction to World Resources.
- 6- Chisholm M., Modern World Development — A Geographical Perspective. 7- Singh K.N. & Singh J., Arthik Bhoogol Ke Moo! Tatva (Hindi), Gyanodaya Prakashan, Gorakhpur.
- 8- Jain, P. Arthik Bhoogol Ki Samiksha (Hindi).
- 9- Srivastava V.K. & Rao B.P., Arthik Bhoogol.
- 10- Wheeler, J.O. et al: Economic Geography, John Wiley, New York 1995.
- 11- Robertson, D. (ed) Globalization and Environment, E. Elgas Co. U.K., 2001.

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## CR 504: Environmental Geography

### Objectives -

- The course aim is to give advance understanding of concept of Environment Geography.
- It will help in understanding about various concept of Environmental Geography.
- Students will be able to apply knowledge gained from Environmental Geography for addressing various environmental issues.
- Students will be able to analyse environmental process working in local and global level.
- Students will be able to understand and comprehend linkages of environmental issues.
- Students will be able to evaluate present condition of environment.

### Unit — I :

Meaning Scope crept approaches of environmental geography, Types of environment, environmental perception. Environment & society, environment and development.

### Unit — II :

Concept of ecology and ecosystem, Biosphere as an ecosystem, Abiotic and biotic components of biosphere and ecosystem, Ecological production and energy flow-tropic level, food chain and food web. Ecological pyramids, Bio-geochemical cycles-nitrogen, Hydrological cycle, carbon cycle.

### Unit — III :

Environmental hazards, Natural Hazard — Flood, Drought, Landslide, soil erosion earthquake, desertification. Man-made hazards — urbanization, Industrialization, technological hazard, global climatic changes, global warming, green house effect, ozone depletion.

### Unit — IV :

Environmental pollution, pollutants, Sources and types of pollution-water sail, air and noise pollution, solid waste disposal, environmental pollution and health

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Environmental education, Environmental monitoring. Environmental impact analysis.  
Environmental policies and legislation, Environmental management.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

### **Books Recommended**

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

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15. Rajagopalan, R. (2005): Environmental Studies: From Crisis to Cure, Oxford University Press, New Delhi.
16. Reddy, M. A. (2004): Geoinformatics for Environmental Management. B. S. Publishers., Hyderabad.
17. Saxena, K.K. (2004): Environmental Studies. University Book House Private Ltd., Jaipur
18. Saxena, H. M. (1999): Environmental Geography. Rawat Publications., Jaipur and New Delhi.
19. Saxena, H. M. (2000): Environmental Management. Rawat Publications., Jaipur and New Delhi.
20. Singh, A.K., Kumra, V.K. and Singh, J. (1986): Forest Resource, Economy and Environment. Concept Publishing. Company, New Delhi.
21. Singh, D.N., Singh, J. and Raju, K.N.P. (eds.) (2003): Water Crisis and Sustainable Management, Tara Book Agency, Varanasi
22. Singh, J. (2001): Paryavaran Evam Samvikas. Gyanodaya Prakashan, Gorakhpur.
23. Singh, O., Nag, P., Kumra, V.K. and Singh, J. (eds.) (1993): Frontier in Environmental Geography. Concept Publishing Company, New Delhi.
24. Singh, O., Kumra, V.K. and Singh, J. (1988): India's Urban Environment. Pollution, Perception and Management. Tara Book Agency, Varanasi.
25. Singh, R. B. (ed.) (1990): Environmental Geography. Heritage Publication, New Delhi.
26. Singh, R. B. (ed.) (1995): Studies in Environment and Development. Rakesh Prakashan, Varanasi.
27. Singh, Rana P.B. (ed.) (1993): Environmental Ethics: Discourses and Cultural Traditions. National Geographical Society of India, BHU, Varanasi.
28. Singh, S. (2006): Environmental Geography. Prayag Pustak Bhawan, Allahabad.
29. Singh, S. (2007): Paryavaran Bhoogol. Prayag Pustak Bhawan, Allahabad.
30. Singh, S. N. (1993): Elements of Environmental Geography and Ecology (in Hindi), Tara Book Agency, Varanasi

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31. Wrigley, N. (1985): Categorical Data Analysis for Geographers and Environmental Scientists. Longman, London.

**GR - 505 - Practical Work**

**Part A: Cartographic Work — 50**

**Part B:. Field Cum-Lab Work — 50**

**Objectives -**

**The differentiate between qualitative and quantitative information, Topographical Sheets and Understand the idea of Map & Projection.**

**Part A : Cartographic Work**

**Unit — I:**

Measures of central tendency-Mean, median and mode, Mean deviation, Quartile deviation. 15

**Unit-II:**

Measures of dispersion, Standard Deviation, Co-efficient of variation, Co-efficient of Correlation, rank Correlation, Chi square test. - 15

**Unit III:**

Geological maps and cross section Horizontal, Inclined, Unconformable, Folded and folded strata. 20

**Part B : Field cum Lab Work**

**Unit — I:**

**Collection of data :** Methods, Sources and Types, Classification and Tabulation Data processing (With special reference to village/Ward/town area). 15

**Unit — II:**

Local excursion and report (maximum 2 days) 15

**Unit — III:**

Practical record (Part A & B) 10

Viva-Voce examination 10

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

**Books Recommended:**

- 1- Monkhouse, F.J. Maps & Diagrams.

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- 2- Robinson, A.H. Elements of Cartography.
- 3- Singh, R.L., Elements of Practical Geography.
- 4- Singh, L.R. & Singh, R.N. Map Work and Practical Geography (Eng./Hindi) 5- Sharma, J.P. Prayogatmak Bhoogol Ki Rooprekha (Hindi)
- 6- Hira Lal, Prayogatmak Bhoogol Ke Adhar (Hindi)
- 7- Lal, Hira, Matratmak Bhoogol (Hindi)
- 8- Tiwari, R.C. and Tiwari, Sudha, Abhinav Prayogic Bhoogol.

vi - GR506 : Project - 1

## Second Semester

### Paper - I

### CR 507 : Climatology

#### Objectives -

- The course aim is to give advance understanding of concept of Climatology.
- Students will be able to understand various aspects of Climatology.
- Students will be able to understand its local climate and can comprehend global climatic patterns.
- Students will be able to analyse cause of climatic trends and patters.
- Students will be able to understand and comprehend pattern of Climatic phenomenon.
- Students will be able to evaluate climatic patters.

#### Unit I :

Definition, scope, significance and evolution of climatology; Elements of weather and climate; Relation with meteorology.

Composition and structure of Atmosphere; Insolation, process of heating and cooling; heat balance of the earth and atmosphere, Greenhouse effect.

#### Unit II :

Air Pressure and pressure belts; Atmospheric motion, Force controlling motion of air, vertical motion and vorticity, Jet stream. Permanent, Seasonal and local wind, cyclone and anticyclone.

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Concepts, classification, characteristics of air mass and front, Ocean atmospheric interaction-El Nino, Southern Oscillation (ENSO) and La-Nina.

### **Unit - III:**

Climatic Classification of Koppen, Thornthwait, and G.T. Trewartha and World climatic region, climatic changes, evidences and possible causes, Global Warming.

### **Unit — IV:**

Applied climatology and weather forecasting, Impact of Human civilization on health, food, clothing, agriculture, Mining, industry, trade and development; Man-climate interrelationship.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

### **Suggested Readings:**

- 1- Barry R.G. and Chorley R.J.: Atmosphere, Weather and Climate, Routledge, London and New York, 1998.
- 2- Critchfield, J.J.: General Climatology, Prentice Hall, New Delhi, 1993.
- 3- Lal, D.S.: Climatology, Chaitanya Publications, Allahabad, 1986.
- 4- Lydolph, P.E.: The Climate of the Earth, Rowman, 1985.
- 5- Robinson P.J. and Henderson S: Contemporary Climatology, Henlow, 1999.
- 6- Upadhyaya D.P., and Singh R.A.: Climatology and Hydrology, Vasundhara Publication, Gond:111:w. 2000 (Hindi).
- 7- Addison H.: Land, water and Flood, Chapman and Hall, London, 1961.
- 8- Chorley R.J., Water, Earth and Man, Methuen, London, 1967.
- 9- Jones J.A.A.: Global Hydrology: Process Resources and Environmental Management, Longman, London, 1997.
- 10- Todd, D.K.: Ground Water Hydrology, John Wiley, New York, 1959.

