RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY ,NAGPUR

Choice Based Credit System (CBCS) Course Structure

Subject-Geography Faculty : Humanities

M.A. Second Year Semester III (NEP)

***with effect from*: June, 2023**

Semester	Core Course	Paper No.	Name of the Paper	Lectures/ Week	Total No. of Lect. Per Sem.	CA	ESE	Total Marks	Credits	Minimum Passing Marks
III	GgC-301	I	Economic Geography(Core)	04	60	20	80	100	04	40
	GgC-302	II	Geography Of Rural Settlement(Core)	04	60	20	80	100	04	40
	GgE-303	III	Town and Country Planning (Elective)	04	60	20	80	100	04	40
	GgE304	III	Natural Disaster Management (Elective)	04	60	20	80	100	04	40
	GgE-305	IV	Urban Geography (Elective)	04	60	20	80	100	04	40
	GgE-306	IV	Agricultural Geography (Elective)	04	60	20	80	100	04	40
	GgP-301	V	Practical- V (Core)	08	60	20	80	100	04	40
	GgP-302	VI	Practical-CI (Core)	08	60	20	80	100	04	40
Semester – III Total				**30**		**145**	**480**	**625**	**25**	**250**

24/7/2023

RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY ,NAGPUR

Choice Based Credit System (CBCS) Course Structure

Subject-Geography Faculty : Humanities

M.A. Second Year Semester IV (New Pattern)

***with effect from*: June, 2023**

Semester	Core Course	Paper No.	Name of the Paper	Lectures / Week	Total No. of Lect. Per Sem.	CA	ESE	Total Marks	Credits	Minimum Passing Marks
IV	GgC-401	I	Population Geography (Core)	04	60	20	80	100	04	40
	GgC-402	II	Geography Of Tourism(Core)	04	60	20	80	100	04	40
	GgE-403	III	Regional Planning & Development (Elective)	04	60	20	80	100	04	40
	GgE404	III	Geography of Resources (Elective)	04	60	20	80	100	04	40
	GgE-405	IV	Social Geography (Elective)	04	60	20	80	100	04	40
	GgE-406	IV	Geography Of Water Resources (Elective)	04	60	20	80	100	04	40
	GgP-401	V	Practical- VII (Core)	08	60	20	80	100	04	40
	GgP-402	VI	Practical-V III (Core)	08	60	20	80	100	04	40
Semester - IV Total				**40**		**145**	**480**	**625**	**25**	**250**

(CC= Core Course, CA= Continuous Assessment (Internal), ESE= End Semester Examination).

1. Teaching work load shall be four periods per week for each theory paper and Eight periods per batch per week for practical.
2. Strength of students for each practical batch shall not be more than 10 (Ten).
3. Students shall not be allowed for Practical Examination without certified Practical Record.
4. Total periods for each theory paper shall be 60 per semester.
5. Total periods for practical paper shall be 60 per semester.
6. Practical examination will be held at the end of every Semester.
7. Theory and Practical Lectures : 60 Minutes Each

Question Paper Model and Scheme of Marking

Subject: **GEOGRAPHY**

M. A. First Year (Semester III and IV) **Theory**

(w. e. f. June 2023)

Time : 3.00 Hrs **Marks: 80**

Q.1 Descriptive type question (Unit- I) **(20)**

OR

Descriptive type question (Unit- I)

Q.2 Descriptive type question (Unit-II) **(20)**

OR

Descriptive type question (Unit-II)

Q.3 Descriptive type question (Unit- III) **(20)**

OR

Descriptive type question (Unit- III)

Q.4 Descriptive type question (Unit- IV) **(20)**

OR

Descriptive type question (Unit- IV)

GgC-301 ECONOMIC GEOGRAPHY (CORE)

Marks: 100 (80+20) **Credits: 04** Periods: 60 hours

Semester Examination =80 Marks
Internal Assessment =20Marks

Time: 3 hours

Course Objective

1. This course offers an introduction to the ways in which economic activities are organized over the earth's surface.
2. The economic processes operating at different geographical scales are depending on the complex economic-political-social interactions that are framed at the global level.
3. The course explores the processes of globalization and seeks to provide understanding of today's increasingly interdependent world.
4. Students will be familiarized with economic processes such as globalization, trade and transportation and their impacts on economic, cultural and social activities.

Learning Outcomes After the completion of the course, Students will be able to

1. Students would be able to understand how in an increasingly globalized world, economic activities occur unevenly over geographical space; how local places and global economy are intertwined, and how the regime of neoliberal policies are generating uneven geography of capitalist development.
2. Students will be introduced to demographic, social and cultural attributes such as migration, social relations and cultural identity. The main objective is to underline that human activities are subject to adaptation and change.
3. Understand the processes driving spatial economic differences in a global era, and the roles of key factors such as transnational firms and the state.
4. Abstract and utilize information on economic change from a range of different sources.

Unit-I	Scope, Content and recent trends in economic geography, relation of economic geography with economics. Classification of economies: sector of economy (Primary, Secondary and Tertiary). Factors of location of economic activities: physical social economic and cultural.	20 Marks 15 Hrs
Unit-II	Classification of industries: resource based and foot loose industries. Theories of industrial location – weber, losch and Isard. Case studies of selected industries – iron and steel, oil refinery and petrochemical, engineering, textile.	20 Marks 15 Hrs
Unit-III	Modes of transportation and transport cost: their significance and characteristics, accessibility and connectivity: international, inter and intra regional: comparative cost advantages, transport network. Pattern of movement: the type, patterns of movement & transport	20 Marks 15 Hrs

	modes, Simple model of interaction transportation network: the function, movement geometry.	
Unit-IV	Transport policy and planning, transport development in developing countries, urban transportation: growth and problems of urban transportation, transport and environmental degradation, vehicular pollution and congestion, alternatives to transport system in mega cities of India, national highway development and planning in India.	20 Marks 15 Hrs

Suggested reading

1. Alexander, J.W. (2012): Economic Geography, Prentice Hall of India, New Delhi.
2. Berry, B.J.L. et al. (1976): Geography and Economic Systems, Prentice Hall, Englewood Cliff.
3. Boyce, R.D. (1990): Bases of Economic Geography, Holt Rinehart & Winston, New York. Cliffs, N.J. Prentice.
4. Dreze, J. and Sen, A. (1996): Economic Development and Social Opportunity. Oxford University Press, New Delhi.
5. Haggett, P. (1966): Locational Analysis in Human Geography, St. Martin's Press, New York.
6. Hanink, D.M. (1997): Principles and Applications of Economic Geography, Economy,
7. Hartshrone, T.A. & Alexander, J.W. (1994): Economic Geography, Prentice Hall of India, New Delhi. 8. Hodder, B.W. & Lee, R. (1996): Economic Geography, Methuen, London.
9. Janaki, V.A. (1985): Economic Geography, Concept Publishing Co., New Delhi.
10. Jones &Darkenwald (1960): Economic Geography, New York.
11. Knox, P. and J. Agnew (1998): The Geography of the World Economy. Arnold, London.
12. Lloyd, P. And P. Dicken (1972): Location in Space: A theoretical approach to Economic Geography, Harper and Row, New York.
13. McCarty, H.H. and J.B. Lindberg (1966): A preface to Economic Geography, Englewood, New York.
14. Rostov, W.W. (1960): The Stages of Economic Growth, Cambridge Univ. Press, London.
15. Singh, K.N and Siddiqui, A (2012): Economic Geography, PrayagPustak Bhawan, Allahabad
16. Singh, K.N. & Singh, J. (1996): ArthikBhoogolKeMooltatva, GyanodayaPrakashan, Gorakhpur.
17. Smith, G.H. (2000): Conservation of Natural Resources, John Wiley, New York.
18. Thomas, Conkling and Yeates (1974): Geography of Economic Activity, Mc Graw Hill, University Press, New Delhi.
19. Wheeler, J.O. et.al. (1995): Economic Geography, John Wiley, New York.

