DRAFT

COURSES OF STUDIES

for

Master of Arts

in

GEOGRAPHY

SESSION – 2023-24

DEPT OF GEOGRAPHY

GOVT WOMENS COLLEGE,

SAMBALPUR -768004

Contents

DEPT OF GEOGRAPHY

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SAMBALPUR -768004

VISION

The Dept. of Geography envisions to become a leading Centre of teaching and research in spatial sciences by making its students productive citizens using relevant state-of-the-art geographic education, harnessing the integrative and interdisciplinarity of geography covering human-environment relationship to promote sustainable development through research**.**

MISSION

Dept. of Geography, GWC is committed to achieve its vision through measurable actions in the form of following mission:

- Produce and disseminate state-of-the-art geographical knowledge and insights on key environmental, socio-cultural and economic issues.
- Undertake cutting-edge geographical research applying relevant tools and techniques (e.g. Remote sensing and GIS) to answer fundamental questions of local, regional and global importance.
- Provide effective and relevant theoretical and practical geographical knowledge to the students for their professional development as well as to encourage their innovative skills.
- Encourage students to think critically and use geographies in solving problems – trivial to complex.
- Inspire students to celebrate diversity as global citizens by realizing their own place, values and responsibilities to other people, to the environment and to earth's sustainability.

PROGRAMME OBJECTIVE (PO)

The Dept. of Geography,GWC expects post-graduate students of geography to be skilled in disciplinary theories, methodologies, and content. After completion of the Master in Geography from the department, the students shall be able to:

- Demonstrate the knowledge on philosophies, concepts, theories, and methods as well tools and techniques used in geography.
- Acquire, interpret, evaluate, analyse and critique geographic data needed for geographic problem solving.
- Apply the geographic concepts, methods, tools and techniques to answer questions of local, regional and global importance;
- Compare and contrast the geographical theories, concepts and methods; integrate themes pertaining to spatial and temporal patterns; evaluate the human-environment interrelationship across range of people and places; as well as infer the interactions between nature and society.
- Communicate geographic data, concepts, theories and research findings in oral, written, and visual forms, valuing ethics along with having respect for cultural, social and economic diversity.

POST GRADUATE - PROGRAMME STRUCTURE

The Master's programme is a two-year course divided into four semesters each of six-month duration. A student is required to complete 88 credits for the completion of course and the award of degree.

year	semesters	
First year	Semester I	Semester II
Second year	Semester III	Semester IV

The information about the title of courses, credit hours, division of marks etc. of all semester is given below.

Part-1: Semester-I

Papers		Marks		Total Marks	Duration (Hrs)	Credit Hours
Paper No	Title	Internal	End Term			
411	Advanced Geomorphology	20	80	100	3	4
412	Geographical Thought	20	80	100	3	4
413	Population Geography	20	80	100	3	4
414	Geography of India	20	80	100	3	4
415	Cartographic Techniques (Practical)	-	100	100	3	4
416	Environmental studies and disaster management (EVS & DM)	20	80	100		2
Total				600		22

***Note: in addition to this student has to take an Entrepreneurship Development course of 2 credit**

Part-I: Semester-II

Papers		Marks		Total Marks	Duration (Hrs)	Credit Hours
Paper No	Title	Internal	End Term			
421	Climatology	20	80	100	3	4
422	Economic Geography	20	80	100	3	4
423	Statistical Methods in Geography	20	80	100	3	4
424	Fundamentals of GIS & Remote Sensing	20	80	100	3	4
425	Remote Sensing & GIS Applications (Practical)	-	100	100	3	4
MOOCS (UGC/NPTEL)						
MOOC		-	-	100	4 Week *	3
IDC Papers*						
AC -GEO-02	Geography of Tourism	20	80	100	3	3
Total				600		26

***Note: in addition to this student of Master degree in Geography has to take IDC of 3 credit and MOOCs of 3 Credit**

Part-III: Semester-III

Papers		Marks		Total Marks	Duration (Hrs)	Credit Hours
Paper No	Title	Mid Term	End Term			
511	Oceanography	20	80	100	3	4
512	Social and Cultural Geography	20	80	100	3	4
513	Settlement Geography	20	80	100	3	4
514	Human Geography	20	80	100	3	4
515	Field Survey Methods (Practical)		100	100	3	4
516	Entrepreneurship and development			100		2
Total				600		22