### **Pedagogy :**

- 1- Weather and climatic maps and charts are to be made available to the students. Audio-Visual aids to be used for effective teaching.
- 2- Students to be taken on a field visit to nearby reservoir. Data pertaining to water table in the local wells in different seasons has to be collected.

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## Paper II :

### GR 508: Basics of Remote Sensing

#### Objectives -

- The course aim is to give basic contemporary skills to understand the of concept of Remote Sensing.
- Students will be able to understand process and application of Remote Sensing.
- Students will be able to use software's to do various image processing tasks with software related to Remote Sensing.
- Students will be able run various tasks for Remote Sensing analysis.
- Students will be able to find out inferences form various image processing techniques.
- Students will be able to evaluate functions related to Remote Sensing.

#### Unit I:

Remote Sensing -definition and Scope, electro-magnetic radiation, characteristics: interaction with matter, type of remote sensing and remote sensing platform.

#### Unit II :

Aerial photos: Types, Scale, resolution, geometric Properties of aerial photos, Stereoscopic parallax, Relief displacement.

#### Unit — III:

General orbital characteristics of remote sensing satellites, general characteristics of remote sensing sensors, characteristics of raw remote sensing data.

#### Unit — IV:

Elements of image interpretation, image processing techniques, visual and digital, Remote sensing in resource mapping and environmental monitoring. Land use and land cover mapping: a cover study.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### Books Recommended

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1. Campbell, J. B. (2002): Introduction to Remote Sensing. 5th edition. Taylor and Francis, London.
2. Cracknell, A. and Hayes, L. (1990): Remote Sensing Year Book, Taylor and Francis, London.
3. Curran, P.J. (1985): Principles of Remote Sensing, Longman, London.
4. Deekshatulu, B.L. and Rajan, Y.S. (ed.) (1984): Remote Sensing. Indian Academy of Science, Bangalore.
5. Floyd, F. and Sabins, Jr. (1986): Remote Sensing: Principles and Interpretation, W.H.Freeman, New York.
6. Guham, P. K. (2003): Remote Sensing for Beginners. Affiliated East-West Press Private Ltd., New Delhi.
7. Hallert, B. (1960): Photogrammetry, McGraw Hill Book Company Inc., New York.
8. Harry, C.A. (ed.) (1978): Digital Image Processing, IEEE Computer Society, California
9. Hord, R.M. (1982): Digital Image Processing of Remotely Sensed Data, Academic Press, New York.
10. Leuder, D.R. (1959): Aerial Photographic Interpretation: Principles and Application. McGraw Hill, New York.
11. Lillesand, T.M. and Kiefer, R.W. (2000): Remote Sensing and Image Interpretation. 4th edition. John Wiley and Sons, New York.
12. Nag, P. (ed.) 1992: Thematic Cartography and Remote Sensing, Concept Publishing. Company, New Delhi.
13. Reeves, R.G. (ed.) (1983): Manual of Remote Sensing, Vols. 1 and 2, American Society of Photogrammetry and Remote Sensing, Falls Church, Virginia.
14. Siegel, B.S. and Gillespie, R. (1985): Remote Sensing in Geology, John Wiley and Sons, New York.
15. Silver, M. and Balmori, D. (eds.) (2003): Mapping in an Age of Digital Media. Wiley-Academy, New York and Chichester.

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16. Spurr, R. (1960): Photogrammetry and Photo Interpretation, The Roland Press Company, London.
17. Survey of India, (1973): Photogrammetry, Survey of India, Dehradun.
18. Swain, P.H. and Davis, S.M. (ed.), (1978): Remote Sensing: The Quantitative Approach. McGraw Hill, New York.

### **Paper - III**

#### **GR 509 : Geography of Resources**

##### **Objectives -**

- Detailed exposure Resources economics of India.
- Students will be able to understand various resources and its role in Indian Economy.
- Students will be able to apply knowledge gained from Resources Geography to address resource allocation issues.
- Students will be able to analyse trends and prospects of Resources.
- Students will be able to make plans for sustainable Resources development.
- Students will be able to evaluate resource prospects in India.

##### **Unit — I:**

Concept and scope of resource geography and geography of resources, Resource concept and types, world resources distribution and pattern , Land, Water, mineral and power resources.

##### **Unit — II:**

Human resources, Resource base and its dynamism as related to stages of cultural technological and economic development, population growth and resource scarcity hypothesis, Sustainable development.

##### **Unit —III:**

Factors of Location of Economic Activities -Physical, Social, Economic and Cultural, Von-Thuenen model of agricultural location, Agriculture regions of the world.

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## Unit-IV:

Resource regionalization, world economic development, concept of developed and developing countries, Resource conservation and management, Resource development and international policies.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

### Books Recommended

1. Burton, I. and Kates, R.W. (1978): Readings in Resource Management and Conservation, McGraw Hill, New York
2. Clark, G. L., Feldman, M.P. and Gertler, M.S. (Eds.) (2000): The Oxford Handbook of Economic Geography. Oxford University Press, Oxford and New York.
3. Ehrlich, P.R., Ehrlich, R.H. and Holdren, J.P. (1998): Ecoscience: Population, Resources and Development. 2nd edition. Freeman and Company, San Francisco.
4. Sheppard, E. and Treror, I. B. (ed.) (2003): A Companion to Economic Geography, Blackwell Publication, U.K. and USA.
5. McCarty, H.M. and James, B.L. (1976): A Preface to Economic Geography, Prentice Hall, New Jersey.
6. Mitra, A. (2000): Resource Studies; Sridhar Publishers., Kolkata.
7. Ramesh, A. (ed.) (1984): Resource Geography ,Heritage Publishers, New Delhi.
8. Singh, J. (2000): Sansadhan Bhoogol, Gyanodaya Prakashan, Gorakhpur
9. Singh, K.N. and Singh, J. (2003): Arthik Bhoogol Ke Mool Tatva, Gyanodaya Prakashan, Gorakhpur.
10. Todaro, M.P. and Smith, S.C. (2004): Economic Development, Pearson Education, (Singapore) Private Ltd.

### Paper - IV :

#### GR 510 : Disaster Management :

#### Objectives -

- The course aim is to give basic understanding of concept of Disaster Management.

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- This paper shall help in understanding global effort in field of disaster management.
- Students will be able to apply knowledge gained from Disaster Management to make disaster management plans.
- Students will be able to analyse vulnerability of humans and infrastructure from various disasters.
- Students will be able to make plans for disaster management.
- Students will be able to evaluate disaster management ecosystem in India.

#### **Unit—I:**

Definition, meaning and concept of disaster and hazard.

Types of Hazards — Natural and man-made.

Concept of Disaster Management

Concept of Disaster Relief, Rescue, Trigger mechanism, Response, Mitigation

Risk and Vulnerability,

#### **Unit — II:**

Natural Disaster — Geological, Water and climate, Environmental

Man-Made disaster — Chemical, Industrial, Nuclear, Accident

#### **Unit — III:**

Biological disaster — Epidemics, Pest — Attack, Cattle epidemic, Food poisoning. Social Response to Hazard-reduction Identification of multiple disaster prone areas.

#### **Unit — IV:**

Natural Disaster reduction Management, Decision making policy.

Determination of acceptable level of Risk

Measures to control and mitigate disaster.

Role of NDMA and SDMA.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Books Recommended:**

1. Alexander David (1993): Natural Disaster, London UCL Press.

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2. Benarde Melvin (1972): Race Against Famine: Mumbai, Orient Longmans.
3. Bhargwa, Gopal (1992) Environmental Challenges and Ecological Disaster: Global perspective, Mittal, New Delhi.
4. Sharma, Vinod K. (1995): Disaster Management, National Centre for Disaster Management. Indian Institute of Public Administration, New Delhi.
5. Parasuraman, S. and P.V. Unnikrishnan (2000): India Disaster Report : Towards Policy Initiatives Oxford University Press, New Delhi
6. World Disaster Report 1997
7. Hewitt, Kenneth, (1997) Regions at Risk — A Geographical Introduction to Disaster, Longman.
8. Lodha, R.M. (1997) Environmental Ruins: The Crisis of Survival, Indus Publishing Company, New Delhi.

### **Pedagogy:**

Students may be encouraged to collect clippings from Newspapers on various topics included in the syllabus. They may be involved in Discussions on the emerging political issues and attempt to provide geographical Interpretation.