GgC-302 GEOGRAPHY OF RURAL SETTELMENT(Core)

Marks: 100 (80+20) **Credits: 04** Periods: 60 hours

Semester Examination =80 Marks
Internal Assessment =20Marks

Time: 3 hours

Objectives:

1 The objective of the paper is to give to the students the basic ideas about the rural settlements, historical development during ancient, medieval and modern times, morphology of rural settlements, functions and rural settlement planning in India.

2 The present paper shall enhance the knowledge of students about the historical development, patterns, types and functional systems of rural settlements.

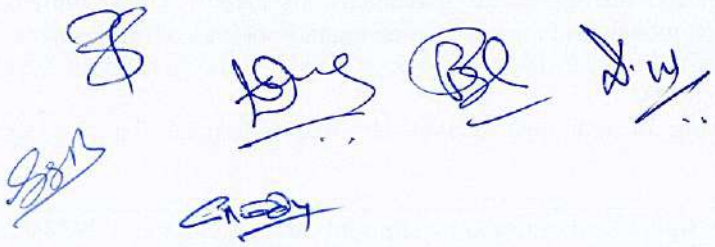
Learning Objective

1. Acquire clear concepts of rural settlements
2. Greater understanding of origin and distribution of settlements; its classifications; settlement structure and settlement hierarchy; models and theories explaining morphology of rural centres
3. Fosters an ability to think in spatial terms, using geographic principles to understand the past as well and present growth of settlements
4. Inculcate a greater understanding of man-land relationship that is crucial for sustainable development

Unit-I	Nature scope significance and development of settlement geography. Approaches to rural settlement geography, histo-genesis of rural settlement: Spatio-temporal dimension and sequent occupance. Distribution of rural settlement: size and spacing of rural settlement.	20 Marks 15 Hrs
Unit-II	Types, forms and pattern of rural settlements: cause and effect, functional classification of rural settlements, rural service centre: their nature hierarchy and functions, rural urban fringe – structure, characteristic and functions	20 Marks 15 Hrs
Unit-III	Social issues in rural settlements: poverty, housing and shelter, deprivation and inequality, empowerment of woman, Health care, rural urban interaction. Environmental issues in rural settlements: access to environmental infrastructure – water supply, sanitation, drainage, occupational health hazards.	20 Marks 15 Hrs
Unit-IV	Cultural landscape elements in rural settlements in different geographical environment with special reference to India: house types and field patterns Origin, evolution, size, socio-spatial structure of Indian villages. Rural development planning in India, Integrated rural development.	20 Marks 15 Hrs

Suggested Reading

1. Alam, S. M. et. al. (1982), Settlement System of India, Oxford and IBH Publication Co. NewDelhi.
2. Chisholm, M. (1967), Rural Settlements and Land Use, John Wiley, New York.
3. Clout, H.D. (1977) Rural Geography of Settlements, Mac Donald & Evans, New York.
4. Hudson, F.S. (1976), A Geography of Settlements, Mac Donald & evans, New York
5. Mandal, R.B. (1988), System to Rural Settlements in Developed Countries, Concept Publication, New Delhi.
6. Mandal, R.B. (2001), Introduction to Rural Settlements, Concept Publication, New Delhi.
7. Misra, H.N. (1987) Rural Geography, Vol. IX, Contributions to Indian Geography, Heritage Publishers, New Delhi.
8. Singh, R.L. and K.N. eds. (1975), Readings in Rural Settlements Geography, NGSI, Varanasi
9. Singh, R.L. (1976), Geographic Dimensions of Rural Settlements, NGSI, Varanasi
10. Singh, R.Y. (1994), Settlements, NGSI, Varanasi.
11. Singh, R.Y. (2005), Adhiwas Bhugol, (in Hindi) Rawat Publication, New Delhi.
12. Wanmali, S. (1983), Service Centres in Rural India, B.R. Publication, New Delhi



GgE-303 NATURAL DISASTER MANAGEMENT (Elective)

Marks: 100 (80+20) **Credits: 04** Periods: 60 hours

Semester Examination =80 Marks
Internal Assessment =20Marks

Time: 3 hours

Course Objective

1.To provide students an understanding the need for studying the disaster management
2. Develop an understanding about the various types of disasters.
3. To expose students to the risk and vulnerability analysis
4. To create awareness about disaster prevention and risk reduction
5. To establish relationship between disasters and developments.
6. To understand Rehabilitation, Reconstruction and Recovery in the event of Disaster.

Learning Outcomes:

1. Understand the need and significance of studying disaster management
2. Understand the different types of disasters and causes for disasters.
3. Gain knowledge on the impacts Disasters on environment and society
4. Study and assess vulnerability of a geographical area.
5. Students will be equipped with various methods of risk reduction measures and risk mitigation.
6. Understand the role of Information Technology in Disaster Management

Unit-I	**Environment hazards & disasters:** Meaning & approaches, Causes and consequences of disaster: Physical, economic and cultural, National and International organizations into disaster management. **Types of environmental hazards and disaster**: Natural disaster-Earthquake, tsunamis, landslides, volcanic eruption, cyclones, tornados, floods, droughts, heat waves and cold waves. Man induced hazards-Soil erosion, release of toxic chemicals, nuclear explosion, population explosion and resultant environmental disasters.	20 Marks 15 Hrs
Unit-II	**Emerging approaches to Disaster management:** (1) Pre-disaster stage (Preparedness)- hazard zonation maps-predictability and forecasting warning, land use zoning, Information, Education & Communication (IEC) Disaster resistance house construction, Population reduction in vulnerable area and awareness. (2) Emergency Stage-Rescue training for search and operation at national and regional level, ground management plan preparation,	20 Marks 15 Hrs

	immediate relief, Assessment surveys. (3) Post disaster stage rehabilitation – Political administrative aspects, social aspect, economic aspect, cultural aspect and environmental aspects.	
Unit-III	**Natural Disaster mitigation:** Relief measure, role of GIS in Relief measures, role of GPS in search and rescue, role of Remote sensing in prediction of hazards and disasters, measures of adjustment of natural hazards.	20 Marks 15 Hrs
Unit-IV	**Disaster in Indian context:** A regional survey of Land Subsidence, Coastal Disaster, Cyclonic Disaster & Disaster in Hills, terror attacks, communal clashes, Remedial measures. National and international policies for disaster management.	20 Marks 15 Hrs