** **in addition to this student of Master degree in Geography has to take either Environmental studies or disaster management of 2 credit.**

Part-IV: Semester-IV

Papers		Marks		Total Marks	Duration (Hrs)	Credit Hours
Paper No	Title	Internal	End Term			
521	Regional Development & Planning	20	80	100	3	4
522	Environmental Geography	20	80	100	3	4
523	Disaster Management	20	80	100	3	4
524	Urbanization and Migration	20	80	100	3	4
525	Project work report and VIVA VOCE (Practical papers)		50+50	100	3	4
	Total			500		20
24 papers	**Grand Total**			**2400**		**90**

- **In addition to this student of Master degree in Geography has to take Yuva Sanskar/Yoga/NSS/NCC Noncredit credit.**
- **Mooc Alternative**

Semester	Core Courses			Discipline SpecificElective			Total No. of Papers	Credits (Per Paper)	Grand Total Credits
	No. of Papers	Credits (Per Paper)	Total Credits	No. of Papers	Credits (Per Paper)	Total Credits			
I	5	4	20	1	2	2	6	4 +(ED 2)	22
II	5	4	20	2	3	6	7	4	23
III	5	4	20	1	2	2	6	4 +(ED 2)	22
IV	5	4	20	Nil	NA	NA	5	4	20
Total	20	4	80	3	3	10	24	4	90

MASTER OF ARTS IN GEOGRAPHY
SEMESTER – I

GEOGRAPHY GEO – 411

Advanced Geomorphology

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of Geomorphology

Aim of the Course: is to train students in relevant topics of Advance Geomorphology covering its theoretical and practical aspects in order to use the understanding developed in spatial planning and management activities.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Review, interpret and describe different perspectives in Geomorphology (Unit 1- OBE level to be achieved – Apply)
II. Review, interpret, discuss, relate and critic different fundamental concepts of Geomorphology (Unit 2 & 3 - OBE level to be achieved – Analyse)
III. Identify, relate and evaluate the application of understanding developed in Unit 1, 2 and 3 for specific planning and management areas (Unit 4 - OBE level to be achieved – Evaluate)

Course Contents:

Unit 1. Perspectives in Geomorphology

1.1. Evolution of Geomorphological thoughts and ideas
1.2. Concepts of scale: spatial, temporal, equilibrium and threshold; Morphogenetic regions;
1.3. Approaches to Geomorphology: Structural, climatic, applied and systems approach.
1.4. Principles of landform classification: Genetic and hierarchical.

(Covers OBE level – Remember, Understand and Apply)

Unit 2. Fundamental Concepts – I

2.1. Earth - A brief review of basics: Origin (Big-bang theory); shape, size and movements of earth; Age (geological history and clock), structure and composition (crust, mental and core); Location of a place on earth; Rock and Minerals
2.2. Forces that produce landforms: Geomorphic process: Endogenetic and Exogenetic forces

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 3. Fundamental Concepts – II

3.1. Movement of crust: Continental Drift Theory (A. Wegner); Plate tectonics theory; Mountain building theory (comparative assessment of Kober's and Jeffrey's)
3.2. Theories of Isostasy (comparative assessment of Airy, Pratt and Heiskanen)
3.3. Geomorphic Cycle and Land Forms; Weathering – concept, controlling factors and types; Erosion – concept, Cycle of erosion (Davis's model, Penck's model), interruptions in cycle and rejuvenation of cycle;

(Covers OBE level – Remember, Understand, Apply, Analyse and Evaluate)

Unit 4. Applied Geomorphology in –

4.1. Water and coastal management
4.2. Regional planning and urbanization
4.3. Hazard and disaster management

(Covers OBE level – Remember, Understand, Apply, Analyse, Evaluate and Create)

