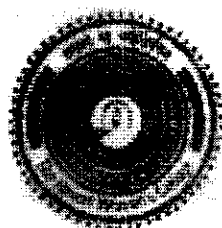


RANCHI WOMEN'S COLLEGE

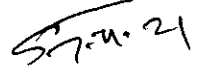
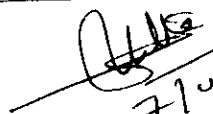
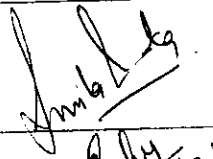
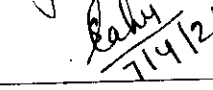

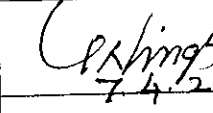
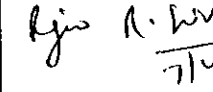
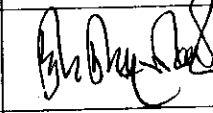
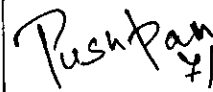
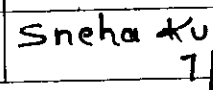
DEPARTMENT OF GEOGRAPHY
POST-GRADUATE PROGRAMME
SESSION-2022-2023



Syllabus Offered Under
Choice Based Credit System (CBCS)

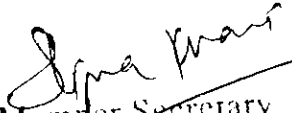
Meeting of Board of Studies
M.A Department of Geography

A meeting of Board of Studies of Geography was held in the Post Graduate Department of Geography, Ranchi University, Ranchi on 07.04.2021 Wednesday at 11.00 am to formulate and finalise the syllabus for the newly proposed Post-graduate Course, under the Choice Based Credit System. The following members were present and the syllabus was approved unanimously. The M.A Programme in Geography has been proposed to start from Session 2020-2022, 2022-2023

Members	Name	Designation	Signature
Head of Department	1. Dr. Mrs. Shashi Kanta Toppo	Assistant Professor (Ranchi Women's College)	 7.4.21
Faculty, Department of Geography	1. Mis Mary Shalini Pushpa Kerketta	Associate Professor (Ranchi Women's College)	 7/4/2021
	2. Dr. Mrs. Smita Linda	Assistant Professor (Ranchi Women's College)	 (in absentia)
	3. Dr. Mrs. Surbhi Shahu	Assistant Professor (Ranchi Women's College)	 7/4/21
	4. Mrs. Archana Kumari	Assistant Professor (Ranchi Women's College) Guest Faculty	 7/4/21
University Nominee	1. Dr. Gyan Singh	Associate Professor (P.G. Department Geography)	 7.4.2021
College Nominee	1. Dr. Rajiv Ranjan Srivastava	Associate Professor (St. Xavier's College)	 7/4/21
P.G Head Department of Geography	1. Dr. Ram Kumar Tiwary	University Professor (P.G. Department Geography)	 7/4/21
Meritorious Students	1. Kumari Pushpam	1. U.G. Topper (2017-2020)	 7/4/21
	2. Sneha	2. U.G. Topper (2017-2020)	 7/4/21

Dr. SHASHI KANTA TOPPO

Head
Department of Geography


Member Secretary
Academic Council
Ranchi Women's College


CHAIRPERSON
ACADEMIC COUNCIL
RANCHI WOMEN'S COLLEGE

COURSE STRUCTURE FOR M.A. (GEOGRAPHY) UNDER CHOICE BASED CREDIT SYSTEM PROGRAMME

SEMESTER I

PAPER CODE	PAPER TITLE	TYPE	INSTRUCTION HOUR PER WEEK	DURATION OF EXAM	MID SEM	END SEM	TOTAL MARKS	CREDITS
FCGEOG101	DEVELOPMENT OF GEOGRAPHICAL THOUGHT	EC-1	5L+1T	3	30	70	100	3
CCGEOG102	GEOMORPHOLOGY	CC-1	5L+1T	3	30	70	100	5
CCGEOG103	CLIMATOLOGY	CC-2	5L+1T	3	30	70	100	5
CCGEOG104	PRACTICAL	CC-P3	10P	6			100	5
	TOTAL						400	20

SEMESTER II

PAPER CODE	PAPER TITLE	TYPE	INSTRUCTION HOUR PER WEEK	DURATION OF EXAM	MID SEM	END SEM	TOTAL	CREDITS
ECGEOG201.1	ELECTIVE (SE) EC-1 (ANY ONE) 1. AGRICULTURE GEOGRAPHY	EC-1	5L+1T	3	30	70	100	5
ECGEOG201.2	2. SETTLEMENT GEOGRAPHY							
ECGEOG201.3	3. TOURISM GEOGRAPHY							
CCGEOG202	OCEANOGRAPHY	CC-4	5L+1T	3	30	70	100	5
CCGEOG203	POPULATION GEOGRAPHY	CC-5	5L+1T	3	30	70	100	5
CCGEOG204	PRACTICAL (INSTRUMENTAL SURVEY)	CC-P6	10P	6			100	5
	TOTAL						400	20

SEMESTER III

PAPER CODE	PAPER TITLE	TYPE	INSTRUCTION HOUR PER WEEK	DURATION OF EXAM	MID SEM	END SEM	TOTAL	CREDITS
CCGEOG301	GEOGRAPHY OF INDIA	CC-7	5L+1T	3	30	70	100	3
CCGEOG302	ECONOMIC GEOGRAPHY	CC-8	5L+1T	3	30	70	100	3
	ELECTIVE (GE/DC) EC-2 (ANY ONE)	EC-2	5L+1T	3	30	70	100	3
ECGEOG303.1	1. HYDROLOGY AND WATER RESOURCE							
ECGEOG303.2	2. REGIONAL PLANNING & DEVELOPMENT							
ECGEOG303.3	3. ENVIRONMENTAL GEOGRAPHY							
ECGEOG304	PRACTICAL (PHYSICAL SURVEY)	CC-P9	10P				100	5
	TOTAL						400	20

SEMESTER IV

PAPER CODE	PAPER TITLE	TYPE	INSTRUCTION HOUR PER WEEK	DURATION OF EXAM	MID SEM	END SEM	TOTAL	CREDITS
CCGEOG401	GEOGRAPHY OF JHARKHAND	CC-9	5L+1T	3	30	70	100	3
ECGEOG402.1	ELECTIVE (GE/DC) EC-4 (ANY ONE) 1. SOIL GEOGRAPHY	EC-4	5L+1T	3	30	70	100	3
ECGEOG402.2	2. URBAN GEOGRAPHY							
ECGEOG402.3	3. REMOTE SENSING & GIS / GPS							
ECGEOG403.1	1. SOIL GEOGRAPHY							
ECGEOG403.2	2. URBAN GEOG. REG. PLANNING -P	EC-P5	10P	3	30	70	100	3
ECGEOG403.3	3. REMOTE SENSING & GIS / GPS -P							
GEOG404	DISSERTATION						100	5
	TOTAL						400	20

Evolution of Geographical Thought

Learning Outcome:

After the completion of course, the students will have ability to:

1. Distinguish the paradigms in geography discipline through time
2. Understand the geographical thinking in different regions of world
3. Appreciate the past and future trends of world geography in general and Indian

geography in particular

Semester-I

ECGEOG181-DEVELOPMENT OF GEOGRAPHICAL THOUGHT: Credits-5

Four questions to be answered out of eight questions (two from each unit)

Full marks:- 100 (Internal Assessment/Mid Semester: 30 + End Semester Exam: 70)

Four Marks-40

Time allotted:- 3 hrs

Unit 1:

The Field of Geography: Definition and Meaning of Geography, Nature and Scope of Geography, Geography as Social and Natural Science, Limits in Geography, Traditions in Geography, Inter-Disciplinary and Intra-Disciplinary approaches in Geography.

Unit 2:

Pioneers and their Contributions to Geography: Ancient period-Greek, Romans, Indians and Chinese, Medieval Period-Arab and Geographical Discoveries, Modern Period-French, British, American and Russian.

Unit 3:

Determinism, Possibilism, Neo-Determinism and Social Determinism, Quantitative Revolution, Geographical Models-their features, types and classification, Geographical Paradigms.

Unit 4:

Explanation in Geography-Cognitive, Cause and Effect, Temporal and Functional, System Analysis and Regional Concepts, Modern Themes in Geographical Thought-Positivism, Existentialism, Realism Radicalism, Behaviouralism.