### **Paper - V**

#### **GR 511: Practical Work**

**100**

#### **Part A: Cartographic Work - 50**

**Objectives - The teaching of many type of projection and central tendency of data. The present data through graphical and diagramatic formats.**

#### **Unit —1:**

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Map Projection: Classification, properties, choice, merits and demerits of map projection.

Drawing of the following map projections by using mathematical methods, Bonne's, Polyconic, Gall's, Equatorial cases of Gnomonic, Stereographic and Orthographic projections, Mollweide's and Interrupted Mollweide's, Sinusoidal and Interrupted Sinusoidal and International Projections.

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## Unit — II:

Cartographic Representation of Statistical Data: 20

Water Surplus Graph, Rainfall Dispersion diagram, Elypsographic curve, Water Balance graph, Locational Quotient, coefficient of Localization and Localization curve.

## Unit — III: Block diagrams.

10

## Part B: Field -cum- Lab Work: - 50

### Unit — I:

Aerial Photo Interpretation -

### Unit — II:

Computer: Components and Characteristics, Application in Map Making. Unit 15

**Practical Record** 10

**Viva-voce** 10

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

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## M.A./M.Sc. III Semester

### GR. 513 : Hydrology and Oceanography

#### Part A: Hydrology

##### Unit —1:

Meaning, scope and development of hydrology, Hydrological cycle, Elements of hydrological cycle, Man's influence on the hydrological cycle. Evapo- transpiration, Factors affecting evaporation from free water surface and soils.

##### Unit — II:

Soil moisture and its zone, infiltration, Ground water: Occurrence, storage, Recharge and discharge, Run-off: its sources and components, factors affecting run-off, Principles and determination of water balance and its application in crop production.

#### Part B: Oceanography

##### Unit III:

Relevance of Oceanography in earth and atmospheric Science, Definition of oceanography, Surface configuration of Ocean floor, Distribution of temperature and salinity of oceans and seas .

##### Unit IV:

Circulation of Oceanic waves, tides and currents, currents of the Atlantic, Pacific and Indian Oceans. Marine Deposits and coral reefs, Ocean as storehouse of resources for the future.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

##### Books Recommended

1. Bernhard, H. and James, M. A. (1944): Climatology. McGraw Hill Company, New York.
2. Chorley, R. J. (1995): Atmosphere, Weather and Climate. Methuen and Company Ltd. and Company Ltd., London.

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3. Chow, V. T. (ed.) (1954): Handbook of Applied Hydrology: A Compendium of Water Resources Technology. McGraw Hill, New York.
4. Critchfield, H. J. (2003): General Climatology. Prentice-Hall of India, New Delhi.
5. Rai, V.K. (1993): Water Resource Planning and Development, Deep and Deep Publication, New Delhi
6. Bilas, R. (1988): Rural Water Resource Utilization and Planning. Concept Publishing Company, New Delhi.
7. Reddy, J. P. (1988): A Textbook of Hydrology. Laxmi Publication., New Delhi. 4th edition.
8. Singh, M. B. (1999): Climatology and Hydrology. Tara Book Agency, Varanasi. (In Hindi).
9. Singh, M. B. (2002): Physical Geography. Tara Book Agency, Varanasi. (In Hindi).
10. Singh, S. (1998): Geomorphology. Prayag Pustak Bhavan, Allahabad.
11. Sparks, B.W. (1986): Geomorphology. Longman, London.
12. Thornbury, W.D. (2005): Principles of Geomorphology. John Wiley and Sons, New York.
13. Trewartha, G. T. (1980): An Introduction to Climatology. McGraw Hill Student edition, New York.
14. Ward, R.C. and Robinson, M. (2000): Principles of Hydrology. McGraw Hill, New York.
15. Weisberg, J. S. (1974): Meteorology. Houghton Mifflin Company, Boston.
16. Wooldridge, S.W. and Morgan, R.S. (1959): The Physical Basis of Geography- An Outline of Geomorphology. Longmans Green, London
17. Upadhyaya D.P. and Singh R.A. : Climatology and Hydrology, Vasundhara Publications , Gorakhpur
18. Jones J.A.A. :Global Hydrology, Process • Resources and Environmental Management, Longman, London, 1997.
19. Todd D.K.: Ground Water Hydrology, John Wiley, New York , 1959.

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## GR 514 : Geographic Information System (GIS) & Applications

- Geoinformatics: Concept, meaning, scope, evolution and development. Interrelation between Geoinformatics and Geodesy: surveying mapping, positioning, navigation, cartography, remote sensing, photogrammetry, GIS and GPS.
- Georeferencing, datum and applications.
- GPS-segment, types, surveying techniques, instruments, applications and benefits.
- Mobile Mapping — concept and use.

- Geospatial technology, meaning, concept and scope.
- Data sources - Field information and discrete information.
- Data types - Spatial and non-spatial, raster and vector.
- Data acquisition, storage, modelling, analysis ,management and NSDI
- Data Base Management System (DBMS)
- New Map Policy Unit III
- GIS: evolution, meaning, scope purpose and application.
- Basic principle of GIS.
- GIS Software and hardware.
- GIS data standards — concept and components
- Digital Elevation Model (DEM) — process, derivatives and application.

- Remote sensing and GIS integration.
- GIS project design and planning
- GIS packages and products
- GIS and industry, business system, human welfare
- Application trend of GIS product.
- Legal and managerial issues in handling geographic data

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**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

**Books Recommended**

1. Bonham, Carter, G.F. (1995): Information Systems for Geoscientists — Modelling With GIS, Pergammon, Oxford.
2. Burroughs, P.A. and McDonnell, R. (1998): Principles of Geographic Information Systems. Oxford University Press, Oxford.
3. Chang, K.T. (2003): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi.
4. Chauniyal, D. D. (2004): Remote Sensing and Geographic Information Systems. (in Hindi). Sharda Pustak Bhawan, Allahabad.
5. Demers, M. N. (2000): Fundamentals of Geographic Information Systems. John Wiley and Sons, Singapore.
6. ESRI (1993): Understanding GIS. Redlands, USA
7. Fraser Taylor, D.R. (1991): Geographic Information Systems. Pergammon Press, Oxford.
8. George, J. (2003): Fundamentals of Remote Sensing. Universities Press Private Ltd, Hyderabad.
9. Girard, M. C. and Girard, C. M. (2003): Processing of Remote Sensing Data. Oxford and IBH, New Delhi.
10. Glen, E. M. and Harold, C. S. (1993): GIS Data Conversion Handbook. Fort Collins, Colorado, GIS Word Inc.
11. Goodchild, M.F., Park, B. O. and Steyaert, L. T. (eds.) (1993): Environmental Modelling with GIS. Oxford University Press, Oxford.
12. Guptill, S.C., and Morrison, J.L. (1995): Elements of Spatial Data Quality. Elsevier/Pergammon, Oxford.
13. Heywood, I. (2003): An Introduction to Geographical Information Systems, 2nd edition, Pearson Publishing Company, Singapore.
14. Korte, G. M. (2002): The GIS Book. On Word Press: Thomson Learning, New York and Singapore.

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15. Lo, C.P. and Yeung, A. K. W. (2002): Concepts and Techniques of Geographic Information Systems. Prentice Hall of India, New Delhi.
16. Longley, P. and Batty, M. (eds.) (1996): Spatial Analysis: Modelling in a GIS Environment. Geoln formation International, Cambridge.
17. Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems: Principles, Techniques, Management, Applications, John Wiley and Sons, New York.
18. Maguire, D. J., Michael, F. G. and David, W. R. (1999): Geographical Information Systems: Principles and Application. Geo Information International, Vol.2, Longman Publication, New York.
19. Martin, D. (1996): Geographic Information Systems: Socioeconomic Implications. Routledge, London.
20. Michael, F. G. and Karan, K. K. (ed.) (1990): Introduction to GIS.. NCGIA, Santa Barbara, California.
21. Nag P. and M. Kudarat (1998): Digital Remote Sensing, Concept Publishing Company. New Delhi.
22. Mishra H.C. (2000) GIS handbook, GIS India, Hyderabad.
23. Reddi A. and Y. Hari Shankar (2006) Text Book of Digital Remote Sensing, B.S. Publication, Hyderabad.
24. Ralston, B. A. (2002): Developing GIS Solutions with Map Objects and Visual Basic. On Word Press: Thompson Learning, New York and Singapore.
25. Reddy, M. A. (2001): Textbook of Remote Sensing and Geographic Information Systems. B.S. Publications., Hyderabad.
26. Ripple, W. J. (ed.) (1989): Fundamentals of Geographic Information Systems: A Compendium. ASPRS/ ACSM, Falls Church.
27. Siddiqui, M.A. (2005): Introduction to Geographical Information Systems, Sharda Pustak Bhawan, Allahabad.
28. Star, J. and Estes, J. (1990): Geographic Information Systems — An Introduction. Prentice-Hall, Englewood Cliffs, New Jersey.
29. Worboys, M. F. (1995): GIS: A Computing Perspective. Taylor and Francis, London.