Reading List

1. Allision, R. (2002). *Applied Geomorphology: Theory and Practices*, Wiley Europe,
2. Bunnett, R.B. (1965), *Physical Geography in diagrams*, Orient Longman Limited
3. Bridges E. M., 1990: *World Geomorphology*, Cambridge University Press, Cambridge.
4. Christopherson, Robert W., (2011), *Geosystems: An Introduction to Physical Geography,* 8 Ed., Macmillan Publishing Company
5. Gautam, A (2010): *Bhautik Bhugol*, Rastogi Punlications, Meerut
6. Hails, J.R. *Applied Geomorphology*, Elsevier, Amsterdam, 1977
7. Kale V. S. and Gupta A., 2001: *Introduction to Geomorphology*, Orient Longman, Hyderabad.
8. Kenneth, J.G. and Lewin, J. (2014). *The Basics of Geomorphology: Key Concepts*, Sage Publications, http://dx.doi.org/10.4135/9781473909984
9. Selby, M.J., (2005), *Earth's Changing Surface,* Indian Edition, OUP
10. Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to physical Geology,*4th Edition, John Wiley and Sons
11. Singh, S. (2009):*Physical Geography*, Prayag Pustak,Allahabad
12. Starhler & Strahler: *Advanced Physical Geography*. John Wiley, New York
13. Thornbury W. D., 1968: *Principles of Geomorphology*, Wiley.
14. Wooldridge & Morgan (1968) – Principle of Geomorphology.

GEOGRAPHY GEO – 412

Geographical Thought

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): Basic understanding of Geographic concepts.

Aim of the Course: To provide basic conceptual understanding of evolution of geographical concepts and approaches.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Understand the evolution of the philosophy of Geography (Unit 1: OBE level to be achieved – Understand)
II. Compare different approaches to study geographical phenomena (Unit 3: OBE level to be achieved – Analyse)
III. Analyse the contemporary socioenvironmental issues in geographical perspectives (Unit 3: OBE level to be achieved – Analyse)

Course Contents:

Unit 1. Introduction

1.1. Meaning & Purpose of Geography; Place of Geography in classification ofscience.
1.2. Changing paradigm – Environmental determinism, Possibilism, Aerial differentiation, Spatial Organization.
1.3. Dualism- Systematic vs Regional, Physical vs Human
1.4. Human-Environment Interaction;

(Covers OBE level – Remember and Understand)

Unit 2. Contribution of different Dept. of thought

2.1. Geographic knowledge in ancient & medieval period.
2.2. Contribution of German and French Dept..
2.3. Contribution of British and American Dept..

(Covers OBE level – Remember, Understand, Apply and Analyze)

Unit 3. Contemporary Trends

3.1. Quantitative Revolution in Geography
3.2. Behaviouralism, Humanism & Radicalism
3.3. Structuralism & Post Structuralism; Mordenism & Postmodernism

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Fu**ture of Geography**

4.1. Changing nature, concepts, approaches & methodologies of geography in globalizing world;

4.2. Progress in Indian Geography;
4.3. Contribution of Indian Geographers

(Covers OBE level – Remember, Understand, Apply and Analyse)

Reading list

1. Arentsen M., Stam R. and Thuijis R., 2000: *Post-modern Approaches to Space*, ebook.
2. Bhat, L.S. (2009) Geography in India (Selected Themes). Pearson
3. Bonnett A., 2008: *What is Geography?* Sage.
4. Clifford, N.J (2002) – The Future of Geography, GEOFORUM, Vol.33, pp 431-436
5. Dikshit R. D., 1997: Geographical Thought: A Contextual History of Ideas, Prentice– Hall India.
6. Hartshone R., 1959: *Perspectives of Nature of Geography*, Rand MacNally and Co.
7. Holt-Jensen A., 2011: *Geography: History and Its Concepts: A Students Guide*, SAGE.
8. Johnston R. J., (Ed.): *Dictionary of Human Geography*, Routledge.
9. Johnston R. J., 1997: *Geography and Geographers, Anglo-American Human Geography since 1945*, Arnold, London.
10. Kapur A., 2001: *Indian Geography Voice of Concern*, Concept Publications.
11. Martin Geoffrey J., 2005: *All Possible Worlds: A History of Geographical Ideas*, Oxford.
12. Peet, R. 1978. Radical Geography. London: Methuen.
13. Peet, R. 1998. Modern Geographical Thought. London: Blackwell.
14. Soja, Edward 1989. *Post-modern Geographies,* Verso, London. Reprinted 1997: Rawat Publ., Jaipur and New Delhi.