References

1. Bhaskar, R (1978) *A Realist Theory of Science*, Hassocks, Sussex
2. Bhaskar, R (1989) *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*, London, Verso.
3. Bunge, W (1966) *Theoretical Geography*, 2nd Edn. Lund Studies in Geography Series C, no.1, Lund: C.W.K. Gleerup
4. Buttimer, A and D-Seamon (eds) (1980): *The Human Experience of Space and Place*, London, Croomhelm
5. Castells, M (1978) *City, Class and Power*, New York, St. Martins Press
7. Castree, R., A. Rogers and D. Sherman (2005) *Questioning Geography. Fundamental Debates*, Oxford:Blackwell.
8. Clifford, N.J. (2002) *The Future of Geography: when the whole is less than the sum of its parts*, *Geoforum*, Vol 33 431-436.
9. Cloke, Philo and Sadler
10. Haggett, P and A.D Cliff and A Frey (1977) *Locational Analysis in Human Geography*, London: Arnold
11. Hartshorne R (1939) *The Nature of Geography*, Association of American Geographers.
12. Harvey, D (1969) *Explanation in Geography*, London:Arnold.
13. Harvey, D (1973) *Social Justice and the City*, Baltimore, John Hopkins University, Baltimore
14. Holt- Jensen Arild (1999). *Geography -History and Concepts*, Sage Publications, London, Thousand Oaks, Delhi

Geomorphology

After the completion of course, the students will have ability to:

1. Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms
2. Distinguish between the mechanisms that control these processes
3. Assess the roles of structure, stage and time in shaping the landforms, interpret geomorphological maps and apply the knowledge in geographical research.

Semester-I

CCGEOG102-GEOMORPHOLOGY: Credits-5

Four questions to be answered out of eight questions (two from each unit)

Full marks= 100 (Internal Assessment/Mid Semester: 30 + End Semester Exam: 70)

Pass Marks-43

Time allotted= 3 hrs

Unit 1:

Geomorphology: Definition and Scope of Geomorphology, Fundamental Concepts-Geological Structure and land forms, Uniformitarian, Multi- Cyclic and Poly Cyclic Evolution of Landforms, Theories of Landscape Development.

Unit 2:

Earth Movements: Orogenic, Epeirogenic Movements and Resultant Landforms, Forces of Instability, Isostasy, Plate Tectonics, Seismicity, Volcanicity, Orogenic Structures with reference to evolution of Himalayas.

Unit 3:

Exogenic Processes: Concept of Gradation, Agents and Processes of Gradation, Process of Weathering and Mass Wasting, Landforms produced by-Drainage System and Drainage Patterns, Slope Evolution.

Unit 4:

Geomorphic Processes: Dynamics of Aeolian, Marine, Glacial, Coastal Processes and Resulting Landforms, Recent Trends in Geomorphology, Applied Geomorphology, Urban Geomorphology, Geomorphic Hazards.

References

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, Ed.,
4. Macmillan Publishing Company
5. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
6. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
7. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
8. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
9. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to
10. physical Geology, 4th Edition, John Wiley and Sons
11. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.
12. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut
13. Tikka, R N (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
14. Singh, S (2009): Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad

Climatology

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Understand the elements of weather and climate and its impacts at different scales.
2. Comprehend the climatic aspects and its bearing on planet earth.

Semester-I

CCGEOG103-CLIMATOLOGY: Credits-5

Four questions to be answered out of eight questions (two from each unit)

Full marks= 100 (Internal Assessment/End Semester: 30 + End Semester Exam: 70)

Pass Marks=45

Time allotted= 3 hrs

Unit 1:

Definitions, Nature and Scope of Climatology, Elements of Weather and Climate, Origin, Composition and Structure of Atmosphere, Temperature: Solar Radiation Principles, Green House Effects, Horizontal and Vertical Distribution of Temperature and Inversion of Temperature, Global Warming.

Unit 2:

Atmospheric Pressure: Pressure Gradient, Coriolis Effect, Horizontal and Vertical Distribution of Air Pressure and Pressure Belts, Winds, Planetary Winds, Monsoons, Local Winds, Jet Streams, Mechanism of Monsoon, Humidity and Precipitation, El-Nino and La Nina Phenomena, El-Nino-Southern Oscillation (ENSO)

Unit 3:

Air Masses-Definition, Nature, Source Region, Classification of Air Masses, Fronts-Frontogenesis and Frontolysis, Classification of Fronts, Cyclones- Tropical Cyclones and Temperate Cyclones-Origin Types, Structure and Distribution.

Unit 4:

Classification of World Climates: Koppen's and Thornthwaite Classification, Climatic Changes, Weather Forecasting, Problems and Prospects of Weather Forecasting, Problems and Prospects of Weather Forecasting in India.

References

1. Barry R. G. and Chorlton A. M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.
2. Barry R. G. and Corley R. J., 1998: Atmosphere, Weather and Climate, Routledge, New York.
3. Critchfield H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi
4. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J. B. and Hidore J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi.
6. Trewartha G. T. and Horn E. H., 1980: An Introduction to Climate, McGraw-Hill,
7. Gupta L. S (2000): Jalvayu Vigyan, Hindi Madhyam Karyanvay Nidishalya, Delhi VishwaVidhyalaya, Delhi
8. Lal, D S (2006): Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad
9. Vatal, M (1986): Bhaatik Bhugol, Central Book Depot, Allahabad
10. Singh, S (2009): Jalvayu Vigyan, Prayag Pustak Bhawan, Allahabad

Thematic Atlas

After the completion of course, the students will have ability to:

1. Have sound knowledge regarding the classification and elements of maps.
2. Have proper utilization of maps for the development.
3. Appreciate the preparation of various thematic maps with the application of various techniques.

Semester-I **CCGEOG104-PRACTICAL: Credits-5**

Four questions to be answered from each unit

Full marks= 100 (End Semester Exam: 80 + Record & Viva: 20)

Pass Marks-10

Time allotted= 6 hrs

Unit 1:

Map Projections: Sinusoidal Projection (Simple), Mollweide's Projection (interrupted), Globular Projection, Cylindrical Projection (Polar, Equatorial and Oblique).

20 Marks

Unit 2:

Geologic Maps: Construction of Sections and Interpretation, Identification of rocks and Minerals.

20 Marks

Unit 3:

Triangular Graph Poly Linear Graph, Scattered Diagram, Lorenz Curve Divided Rectangular Diagram.

20 Marks

Unit 4:

Profiles: Serial, Superimposed Projected and Composite, Slope Analysis (Wentworth's Method), Stream Ordering.

20 Marks

**Practical Record
Marks**

10

**Viva-Voce
Marks**

10

References

1. Monkhouse FJ and Wilkinson HR (1952) Maps and Diagrams, their Compilations and Concentration, Mulluen & Co, London.
2. Harwit JD, Newson MD. (1973)- Techniques in Physical Geography, Mc. Millan Edu. Ltd. London.
3. Mishra RP. And Ramesh A (1968) - Fundamentals of Cartography, Prasaranga. University of Mysore, Mysore.
4. Robinson & Marison (1995). Elements of Cartography USA.
5. R.L. Singh (2010) Practical Geography. Sharada Pustak Bhavan. 11, University Road. Allahabad, UP

Agriculture and Food Security

Learning Outcome:

After the completion of course, the students will have ability to:

1. Conceptualise the agriculture and its determinants.
2. Get the overview of Indian and World agriculture regions and systems.
3. Have sound knowledge of agriculture revolutions and food security

Semester-II

Elective Skill Enhancement

(One Paper to be opted)

ECGEOG201.1-AGRICULTURE GEOGRAPHY: Credits-5

Four questions to be answered out of eight questions (two from each unit)

Full marker- 100 (Internal Assessment/Mid Semester: 30 + End Semester Exam: 70)

Pass Marks-45

Time allowed- 3 hrs

Unit 1:

Nature and Scope, Significance and Development of Agricultural Geography. Approaches to the Study of Agricultural Geography, Origin and Dispersal of Agriculture, Sources of Agricultural Data.

Unit 2:

Determinants of Agricultural Land Use-Physical, Economic, Social and Technological, Land Holding and Land tenure Systems, Land Reforms, Land Use Policy and Planning, Cropping Pattern, Intensity of Cropping.

Unit 3:

Theories of Location Based on Several Multi-Dimensional Factors, Von Thunen's Model and its Recent Modifications, Whittlesey's Classification of Agricultural Regions, Agro-Climatic Regions of India.

Unit 4:

Agriculture in India-Land Use and Shifting Cropping Pattern, New Trends in Indian Agriculture, Green Revolution, White Revolution, Blue Revolution, Problems of Indian Agriculture, Agricultural Policy of India.