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## **M.A./M.Sc. Third Semester : Paper III**

**Optional Paper (515) : Student are required to opt any one of the following GR 515A, GR 515B, GR 515C**

### **GR515A: Population Geography**

#### **Unit- I:**

Concepts, Scope, method, approaches and development of population geography, population geography and demography, sources of population data : their reliability and problems of mapping. Population dynamics: measurements of fertility and mortality, Types, causes, theories and consequences of migration, India's population dynamics.

#### **Unit -II:**

Population distribution, density and growth: Theories of population growth- classical and modern. Factors affecting population distribution, density types, world pattern of population distribution and density. Population distribution, density and growth profile of India.

#### **Unit - III:**

Concepts of under population, overpopulation, optimum population and population explosion, Demographic transition theory. Population composition: Rural and urban population, urbanization, Age and sex structure, literacy and education, occupational structure, gender issues , population composition of India.

#### **Unit -IV:**

Population resource regions of the world and India. Human development index and its components, population policy and population planning with special reference to India. Success and failure of family planning and family welfare programmes. Population growth and environmental consequences.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Suggested Readings:**

- 1- Bogue D.J.: Principles of Demography, John Wiley, N.Y., 1969.

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- 2- Chandana, R.C.: Geography of Population: Concept, Determinants and Patterns, Kalyani Publishers, 2000.
- 3- Clarke, John, I: Population Geography, Pergammon Press, Oxford, 1973.
- 4- Crook Nigel: Principles of population and Development Pergammon Press, N.Y., 1997.
- 5- Daugherty Helen, gin, Kenneth C.W. Kemmerer: An Introduction to Population, The Guilford Press, N.Y., London, 1998.
- 6- Gamier, J.B.: Geography of Population, Longman, London, 1970.
- 7- Mamoria, C.B. India's Population Problem, Kitab Mahal, New Delhi, 1981.
- 8- Premi M.K.: India's population Heading Toward Billion B.R. Publishing Corporation, 1991.
- 9- Srinivasan K. and M. Blassof: Population Development Nexus in India: Challenges for the New Millennium. Tata McGraw Hill, New Delhi, 2001.
- 10- Woods, R: Population Analysis in Geography, Longman, London 1979.

### **M.A./M.Sc. Third Semester: Paper III**

#### **GR515B : Urban Geography**

##### **Unit — I**

Meaning, scope, approaches and evolution of urban geography. Attributes of urban places during ancient, Medieval and modern period. Origin and growth of urban settlements. The models of urban growth: concentric zone, sectoral and multinuclei.

##### **Unit — II:**

Bases and process of urbanization and urban development, urban growth, urban hierarchy and rank size rule, theories of urban growth: Christaller, Losch, Peroux and Boudeville. Urban economic base: Occupational structure and basic and non-basic functions, functional classification, Morphology and land use structure- built up and non-built up, C.B.D. Commercial, residential, industrial and institutional areas, city-region relations and modern urban landscape.

##### **Unit — III:**

The urban profile, demographic structure and characteristics of urban population. Movement of population within and beyond corporate limit. City as central

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#### **Unit- IV:**

Urban policy and planning, development of medium size towns, planning for new wards, city planning, green belt, garden cities, urban policy, Globalization and urban planning. Special study million towns of U.P.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Suggested Readings:**

- 1- Berry B.J.L. and Horton F.F.: Geographic Perspectives on Urban Systems, Prentice Hall, Englewood Cliffs, J.J. 1970.
- 2- Dickinson, R.E. City and Region, Routledge, London, 1964.
- 3- Gibbs, J.P.: Urban Research Methods, Van Nostrand Co. Princeton, N.J. 1961.
- 4- Hall P: Urban and Regional Planning, Routledge, London, 1992.
- 5- Kundu, A: Urban Development and Urban Research in India, Khanna Publication, 1992.
- 6- Rao, V.L. S.P.: Urbanization In India: Spatial dimensions, Concepts publishing Co. New Delhi.
- 7- Smailes, A.E.: The Geography of Towns, Hutchinson, London, 1953.
- 8- Singh O.P. Nagariya Bhoogol, Sharda Pustak Bhawan, Allahabad, 2011.

#### **Pedagogy-**

- 1- Awareness to data sources should be highlighted in the class. This needs to be in the form of selected case studies.
- 2- Study of urban morphology and urban functions with special reference to selected towns need to be encouraged.
- 3- Atlases and maps of NATMO and Census should be consulted and students should be given opportunity of participation in discussion groups.

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## M.A. / M.Sc. Third Semester : Paper III

### Optional Paper GR515C

### GR515C : Transport Geography

#### Unit I:

Nature, Scope, significance and development of transport geography, evolution of transportation-preindustrial era. 19th and 20th centuries, Factors associated with the development of transport system. Physical, Economic, social, cultural and institutional. Evolution of transport network. Characteristics and relative significance of different modes of transport, Railways, Roads, Airways and waterways.

#### Unit II:

Accessibility and flow models, network structure, graph theoretic measures, measurement of accessibility, models of network change, Linear programming and gravity models. Theories related to freight rate structure, bases of spatial interaction: complementarity, intervening opportunity, transferability, gravity, potential models of spatial interaction.

#### Unit III:

Transport system in India, Railways, Roads, airways and waterways, patterns of movement, simple model of interaction, movement geometry. Transport policy and planning, transport development in developing countries.

#### Unit IV:

Urban transportation-growth and problems. Transport and regional planning, transport and regional planning, transport and environmental degradation, vehicular pollution and congestion, alternative to transport system in Megacities of India, National Highway Development and planning in India.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### Suggested Readings:

- 1- Chorley, R.J. and Hagget P: Model in Geography, Methuen & Co London, 1967.
- 2- Hurst, M.E. (Ed): Transportation Geography, McGraw Hill, 1974.
- 3- Hagget P. and Chorley R.J.: Network Analysis, Edward Arnold, London, 1968.

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- 4- Hay A.: Transport Economy, Macmillan, London, 1973.
- 5- Hoyle, B.S. (ed) Transport and Development Macmillan, London, 1973
- 6- Raza M. Agrawal Y.P.: Transport Geography of India, Concept, New Delhi, 1985.
- 7- Robinson H. and Bamford G.G.: Geography of Transport, Macdonald & Evans, London, 1978.
- 8- Traffe, E.J. and Gauthier (Jr.) H.L.: Geography of Transportation Prentice Hall, Englewood Cliffs, J.J., 1973.
- 9- White H.P. and Senior M.L.: Transport Geography, Longman, London, 1953.

### **Pedagogy:**

The students should familiarize themselves with data sources including maps of transport network and mapping flow data of goods and people (Roads and railways) and demarcating tributary areas and major nodes, They should also undertake practical exercise in working out accessibility index, network density and hierarchy. Study of transport should be related to regional and locational interaction using maps of market and urban centre and industrial location.

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## M.A./M.Sc. Third Semester: Paper IV

**Optional Paper (GR 516):** Students are required to opt any One of the following: GR 516A, GR 516B, GR 516C

### **GR 516A : Geography of Rural Settlements**

#### **Unit I:**

Nature, Scope, significance, development and approaches of rural settlement geography, Definition and characteristic of rural settlements, human settlement as a system. Rural-urban continuum. Histogenesis of rural settlements; Spatio-temporal dimensions and sequent occupancy. Distribution, size and spacing of rural settlements.

#### **Unit II:**

Types, forms and patterns of rural settlements: cause and effect, functional classification of rural settlements of rural settlements, morphogenesis of rural settlements, morphology of rural settlements, Central places and rural service centres: their nature, hierarchy and functions. Service centres as growth points, Rural-urban fringe-structure, characteristics and functions.

#### **Unit III:**

Cultural landscape elements in rural settlements in different geographic environments with special reference to India, house types and their spatial patterns. Origin, evolution, size, socio-spatial structure of Indian villages.