Suggested Reading :

1. R.B.Singh (Ed) ,1990, Environmental Geography, Heritage Publishers New Delhi.
2. Savinder Singh,1997, Environmental Geography, Prayag Pustak Bhawan.
3. Kates,B.I & White,1978, G.F The Environment as Hazards, oxford, New York.
4. R.B. Singh (Ed), 2000,Disaster Management, Rawat Publication, New Delhi.
5. H.K. Gupta (Ed), (2003),Disaster Management, Universiters Press, India.
6. R.B. Singh,(1994),Space Technology for Disaster Mitigation in India (INCED), University of Tokyo.
7. Dr. Satender, (2003), Disaster Management t in Hills, Concept Publishing Co., New Delhi.
8. A.S. Arya Action Plan For Earthquake, Disaster, Mitigation in V.K. Sharma (Ed) (1994),Disaster Management IIPA Publication New Delhi.
9. R.K. Bhandani An overview on Natural & Man made Disaster & their Reduction ,CSIR, New Delhi
10. M.C. Gupta, (2001),Manuals on Natural Disaster management in India, National Centre for Disaster Management,IIPA, New Delhi.

GgE-304 **TOWN AND COUNTRY PLANNING** (Elective)

Marks: 100 (80+20) **Credits: 04** Periods: 60 hours

Semester Examination =80 Marks
Internal Assessment =20Marks

Time: 3 hours

Course objectives:

1. Understand the evolution of human settlements and the philosophies guiding the early and modern Town and Country Planning with case studies
2. Explain the systems of City planning in pre-& post-industrial periods
3. Understand the various schools of thought guiding the theories on settlements and urban & regional planning

Learning Outcomes

1. Acquire outstanding fundamental knowledge in the field of Urban Planning.
2. Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, Policy decisions.
3. Understanding the diverse needs of values and systems of society and providing sustainable solutions
4. Acquire outstanding knowledge and understanding of the current trends in Urban Planning with the introduction of Sustainability, Smart Cities, Data-Centric Planning and Management, etc.

Unit-I	▪ Human Settlement: A brief history with its relevance in modern context. ▪ Settlement System: Types and Function ▪ Town and County Planning practice in India. ▪	20 Marks 15 Hrs
Unit-II	▪ Town Planning- Definition, Nature, importance and scope . ▪ Preparation of town plan- Objective, Surveys and Data Collection for town planning with specific reference to urban land survey, formulation of policies, zoning, locational and space requirement for residential ,work and play areas. ▪ Problem of town planning in India. ▪ Urban planning policies in India in Five year plan and Niti Ayog.	20 Marks 15 Hrs
Unit-III	▪ Country planning : Definition , nature, importance and scope. ▪ Rural landuse and its determinants. ▪ Rural landuse, land suitability and soil survey.	20 Marks 15 Hrs
Unit-IV	▪ Rural Development in India during five year plan & Niti Ayog. ▪ Planning for the following problems of rural India. ▪ A) Drinking Water ▪ B) Flood ▪ C) Public Utility Services ▪ D) Poverty and Food Supply	20 Marks 15 Hrs

Suggested Reading :

1. A.E.J. Morries, 1994, History of Urban Form: Before the Industrial Revolution, Routledge, New York, 3rd Ed.
2. Frederick Gibberd, 1959, Town Design, Praeger
3. Stephen V. Ward (ed),1992, The Garden City: Past, present, and future, Routledge, published in 2011.
4. David Adams, 1994, Urban Planning and Development process, UCL Press London
5. Jay M Stein, 1994, Classic Readings in urban planning: An introduction, McGraw-Hill, New York
6. C.A. Doxiades, 1976, Action for Human Settlements, Athen's, Centre of Ekistics.
7. William H.Wilson, 1989 City Beautiful Movement, The Johns Hopkins University Press, Baltimore, and London.
8. Arthur Korn,1953, History Builds the Towns, Lund, Humphris, London.
9. Arthur B. Gallion, 1975, Urban Pattern, Van Nostrand Reinhold Inc, U.S.; 3rd Revised edition
10. Lewis Mumford, 1938, Culture of Cities, Harcourt Brace Jovanovich.
11. P. Geddes, 1915, Cities in Evolution, McGraw Hill,
12. Dutta, 2009, Ancient Town Planning in India, Isha Books, India.
13. Lewis Keeble, 1969, Principles of Town and Country Planning. Estates Gazette Ltd, London, 4th edition.
14. K.S. Ramegowda, 1972, Urban and Regional Planning, Prasaranga, University of Mysore
15. Rangwala, 2015, Town planning in India, Charotar Book Distributors, India, 28th Ed.
16. Bhardwaj, R.K., Urban Development in India, National Book Trust, New Delhi, 1974.
17. Chapin, F.S. & Kaiser Edward J., Urban Landuse Planning, Harper Bros., New York, 3rd Ed., 1985.
18. Jackson, J., Surveys for Town and Country Planning, Hutchinson University Library, London, 1966.
19. Modak, V.N. and V.N. Ambedkar, Town and Country Planning and Housing, Oriental Longman, New Delhi, 1971.
20 TCPO, Regional Planning Efforts in India, Government of India, New Delhi, 1985.

Further Readings:

1. Government of India, Report of the National Commission on Urbanisation, Vols. I & II, Ministry of Urban Development, New Delhi, 1988.

2. Government of India, Plan Drafts of Different Five–Year Plans, Planning Commission, New Delhi.

GgE-305 URBAN GEOGRAPHY (Elective)

Marks: 100 (80+20) **Credits: 04** Periods: 60 hours

Semester Examination =80 Marks
Internal Assessment =20Marks

Time: 3 hours

Course Objectives:

1. To develop awareness among the students about the data sources and their application to understand and evaluate the spatial patterns and processes of urbanization.
2. To encourage the students to study the urban morphology and urban functions with special reference to India.
3. To understand the evolution of urban settlements with relevant theories and models.
4. To study the fundamental concepts of urban settlement.

Learning Outcomes

1. Develop deeper understanding of Urban geography
2. Focus on establishing in-depth knowledge on spatial and temporal basis of urban studies; physical, social, cultural and economic setup of urban centers with special reference to India
3. Helps to understand, analyse and interpret the morphology of urban centres
   Learn the significance of human activities, physical-biological and cultural phenomena, across temporal and spatial variations, that influence the urban landscape

Unit-I	Nature Scope and Development of urban geography, different approaches and recent trends in urban geography, Origin and growth of urban settlements: bases and process of urbanization from the ancient, medieval and modern period, and development, Classification of urban settlements on the basis of size and function: urban system.	20 Marks 15 Hrs
Unit-II	Location, size and spacing of urban settlements, Factors in the location of cities: urban hierarchy and central place theory of christaller and losch, rank size rule – urban function and Functional classification of towns.	20 Marks 15 Hrs
Unit-III	Urban Morphology – economic based and the functional organization of the city. Models of the city structure. basic and non basic functions. central area/CBD – its characteristics and delimitation. residential and industrial and other types of land use within the cities. Contemporary urban issues, urban poverty, urban sprawl, transportation, housing – Slums, environmental pollution: Air, Water, Noise, Solid Based, Urban Crime, issues of	20 Marks 15 Hrs