References

1. Atkin's, P., and Bowler, L., 2001: Food in Society - Economy, Culture and Geography, Oxford University Press, Oxford.
2. Basu, D.N., and Guha, G.S., 1996: Agro-Climatic Regional Planning in India, Vol.I & II, Concept Publication, New Delhi.
3. Butler, N. and Hoggart, K., (eds.) 2001: Agricultural Transformation, Food and Environment, Vol. I, Ashgate Publishing Company, Burlington.
4. Burger, A., 1994: Agriculture of the World, Aldershot, Avebury.
5. Bryant, C.R., Johnston, T.R., 1992: Agriculture in the City Countryside, Belhaven Press, London.
6. O'Griff, D.B., 1984: Introduction to Agricultural Geography, Hutchinson, London.
7. Grossman, D., VanDen Berg, L.M., and Ajaegbu, H., 1999 : Urban and Peri-Urban Agriculture in Africa, Ashgate, Publishing Company, Brookfield.
8. Hbery, B.W., (ed.) 1998: Geography of Rural Change, Addison Wesley Longman, London.
9. Mohammd, N., 1992: New Dimension in Agriculture Geography, Vol. I to VIII, Concept Pub., New Delhi.
10. Obasi-Mensah, K., 1999: Food Production in Urban Areas: A Study of Urban Agriculture in
11. Accra, Ghana, Ashgate publishing Co., Brookfield.
12. Roling, N.G., and Wagerufers, M.A.E., (ed.) 1998 : Facilitating Sustainable Agriculture,
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14. Singh, J., and Dhillon, S.S., 1994: Agricultural Geography, Tata McGraw Hill, New Delhi.
15. Srivastava, H.C.(ed.) 1993 : Biotechnological Applications for Food Security in Developing
16. Countries, Oxford & IBH Publishing Company, New Delhi

Urbanization and Urban System

Learning Outcome:

After the completion of course, the students will have ability to:

1. Understand the fundamentals and patterns of urbanization process
2. Learn the functional classification of cities and Central Place Theory
3. Know contemporary problems of Delhi, Mumbai, Kolkata and Chennai

ECGEOG301.2: SETTLEMENT GEOGRAPHY: Credits-3

Four questions to be answered out of eight questions (two from each unit)

Full marks = 100 (Internal Assessment/Mid Semester: 30 + End Semester Exam: 70)

Pass Marks-45

Time allotted= 3 hrs

Unit 1:

General Introduction, Evolution and Distribution of Settlements: Nature, Scope Significance and Recent Trends in Settlement Geography, Evolution of Settlements in India: Emergence of Village Settlements Origin and Growth of Towns; Basic and Non-Basic Concepts in Settlement Formation, Distribution of Settlements, Spacing of Settlements-Application of Models of Christaller and Losch.

Unit 2:

The Functional Classification of Settlements: Rural and Urban Settlements. Rural Settlements-Types of Rural Settlements, House Types, Morphology and Functions of Rural Settlements. Rural Service Centers and Their Role in Urbanisation Process. India Rural Settlements in different Micro-Environmental Conditions: a) Mountains b) Desert Region c) In the Vicinity of Urban Centers.

Unit 3:

Urban Settlements-Classification of Urban Places: Non-Functional and Functional Morphology of Indian Cities and its Comparison with Western Cities; Functional Relations between Urban Settlements and their Umlands.

Unit 4:

Theories in Settlement Geography-CBD, Centrifugal and Centripetal forces of Theory, Urban Fringe, Urban Structures Theories Rank Size Relationship, Settlement Geography of Selected Indian Cities: Mumbai, Kolkata, Delhi, Chennai, Ranchi, Jamshedpur and Dhanbad

References

1. Beaujeu-Garnier J. and Chabot G. (1967): Urban Geography, Longman.
2. Christaller W. (1933): Central Places in Southern Germany, Prentice-Hall International. (in German)
3. Dickinson R. E. (1964): City and Region, Routledge and Kegan Paul.
4. Geddes P. (1949): Cities in Evolution, Benn.
5. Gottman J. (1961): Megalopolis, Twentieth Century Fund, New York.
6. Hudson F. S. (1970): A Geography of Settlements, Macdonald & Evans, London.
7. Johnson J. H. (1967): Urban Geography, Pergamon.
8. Mayer H. M. and Kohn C. F. (1959): Readings in Urban Geography, University of Chicago.
9. Smailes A. E. (1953): The Geography of Towns, Hutchinson.
10. Taylor Griffith (1949): Urban Geography, Methuen.

Geography of Tourism and Pilgrimage

Learning Outcome:

After the completion of course, the students will have ability to:

1. Equip with a basic understanding of nature and scope, trends and patterns of various types of tourisms.
2. Have sound knowledge on geographical, environmental and socio-cultural aspects of tourism in India.
3. Apply the principles of Geo-tourism and analyse the prospects and problems associated with pilgrimage tourism.

ECGEOG201.3-TOURISM GEOGRAPHY: Credits-5

Four questions to be answered out of eight questions (two from each unit)

Full marks= 100 (Internal Assessment/Mid Semester: 30 + End Semester Exam: 70)

Pass Marks-45

Time allotted= 3 hrs

Unit 1:

Definition, Nature, Scope and Extent, Concepts of Tourism, Importance of Tourism, Relation between Geography and Tourism, Ecotourism, Agro-Tourism, Heritage Tourism and Adventure Tourism.

Unit 2:

Types of Tourism-Domestic and International Tourism, Adventure, Wildlife, Medical, Pilgrimage, Business, Leisure, Pleasure and Cultural Tourism, Tourist Types-Local, National and International, Economic and Socio-Cultural Impact of Tourism.

Unit 3:

Infrastructural Approach for Development of Tourism-Mode of Transportation, Govt. Agencies, Guides, License, Hotels, Resorts Youth Hostels, Home-Stays, Government Policies for Planning and Promotion of Tourism in India, Prospects and Planning of Tourism in Jharkhand.

Unit 4:

Case Studies-Hill Station-Mount Abu, Shimla Ooty, Beach Points-Kovalam, Goa and Marina Beach, Historical Centres-Mysore, Jaipur and Agra, Religious Centers-Puri, Shirdi and Tirupathi, Dams-Sardar Sarovar, Bhakra Nangal and Masanjore Dam National Parks-Gir National Park, Palamu Tiger Reserve, Betla, Nandan Kanan National Park, Bhubaneswar.

References

1. Cooper, Fletcher et al, (1993). Tourism Principles and Practices, Pitman.
2. Burkart and Medlik, (1981). Tourism: Past, Present and Future, Heinemann, ELBS.
3. Dixit, M. Tourism Geography and Trends, Royal Publication
4. Hall, CM and Page, SJ. The Geography of Tourism and Recreation, Routledge
5. International Atlas, Penguin Publication and DK Publications.
6. Mill and Morrison, (1992). The Tourism System: An Introductory Text, Prentice Hall.
7. Mill, R.C., (1990). Tourism: The International Business, Prentice Hall, New Jersey.
8. Sethi, P.N., (1999) Successful Tourism Management (Vol I &2)
9. Sinha, P.C. Tourism Geography, Anmol Publication

Oceanography

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Understand the oceanic process and availability of resources.

Semester-II **CODEOC-11 OCEANOGRAPHY Credit-5**

Four questions to be answered out of eight questions (two from each unit)

Full marks- 100 (Internal Assessment/ Mid Semester: 40 + End Semester Exam: 60)

Four Marks-40

Three Marks- 30

Unit-1:

Nature and Scope of Oceanography, Configuration of Ocean Floor-Continental Shelf, Slope, Ocean Floor and Ocean Depth, Physical and Chemical Properties of Ocean Water: Composition, Temperature and Salinity

Unit-2:

Surface Currents, Waves and Tides, Marine Biological Environment, Biomes, Types of Organisms, Plankton, Nekton and Benthos, Food and Mineral Resources of Sea.

Unit-3:

Major Marine Environment: Coastal, Estuaries, Deltas, Coastal Ecology-Coastal Dunes and Mangroves.

Unit-4:

Ocean Deposits: Types and Distribution, Coral Reefs: Origin, Types and Theories of Origin of Coral Reefs (Darwin, Dally and Murray), Impact of Humans on Marine Environment, Recent Trends in Oceanography.