#### **Unit IV:**

Social issues in rural settlements-poverty, housing. deprivation and inequality, Environmental issues in rural settlements water supply, sanitation, drainage and health hazards. Planning of rural settlements with special reference to India.  
**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Suggested Readings:**

- 1- Alam, S.M. et al: Settlement System in India, Oxford and IBP publication Co. New Delhi, 1982.
- 2- Chisholm M. rural settlements and Land use. John Wiley N.Y. 1967.

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- 3- Grover N. Rural settlements; A Cultural Geographical Analysis; Inter India Publication, Delhi; 1986.
- 4- Daniel P. and Hopkinson M; the Geography of Settlements, Oliver and Boyd; Edinburg, 1986.
- 5- Hudson, F.S.: Geography of Settlements, Macdonald and Evans, N.Y. 1976.
- 6- Vanmali, S: Service Centers in Rural India, B.R. Publication Corporation, New Delhi, 1983.

### **Pedagogy:**

The teacher should motivate students with illustrations: of diverse patterns of settlements in different natural settings of this country and abroad. Models, maps, Illustrations and audio-visual devices should form teaching aids to impress the students. The students are advised to consult Census of India Table H-Series.

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## **M.A./M.Sc. Third Semester : Paper IV**

### **Optional Paper GR 516B**

### **GR 516B : Geography of Rural Development**

#### **Unit — I:**

Rural development: A geographical perspective. Theoretical Framework of rural development. Structure and spatial organization of rural settlements. Rural markets and market Centers, Growth point and growth centers. Theories of central places.

#### **Unit II:**

Rural-Urban Relationship and their integration. Rural Land use and its problems. Dimensions of rural economy, physical and human resources-their spatial patterns and interrelationships, socio-economic dimensions, infrastructural facilities, socio-cultural organization.

#### **Unit III:**

Migrations and their causes Characteristic of rural population, agricultural and its characteristics. Social issues of rural areas- poverty, housing and shelter, deprivation and inequality. Empowerment of women, health care, social tension and underdevelopment.

#### **Unit IV:**

Environmental issues-access to environmental infrastructure-water supply, sanitation, drainage, occupational health hazards. Balanced development strategies of India- Failure and success of various schemes sponsored by government for rural development. Government agencies and NGOS, Integrated rural development strategy.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Suggested Readings :**

- 1- Kuklinski, A.R. (ed.) Grown poles and growth Centers in Regional planning,

Moutan, The Hague, 1972.

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- 2- Kundu A and Raza M; Indian Economy: The regional Dimension, Spectrum Publishers, New Delhi, 1982.
- 3- Richardson, H.W.: Regional Economics, Weidenfeld and Nicholson, London, 1969. 4- Clout, H.D.: Rural Geography, Pergammon, Oxford, 1977.
- 5- Ram Chandran, H: Village Clusters and Rural Development, Concept publication, New Delhi, 1985.
- 6- Rao, E.N.: Strategy for Integrated Rural Development, B.R. Publication Cor. Delhi, 1986.
- 7- Srinivas M.N: Village India, Asia publication House, Bombay, 1968.
- 8- Wanmali, S: Service Centers in Rural India, B.R. Publication Cor. Delhi, 1983.

## M.A./M.Sc. Third Semester: Paper IV

### GR 516C : Industrial Geography

#### Unit - I :

Nature, Scope and recent developments. Elements and factors of location of industries, centralization and decentralization of industrial enterprises, horizontal, vertical and diagonal linkages of modern industries .

#### Unit - II:

Theories of Industrial location: Webber, Losch, Isard and Hoover, Modern refinements in the theories of industrial location. Critical review and application of industrial location theories. Distribution and spatial pattern of industries; petro-chemical hardware and software industries. Methods of delineating industrial regions; major industrial regions of the world. Industrial system and industrial regions of India.

#### Unit III:

Methods of measuring the spatial distribution of industries: location quotient, co-efficient of geographic association, index of concentration, coefficient of localization, case studies of application of these methods.

#### Unit - IV:

Environmental problems caused by industries; industrial hazards and occupation health, Role of globalization on industrial sector. Changing industrial

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policy and industrial policy of India. Industrial planning as an integral part of regional planning.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

**Suggested Readings:**

- 1- Alexander, J.W.; Economic Geography, Prentice Hall, Englewood Cliffs, 1998.
- 2- Alexanderson, C: Geography of Manufacturing, Prentice Hall, Bombay, 1967.
- 3- Hoover, E.M.: The Location and Space Economy, McGraw Hill, N.Y., 1948.
- 4- Isard, W; Methods of Regional Analysis, The Technology Press of M.I.T. & John Wiley & Sons, N.Y., 1956.
- 5- Miller, E: Geography of Manufacturing, Prentice Hall, Englewood Cliffs, N.J., 1962.
- 6- Weber, Alfred: Theory of Location of Industries, Chicago University Press, Chicago.

**Pedagogy**

The teacher should take the students to a neighbouring industrial area and apprise them of the functioning of the various industries, difficulties faced and environmental problems created by them.

**M.A./M.Sc IIIrd Semester**

	Marks
<b>Marks Paper V GRP 517: Practical Work</b>	<b>100</b>
<b>(A) Surveying</b>	<b>80</b>
<b>Prismatic Compass</b>	<b>20</b>
<b>Dumpy Level</b>	<b>20</b>
<b>Theodolite</b>	<b>15</b>
<b>Sextant</b>	<b>15</b>
<b>Abney Level</b>	<b>10</b>
<b>(B) Practical Record</b>	<b>10</b>
<b>(C) Viva-Voce</b>	<b>10</b>

**Methods of Teaching - Chalk & Talk, Project Method, Group Discussion and cartographic methods & Field Work.**

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## M.A. / M.Sc. Semester- IV

### GR 519: Geographical Thought

#### Unit 1:

Basic Frame and Concepts: Man-environment interaction: New environmentalism, Concepts: space, place, environment, time and spatial organization, Region and regional typology., culture and cultural landscape.

#### Unit II:

**Modern Approaches:** Quantitative revolution and challenges, Philosophy and geography: Contributions of Vidal de la Blache, and Carl Sauer; Humanistic and phenomenological geography: contributions of Yi-Fu Tuan; Literary geography: landscape as text.

#### Unit III:

Contemporary Trends: Qualitative paradigm, Behavioural revolution: perception and cognition, mental maps; Marxism, Postmodernism; Poststructuralism and Postcolonialism.

#### Unit IV:

Indian Geography-Base and Trends: Postcolonialism and Indian geography: Gandhi's contribution and Indian Geography, Gaia Theory and links to Indian Literature, Ancient Indian Geography and scientific outlook (e.g. cultural astronomy); Future of Indian geography: problems, perspectives and prospects.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### Books Recommended :

- I- Adams, P., Steven, H. and Karel, T. (eds.) (2001): Texture of Place, Exploring Humanistic Geographies University of Minnesota Press, Minneapolis.
- 2- Anderson, K. Dotnosh, M., Pile, s. and Thrift, N. (eds.) (2003): Handbook of Cultural Geography sage Publication London.
- 3- Barnes, T. and Gregory, D. (eds.) (1997): Readings in Human Geography: The Poetics and Politics of Inquiry. Arnold, London.

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- 4- Bunkse, E.V. (2004): Geography and the Art of Life. John Hopkins University Press, Baltimore.
- 5- Buttimer, A. (1971): Society and Milieu in the French Geographic Tradition. Rand Mc Nelly, Chicago.
- 6- Daniels, P., Bradshaw, M., Shaw, D. and Sidway, J. (2000): An Introduction to Human Geography. Issues for the 21' Century. Prentice Hall, London.
- 7- Dear, M.J. and Fusty, S. (2002): The Spaces of Post modernity: Readings in human Geography. Blackwell Publishers, Oxford.
- 8- Dikshit, R.D. (2004): Geographical Thought. A Critical History of ideas. Prentice- Hall of India, New Delhi, (in English and Hindi).
- 9- Doel, M. (1999): Poststructuralist Geographies. The Diabolical Art of Spatial Science. Edinburgh University Press, Edinburgh.
- 10- Gayle, G. and Wilmot, c. (eds.) (2003): Geography in America at the Dawn of the 21' Century. Oxford University Press, Oxford and New York.
- 11- Harvey, D. (1969): Explanation in Geography, Arnold, London.
- 12- Harvey, M.E. and Holly, P.B. (2002): Themes in Geographic Thought, Rawat Publications., Jaipur and New Delhi.'
- 13- Hubbard, P., Kitchin. R. Bartley, B. and Fuller, D. (2002): Thinking Geographically: Space, Theory and Contemporary Human Geography. Continuum, London.
- 14- Johnston, R, Gregory D, Pratt G, Watts M. and Whatmore S. (2003): The Dictionary of Human Geography. Blackwell Publishers, Oxford. 5th edition.
- 15- Johnston, R.J. (1985): The Future of Geography, Methuen and Company Ltd., New York. (2003 edition published).
- 16- Johnston, R.J. and Sidaway, J.D. (2004): Geography and Geographers. tithe edition, Edward Arnold, London.
- 17- Kapur, A. (ed.) (2001) Indian Geography — Voice of Concern. Concept Publishing Company, New Delhi.
- 18- Martin, G. (2005): All Possible Worlds. A History of Geographical ideas. 4th edition, Oxford University Press, new York.