	Environmental health.	
Unit-IV	Areal Expansion of cities suburbs. conurbation and mega polis development. Rural – urban fringe. centrifugal and centripetal force. the regional relation of the city. concept of city region,– growth and morphological study of the following Indian cities – New Delhi, Chandigarh, Mumbai, Hyderabad, Secunderabad, Jaipur, and Nagpur.	20 Marks 15 Hrs

Suggested reading

1. Alam, S.M. (1965) Hyderabad-Secundrabad : A Study in Urban Geography, Allied Publishers, Mumbai.
2. Bansal, S.C. (2008) Urban Geography (in Hindi), Meenakshi Prakashan, Meerut.
3. Bose, A. (1980): India's Urbanisation, Tata McGraw Hill, New Delhi.
4. Carter, H. (1979): The Study of Urban Geography, Arnold Heinemann, London. 42
5. Gibbs, J. P. (Ed.),(1961): Urban Research Methods, Princeton.
6. Hall, T. (2006): Urban Geography, Routledge, London.
7. Karan, M.P. (1991) Urban Geography (in Hindi), Kitab Ghar Acharya Nagar, Kanpur.
8. Mandal, R.B. (2000) Urban Geography: A Textbook, Concept Publishing Company, New Delhi.
9. Mayer, H.M. & Kohn, C.F. (1967): Reading in Urban Geography, Central Book Depot, Allahabad.
10. Pacione, M. (2009): Urban Geography, Routledge, New York Press, New Delhi.
11. Ramchandran, R. (1997): Urbanization and Urban Systems in India, Oxford University.
12. Rao, B.P. and Sharma, N. (2000) Urban Geography (in Hindi), Vasundhara Prakashan, Gorakhpur.
13. Siddharth, K. and Mukherjee, S. (2013): Cities, Urbanization and Urban System, KisalayaPrakashan,
14. Singh, O.P. (1979) Urban Geography (in Hindi), Tara Publication, Varanasi.
15. Singh, R.L. (1955) Banaras: A Study in Urban Geography, Nand Kishore & Sons, Varanasi.
16. Singh, Ujagir (1974) Urban Geography (in Hindi), Uttar Pradesh Hindi Granth Academy, Lucknow.
17. Tayler, G. (1964) Urban Geography, Methuen, London.
18. Yadav, C.S. (1992) Urban Planning and Policies, Concept Publishing Company, New Delhi.

GgE-306 AGRICULTURAL GEOGRAPHY (Elective)

Marks: 100 (80+20)	**Credits: 04**	Periods: 60 hours
Semester Examination =80 Marks Internal Assessment =20Marks		Time: 3 hours

Course Objectives:

1. Understand about the introduction to agriculture, nature, scope, significance and Development of agriculture geography, study approaches applied in agriculture.
2. Understand the influence of physical, Economic and Technological factors on agriculture patterns.
3. To understand the agricultural system its meaning and concept, classification of agricultural system, types of agricultural, study the types of agricultural in respect of area, salient features and their problems.
4. Understand the agricultural regionalization and modes in agricultural geography and their classification of agricultural models and some theories.

Learning Outcomes

1. To analyse and understand complex classification of agriculture, land capability& land uses
2. To understand the methods of agricultural productivity I.e. Kendal method etc.
3. To introduce a systemic framework for issues, conservation and management in agriculturally backward region and their livelihood.
4. To support and assimilate the information relating to the levels of agricultural development& policies, to check the disparities in levels of agricultural development.

Unit-I	Nature, Scope, significance and development of agricultural geography. Approaches to the study of agricultural geography: commodity, systematic and regional. Origin and dispersal of agriculture.	20 Marks 15 Hrs
Unit-II	Determinants of agricultural land use: physical, economic, social and technological. Land use policy and planning. Selected agricultural concepts and their measurements: cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization, efficiency and productivity, crop combination regions and agricultural development.	20 Marks 15 Hrs
Unit-III	Theories of agricultural location based on several multidimensional factors; Von Thunen's theory of agricultural location and its recent modifications. Whittlesey's classification of agricultural regions. Land use	20 Marks 15 Hrs

	and land capability, green revolution, white revolution.	
Unit-IV	Contemporary issues of agricultural in India – Food deficit and food surplus region, food aid programmes, nutritional index. Specific problems in Indian agriculture and their management and planning. Agricultural policy in India, Environmental degradation, role of irrigation, fertilizers, insecticides, technological Know How.	20 Marks 15 Hrs

Suggested Reading

1. Giri, H.H. (1975): Land Utilization in Gonda District, ShiwalayaPrakashan, Gorakhpur.
2. Grigg, D. (1995): An Introduction to Agricultural Geography, Routledge, London
3. Hussain, Majid (1998): Agricultural Geography, Rawat Publications, Jaipur.
4. Kumar, Pramila & Sharma, S.K. (1990) : Agricultural Geography (Hindi), M.P. Hindi Granth Academy, Bhopal.
5. Misra, R.P. (1968): Diffusion of Agricultural Innovation, Concept Publication, New Delhi.
6. Mohammad Ali (1977) Food and Nutrition in India, K.B. Publications,
7. Mohammad Ali (1978) Studies in Agricultural Geography, Rajesh Publishers, New Delhi
8. Mohammad, Noor (1980): Perspectives in Agricultural Geography (Vol. I–IV), Concept Pub. Co., New Delhi. 27
9. Negi, B.S. (1980): Agricultural Geography, Kdarnath Ramnath, Meerut.
10. Pandey, J.N. & Kamlesh, S.R. (2003) : Agricultural Geography (in Hindi), Vasundhara Prakashan, Gorakhpur.
11. Singh, B.B. (1979): Agricultural Geography (Hindi), GyanodayaPrakashan, Gorakhpur.
12. Singh, Jasbir& Dillon, S.S. (1984): Agricultural Geography, Tata Mc Graw Hill Pub., New Delhi.
13. Singh, S.N. (1994): Agricultural Development in India, Kaushal Publications, Shillong.
14. Symons, L. (1970): Agricultural Geography, G. Bell and Sons Ltd., London
15. Tiwari, R.C. & Singh, B.N. (1994) : Agricultural Geography (Hindi), Prayag Pushtak Bhawan, Allahabad.