GEOGRAPHY GEO – 413

Population Geography

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): None.
Aim of the Course: To provide basic conceptual understanding of demographic concepts, population theories and policies.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Understand of nature, scope and evolution of population geography (Unit 1: OBE level to be achieved – Understand)
II. Understand, discuss and discover different sources of population data to study population. (Unit 1: OBE level to be achieved – Apply)
III. Describe and discuss different aspects of population dynamics & population-resource interactions. (Unit 3: OBE level to be achieved – Analyze)
IV. Compare population problems and policies of developed and developing countries (Unit 4: OBE level to be achieved – Analyze)

Course Contents:

Unit 1. Defining the field and Data Sources:

1.1. Nature and scope of population geography.
1.2. Sources of population data; Population data from UN publications.
1.3. Population data sources in India-Census, National Sample Survey; Unique Identification Scheme (*UID*) & National *Population* Register (NPR).

(Covers OBE level – Remember and Understand)

Unit 2. Population-Resource Relationship:

2.1. World distribution of population; Factors affecting population distribution.
2.2. World population growth and density.
2.3. Population-Resource Regions of the world.
2.4. Malthus theory of Population.

(Covers OBE level – Remember, Understand and Apply)

Unit 3. Population dynamics:

3.1. Determinants, measures and theories of fertility
3.2. Determinants and measures of Mortality and Morbidity
3.3. Determinants, measures and theories of Migration
3.4. Demographic transition theory

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Population problems, Prospects and Policies:

4.1. Changing Population composition (age, sex & occupation) and its socioeconomic implications.
4.2. Population problems of developed and developing countries.

4.3. Causes and consequences of Aging.
4.4. Population policies of developed and developing countries with a special focus on India.

(Covers OBE level – Remember, Understand, Apply and Analyse)

Reading list

1. Barrett H. R., 1995: *Population Geography*, Oliver and Boyd.
2. Bhende A. and Kanitkar T., 2000: *Principles of Population Studies*, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980: *An Introduction to Population Geography*, Kalyani Publishers.
4. Clarke J. I., 1965: *Population Geography*, Pergamon Press, Oxford.
5. Hassan, M.I. 2020 : Population Geography: A Systematic Exposition, Routledge, New York.
6. Jones, H. R., 2000: *Population Geography,* 3rd ed. Paul Chapman, London.
7. Lutz W., Warren C. S. and Scherbov S., 2004: *The End of the World Population Growth in the 21st Century*, Earthscan
8. Newbold K. B., 2009: *Population Geography: Tools and Issues*, Rowman and Littlefield Publishers.
9. Pacione M., 1986: *Population Geography: Progress and Prospect*, Taylor and Francis.
10. Wilson M. G. A., 1968: *Population Geography*, Nelson.
11. Panda B P (1988): Janasankya Bhugol, M P Hindi Granth Academy,Bhopal
12. Maurya S D (2009) Jansankya Bhugol, Sharda Putak Bhawan, Allahabad
13. Chandna, R C (2006), Jansankhya Bhugol, Kalyani Publishers, Delhi

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GEOGRAPHY GEO – 414

Geography of India

Credit = 4

F.M. = 100 (Mid Term: 20 + Term End: 80)

Prerequisite Course / Knowledge (If any): Basic understanding about India would be helpful.

Aim of the Course: is to provide essential and advanced understanding of Geography of India that could be used in analyses during simultaneous modules.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Recall, describe, locate and summarise Physiographic and climatic characteristics of India (Unit1 - OBE level to be achieved – Understand)
II. Review, summarise and relate social characteristics of India (Unit2 - OBE level to be achieved – Apply)
III. Review, identify and breakdown resources of India (Unit3 & 4 - OBE level to be achieved – Analyze)

Course Contents:

Unit 1. Physiographic and climatic characteristics of India

1.1. Physiographic division of India;
1.2. Soil types and distribution;
1.3. Vegetation - types and distribution in India;
1.4. Climatic characteristics of India, Monsson mechanism in India

(Covers OBE level – Remember and Understand)