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- 19- Mathews, J.A. and Herbert, D.T. (eds.) (2004): Unifying Geography Common Heritage, Shared Future Routledge, London.
- 20- Peet, R. (1998): Modern Geographical Thought. Blackwell Publishers Inc, Massachusetts.
- 21- Sack, R.D. (ed.) (2002): Progress Geographical Essays. John Hopkins University Press, Baltimore.
- 22- Sauer, C.O. (1963): Land and Life, university of California Press, Berkley.
- 23- Singh. R.L. and Singh, Rana P.B. (eds.) (1990) Literature and Humanistic Geography, National Geographical Society of India, BHU, Varanasi, Publication number 37.
- 24- Singh, R.L. and Singh, Rana P.B. (eds.) (1992): The Roots of Indian Geography Search and Research. National Geographical Society of India, B.H.U., Varanasi Publication number 39.
- 25- Singh, Rana P.B. (ed.) (1993): Environmental Ethics. National Geographical Society of India, BHU, Varanasi. Publication number 40.
- 26- Singh, Rana P.B. (ed.) (1994): The Spirit and Power of Place. National Geographical Society of India, BHU, Varanasi Publication number 41
- 27- Singh, Rana P.B. (2004): Cultural Landscapes and the Lifework. Indica Books, Varanasi.
- 28- Soja, E. (1989): Post-modern Geographies, Verso Press, London. Reprinted 1997: Rawat Publications, Jaipur and New Delhi.
- 29- Taylor, G. (Ed) (1953): Geography in the Twentieth Century. Methuen and Company Ltd. And Company, London.
- 30- Tuan, Yi-Fu (1977): Space and Place. The Perspective of Experience. Edward Arnold, London.

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## M.A. / M.Sc. Semester- IV

### GR 520: Research Methods and Techniques.

#### Unit I:

Framework of Research: Concept and significance of research in geography, Philosophy and methods: empiricism, positivism, behaviorism.

#### Unit II:

Planning Research and Data Generation: Primary and secondary data: Data collection and arrangement; Research design; Participatory research; Framing pilot and research project; Making survey-questionnaire.

#### Unit III:

Theories and Techniques: Model making, Application of system theory; Application and relevance of statistical and cartographic techniques; Application of computer and GIS.

#### UNIT - IV:

Analysis, writing and Dissemination: Production and arrangement of data; Analysis of data and maps; Quantitative and qualitative interpretations; writing manuals (arranging themes, maintaining coherence, cross-comparison, concluding, referencing, noting); Proof marks and marked proof; writing a research paper/report.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### Books Recommended:

- 1- Ahuja, R. (2001): Research Methods, Rawat Publications Jaipur and New Delhi.
- 2- Bhattacharyya, D.K. (2005): Research Methodology, Excel Books, New Delhi.
- 3- Blackburn, J. and Holland, J. (eds.) (1998): Who changes? Institutionalising Participation in Development, IT Publications, London.
- 4- Blaxter, L., Hughes, C. and Tight, M. (1996): How to Research. Open University Press, Buckingham.
- 5- Crang, Mike 1999. Cultural Geography. Routledge, London.

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- 6- Daniels, P., Bradshaw, M., et al. (2000): Human Geography: Issues for the 21<sup>st</sup> Century, Prentice Hall, London, and Pearson Publishers., Singapore, Indian reprint, 2003.
- 7- Denzin, N.K. and Lincoln, Y.S., (eds.). Handbook of Qualitative, Research. Thousand Oaks CA, Sage Publications.
- 8- Dikshit, R.D. (2003): The Art and Science of Geography: Integrated Readings, Prentice&Hall of India, New Delhi.
- 9- Dorling, D. and Simpson, L. (eds.) (1999): Statistics in Society. Edward Arnold, London.
- 10- Fisher, P. and Unwin, D., (eds.) (2002) virtual Reality in Geography. Taylor and Francis, London.
- 11- Flowerdew, R. and Martin, D. (eds.) (1997): Methods in Human Geography. A Guide for Students Doing a Research Project, Longman, Harlow.
- 12- Hay, I. (ed) (2000): Qualitative Research Methods in Human Geography. Oxford University Press, New York.
- 13- Henn, M., Mark W., and Nice F. (2006): A Short Introduction to Social Research, vistaar Publications, New Delhi.
- 14- Eyles J. and Smith D.M. (1988): Qualitative Methods in Human Geography, Polity Press Dales Breweing Cambridge.
- 15- Kitchin R. and Tate, N., (2001): Conducting Research into Human Geography, Theory, Methodology and Practice, Prentice-Hall London.
- 16- Kitchin, R. and Fuller, D., (2003): The Academic's guide to Publishing, Vistaar Publications, New Delhi
- 17- Limb, M. (2001) Qualitative Methodologies for Geographers. Issue and Debates, Edward Arnold, London.
- 18- Lofland, J. and Lofland, L.H. (1995): Analysing Social Setting, A Guide to Qualitative Observation and Analysis, Wadsworth, Belmont, CA.
- 19- Longley, P., Goodchild, M.F., Maguire, D. and Rhind, D. (1999): Geographic Information Systems. Principles, Techniques, Management, Applications. John Wiley and Sons, New York.

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- 20- Maso, I., Atkinson, P.A. Delamont, S. and Verhoeven, J.C. (eds.) (1995): Openness in Research. The Tension Between Self and Other. Van Corcum, Assen, Netherlands.
- 21- Mikkelsen, B.(2005) Methods for Development Work and Research: A New Guide for Practitioners, Sage Publications, London.
- 22- Mukherjee, N. (1993): Participatory Rural Appraisal: Methodology and Application. Concept Publishing Company, New Delhi.
- 23- Mukherjee, N. (2002): Participatory Learning and Action: with 100 Field Methods. Concept Publishing Company, New Delhi.
- 24- O'Leary, Z. (2005): The Essential Guide in Doing Research, vistarr Publications, New Delhi.
- 25- Pacione, M., (ed) (1999): Applied Geography: Principle and Practice. Routledge, London.
- 26- Parsons, T. and Knight, P.G., (1995): How to Do Your Dissertation in Geography and Related Disciplines, Chapman and Hall, London.
- 27- Patrick M. and Chapman S. (1990): Research Methods (Third Edition), Routledge, London
- 28- Peet, R. and Thrift N. (ed.) (1989/2002): New Models in Geography (2vols.) Rawat Publishers, Jaipur and New Delhi.
- 29- Rachel, P. et al(2001) Introducing Social Geographics, Arnold Hodder Group, London, and Oxford University Press, Oxford.
- 30- Robson, C. (1993): Real World Research. A Resource for Social Scientists and Practitioners-Researchers, Blackwell Publishers, Oxford.
- 31- Rogers, A. and Viles, H.A. (2003): The Student's Companion to Geography, Blackwell Publishers, Oxford. Indian reprint available.
- 32- Sheskin, Ira, M. (1987): Survey Research for Geographers, Scientific Publishers, Jodhpur.
- 33- Silverman, D. (1993): Interpreting Qualitative Data. Methods for Analyzing Talk, Text and Interaction. Sage Publications, London.
- 34- Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. Kalyani Publishers, Ludhiana and New Delhi. (English and Hindi editions).