References:

1. Andrew, D. Ward and Stanley, Trimble (2004): **Environmental Hydrology**, 2nd edition, Lewis Publishers, CPC Press.
2. Karanth, K.R., 1988 : **Ground Water: Exploration, Assessment and Development**, Tata- McGraw Hill, New Delhi.
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4. Rao, K.L., 1982 : **India's Water Wealth** 2nd edition, Orient Longman, Delhi.
5. Singh, Vijay P. (1995): **Environmental Hydrology**. Kluwer Academic Publications, The Netherlands
6. Anikouchine W. A. and Sternberg R. W., 1975: **The World Oceans: An Introduction to Oceanography**, Prentice-Hall.
7. Garrison T., 1998: **Oceanography**, Worthworth Company, Belmont.
8. Kershaw S., 2000: **Oceanography: An Earth Science Perspective**, Stanley Thornes, UK.
9. Pinet P. R., 2008: **Invitation to Oceanography (Fifth Edition)**, Jones and Bartlett Publishers, USA, UK and Canada.
10. Sharma R. C. and Vatal M., 1980: **Oceanography for Geographers**, Chaitanya Publishing House, Allahabad.
11. Sverdrup K. A. and Armbrust, E. V., 2008: **An Introduction to the World Ocean**, McGraw Hill, Boston.
12. Singh, M., Singh, R.B. and Hassan, M.L (Eds.) (2014) **Landscapes ecology and water management**. Proceedings of IGU Habitat Conference, Volume 2. **Advances in Geographical and Environmental Studies**, Springer

Demography and Population Studies

Learning Outcome:

After the completion of course, the students will have ability to:

1. Learn the role of demography and population studies as a distinct fields of human geography
2. Have sound knowledge of key concept, different components of population along with its drivers
3. Examine population dynamics and characteristic with contemporary issues

CCGE001- POPULATION GEOGRAPHY: Credits-6

Four questions to be answered out of eight questions (two from each unit)

Full marks- 100 (Internal Assessment-50 Semester: 30 + End Semester Exam: 70)

Pass Marks-45

Time allotted- 3 hrs

Unit 1:

Name and Scope of Population Geography, Population Geography and Demography, Sources of Population Data, Distribution and Density of Population, Distribution and its Pattern in the World, Factors Influencing Distribution of Population in the World.

Unit 2:

Concept of Population Composition, Population Change: Growth of Population in the World and India, Components of Population Change-Fertility, Mortality and Migration, Determinants of Fertility and Mortality, Demographic Transition Theory.

Unit 3:

Migration-Meaning and Types, Causes and Consequences, Theories of Migration-Ravenstein and Lee

Unit 4:

Population and Resources, Optimum Population, Population Resource Regions, Malthus Population Theory, Population Policy of India.

References

1. Bandarage, Asoka. (1998) Women, Population and Global Crises: A Political Economic Analysis, Zed Books, London.
2. Cadwell, John. (1982) Theory of Fertility Decline, Academic Press, New York.
3. Crook, Nigel. (1997) Principles of Population and Development, Oxford University Press, Oxford.
4. Davis, Kingsley. (1949) Human Society, Macmillan Co, New York.
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6. Ehrlich and Ehrlich. (1990) The Population Explosion, Simon and Schuster, New York.
7. Guillemot, C.E and Allan Vagnet. (2000) Essays on Population and Space in India, Institut de Pondichery, Pondichery.
8. Herdt, Gilbert and Shirley Lindenbaum. (1992) Eds The Time of AIDS: Social Analysis, Theory and Method, Sage Publications, Newbury Park C.A.
9. Johnson, Stanley, P. (1994) World Population- Turning the Tide- Three Decades of Progress, Kluwer Academic Publishers Group.
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11. Parrot, H.R., (1997) Population Geography, Oxford and Boyd, Oxford.
12. Preston, Samuel. et al. (2001) Demography, Blackwell publishers Inc, Massachusetts, USA.
13. Rao, Mohan. (2004) From Population Control to Reproductive Health- the Malthusian Arithmetic.
14. Ramachandran, G and M. Prasad Rao. (2004) Census 2001 and Human Development in India, Serials Publication, New Delhi.
15. Siegal, Jacob, S. (2002) Applied Demography, Academic Press, New York.

Field Techniques, Surveying and Research Methods (Practical)

Learning Outcome:

After the completion of course, the students will have ability to:

1. Conduct proper field work for the collection of primary data to bring out grassroots realities.
2. Make use of proper tools and surveying methods for measurement in context of collection and processing of data.
3. Prepare a report based on field data.

Semester-II

CCGEOG203- PRACTICAL (INSTRUMENTAL SURVEY): Credits-5

One Question will be related to Field Work and other Three will be of Lab Work (three questions to be answered from each unit)

Full marks= 100(End Semester Exam: 80 + Record & Viva: 20)

Pass Marks-50

Time allotted= 6 hrs

Unit 1:

Importance of Field Work, Scope and Purpose, Types of Survey, Principles and Applications of Selected Survey Instruments, Plane Table, Plan Preparation Resection Method : Two point Problem, Three Point Problem, Tracing Paper Method.

20 Marks

Unit 2:

Prismatic Compass: Open and Closed Traverse, Elimination of Error y Bowditch Rule, Other Smaller Instruments: Sextant, Abney Level and Indian Clinometer, Dumpy Level: Traverse Survey, Spot Height Determination and Contour Plan Preparation.

20 Marks

Unit 3:

Theodolite: Horizontal and Vertical (Height) Measurement, Accessible and Inaccessible Method, Survey of Selected Area, Preparation of Base Map by the Use of Surveying Instruments.

20 Marks

Unit 4:

Measures of Central Tendency, Dispersion, Skewness, Kurtosis, Moments, Correlation, Regression.

20 Marks

Practical Record

10 Marks

Viva-Voce

10 Marks

References

1. Davis, Peter, (1974): Science in Geography Data Description & Presentation, Vol.3, Oxford University Press, London.
2. Hanwell, J.D. & Newson, M.D. (1973): Macmillan Education Ltd., London.
3. Mishra, R.P. (1973): Elements of Cartography, Prasaranga, University of Mysore.
4. Monkhouse, F.J.R. & Wilkinson, H.R.: Maps and Diagrams, Mathwn & Company, London.
5. Robinson, A.H. & Sale R.D.: Elements of Cartography, Johns House & Sons, London.
6. Singh R. L. (1996) : Map Work & Practical Geography, Central Book Dept. Allahabad.
7. Singh & Kanaujia (1973) : Map Work & Practical Geography, Central Book Dept. Allahabad.
8. N. N. Basak (1994): Surveying and Leveling, Tata McGraw Hill Publishing Company LTD., New Delhi.

Geography of India

After the completion of course, the students will have ability to:

1. Understand the physical profile of the country
2. Study the resource endowment and its spatial distribution and utilization for sustainable development
3. Synthesise and develop the idea of regional dimensions.

Semester-III

CCGE0301-GEOGRAPHY OF INDIA: Credit-5

Four questions to be answered out of eight questions (two from each unit)

Full marks- 100 (Internal Assessment/1st Semester: 30 +2nd Semester Exam: 70)

Pass Marks-43

Time allotted- 3 hrs

Unit 1:

Physical Setting of India: Location, Physiographic Divisions, Natural Drainage Systems and their Distribution, Climate: Seasons and Climatic Regions, Soils: Types, Distribution, Erosion and Conservation, Natural Vegetation: Types and Distribution, Degradation and Conservation.

Unit 2:

Agriculture: Major Agricultural Crops: Rice, Wheat, Cotton, Sugarcane, Maize, Jowar, Tea, Coffee, Rubber, Mulberry Crops, Green Revolution in India, Food Security in India, Irrigation: Major River Projects.

Unit 3:

Distribution, Production and Trade of Important Minerals and Power Resources: Iron-Ore, Manganese, Mica, Copper, Bauxite, Coal, Petroleum, Natural Gas, Atomic Energy, Hydel and Thermal Power, Growth, Development and Distribution of Major Industries: Iron and Steel, Engineering, Cement, Paper, Fertilizers, Cotton Textiles, Silk, Knowledge Based Industries, Industrial Regions of India

Unit 4:

Growth and Development of Transport System: Roads, Railways, Airways and Inland Water, Population Growth and Distribution, Composition and Density, Literacy, Sex-Ratio, Fertility and Mortality and Health Services

References

1. Deshpande G. D., 1992: India: A Regional Interpretation, ICSSR, New Delhi.
2. Johnson, B. L. C., ed. 2001. Geographical Dictionary of India. Vision Books, New Delhi.
3. Mandal R. B. (ed.), 1990: Patterns of Regional Geography – An International Perspective. Vol. 3 Indian Perspective.
4. Sdhasuk Gulina and P Sengupta (1967): Economic Regionalisation of India, Census of India.
5. Sharma, T. C. 2003: India - Economic and Commercial Geography. Vikas Publ., New Delhi.
6. Singh R. L., 1971: India: A Regional Geography. National Geographical Society of India.
7. Singh, Jagdish 2003: India - A Comprehensive & Systematic Geography, Gyanodaya Prakashan, Gorakhpur.
8. Spate O. H. K. and Learmonth A. T. A., 1967: India and Pakistan: A General and Regional Geography, Methuen.
9. Tirtha, Ranjit 2002: Geography of India, Rawat Publ., Jaipur & New Delhi.
10. Pathak, C. R. 2003: Spatial Structure and Processes of Development in India, Regional Science Assoc., Kolkata.
11. Tiwari, R.C. (2007) Geography of India. Prayag Pustak Bhawan, Allahabad
12. Sharma, T.C. (2013) Economic Geography of India. Rawat Publication, Jaipur

Introduction to Global Economic System Learning Outcome:

After the completion of course, the students will have ability to:

1. Distinguish different types of economic activities and their utilities.
2. Appreciate the factors responsible for the location and distribution of activities.
3. Examine the significance and relevance of theories in relation to the location of different economic activities.