GgP-301 PAPER-(3.P-1)

Semester Practical Examination Marks: 80 Time- 4 hours
Internal Assessment Marks: 20

PRACTICAL-V

Unit-I	**Economic Maps and Diagrams** 1. Lorenz Curve 2. Ergo Graph 3. Triangular graph 4. Isochors and Isochrones 5. Simple and semi-log graphs	10 Marks
Unit-II	**Population maps and Diagrams** 1. Dependency ratio map 2. Isopleths of population potential 3. Demographic transition model 4. Superimposed pyramid 5. Natural replacement graph of population.	10 Marks
Unit-III	**Settlement maps and Diagrams** 1. Spatial mean center- standard distance map 2. Distance decay graph 3. Dispersion of settlement 4. Concentration of settlement 5. Reilly's law of retail gravitation	10 Marks
Unit-IV	**Cartographic methods** **(i) Agricultural geography and regional development and planning** **(i)** Index of concentration **(ii)**Index of diversification **(iii)** Index of crop combination **(iv)** Agricultural efficiency	25 Marks
	Or	
Unit-IV	**(ii) Urban Geography** A. Index of centrality B. Near- neighbor analysis C. Shop- rent Index D. K3, K4 and K7 Value Computation E. Rank Size Rule	25 Marks
	4. Viva-Voce **5. Practical Record** **Internal Assessment Marks:** Test Examination	15 Marks 10 Marks 20 Marks

Note- The batch of Practical Class should not be exceeding 10 (Ten) Students.

uggested Readings:

1. Monkhouse F.X.J. and Wilkinson H. R. (1971), Maps and Diagrams, London

2. Ramamurthy, K. (1982): Map interpretation, Madras

3. Petrie N. (1992), Analysis and Interpretation of Topographical Maps. Orient Longman Limited Calcutta.

4. Singh R. L. (1997), Elements of Practical Geography, Kalyan Publishing, New Delhi

5. Meux A. H. (1960), Reading Topographical Maps.University of London Press Limited

6. Jones P. A. (1968), Fieldwork in Geography. Longmans, Green and Company Limited

7. Archer J. E and Dalton T. H. (1968), Fieldwork in Geography B.T. Batsford Limited London

8. Wheeler K.S. Ed (1970), Geography in the field. Blond Educational, London.

9. Gupta, K. K. and Tyagi, V. C. (1992): Working with maps, Survey of India Publication, Dehradun.

GgP-302 Practical (3.P-2)

Semester Practical Examination Marks: 80 Time- 4 hours
Internal Assessment Marks: 20

PRACTICAL-VI

Statistical Techniques

Study of Practical problems on the following particular emphasis on the optional subject offered by the students. (Data and problems attempeted shouls be from the the rspective optional subject offered by the students)

Collection and organization of statistical data. Majors of central tendencies and dispersion.

1. The normal frequency distribution curve and its use. Probabilities. (10 marks)
2. Methods of sampling – A numerical B. Aerial distribution (5 marks)
3. Stastistical significance tests:
   A) Students T Test
   B) Chi-square test
   C) F-test (10Marks)
4. Correlation- A. Pearson's Product moment correlation (10Marks)
   B. Spearman's rank correlation
5. Correlation significance test (10marks)
6. Regression Line (10 marks)
7. Confidence limits (10 marks)
8. Viva voce (10 marks)
9. Practical Record (5 marks)

Internal Assessment Marks:

Test Examination (20 Marks)

Note- The batch of Practical Class should not be exceeding 10 (Ten) Students.

Suggested Readings

1. Gupta, C.B.(1978): An introduction to Statistical Methods, Vikas Pub. House, New Delhi.
2. Elhance, D.N. (1972): Fundamentals of Statistics, Kitab Mahal, Allahabad.
3. Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers (3rd Ed.), The Guilford Press.
4. King, L.J. (1991): Statistical Analysis in Geography. Prentice Hall, Englewood Cliff N.J.
5. Cole, J.P. & King, C.A.M. (1968): Quantitative Techniques in Geography. John Wiley & sons Inc.New York.
6. Gregory, S. (1978): Statistical Methods and the Geographer (4th Ed.), Wiley.
7. Hammond, R., and Mc Cullagh, P.S. (1978): Quantitative Techniques in Geography: An Introduction (2nd Ed.), Oxford University Press, USA.
8. Kothari, C.R. (1996): Research Methodology: Methods and Techniques, Vishwas Prakashan, New Delhi.
9. Mahmood, A. (1977): Statistical Methods in Geographical Studies, Rajesh Pub, New Delhi.
10. Mishra, R.P. (1991): Research Methodology in Geography, Concept Publising, New Delhi.

M.A Geography Second Year

Semester IV

GgC-401 POPULATION GEOGRAPHY (Core)

Marks: 100 (80+20)	**Credits: 04**	Periods: 60 hours
Semester Examination =80 Marks Internal Assessment =20Marks		Time: 3 hours

Learning Objective

1. This course introduces the spatial distribution of population with causative factor.
2. It also deals with various theories and concepts related with population
3. Study of population is an essential component in planning of various human related issues.
4. It also helpful in knowing various kinds of demographic problems.
5. Population Geography also deals in population policies in developed & developing countries

Learning Outcomes

After the completion of the course, Students will be able to

1. Understand the distribution of population.
2. Population distribution and its problems.
3. Population dynamics
4. Understand population policies & its importance.
5. Students aware about the population policies.

Unit-I	Population geography : Scope and objectives, development of Population Geography as a field of specialization-population geography and Demography-Sources of population data, their level of reliability and problems of mapping of population data.	20 Marks 15 Hrs
Unit-II	Population distribution : density and growth-Theoretical issues, Classical and modern theories in population distribution and growth, World patterns and their determinants, India-: Population distribution, density and growth profile, Concepts of under population and over population.	20 Marks 15 Hrs
Unit-III	Population composition age and sex, Literacy and education, Rural and urban, Urbanization, occupational structure, Population composition of India. Population dynamics; Measurement of fertility and mortality. Migration : National and international patterns, India's population dynamics.	20 Marks 15 Hrs
Unit-IV	Population and development : population-resource regions	20 Marks

	and levels of population and socio- economic development, population policies in developed and less development countries, Human development index and its components, India's population policies, population and environment, implication for the future.	15 Hrs

Suggested reading:

1) Bogue, D.J. (1969): Principles in Demography, John Wiley New York
2) Bose, Ashish et al (1974): Population in India;s Development (1947-2000) Vikas Publishing House New Delhi.
3) Census of India, India : A State Profile, 1991
4) Chandna R. C. (2000): Geography of population, Concept Determinants and Patterns, Kalyani Publishers, New Delhi.
5) Clark John (1973): Population Geography, Pergamum Press New York
6) Crook, Nigel (1977): Principles of population and development Pergamum Press New York
7) Mamoria C. B. (1981): India's Population Problems Kitab Mahal Delhi
8) Premi M. K. (1991): India population Heading towards a Billion Publishing Corporation
9) Shrinivasan K. (1998) Basin Demographic Techniques and application Sage Publication New Delhi.

GgC-402 GEOGRAPHY OF TOURISM (Core)

Marks: 100 (80+20)	**Credits: 04**	Periods: 60 hours
Semester Examination =80 Marks Internal Assessment =20Marks		Time: 3 hours

Course Objective

1. The Course aims at creating requisite perception of the readers on basics of world geography.
2. In a manner that they would readily understand the close inter-relationship prevailing between 'Geography and Tourism'.
3. The knowledge thus acquired will be considerably useful for them while starting their professional career.