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## M.A./M.Sc Semester IV : Paper III

**Optional Paper (521) Student are required to opt any one of the following GR 521A, GR 521B, 521C**

**Optional Paper GR 521A --**

**GR 521A - Political Geography**

**Unit - I:**

Nature, Scope, development, recent trends and approaches of political geography. Major schools of thought in political geography. Political geography vs. geopolitics, geographic element of the state-physical, human & economic.

**Unit -II:**

The methodology of political geography: A critical analysis of the functional unified theory. Genetic, functional and systems approaches, function and classification. Themes in political geography, state, nation. Nation-state and Nation building, frontiers and boundaries.

**Unit - III:**

Colonialism, Decolonialisation, Neocolonialism, federalism and other forms of governance. Global strategic view with particular reference to the ideas of Mahan, Mackinder, Spykeman and De Seversky. The changing pattern of super powers and super nationalism. Impress of politics upon the environment framework. Elements of electoral geography. .

**Unit - IV:**

Political geography of contemporary India, India: a global strategic view, India's border with neighboring countries especially with Pakistan, China and Bangladesh. Geopolitical significance of Indian Ocean. SAARC region and India. The changing political map of India.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

**Suggested Readings:**

- 1- Alexander, I.M. World Political Patterns, Ran McNally, Chicago, 1963.

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- 2- De Blij H.J. and Glassner, Martin: Systematic Political Geography, John Wiley, N.Y. 1968.
- 3- Dikshit, R.D.: Political Geography: A Contemporary Perspective, Tata McGraw Hill, New Delhi, 1996.
- 4- Taylor, P: Political Geography, Longman, London, 1985.
- 5- Sukhwai, B.L., Modern Political Geography of India, Sterling Publisher, New Delhi, 1968.
- 6- Taylor, P: Political Geography, Longman, London, 1985.
- 7- Fisher, Charles: Essays in Political Geography, Methuen, London, 1968.
- 8- Pounds, N.J.G.: Political Geography, McGraw Hill, N.Y., 1972.
- 9- John R. Short, An Introduction to Political Geography, Routledge, London, 1982.
- 10- Moddle A.E.: Geography Behind Politics, Hutchinson, London, 2000.
- 11- Prescott, J.R.V.: The Geographical Factors and Boundaries, Aldine, Chicago.
- 12- Deshpande, C.D.: India: A regional Interpretation, Northern Book Centre, New Delhi 1992.
- 13- Panikkar, K.M.: Geographical Factors in Indian History, 2 Vols. Asia Publishing House, Bombay, 1959

## M.A./M.Sc. Semester IV : Paper III

### Optional Paper 521 B

### GR.521B - Resource Planing

#### UNIT I :

Basic Framework: Nature and scope of resource planning; Methods and techniques of resource appraisal; Concept and approaches of sustainable development; Human resource development.

#### UNIT II:

Resource Conservation: Principles of resource conservation; Resource management; Planning for conservation of resources: land, water, forest, and minerals (with special reference to India).

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### UNIT III:

Indian Perspective: Resource utilisation and development; Impact of resource utilisation on environment; Environmental planning and policies in India; Resource potentials and resource regions.

### UNIT IV:

Resource Perspective: Agriculture regions; Population-resource regions; Resource planning units and development strategies: Damodar Valley and National Capital Region (NCR).

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion, cartographic methods, model construction and representation.**

### Books Recommended

1. Adam, M.G.(2000a): Kumasi Natural Resources Management, Final Technical Report. Natural Resources Institute, University of Greenwich, U.K.
2. Adams, W. M. (1990): Green Development: Environment and Sustainability in the Third World. Routledge and Chapman Hall, London.
3. Alam, S. Manzoor and Kidwai, Atiya Habeeb (eds.) (1987) : Regional Imperatives in Utilization and Management of Resources: India and the U.S.S.R. Concept Publishing Company, New Delhi.
4. Burton, I. and Kates, R.W. (1978): Readings in Resource Management and Conservation. McGraw Hills, New York.
5. Corbridge, S., (ed.) (1995): Development Studies: A Reader. Arnold, London.
6. Ehrlich, P.R., Ehrlich, R.H. and Holdren, J.P. (1998): Ecoscience: Population, Resources and Development. 2nd ed. Freeman and Company, San Francisco.
7. Freeman, T.W. (1972): Geography and Planning. Freeman and Company, New York.
8. Holechek, J. L., Cole, R., Fisher, J., and Valdez, R. (2000): Natural Resources: Ecology, Economics and Policy. Prentice-Hall, New Jersey.
9. Mitchell, B. (1979): Geography and Resource Analysis. Longman, London.
10. Mitra, A. (1999): Resource Studies. Shridhar Publications, Calcutta.
11. Prasad, H. et al. (eds.) (2005): Sustainable Management of Water Resources, Tam Book Agency, Varanasi
12. Rao, P. K. (2001): Sustainable Development: Economics and Policy. Blackwell Publications, Oxford.
13. Raza, M. (ed.) (1989): Renewable Resources for Regional Development: The Indian and the Soviet Experience. Concept Publishing Company, New Delhi.
14. Reid, S. (2000): Global Environmental Outlook. Earthscan, London.
15. Reid, S. (1995): Sustainable Development. Earthscan, London.

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16. Simon, D. and Narman, A. (eds.) (1999): Development Theory and Practice. Longman.
17. Simon, D. (ed.) (2005): Fifty Key Thinkers on Development. Routledge, London.
18. Singh, M. B. et al. (eds.) (2005): Sustainable Management of Natural Resources. Tara Book Agency, Varanasi.
19. Sundaram, K.V.; Mani, M. and Jha, M.M. (eds.) (2004): Natural Resource Management and Livelihood Security. Concept Publishing Company, New Delhi.
20. Thakur, B., (ed.) (2003): Perspectives in Resource Management in Developing Countries, Vol. I: Resource Management: Theory and Techniques. Concept Publishing Company, New Delhi.
21. UNDP (2001-04): UNDEP Human Development Report. Oxford University Press.
22. Valdiya, K. S. (1987): Environmental Geology: Indian Context. Tata McGraw Hill Publishing Company. Ltd., New Delhi
23. World Bank (2001-05): World Development Report. Oxford University Press, New York.

### **M.A. / M.Sc. Semester- III**

#### **Optional Paper GR- 521C**

#### **GR 521 C: Regional Development and Planning**

##### **Unit -1:**

Philosophy and purpose of planning. The development of planning thought, theories of regional development, economic base theory, international trade multipliers, aggregate growth model. The concept of growth centres, growth centre strategy of regional planning, rural economy, core-periphery relationship.

##### **Unit - II:**

Concept and types of regions-functional and formal, Uniform and nodal, single purpose and composite regions in the context of planning Regional hierarchy. Approaches for the definition of different types of regions and their utility in planning-resource base approach, growth centre approach, basic needs approach and habitat transformation approach.

##### **Unit - III:**

Delineation of planning regions. Planning regions of India. Planning process sectoral, temporal and spatial dimensions. Planning for a regions development and

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multiregional planning in a national context. Indicators of development and measuring levels of regional developments with special reference to India.

#### **Unit - IV:**

Regional planning for rural development with special reference to U.P. role of innovation diffusion, infra-structural elements (Irrigation, power, transpiration and communication and marketing) and Industrial in regional planning. Population-resource equilibrium and spatial organization in regional planning. Metropolitan regions in regional planning. Regional planning as development strategy since independence, regional development strategies concentration vs dispersal. Regional plans of India Concepts of multilevel planning decentralized planning. People's participation with the planning process.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Suggested Readings:**

- 1- Singh, O.P. and Pandey, D.C.: Development Planning: Theory and Practice, Gyanodya Prakashan Nainital, 1986.
- 2- Bhatt, L.S.: Regional Planning in India, Statistical Publishing Society, Calcutta, 1973.
- 3- Freidman, J. and Alonso W. Regional Development Policy: A case Study of Venezuela, MIT Press, Cambridge Mass-1966.
- 4- Ghosal G.S. and Krishnan G: Regional Disparities in Levels of Socio Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984.
- 5- Kuklinski A.R. (Ed) : Growth Poles and growth Centres in Regional Planning, Moutonj, The Hague, 1972.
- 6- Kundu A and Raza M: Indian Economy: The Regional dimension, Spectrum Publishers, New Delhi, 1982.
- 7- Losch, A: The Economics of Location, University Press, New Haven, 1954.
- 8- Mishra, R.P.: Regional Planning: Concepts, Techniques and Policies, University of Mysore, Mysore, 1969.
- 9- Mishra R.P. and Other (Ed): Regional Development-Planning in India: A strategy, Institute of Development Studies, Mysore, 1974

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## **M.A./M.Sc. Semester IV : Paper IV**

**Optional Paper (GR 522) Student are required to opt any one of the folloing GR 522A, GR 522B, GR522C**

### **GR-522A : Geography of Tourism**

#### **Unit I :**

Definition of tourism, factors influencing tourism-historical, natural, Socio-cultural and economic; motivating factors for pilgrimages, leisure and recreation, elements of tourism, tourism as an industry.