COGEOGRAPHICAL-ECONOMIC GEOGRAPHY: Credits-5

Five questions to be answered out of eight questions (two from each unit)

Full marks:- 150 (Internal Assessment: 100 Semester: 30 + End Semester Exam: 70)

Pass Marks- 45

Time allotted- 3 hrs

Unit 1:

Nature, Scope and Importance of Economic Geography, Evolution of Economic Geography, Approaches in Economic Geography, Concept of Economy, Spatial Structure of Economy, Economy and Economic Geography

Unit 2:

Primary Economic Activities: Hunting, Fishing, Food Gathering, Herding, Timbering, Agriculture and Mining, Commercial Economic Activities: Dairying, Mixed Farming, Poultry and Plantations, Fishing and Forestry: Law of the Sea, Fishing Grounds and Aquaculture, Issues and Challenges for the Development of Fishing and Forestry.

Unit 3:

Knowledge- Based Technologies: Electronic Age Spatial Information Technology Telecommunication, High-Tech Transport Effects of Liberalisation, Privatisation and Globalisation (LPG) on Economic Activities in the World and India.

Unit 4:

Economic Development: Growth and Development, Definition, Concept, Contents of Development and Sustainable development, Human Resource Development: Concept, Measurement, Indicators and Components.

References

1. Barbier, Edward B (2005) Natural Resources and Economic Development, Cambridge University Press.
2. Burton, I and R. W Kates (1984) Readings in Resource Management and Conservation, University of Chicago Press, Chicago.
3. Bruce, Mitchell (1989) Geography and Resource Analysis, John Wiley and Son, New York.
4. Fabricius, C & Eddie Koch Eds. (2004) Rights, Resources and Rural Development: Community based Natural Resource Management in Southern Africa, Earthscan, London Sterling.
5. Das Gupta, Biplob (1979) the Environmental Debate, Economic and Political Weekly, Vol.13, No. 6/7, Annual Number (Feb.), pp. 385-387+389+391+393+395+397-400.
6. Guha, J. L. and P. R. Chatterjee (1994) Economic Geography- A Study of Resources, The World Press Pvt. Ltd. Calcutta
7. Kates, R.W. & Burton, I (eds): Geography, Resources and Environment, Vol I & II, University of Chicago Press, Chicago, 1986.
8. Martino, R. L. (1989) Resource Management, Mc Graw Hill Book Co., London.
9. Negi, B. S. (2000) Geography of Resources, Kedar Nath and Ram Nath, Meerut.
10. Owen, Oliver, E (1971) Natural Resource Conservation: A Ecological Approach, McMillan, New Delhi.
11. Raja, M (1989) Renewable Resources, Development, Concept Pub. New Delhi.
12. Ramesh, A (1984) Resource Geography (Ed.) R. P. Misra, Contribution to Indian Geography, Heritage Publishers, New Delhi.
13. UNDP & World Resource Institute (2005) The Wealth of the Poor—Managing Ecosystems to Fight Poverty, World Resources Institute, Washington, DC 20002
14. Zimmermann, E. W. (1951) World Resources and Industries, Harper and Brothers, New Delhi.

Hydrology

After the completion of course, the students will have ability to:

1. Understand the basic components of hydrological cycle and comprehend practices of integrated watershed management.
2. Evaluate the water balancing and river basin and water disputes.
3. Study the soil as a basic resource, focusing its distribution, problems and management.

Semester III

Elective Skill Enhancement

(This Paper to be opted)

ECOE030311 - HYDROLOGY AND WATER RESOURCE: Credits-5

Four questions to be answered out of eight questions (two from each unit)

Half marks- 100 (Internal Assessment/End Semester: 30 + End Semester Exam: 70)

Exam Marks-45

Time allotted- 3 hrs

Unit 1:

Definition and Scope of Hydrology, Importance of Water, Hydrological Cycle, Water Storage: Glaciers, River Channels, Lakes and Reservoirs, Soil Moisture, Ground Water.

Unit 2:

Surface Water: Sources and Factors Affecting Quality and Quantity; Precipitation: Forms and Factors; Atmospheric Moisture; Runoff: Sources and Factors Affecting Runoff; Evapotranspiration: Measurement and Factors; Evapotranspiration: Measurement and Factors.

Unit 3:

Groundwater: Characteristics of Stream Flow, Darcy's Law, Permeability, Infiltration, Groundwater Storage, Groundwater Aquifers in Different Rock Systems, Movement and Discharge.

Unit 4:

Environmental Influences on Water Resources; Sectoral Demand for Water; Urban Water Supply; Water Management; Water Harvesting; Water Pollution and Control.

References:

1. Ahmed, E., 1985, Geomorphology, Kalyani Publishers, New Delhi
2. Chatterji, K., Chandra, S. and Sugden, D.E. 1994, Geomorphology, Methuen, London
3. Cook and Doornkamp, 1988, Geomorphology in Environment Management, London
4. Engel, F., 1995, A Text Book of Geomorphology, Shiksha Book Depot, Patna
5. Dury, G.H. 1967, Essays in Geomorphology, Heinemann Educational Books Ltd, London
6. Fairbridge, R.W., 1966, The Encyclopedia of Geomorphology, (Edgell), Reinhold Book Corporation, New York
7. Kale, V.S. and Gupta, A. 2001, Introduction to Geomorphology, Orient Longman Ltd., Hyderabad
8. Knighton, D. 1998, Fluvial Forms and Processes: A New Perspective, Arnold, London
9. King, L.C., 1964, Morphology of the Earth, Oliver and Boyd, Edinburgh
10. Leopold, L.B. et al, 1964, Fluvial Processes in Geomorphology, Eurasia Publishing House, New Delhi
11. Morisawa, M. (ed) 1994, Geomorphology and Natural Hazards, Elsevier, Amsterdam
12. Morisawa, M. 1985, Rivers, Longman, London
13. Oliver, C.D. 1981, Tectonic Geomorphology, Longman Scientific & Technical, London
14. Potts, G. and Finney, J. 1985, Rivers and Landscapes, Edward Arnold, London
15. Strahler, A. N. and Strahler, A. H., 1978, John Wiley and Sons, New York
16. Summerfield, M.A. (Editor) 1991, Global Geomorphology: An Introduction to the Study of Landforms, John Wiley and Sons Ltd., New York
17. Singh, S. 2000, Geomorphology, Praying Pustak Bhawan
18. Thornbury, W.D. 1969, Principles of Geomorphology, Wiley Eastern Limited, New Delhi
19. Vaidya, K.S. 1998, Dynamic Himalaya, University Press (India) Ltd., Hyderabad
20. Wilson, J.P. and Gallant, J.C. (editors) 2000, Terrain Analysis: Principles and Applications, John Wiley and Sons Ltd, New York
21. Wirthmann, A. 2000, Geomorphology of the Tropics, Translated by Busche, D. Springer-Verlag, Berlin
22. Wooldridge, S.W., 1965, An Outline of Geomorphology, Longman
23. Young, A., 1972, Slopes, T. and A. Constable Ltd, Edinburgh

Regional Planning and Sustainable Development

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Identify notable lagging regions and solutions for their overall development
2. Have comprehensive understanding regarding the different regions and application of different models and theories for integrated regional development.
3. Select appropriate indicators for the measurement of socio-economic regional development.

REGIOE0303-REGIONAL PLANNING AND DEVELOPMENT: CREDIT-3

Four questions to be answered out of eight questions (two from each unit)

Full marks= 100 (Internal Assessment/Mid-Semester: 30 + End Semester Exam: 70)

Pass Marks-43

Time allowed= 3 hrs

Unit I:

Concept of Region: Types, Hierarchy and Characteristics of Regions, Definition Methods of Region: Formal, Functional and Nodal, Geography and Regional Planning, Concept and Scope of Regional Planning, Regional Approaches, Principles, Methods, Techniques of Regional Planning, Need for Planning.

Unit II:

Conceptual and Theoretical Framework of Regional Planning, Growth Pole and Growth Foci, Planning Processes: Sectoral, Multi-Level, Decentralised Planning, Integrated Area Development Planning, Planning for Tribal and Hill Areas, Drought Prone Areas, Command Areas and Watershed, Planning for Metropolitan Region: CDP, Satellite Towns, Urban Growth Belt.