Learning Outcomes

1. Know the importance of travel geography
2. Use the methods and procedures of calculating travel time
3. Identify the physical geography of Pacific region's destinations
4. Understand the existence and location of tourist spots
5. Explain the attractions and accessibilities of countries

Unit-I	Basics of Tourism: Definition of Tourism, Factors influencing tourism: Historical, Natural, Socio-Cultural and Economic. Motivating factors for pilgrimages: leisure, recreation, elements of tourism, tourism as an industry	20 Marks 15 Hrs
Unit-II	Geography of Tourism – its spatial affinity, areal land locational dimensions comprising physical, cultural, historical and economic; Tourism Types: Cultural, eco- ethno- coastal and adventure tourism, national and international tourism, globalization and tourism.	20 Marks 15 Hrs
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 detraction – agencies and intermediacies – Indian hotel industry.	20 Marks 15 Hrs
Unit-IV	Impacts of Tourism: Physical, economic and Social and perceptional 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.	20 Marks 15 Hrs

Suggested reading

1. Bhatia A. K., Tourism Development: Principles and Practices, Sterling Publishers, New Delhi, 1996.
2. C. Michell Hall, Tourism Planning, Policies and Relationship.
3. Milton, D., Geography of World Tourism, Prentice Hall New York, 1993.
4. Robinson, H. A., Geography of Tourism, Macdonald and Evans, London, 1996.
5. Shaw, G. and Williams, A. M. Critical Issues in Tourism – A Geographical Perspective, Oxford Blackwell, 1994.
6. Theobeld, W. (Ed.), Global Tourism: The Next Decade, Oxford, 1994.
7. Williams Stephen, Tourism Geography, Routledge, Contemporary Human Geography, London, 1998

GgE-403 REGIONAL PLANNING & DEVELOPMENT (Elective)

Marks: 100 (80+20)	**Credits: 04**	Periods: 60 hours
Semester Examination =80 Marks Internal Assessment =20Marks		Time: 3 hours

Course Objectives:

1. Understand the definition and concept of regional geography study about the principles and importance of Regional Geography.
2. Understand regional approach for the study regionalization and planning.
3. Understand theoretical structure of planning by central place theory, Growth pole Theory.
4 study about causes, effect of regional disparities and remedies on disparities.
5 student presentations on any one topic related to regional geography with issues and solutions.

Learning Outcomes

1. To acquaint the students with geography of our Nation.
2. To make the student aware of the magnitude of problems and Prospects at National level.
3. To help the students to understand the inter relationship between the subject and the society.
4. To help the students to understand the recent trends in regional studies.

Unit-I	Regional concepts in geography, conceptual and theoretical framework, merits and limitations for application to regional planning and development, changing concept of the region from an inter-disciplinary view-point, concepts of space, area and locational attributes. Types of regions : Formal and functional, uniform and nodal, single purpose and composite region, in the context of planning, regional hierarchy, special purpose regions.	20 Marks 15 Hrs
Unit-II	Physical regions, resources regions, regional divisions according to variation in levels of socio- economic development, Special purpose regions-river valley regions, metropolitan region, problem region-Hilly region, tribal region, regions of drought and floods.	20 Marks 15 Hrs
Unit-III	Approaching to delineation of different types of regions and their utility in planning. Planning Process-sectoral, temporal and spatial dimensions, short-term and long perspective of planning, Planning for the region's development and multi regional planning in a national context. Indicators of	20 Marks 15 Hrs

	development and their data sources. Measuring levels of regional development and disparities.	
Unit-IV	Concept of multi-level planning: decentralized planning : People participation in the planning process, Panchayat Raj system, role and relationship Panchayat raj, Institutions 9Village Panchayat, Panchayat Samitee and Zilla Parishad) and administrative Structure (Village, Block, District) regional development in India-Problems and prospect.	20 Marks 15 Hrs

Suggested Reading:

1. Alonso, W. & Friedmann, E. (1970): Regional Development and Planning, Longman, London.
2. Bhat, L.S. (1973): Regional Planning in India, Statistical Publishing Society, Kolkata.
3. Chand, M. and Puri, V. K. (2003): Regional Planning in India, Allied Publishers Pvt. Ltd., New Delhi 4. Chandana, R. C. (2000): Regional Planning: A Comprehensive Text, Kalyani Publishers, Ludhiana
5. Dube, K. N. (1990): Planning and Development in India, Asia Publishing House, New Delhi
6. Dubey, K.K. & Singh. M.B. (1988): PradeshikNiyojan, Tara Publication, Varanasi.
7. Friedmann, J. and Alanso, W. (1967): Regional Development and Planning: A Reader, MIT Press, New York
8. Ginsburg, N.S. (1959): The Regional Concept and Planning, Regional Planning UNO, New York.
9. Glassen, John (1978) : An Introduction to Regional Planning, Hutchinson, Educational, London.
10. Glasson, J. and Marshall, T. (2007): Regional Planning, Routledge, New York
11. Glikson, Arther (1985): Regional Planning and Development, London.
12. Govt. of India (1986): Regional Plan 2001: National Capital Region, NCRPB, Ministry of Urban Development, New Delhi
13. India Year Book (2014): Publication Division, New Delhi
14. Mishra, H. N. (2005): Regional Planning, Rawat Publication, Jaipur
15. Mishra, R. P. (2002): Regional Planning in India- Concept Publication, New Delh
16. Mishra, R.P. (1992): Regional Planning: Concepts, Techniques, Policies and Case Studies, Concept Pub., New Delhi.
17. Mishra, R.P. et. Al. (1987): Regional Development Planning in India : A New Strategy Vikas Pub., New Delhi.
18. Mishra, R.P. et.al. (1980): Multi Level Planning, Heritage Publishers
19. Ojha, R.N. (1987): PradeshikNiyojan, Kitabghar Acharya Nagar, Kanpur.
20. Sharma, N. (2012): PradeshikNiyojan Geography, DrishtikonPrakashan, New Delhi.
21. Singh, J. (1981): Central Places & Integrated Development in a Backward Economy, Gorakhpur. 22. Srivastava, V.K., Sharma N. & Chauhan, P.R. (2002): PradeshikNiyojanAvamSantulit Vikas, Vasundhara Prakashan, Gorakhpur.

GgE-404 **GEOGRAPHY OF RESOURCES** (Elective)		
Marks: 100 (80+20)	**Credits: 04**	Periods: 60 hours
Semester Examination =80 Marks Internal Assessment =20Marks		Time: 3 hours

Course Outcomes:

1. Understand concepts of different natural resources, its use, overuse, with its solution by natural resource management methods.
2. Appreciate the need for managing land and water resources for sustainable growth and development, managerial skills such as land evaluation and land classification.
3. Also, able to understand the causes and consequences of water stress and draw water conservation and management plans.

Course Objectives –

1. explain the types of natural resources that exist.
2. Study the role of government and different agencies in the natural resource management
3. Study the threat to the natural resources and the policies to solve it.