#### **Unit II:**

Geography of tourism: its spatial affinity, areal and locational dimensions comprising physical, cultural, historical and economic Tourism types-Cultural, eco-ethno-coastal and adventure tourism, national and international tourism. Globalization and tourism.

#### **Unit III:**

Indian tourism: Regional dimensions of tourist attraction, evolution of tourism, promotion of Tourism. Infrastructure and support system-accommodation and supplementary accommodation, other facilities and amenities. Tourism circuits-short and longer destination agencies and intermediates. Indian hotel industry.

#### **Unit — IV:**

Impacts of tourism-physical, economic, social and perceptual positive and negative impacts, environmental laws and tourism, Current Trends, spatial patterns and recent changes, role of foreign capital and impact of globalization on tourism.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Suggested Readings:**

- 1- Bhatia, A.K. Tourism: Development principles and Practices, Sterling Pub. New Delhi, 1996.

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- 2- Chandra, R.H. Hill Tourism: Planning and Development, Kanishka Pub., New Delhi, 1998.
- 3- Hunter C and Green H: Tourism and the Environment: A sustainable Relationship, Routledge, London, 1995.
- 4- Kaur J: Himalayan pilgrimages and New Tourism, Himalayan Books, New Delhi, 1993.
- 5- Milton, D: Geography of World Tourism, Prentice Hall, N.Y. 1993. 6- Voase, R: Tourism: the Human Perspective, Hodder and Stoughton, London, 1995. 7- Williams Stephen: Tourism: Geography, Routledge, London, 1998.

### **Pedagogy:**

Students may be encouraged to gain firsthand knowledge from field excursions. A Project report may be prepared by the students. Visit a tourist place and list and map the problems and suggest the remedial measures.

## **M.A. / M.Sc. Semester- IV**

### **GR 522B : Agricultural Geography.**

#### **Unit — I :**

Nature, Scope, significance, development and approaches of agriculture geography .Development of agricultural technology in plant production, animal production and other agricultural fields. Origin and dispersal of agriculture, Determinants of agricultural land use.

#### **Unit — II :**

Land Reforms and land use policy, cropping pattern. Crop concentration, intensity of cropping, degree of commercialization, diversification and specialization efficiency and productivity, carrying capability of land. The concept of agricultural landscape.

#### **Unit — III :**

Determination of crop combination regions, Theories of agricultural location based on several multidimensional factors: Von Thuenen theory and its recent modification. Methods of delineation of agricultural regions. Whittlessey's

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classification of agricultural regions. Agricultural regions of the world, their location and characteristics.

#### **Unit — IV :**

Agricultural land use and cropping pattern in India. Regional pattern of productivity in India. Green, white and Blue revolutions and their impacts. Food deficit and food surplus regions of India. Specific problems in Indian agriculture and their management and planning. Agricultural policy of India. Contemporary Issues- food, nutrition and hunger, food aid programmes. Role of irrigation, fertilizers, insecticides, pesticides and technological knowhow in environmental degradation, employment in agricultural sector.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Readings :**

- 1- Baylist Smith T.P.: The Ecology of Agricultural System, Cambridge University Press, London, 1987.
- 2- Gregor, H.P.: Geography of Agriculture, Prentice Hall, B.Y., 1970.
- 3- Mannion, A.M. : Agriculture and Environmental Change, John Wiley, London, 1971.
- 4- Morgan, W.B. and Norton, R.J.C.: Agricultural Geography, Methuen, London, 1971.
- 5- Morgan, W.B. Agricultural in the Third World, A spatial Analysis, West View Press, Boulder, 1978.
- 6- Sauer, C.O.: Agricultural Origins and Dispersals, MIT; Press West View Press Mass, USA, 1969.
- 7- Singh J. and Dhillon S.S.: Agricultural Geography, Tata McGraw Hill Pub., New Delhi, 1988.
- 8- Tarrant, J.R.: Agricultural Geography, Wiley, N.Y., 1974.

#### **Pedagogy:**

The teacher should impress the students the overall importance of agriculture in the global perspective. The world is fast changing and its impact is felt on agriculture. Population is increasing and demand of agricultural products is also on the increase.

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Contrary to it, the farm lands are decreasing the necessary infusion of technology in agricultural sector. It is causing environmental pollution. The teacher should interact with students on above mentioned issues. Examples: Iron neighbouring areas may be given to the students for better perception.

## **M.A. / M.Sc. Semester- IV**

### **Optional Paper GR 522C - Population and Development**

#### **Unit I :**

Conceptual Frame :Population as resource; Population and development; Population and ecosystem; Demographic transition.

#### **Unit II :**

Historical Background and Characteristics: History of human population; Relationship between population, food and energy; Population characteristics: developed and developing countries (case study of India).

#### **Unit III :**

Problems and Policies: Optimum population ;Over Population & Under Population, Family welfare and planning; Population policies in India.

#### **Unit IV :**

Population and Development Conflict: Neo-Malthusian theory; Future perspectives: Growth scenario and relationship with Development . Population problems versus Development.

**Methods of Teaching - Chalk & Talk, Assignment Method, Project Method, Group Discussion and cartographic methods.**

#### **Books Recommended :**

1. Champion, T. (ed.) (1993): Population Matters. Paul Chapman, London.
2. Ehrlich, P.R. and Ehrlich, A.H. (1996): Ecoscience: Population, Resources, Environment. 6th edition, W.H. Freeman and Company, San Francisco.
3. Firor, J. and Jacobsen, J. E. (2003): The Crowded Greenhouse: Population, Climatic Change and Creating a Sustainable World. Universities Press (India) Private. Ltd., Hyderabad.

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4. Haggett, P. (2001): Geography, A Modern Synthesis. 5th edition, Harper and Row, New York.
5. Hammett, C. (eds.) (1996): Social Geography: A Reader. Arnold, London.
6. Meadow, D.H., Meadows, D.L., Randers, J. and Behrens, W.W. 111(1973): The Limits to Growth. I Report of the Club of Rome. The New American Library, New York.
7. Meadows, D.H., Meadows, D.L. and Randers, J. (1992): Beyond the Limits. Confronting Global Collapse, Envisioning a Sustainable Future. (A sequel to The Limits to Growth). Chelsea Green Publishers, Post Mills VT, USA.
8. Mesarovic, M. and Pester, E. (1974): Mankind at the Turning Point. II Report of the Club of Rome. The New American Library, New York.
9. Middleton, N. and O'Keefe, P. (2001): Redefining Sustainable Development. Pluto Press, London.
10. Ross, J. A. (ed.) (1982): International Encyclopaedia of Population. Free Press, New York.
11. Sharma, P. R. (ed.) (1991): Perspectives on the Third World Development. Rishi Publications., Varanasi.
12. Sharma, P. R. (ed.) (1994): Regional Policies and Development in the Third World. Rishi Publications, Varanasi.
13. Simon, J. L. (1977): The Economics of Population Growth. Princeton University. Press, Princeton.
14. Thakur, B. (ed.) (2004): Population, Resources and Development. Vol. II, Perspectives in Resource Management in Developing Countries. Concept Publishing. Company, New Delhi.
15. Tinbergen, J. (1976): RIO. Reshaping the International Order. III Report of the Club of Rome. The New American Library, New York.
16. U.N.C.E.D. (1987): Our Common Future. UNCED The Centre for Our Common Future, Geneva.

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## M.A./M.Sc. IVth Semester

### Paper V

### Marks

#### GR 523 : Project Work & Study Tour

100

1- Project work (Related to optional paper ) Based upon the field survey of a area give by Head/Chairman of the Department.

50

2- Study Tour (Outside of the Gangetic Plain) and Tour Report (minimum seven Day's)

40

3- Viva - Voce

10

#### Specific Instruction -

1- The T.A//D.A. and related expenses to teachers and supporting staff on tour duty shall be met by representative institution.

2- Normally two teacher and one attendant will accompany the tour party.

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