Unit III:

Concept of Development, Indicators of Development, Regional Imbalances, Regional Development Strategies, Problems and Issues of Regional Planning, Sustainable Development of Regions, Regionalisation of India: Natural, Economic and Administrative (Macro and Meso Levels only)

Unit 4

Theories of Regional Development: Central Place Theory, Diffusion Theory (Hägerstrand's), The Role of Local Theories in Regional Planning Process, An Evaluation of Regional Disparities/Imbalances-Backward Regions of India, Identification of Backward Regions Planning Backward Regions, Harnessing the Information through GIS, Remote Sensing, GPS for Regional Planning and Development.

References

1. Boudeville J. R. (1966): Problems of Regional Economic Planning, Edinburgh Univ. Press, Edinburgh.
2. Friedmann J. (1966): Regional Development Policy: A Case Study of Venezuela, MIT Press, Massachusetts.
3. Friedmann J. (1973): Urbanization, Planning and National Development, Sage Pub., London.
4. Friedmann J. and Alonso W. (1966): Regional Development and Planning: A Reader, MIT Press, Massachusetts.
5. Friedmann J. and Alonso W. (1975): Regional Policy: Readings in Theory and Applications, MIT Press, Massachusetts.
6. Friedmann J. and Weaver C. (1979): Territory and Function: The Evolution of Regional Planning, Edward Arnold, London.
7. Hirschman A. O. (1958): The Strategy of Economic Development, Yale Univ. Press, New Haven.
8. Johnson E. A. J. (1970): The Organization of Space in Developing Countries, MIT Press, Massachusetts.
9. Myrdal G. (1957): Economic Theory and Underdeveloped Regions, Duckworth, London.
10. Ohlin B. (1933): Interregional and International Trade, Harvard Univ. Press, Massachusetts.
11. Richardson H. W. (1978): Regional and Urban Economics, Penguin, Harmondsworth.
12. Ronciglioni D. A. and Ruddle K. (1978): Urbanization and Rural Development: A Spatial Policy for Equitable Growth, Praeger.
13. Rosdow W. (1960): The Stages of Economic Growth: A Non-Communist Manifesto, Cambridge Univ. Press, Cambridge.
14. Stohr W. B. and Taylor D. R. F. (1981): Development from Above or Below? The Dialectics of Regional Planning in Developing Countries, John Wiley, Chichester.

. Environment and Natural Resource Management

Learning Outcome:

After the completion of course, the students will have ability to:

1. Understand the dynamic interactive relationship between man and environment.
2. Have sound understanding on distribution, utilization and proper management of natural resources at global level.
3. Make assessment and review of planning and policies related to environment and natural resources.

ECOLOGICAL ENVIRONMENT GEOGRAPHY: Credits-3

Four questions to be answered out of eight questions (two from each unit)

Full marks- 100 (Internal Assessment: 40 Semester: III + End Semester Exam: 70)

Pass Marks-45

Time allotted- 3 hrs

Unit 1:

Nature and Interdisciplinary Aspect of Environment Geography, Ecological Approach, Definition and Meaning of Environment, Habitat, Biogeographical Zones, Biomes and Biodiversity.

Unit 2:

Geographic Structure and Functioning of Ecosystem: Food Chains, Food Webs, Food Pyramid, Ecosystem-Spectrum to Biosphere (11 types) Man and Environmental Relationships, Resource Use as Ecological Imbalance with Special Reference to Soil, Forest and Energy Resources, Man-Made Ecosystem-Urban, Industrial, National Parks and Sanctuaries, Depletion of Ozone, Green House and Acid Rain.

Unit 3:

Man Induced Changes in Environment: Environmental Pollution-Air, Water, Noise, Solid Waste with Special Reference to India, Environmental Hazards-Earth as Warehouses, Flood, Famines, Land Slides, Avalanches, Forest Fires, Impact of Green Revolution and Extinction of Species.

Unit 4:

Principles of Environmental Management-Environment Policy of India (post 2000 AD), Environment Impact Assessment (EIA), Global Summits and Agencies of Environment Conservation.

References

1. Chandra, R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
2. Cunningham W. F. and Cunningham M. A., 2004: *Principals of Environmental Science: Inquiry and Application*, 7th ed. MacGraw Hill, New Delhi.
3. Gould, A., 2001: *The Nature of the Environment*, Blackwell, Oxford.
4. Singh, R.B. (Eds.) (2009) *Biogeography and Biodiversity*, Rawat Publication, Jaipur
5. Miller G. T., 2004: *Environmental Science: Working with the Earth*, Thomson Brooks Cole, Singapore.
6. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment and Forests, Government of India.
7. Singh, R.B. and Hishala, R. (Eds.) (2014) *Livelihood security in Northwestern Himalaya: Case Studies from Changing Socio-Economic Environments in Himachal Pradesh, India*. Advances in Geographical and Environmental Studies, Springer
8. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Cengage Learning India.
9. Singh S., 1997: *Environmental Geography*, Prayag Pustak Bhawan, Allahabad.
10. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme.
11. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) *Climate change and biodiversity: Proceedings of IQU Rohtak Conference, Volume 1*. Advances in Geographical and Environmental Studies, Springer
12. Singh, R.B. (1998) *Ecological Techniques and Approaches to Vulnerable Environment*, New Delhi, Oxford & IBH Pub.
13. Singh, Savindra (2001) *Paryavaran Bhugol*, Prayag Pustak Bhawan, Allahabad. (in Hindi)
14. Tiwari Ram Kumar (2006) *Paryavaran Adhyanam*, Lakshmi Publication, Delhi

Field Techniques, Surveying and Research Methods (Practical)

Learning Outcome:

After the completion of course, the students will have ability to:

1. Conduct proper field work for the collection of primary data to bring out grassroots realities.
2. Make use of proper tools and surveying methods for measurement in context of collection and processing of data.
3. Prepare a report based on field data.

Semester-III

ECGE06304: PHYSICAL SURVEY (PRACTICAL): Credits-5

Survey Report (60 Marks), Oral Presentation (20 Marks) and Viva (20 Marks)

Total Marks: 100

Pass Marks: 50

Objective

The main objective of the field work (Physical Survey) is to conduct an extensive survey of a conspicuous wide range of India and identify salient landforms, their genesis and their impact of human life, flora and fauna. It is an extensive field study outside the class room.

Unit 1:

Trace the prominent features of the area to be surveyed. Identify the salient landform features of the selected area on a topographical sheet.

Unit 2:

Identify the landforms on the surface, while in the field. Also note the agents of erosion, transportation and deposition associated with the landforms.

Unit 3

Identify and classify the biodiversity in the area (Flora and Fauna).

Unit 4

Observe the relationship of various landforms, flora and fauna with land use, settlement, structure and lifestyle of the people.

Based on observations of the above characteristics, prepare a field survey report. The report need to be supplemented with maps, sketches, diagrams and photographs etc.

The practical exercises should aim at identification of micro – geomorphic features on the ground and their relationship to land use/ settlement pattern. This is also training in Report Writing.

1. Physical survey report will have to be submitted to the H.O.D. ten days before examination and it will be placed before the external examiners who will ask questions related to the concerned report.
2. Marking will be done on the basis of the Survey Report (60 Marks), Oral Presentation (20 Marks) and Viva (20 Marks)

JHARKHAND

GATHER KNOWLEDGE ABOUT JHARKHAND

Semester-IV **CCGEOG401: GEOGRAPHY OF JHARKHAND: Credits-5**

Four questions to be answered out of eight questions (two from each unit)

Full marks= 100 (Internal Assessment/Mid Semester: 30 + End Semester Exam: 70)

Part Marks-45

Time allotted= 3

hrs

Unit 1:

Physical: Aerial differentiation and characterization of land units based on rocky type, topography, drainage, climate, vegetation and soil.

Unit 2:

Agriculture, areal pattern differentiation of different crops, crop intensity (irrigated and unirrigated), yield of crops and agricultural productivity of the land, impact of physical, economic and institutional factors (size of the land holding, land tenure, agricultural practices, etc)

Unit 3:

Location of economic activities, type of industries (Large, medium and small), relationship of the resource-based and footloose industries, industrial regions, minerals and power resources.

Unit 4:

Population: Demographic and socio-economic characteristics and locations of infrastructure facilities and amenities, demographic and socio-economic conditions of tribes – Oraon, Munda and Santhal, settlement Hierarchy and pattern, urbanization, Tourism.

Reading List

1. Mahto B. K., 2004, Jharkhand...Ek Adhyayan, Sahitya Bhawan Publication, Agra
2. Mamoria C.B. & Mahto B.K., 2013, Geography of India and Regional Geography of Jharkhand, Sahitya Bhawan Publication, Agra
3. Roy D., 2018, Geography of Jharkhand, Land, Economy and People, Kalyani Publishers, New Delhi.
4. Singh S.K., 2002, Jharkhand 2002, Readers Corner, Patna
5. Singh S.K. 2015, Jharkhand Pradesh ki Bhugolik Vyakhya, Rajesh Publication, New Delhi.