Unit-I	**Concept of Resources** Meaning, Definition, importance and classification of Resources, Appraisal of Natural Resources, Natural Resources Economics, History of Conservation, need for conservation and Management of Natural Resources –Role of Government and NGO Agencies, Resource Creating Factors. Environmental Risk- types, wildlife, forest risk and its impact on environment and its management.	20 Marks 15 Hrs
Unit-II	**Land Resources** Land Evaluation Methods, Land classification Methods, Land use and Land cover Mapping changes. Issue related to land use change – Land use and population, Land use pattern in the world. Land source at stress, land use planning and development. Soil erosion, soil degradation, methods of conservation.	20 Marks 15 Hrs
Unit-III	**Water Resources** Importance of water, Recent trends in water use in the world and in India, water crises, (stress) causes and consequences of water stress or crises, methods of water conservation, watershed management, coastal and ocean Resources management, Fisheries Management	20 Marks 15 Hrs
Unit-IV	**Minerals Resources** Types of minerals, classifications of Major Minerals, their distribution and production. Such as Petroleum, Coal, Iron ore, Bauxite and Copper etc, and its uses. Mineral exploration methods, Mining, and its effects on environment. Mineral's conservation and mining policy	20 Marks 15 Hrs

Suggested Reading:

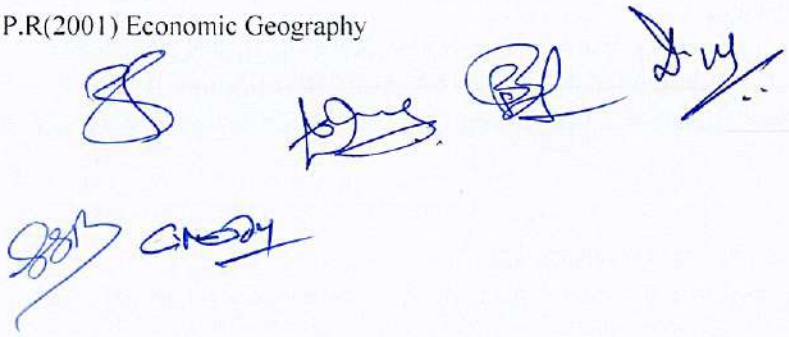
1.Dr.Alka Gautham: Geography of Resources: Exploitation, Conservation and Mangement, Sharada Pustak Bhavan, Allahabad.

2. Dr.P.S.Negi: Geography of Resources: Kedarnath Ramnath Publishers, New Delhi

3. Dr.Rajashekara Shetty(2009): An Analysis of World Resources with reference to India, Sarala Raj, Ria Publishers, Mysore

4. Khanna K.K and Gupta V.K.(1993): Economic and Commercial Geography, Sultan Chand, New Delhi 5. Prof. Zimmerwan – World Resources and Industries

6. Roy, P.R(2001) Economic Geography



GgE-405 **SOCIAL GEOGRAPHY (Elective)**		
Marks: 100 (80+20)	**Credits: 04**	Periods: 60 hours
Semester Examination =80 Marks Internal Assessment =20Marks		Time: 3 hours

Course Objectives:

1. To study and identify the philosophical base, problems associated with society & its culture.
2. To know about the culture, cultural regions, hearths and their diffusion, realms, and distribution of races.
3. To study and knowing of socio-cultural diversity of India, and processes of social changes.
4. To understand the social justice and well-being of society, to find out the level of well-being in India

Learning Outcomes

Social geography is concerned with the study of both the spatially uneven outcome of Social processes and the way in which Social processes are themselves affected by spatial structures

Unit-I	Nature and development of social geography, Philosophical bases of social geography-Positivist, Structuralist, radical, Humanist, Post-modern and post structuralist; social geography in the realms of social sciences.	20 Marks 15 Hrs
Unit-II	Space and Society, Understanding a society and its structure and process. Geographical bases of social formations, contribution of social theory, power relation and space.	20 Marks 15 Hrs
Unit-III	Towards social geography of India, Social differentiation and region formation, evolution of socio-cultural regions of India. Bases of social regions formation, role of race, caste, ethnicity, religion and language, India unity and diversity, Social transformation and change in India.	20 Marks 15 Hrs
Unit-IV	Social well-being : Concepts of social well-being. Physical quality of life, Human Development : Measurement of Human development with social, economic and environmental indicators, Rural urban deprivation in India with respect to health care : education and shelter; deprivation and discrimination issues relating to women and under privileged groups : patterns and bases of rural and urban society.	20 Marks 15 Hrs

Suggested Reading:

1.Ahmed, A. 1999. Social Geography, Rawat publications, Jaipur.
2. Ahmed, A. 1993. (ed) Social Structure and Regional Development: A Social Geography Perspective, Rawat Publications, Jaipur.
3. Singh, K.S. 1993. People of India Vol I to XI, Oxford University Press, New Delhi.
4. Raza, M. and Ahmed, A. 1990. An Atlas of Tribal India, Concept Publishing Co, Delhi.
5. Sopher, D. (ed.) 1980. An Exploration of India: Geographical Perspectives on Society and Culture, Cornell Press, New York.
6. Schwartzberg, J. 1978. A Historical Atlas of South Asia, University of Chicago Press, Chicago.
7. Crane Robert, I. 1973. Regions and Regionalism in South Asian Studies: An Exploratory Study, Duke University Durham.
8. Registrar General of India, 1972. Economic and Socio cultural Dimensions of Regionalization of India, Census Centenary Monograph No 7, New Delhi.
9. Pannikar, K.M. 1959. Geographical Factors in Indian History, Bharatiya Vidya Bhavan, Bombay.
10 Subba Rao, B. 1958. Personality of India, MS University Press, Baroda
11 De Blij. H.D. Human Geography. John Wiley and son, New York.
12 Dreze Jean, Amariya Sen,Economic Development and Social opportunity. Oxford University Press. New Delhi. 1996
13 Dubey. S.C : Indian Society. National Book Trust, New Delhi, 1991.
14. Gregory. D . and J. Larry (Eds.) Social. relations and spatial structures. MCMillan. 1985.
15. Haq. Mahbubul : Reflections on Human Development. Oxford University Press, New Delh6. .
16. Jones, Emrys, Reading in Social Geography, Oxford University Press, Ely House, London, 1977.
17. Jones, Emrys and John Eyles, An Introduction to Social Geography, Oxford University Press, London,1977.
18. Maioney. Clarence: People of South Asia, Winston, New York, 1974.
19. Planning Commission, Government of India: Report on Development of Tribal areas, 1981

GgE-406 **GEOGRAPHY OF WATER RESOURCES (Elective)**		
Marks: 100 (80+20)	**Credits: 04**	Periods: 60 hours
Semester Examination =80 Marks Internal Assessment =20Marks		Time: 3 hours

Learning Objective

1. Water scarcity is a global problem in the present century.
2. Knowledge of this natural resource is essential to meet the future demands.
3. This will make the students aware about the various problems relating to water resources.
4. Provide a broad background on the occurrence, use, management, and conservation of water and water resources at worldwide.