Unit 2. Social composition of India

2.1. Population: distribution and growth and associated basic characteristics;
2.2. Social composition of India: Religion, Language; Tribe; Caste system in India
2.3. Settlement Pattern – urban and rural

(Covers OBE level – Remember, Understand and Apply)

Unit 3. Mineral resources and industries in India

3.1. Distribution, pattern and utilization of coal, Iron ore, Bauxite, Petroleum, Natural gas
3.2. Major Industries - Iron and Steel, Aluminum Industry, Automobile, Cotton Textile Industry

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Agricultural resources in India

4.1. Production and distribution of rice, Wheat, Cotton;
4.2. Agro-climatic region of India

(Covers OBE level – Remember, Understand, Apply and Analyse)

Reading List -

1. Deshpande C. 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 Intenational Perspective. Vol. 3 – Indian Perspective.
4. Sdyasuk Galina 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 Publs., 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

GEOGRAPHY GEO – 415

Cartographic Techniques (Practical)

Credit = 4

F.M. = 100

Prerequisite Course / Knowledge (If any): Basic understanding of mapping would be helpful.

Aim of the Course: is to provide essential cartographic skills to the students and educate them in effective map-making as per the requirement.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Understand, explain and relate the need, scientific bases, characteristics and types of map-making (Unit1 - OBE level to be achieved – Apply)
II. Interpret, relate, compare, differentiate and examine different fundamentals of mapping (Unit 2 - OBE level to be achieved – Analyse)
III. Create maps as per audience's requirement after evaluating and synthesizing the available information (Unit 3 - OBE level to be achieved – Create)
IV. Interpret Maps (Unit 4-OBE level to be achieved -Analyse)

Course Contents:

Unit 1. Overview of Cartography

1.1. Need and scientific basis of map-making (Cartography); History of Cartography
1.2. Types of maps – brief review of general-purpose map and thematic maps (Choropleth, Isopleth, Chorochromatic, proportional symbol, dot maps including multiple dots, flowmaps, and cartograms);
1.3. Basic elements of map
1.4. Use of Diagrams in Geography - Climograph, Hydergraph, and Ergograph

(Covers OBE level – Remember, Understand and Apply)

Unit 2. Fundamentals of Map-making

2.1. The reference system – Geographic Coordinate system; Datum;
2.2. Map projections: need, properties (four distortions –direction, distance, shape and size) and classification;
2.3. Key projections (brief review): Conical projection (one standard & two standard parallels), Cylindrical Projection (Equal Area), Gromonic projection, Universal Transverse Mercator's projection (UTM).

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 3. Designing the map

3.1. Preparation before mapping: Purpose of the map; Steps in mapproduction;
3.2. Basic elements of map: Major (main body of map), Marginal information (Graticules and Grids, legend/index, title, north arrow, scale, labels and map specifications)

3.3. Symbolization of data (Quantitative and Qualitative) using key components –
   3.3.1. Geometry (Point, line and Area) and
   3.3.2. Visual Variables (Shape, size, Hue and Value)
3.4. Final map layout: Cartographic considerations (placing major and minor components on map)

(Covers OBE level – Remember, Understand, Apply, Analyse, Evaluate and Create)

Unit 4. Map Interpretation

4.1. Morphometric Analysis: Stream order, Sinuosity Index and Bifurcation Ratio; Drainage Density
4.2. Topographic & Weather Maps interpretation

(Covers OBE level – Remember, Understand and Apply)

Record & Viva would carry 20 % of marks

Reading List

1. Anson R. and Ormelling F. J., 1994: *International Cartographic Association: Basic of Cartographic Vol.* Pregmen Press.
2. Gupta K. K. and Tyagi V. C., 1992: *Working with Maps*, Survey of India, DST, New Delhi.
3. Kraak M.-J. and Ormeling F., 2003, 2020: *Cartography: Visualization of Geo-Spatial Data*, Prentice-Hall.
4. Mishra R. P. and Ramesh A., 1989: *Fundamentals of Cartography*, Concept, New Delhi.
5. Manson, S. M. (ed) (2017). *Mapping, Society, and Technology*. Minneapolis, Minnesota: University of Minnesota Libraries Publishing. URL: https://open.lib.umn.edu/mapping
6. Monkhouse F. J. and Wilkinson H. R., 1973: *Maps and Diagrams*, Methuen, London.
7. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
8. Robinson A. H., 2009: *Elements of Cartography*, John Wiley and Sons, New York.
9. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
10. Bhopal Singh R L and Duttta P K (2012) Prayogatama Bhugol, Central Book Depot, Allahabad