Soil Studies

After the completion of course, the students will have ability to:

1. Study the soil as a basic resource, focusing its distribution, problems and management.

SEMESTER-V Elective Soil Environment (One Paper to be offered) SOIL ECOLOGY AND GEOGRAPHY: Credits-5

Four questions to be answered out of eight questions (Two from each unit)

Full marks- 100 (Internal Assessment-50 Semester: 20 + Final Semester Exam: 70)

Pass Marks-45

Time allotted- 3 hrs

Unit 1:

Nature, Scope and Significance of Soil Geography; Its Relationship with Pedology, Soil Forming Factors: Parent Material, Organic, Climate, Topography, Spatio-Temporal Dimensions, Process of Soil Formation and Soil Development: Physical, Biotic and Chemical, Soil Profile.

Unit 2:

Soil Organism, Macro Animals (Earthworms, Sowbugs, Mites, Centipedes, Rodents and Insects), Micro-Animals and Plants-Nemotodes, Protozoa, Rotifers, Fungi, Bacteria, Algae and Antinomycetes

Unit 3:

Physical Properties of Soil: Morphology, Texture, Structure, Water, Air, Temperature and other Properties of Soil, Chemical Properties of Soil and Soil Reaction, Soil Erosion, Degradation and Conservation.

Unit 4:

Evaluation of Land and Soil: Parametric and Non-Parametric Systems, Land Capability Classification, Soil Reclamation and Management: Soil Survey and Landforms in Environmental Management, Sustainable Development of Soil Resources with Reference to India.

References

1. A.G. Pimente, J. D. (editor) 1993 : World Soil Erosion and Conservation, Cambridge University Press, Cambridge
2. Biswas, T.D. and Mukherjee, S.K. 1987 : Textbook of Soil Science, Tata-McGraw-Hill.
3. Brady, N.C. and Weil, R.R. 1996 : The Nature and Properties of Soil, 11th edition, Longman, London.
4. Coleman, D.C. and Crossby, J. 1996 : Fundamentals of Soil Ecology, Academic Press, San Diego
5. Ellis, S. and Mellor, R. 1995 : Soils and Environment, Routledge, London
6. Floth, H.D. 1990 : Fundamentals of Soil Science, 8th edition, John Wiley and Sons, New York
7. Mitchell, C. W. 1991 : Terrain Evaluation: An Introductory Handbook to the History, Principles and Methods of Practical Terrain Analysis, 2nd edition, Longman Science & Technical, London
8. Morgan, R.P.C. 1995 : Soil Erosion and Conservation, 2nd edition, Longman, London
9. Schwab, G.O., Fangmeir, D.D. and Elliot, W.J. 1996: Soil and Water Management Systems, 4th edition, John Wiley and Sons Inc., New York
10. Singer, M.J. and Muhs, D.N. 1996: Soils: An Introduction, Prentice Hall, London
11. Wild, A. 1993: Soils and the Environment: An Introduction, Cambridge University Press, Cambridge
12. Byers H.R. 1959: General Meteorology, McGraw Hill Book Company
13. Oliver J.E. & Hiddore J.J. 2003: Climatology: An atmospheric science. Pearson
14. Lal M. 1993: Global Warming: concern for tomorrow, Tata McGraw Hill
15. Joffe, J. 1968: A.B.C. of Soil, Oxford Book Company, Calcutta

Urbanization and Urban System

Learning Outcome:

After the completion of course, the students will have ability to:

1. Understand the fundamentals and patterns of urbanization process
 2. Learn the functional classification of cities and Central Place Theory
- Know contemporary problems of Delhi, Mumbai, Kolkata and Chennai

ECGEOG402.2-URBAN GEOGRAPHY: Credits-5

Four questions to be answered out of eight questions (two from each unit)

Full marks= 100 (Internal Assessment/Mid Semester: 30 + End Semester Exam: 70)

Pass Marks-45

Time allotted- 3 hrs

Unit 1:

Nature and Scope of Urban Geography-Definition of Urban Settlements (Towns, Cities and Metros, etc), Attributes of Urban Form during Ancient, Medieval and Modern Period, Classification of Urban Settlements on the basis of Size and Function, urban Growth and Theories, Central Place Theory of Christaller and Letch, Contribution of Indian Scholars to the Studies of Urban Settlements.

Unit 2:

Urban Population Density and Land Value Curves Urban Land Use-Vertical and Horizontal Growth of Cities, Concentric, Zonal and Multiple Nuclei Theories of Urban Structure.

Unit 3:

Urban Functions-Basic and Non Basic-Urban Hierarchy-Rank Size Rules-Central Place Theory-functional Classification of Towns by C.D. Harris and H.J. Nelson, Urban Issues and Challenges: Water Supply, Traffic Congestion, Solid Waste, Smog, Sewage and Drainage System.

Unit 4:

Concept of City, Region and Urban Hinterland-Urban Sprawl-Urban Slums-Urban Crimes and their Trends with Reference to India-Concept and Issues of Peri- Urbanisation, Elements of Urban Planning-Urban Renewal-Policies of Urban Development in India-Master Plans of Kanabi City.

References

1. Beaujeu-Garnier J. and Chabot G. (1967): Urban Geography, Longman.
2. Christaller W. (1933): Central Places in Southern Germany, Prentice-Hall International. (in German)
3. Dickinson R. E. (1964): City and Region, Routledge and Kegan Paul.
4. Geddes P. (1949): Cities in Evolution, Benn.
5. Gottman J. (1961): Megalopolis, Twentieth Century Fund, New York.
6. Hudson F. S. (1970): A Geography of Settlements, Macdonald & Evans, London.
7. Johnson J. H. (1967): Urban Geography, Pergamon.
8. Mayer H. M. and Kohn C. F. (1959): Readings in Urban Geography, University of Chicago.
9. Smailes A. E. (1953): The Geography of Towns, Hutchinson.
10. Taylor Griffith (1949): Urban Geography, Methuen.

Digital Remote Sensing (Practical)

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Develop the skill so as to use digital satellite data using software
2. Prepare the maps based with satellite data to compare with the ground realities.
3. Classify digital data for the land use/land cover and urban studies

EEGEOG402.3-REMOTE SENSING, GIS AND GPS: Credits-6

Four questions to be answered out of eight questions from each unit

Full marks- 100 (Internal Assessment/End Semester: 30 & End Semester Exam: 70)

Pass Marks-45

Time allotted- 1 hr

Unit 1:

Stages in Remote Sensing Data Acquisition, Physics of Remote Sensing, Electromagnetic Spectrum (EMR), EMR and its Interaction with Atmosphere and Earth Surface Features.

Unit 2:

REMOTE SENSING-Platforms: Types and their Orbital Characteristics; Sensor Types- Active and Passive; Sensor Systems: Whiskbroom and Push Broom; Satellite Sensor: IRS, SPOT, IRSAT and QuickBird.

Unit 3:

Digital Image processing: digital Data Formats; Image Enhancement: Geometric and Radiometric Corrections and Filtering; Image Enhancement: Linear and Non-Linear Contrast Stretch, Band Combinations; Image-Classifications: Supervised and Unsupervised.

Unit 4:

GEOGRAPHIC INFORMATION SYSTEM AND GLOBAL POSITIONING SYSTEM: Components of GIS; Data Structures; Database Management; Data Models; Spatial Data Analysis and Applications; Fundamentals of GPS; Applications of GPS; Segments of GPS; Applications of GIS.

References

1. Curran, Paul J., 1983: Principles of Remote Sensing, Longman, London & New York.
2. Gupta, R. P., 2003 : Remote Sensing Geology, Springer-Verlag.
3. Jensen, J.R., 2004 : Remote Sensing of the Environment : An Earth Resource Perspective, Pearson Education.
4. Joseph, G., 2003: Fundamentals of Remote Sensing, University Press, Hyderabad.
5. Lillesand, T. and Kiefer, R., 1999 : Remote Sensing and Image Interpretation, Wiley, London.
6. Sabins, Floyd F. Jr., 1997: Remote Sensing: Principles and Interpretation, W.H. Freeman, New York.
7. Singh, R.B. (ed.), 1991: Environmental Monitoring: Application of Remote Sensing and GIS, Geocarto Int. Centre, Hong Kong.
8. Singh, R.B. and Murai, S. (eds.), 1998 : Space Informatics for Sustainable Development, Oxford & IBH Pub., New Delhi.
9. Burrough, P.A. and McDonnell, R.A., 1998 : Principles of Geographic Information Systems, Oxford University Press, Oxford.
10. Chang, K.-L., 2006 : Introduction to Geographic Information Systems, Tata McGraw-Hill.
11. De Mers, Michael N., 1999 : Fundamentals of Geographic Information Systems, John Wiley & Sons, New York.
12. Environmental Systems Research Institute (ESRI), 1997 : Getting to Know Arc View GIS, Cambridge : GeoInformation International.
13. Heywood, I. et al. 2004 : An Introduction to Geographic Information Systems, Pearson Education.
14. Longley, P.A., Goodchild, M.F., Maguire, D.J. and Rhind, D.W., 2001, Geographic Information Systems and Science, Wiley, Chichester.
15. Maguire, D.J., M.F. Goodchild and D.W. Rhind, 1991 : Geographic Information Systems. Longman Scientific and Technical, Harlow.