Learning Outcomes After the completion of the course, Students will be able to

1. They will learn some strategies of water resource management.
2. Various components of hydrologic cycle that affect the movement of water in the earth.
3. Various Stream flow measurements technique.
4. The concepts of movement of ground water beneath the earth

Unit-I	Water as a focus of geographical interest, inventory and distribution of world's water resources (surface and subsurface); Basic hydrological cycle and its components-precipitation, potential evapotranspiration, interception losses; runoff; Factors affecting water resources development – climatic factors, physiographic factors, geological factors.	20 Marks 15 Hrs
Unit-II	Water demand and use: methods of estimation — agricultural, industrial and municipal uses of water. Agricultural use of water: estimation of crop —water requirement; soil-water- crop relationships; water balance and drought; major and minor irrigation: methods of distribution of water to farms; water harvesting techniques, soil water conservation. Irrigation - water logging; salinity and alkalinity of soil - over exploitation of groundwater; land subsidence; saline water intrusion into the coastal aquifers; Water quality parameters; water pollution-river and ground water-fluoride and arsenic.	20 Marks 15 Hrs
Unit-III	Industrial use of water: methods of estimation; demand for	20 Marks

	water in the industrial sector of India. Municipal use of water: general trends in water supply to the urban and rural communities in India, Internal navigation, hydel power and recreation.	15 Hrs
Unit-IV	Problems of water resource management; Floods - magnitude/frequency, structural and nonstructural adjustment of flood hazards; embankments, reservoirs, channel improvement, soil conservation, afforestation, flood forecasting, evacuation, floodplains; land use regulation and insurance. Case studies of major floods. Droughts - occurrence, major drought management. Conservation and planning for the development of water resources-social and institutional considerations; integrated basin planning; conjunctive use of surface and groundwater resources; watershed management; international and inter-state river water disputes and treaties; some case studies.	20 Marks 15 Hrs

Recommended Readings:

1. Agarwal, Anil and Narain, Sunita (1997), Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting System. Centre for Science and Environment, New Delhi.
2. Andrew A. Dzurik, (2002), Water Resources Planning, Rowman & Littlefield Publishers, Inc., Savage, Maryland.
3. Cech, T.V. (2005), Principles of Water Resources : History, Development, Management and Policy, John Wiley & Sons, Hoboken.
4. Chorley, R.J. (1979), Water, Earth and Man, Methuen, London.
5. Daniel P. Loucks and Beek, E.V. (2005), Water Resources Systems Planning and Management : An introduction to Methods, Models and Applications, UNESCO Publishing.
6. Dingman, S.L. (2002), Physical Hydrology, Prentice-Hall Inc., New Jersey.
7. Economic and Social Commission for Asia and the Pacific (1989), United Nations' Guidelines for the Preparation of National Master Water Plans.
8. Govt. of India, Ministry of Agriculture (1972), Report of the Irrigation Commission, Vols. I to IV, New Delhi.
9. Govt. of India, Ministry of Energy and Irrigation (1980), Rashtriya Barh Ayog ReportNational Commission on Floods. Vols. I & II, New Delhi.
10. Gulhati, N.D. (1972), Development of Inter-State Rivers: Law and Practice in India, Allied Publisher, Bombay.
11. International Water Resource Association and Central Board of Irrigation & Power (1975), Water for Human Needs, Vols. I to V, Proceedings of the Second World Congress on Water Resources, 12-16 December, New Delhi.

12. Jones, J.A. (1997), Global Hydrology: Processes, Resources and Environmental Management, Longman.
13. Kates, R.W. and Burton, I. (ed.) (1980), Geography, Resources and Environment, Ottowa.
14. Krutilla, John V. and Eckstein, O. (1958), Multiple Purpose River Development: Studies in Applied Economic Analysis, John Hopkin's Press, Boston.
15. Law, B.C. (ed.) (1968), Mountains and Rivers of India, IGU National Committee for Geography, Calcutta.
16. Matter, J.R. (1984), Water Resources Distribution, Use and Management, John Wiley, Marylane.
17. Michael. A.M. (1978), Irrigation: Theory and Practices, Vikas Publishing House Pvt. Ltd., New Delhi.
18. Neil S. Grigg (1996), Water Resources Management, McGraw-Hill Book Co., New York.
19. Newson, M. (1992), Land, Water and Development: River Basin Systems and their Sustainable Management, Routledge, London.
20. Pereira, H.C. (1973), Land Use and Water Resources, Cambridge University Press, Cambridge.
21. Rao, K.L. (1979), India's Water Wealth, Orient Longman, New Delhi.
22. Singh, R.A. and Singh, S.R. (1979), Water Management: Principles and Practices, Tara Publication, Varanasi.
23. Smith, K. (1972), Water in Britain : A Study in Applied Hydrology and Resource Geography, McMillan, London.
24. Tebbutt, T.H.Y. (ed.) (1985), Advances in Water Engineering, Elsevier Applied Science Pub., London.
25. Tideman, E.M. (1996), Watershed Management: Guidelines for Indian Conditions, Omega, New Delhi. 26. Todd, D.K. (1959), Ground Water Hydrology, John Wiley, New York.
27. U.S.D.A. (1955), The Year Book of Agriculture: Water, Oxford and I.B.H. Publishing Co., New Delhi.
28. Verghese, B.G. (1990), Water of Hope: Integrated Water Resource Development and Regional Co-operation within the Himalayan-Ganga-Brahmaputra-Barak Basin, Oxford & IBH, New Delhi
29. White, G.F.L. (1977), Environmental Effects of Complex River Development, Westriver Press, Boulder, Colorado.

GgP-401 PRACTICAL-VII

1. Visit to a field on some aspects of M.A. Part-II theory paper and writing of a field work report

Leaning Objectives:

The Objective of the course is to provide an opportunity to the students with the understanding of ground reality of a specific chosen Geographical area by observation, and learn field survey techniques. **Learning Outcomes:**

Students would be able to understand the basic socio-economic characteristics of the chosen area through the field methods/ techniques and build the capability of writing a report.

Unit-I	**Field Work in Geographical studies-** Role, Value and Ethics; Field techniques- Merits and Demerits; Source of Data- Primary and Secondary; Collection of data: methods of primary data collection- Observation method, interview method, through questionnaire, through schedule and other methods; Questionnaire and Schedule; Processing and analysis of data.	25 Marks
Unit II	**Field Work and Report writing:** Identification of research problem; data collection through field visit; Preparing research design- aims and objectives, methodology, analysis, interpretation and writing of report.	40 Marks

Note-1:

1. The students shall conduct physical/socio-economic survey in the area as decided by the department (within or out of state) under the supervision of a faculty member (s) of the department.

2. A group of 10 students will prepare a report based on primary and secondary data collected during field work. One teacher and one Non-Teaching staff should be allotted for 10 students batch.

3. The duration of the field work should not exceed ten days.

4. One copy of the report on A-4 size paper should be submitted in Hard binding

Plan of Practical Examination

(A) Collection of data & data Processing and Tabulation	(25 Marks)
(B) Writing of Project Report	(40 Marks)
2. **Viva Voce**	(15 Marks)

Internal Assessment Marks:

Pre Viva Seminar Presentation	(20 Marks)

Note- The batch of Practical Class should not be exceeding 10 (Ten) Students.

Semester-IV

GgP-402 **PAPER VII (4.P-2)**

Practical Marks: 80 **Time- 4 hours**

Internal Assessment Marks: 20

PRACTICAL-VIII

1. Writing of at least one short research paper based on theory of the syllabus.

(A) Collection of data	(10 marks)
(B) Data Processing and Tabulation	(15 Marks)
(C) Writing on Short Research Paper	(40 Marks)
D) Viva Voce	(15 Marks)

Internal Assessment Marks:

Pre Viva Seminar Presentation	(20 Marks)

Note- The batch of Practical Class should not be exceeding 10 (Ten) Students.