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Semester-IV

ECGEOGRAPHY, SOIL AND HYDROLOGY (PRACTICAL): Credits-5

Four questions to be answered from each unit

Full marks= 100 (End Semester Exam: 80 + Record & Viva: 20)

Pass Marks-50

Time allotted= 6 hrs

Unit 1:

Land Capability, Agricultural Efficiency, Cropping Intensity, Crop Combination

20 Marks

Unit 2:

Study of Soil P_h Value, Nitrogen Content, Phosphorus and Construction of Soil Profiles

20 Marks

Unit 3:

Stream Ordering, Drainage Density, Drainage Texture, Thalweg, Channel Profiles, Hypsometric Curve, Area-Height Diagram.

20 Marks

Unit 4:

Water Budget, Rainfall Dispersion Diagram, Ergo Graph, Climatograph

20 Marks

References

1. Biswas, T.D. and Mukherjee, S.K. 1987 : Textbook of Soil Science, Tata-McGraw-Hill.
2. Joffe, J., 1965: A.B.C. of Soil, Oxford Book Company, Calcutta
3. King, L.C., 1965 Morphology of the Earth, Oliver and Boyd, Edinburgh.
4. Monkhouse F.J and Wilkinson H.R (1952) Maps and Diagrams, their Compilations and Concentration, Methuen & Co. London.
5. R.L. Singh (2010) Practical Geography, Sharada Pustak Bhavan, 11, University Road, Allahabad, UP
6. Wooldridge, S.W., 1965, An Outline of Geomorphology, Longman

Urbanization and Urban System

Learning Outcome:

After the completion of course, the students will have ability to:

1. Understand the fundamentals and patterns of urbanization process
2. Learn the functional classification of cities and Central Place Theory
Know contemporary problems of Delhi, Mumbai, Kolkata and Chennai

Regional Planning and Sustainable Development

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Identify notable lagging regions and solutions for their overall development
2. Have comprehensive understanding regarding the different regions and application of different models and theories for integrated regional development.
3. Select appropriate indicators for the measurement of socio-economic regional development.

EGG00002-URBAN GEOGRAPHY AND REGIONAL PLANNING (PRACTICALS) **Credits-5**

Four questions to be answered from each unit

Full marks- 100 (End Semester Exam: 80 + Record & Viva: 20)

Pass Marks-70

Time allotted- 6 hrs

Unit-1

Symbolic Diagrams, Isopleth, Volumetric or Stan de Geer's Method, Traffic Flow Diagrams.

20 Marks

Unit-2

Unplanned Nuclei, Unplanned Village in Jharkhand, Industrial Concentration Map, Regional Pattern of Urbanization, Regional Pattern of Agricultural labourers in Jharkhand.

20 Marks

Unit-3

Delineation of Planning Regions, Proposing Growth Foci.

20 Marks

Unit-4

Planning of Satellite Town, Planning of Garden Town, Planning Resource Association Regions.

20 Marks

References:

1. Chai, L.S. (1971), Regional Planning in India, SPS, Calcutta Monkhouse F.J and Harwei J.D.
2. Newson M.D. (1973)- Techniques in Physical Geography, Mc. Millan Edu. Ltd.
3. Wilkinson H.R. (1952) Maps and Diagrams, their compilations and concentration, Muthuen & Co. London.
4. Mishra R.P. and Ramesh A (1968) - Fundamentals of Cartography, Prasaranga, University of Mysore, Mysore.
5. Prakash Rao L.V.S, 1963, Regional Planning, Asia Publication House, London.
6. Robinson & Marison (1995), Elements of Cartography USA.
7. R.L. Singh (2010) Practical Geography, Sharada Pustak Bhavan, 11, University Road, Allahabad, UP- India.

Digital Remote Sensing (Practical)

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Develop the skill so as to use digital satellite data using software
2. Prepare the maps based with satellite data to compare with the ground realities.
3. Classify digital data for the land use/land cover and urban studies

ECGEOG403-3-REMOTE SENSING, GIS, GPS (PRACTICAL): Credit-5

Four questions to be answered from each unit

Full marks = 100 (End Semester Exam: 80 + Record & Viva: 20)

Pass Marks-50

Time allotted = 5 hrs

Unit 1:

Image Analysis: Principles of Visual Image Interpretation, Recognition Elements and Interpretation Keys for Visual Interpretation (Shape, Size, Colour, Tone, Texture, Association), Interpretation of Satellite Image (Landsat, LISS III, LISS IV, Cartosat etc)

20 Marks

Unit 2:

Photographs, Identification of Spatial Data: Point, Line and Polygon Features, Representation of Spatial Features: Raster and Vector Data Model, Data Structure, Overlay Analysis, Change Analysis and Buffer Analysis.

20 Marks

Unit 3:

Introduction of GIS Software, Georeferencing and Projection, Spatial Data Entry, Editing, Query Building and Executing, Topology Creation and Linking Spatial and Non-Spatial Data, Spatial Data Visualisation and Output Map Generation.

20 Marks

Unit 4:

Introduction to GPS, Finding Latitude, Longitude and Altitude, Tracking in GPS, Routing in GPS.

20 Marks

References

1. Curran, Paul J., 1985: Principles of Remote Sensing, Longman, London & New York.
2. Gupta, R. P., 2003 : Remote Sensing Geology, Springer-Verlag.
3. Jensen, J.R., 2004 : Remote Sensing of the Environment : An Earth Resource Perspective, Pearson Education.
4. Joseph, O., 2003: Fundamentals of Remote Sensing, University Press, Hyderabad.
5. Lillesand, T. and Kiefer, R., 1999 : Remote Sensing and Image Interpretation, Wiley, London.
6. Sabins, Floyd F. Jr., 1997: Remote Sensing: Principles and Interpretation, W.H. Freeman, New York.
7. Singh, R.B. (ed.), 1991: Environmental Monitoring: Application of Remote Sensing and GIS, Geomatics Int. Centre, Hong Kong.
8. Singh, R.B. and Murai, S. (eds.), 1998 : Space Informatics for Sustainable Development, Oxford & IBH Pub., New Delhi.
9. Burrough, P.A. and McDonnell, R.A., 1998 : Principles of Geographic Information Systems, Oxford University Press, Oxford.
10. Chang, K.-t., 2006 : Introduction to Geographic Information Systems, Tata McGraw-Hill.
11. De Mers, Michael N., 1999 : Fundamentals of Geographic Information Systems, John Wiley & Sons, New York.
12. Environmental Systems Research Institute (ESRI), 1997 : Getting to know Arc View GIS, Cambridge : GeoInformation International.
13. Heywood, I. et al. 2004 : An Introduction to Geographic Information Systems, Pearson Education.
14. Longley, P.A., Goodchild, M.F., Maguire, D.J. and Rhind, D.W., 2001, Geographic Information Systems and Science, Wiley, Chichester.
15. Maguire, D.J., M.F. Goodchild and D.W. Rhind, 1991 : Geographic Information Systems, Longman Scientific and Technical, Harlow.
16. www.gisdevelopment.net/tutorials/human008.html
17. www.gislounge.com/remotesensing.html

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GEOG-404 DISSERTATION: Credits-5

Full marks= 100(End Semester Exam: 80 + Record & Viva: 20)

Pass Marks-50

1. Dissertation paper is compulsory in Semester 4th and shall be on the themes or sub themes related to the field of Specialisation and for which an area, preferably any Community Development Block nearer to the College will be selected by the Department.
2. The main components of the Paper include Primary Survey based (with the help of the Printed Questionnaire) on the topic (s) related to the students' field of Specialisation, respectively. The field of Study or the area/ region of the study as well as the universe for the survey shall be decided by the department.
3. The preparation of the Survey based Project/ Dissertation shall be in accordance with the standard guidelines available for writing Thesis or dissertation.
4. Students are required to strictly follow the standard format in preparing the dissertation.
5. The evaluation shall be on the basis of the dissertation and subsequent Viva- Voce, there upon.
6. Students would complete the work within the specified period and submit the Dissertation to the H.O.D. 15 days before the practical Examination.