Online Resource:

1. Commonwealth of Australia on behalf of ICSM, 2021. *Fundamental of Mapping* [online]. Available at - https://www.icsm.gov.au/education/fundamentals-mapping [Accessed on: 11/06/2021]
2. Gimond, Manuel, 2021. *Intro to GIS and Spatial Analysis* [online]. Available at - https://mgimond.github.io/Spatial/index.html [Accessed on: 11/06/2021]
3. Manson, S. M. (ed) (2017). Mapping, Society, and Technology. Minneapolis, Minnesota: University of Minnesota Libraries Publishing. URL: https://open.lib.umn.edu/mapping

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MASTER OF ARTS IN GEOGRAPHY
SEMESTER – II

GEOGRAPHY GEO – 421

Climatology

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of high Dept. physics and math

Aim of the Course: It aims to provide students with an integrated knowledge on the Earth's climate, understanding of physical climate processes and principles and laws that govern climate.

Course Learning Outcome: After completion of this course, the students will able to:

I. List the composition and structure of atmosphere; describe insolation and heat budget; explain the greenhouse effect, relate insolation and heat budget of an area. *(OBE level to be achieved – Remembering, understanding)*

II. Tell reasons of spatial variation in temperature on earth surface, explain the reason of thermal inversion, apply the concept of thermal inversion for solving air pollution; apply the concept of insolation to temperature variations and analyze its impact on atmospheric variables like pressure and wind at different spatial scale. *(OBE level to be achieved – Remembering, understanding, applying)*

III. Relate heat and water content through atmospheric process of evaporation, condensation, cloud formation; apply the concept of saturation and dew point in in humidity, compare the different types of humidity, classify and distinguish rain causing clouds and precipitation and rainfall. *(OBE level to be achieved – Remembering, understanding, applying, analyzing)*

IV. Outline the different types of airmass; understand and compare the development and effect of extreme weather condition like cyclone, front; Appraise the use of different climate classification system *(OBE level to be achieved – Remembering, understanding, applying, analyzing, Evaluating)*

Course Contents:

Unit 1. Earth's atmosphere and heat budget

1.1 Composition & Structure of Atmosphere; Chemical Composition of Atmosphere- Homosphere & Heterosphere

1.2 Insolation and Factors affecting distribution of insolation;

1.3 Heat Budget of Earth

(Covers OBE level – Remember, Understand and Apply)

Unit 2. Temperature variation and its effect

2.1 Temperature and factors controlling distribution of temperature; Horizontal & Vertical Distribution of temperature, Cause and effect Temperature Inversion

2.2 Atmospheric pressure and its measurement, Horizontal distribution of pressure & pressure belt

2.3 Wind and its types, Planetary Wind, Effect of Coriolis force on wind, Jet stream, Monsoon.

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 3. Atmospheric water

3.1 States of water and latent heat, and Evaporation; Condensation;

3.2 Water Vapour - concept of saturation, Dew point, Humidity measurement, Absolute Humidity, relative Humidity, Specific Humidity

3.3 Classification of Cloud; Forms of precipitation; Types of Rainfall and its measurement

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4.

4.1 Meaning, properties and source of Airmass

4.2Fronts, its Classification, development and effect

4.3 Origin, characteristics and effects of Tropical and Extra Tropical Cyclone

4.4 Climate classification basic Koeppen's and Thornthwaite's Classification of Climate

(Covers OBE level – Remember, Understand, Apply and Analyse and evaluate)

Reading List

1. Barry R. G. and Carleton 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. E. and Hidore J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi.
6. Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-Hill.
7. Lal, D S (2006): Climatology, Sharda Pustak Bhawan, Allahabad
8. Vatal, M (1986): Bhautik Bhugol, Central Book Depot, Allahabad
9. Singh, S (2009): Climatology, Prayag Pustak Bhawan, Allahabad

GEOGRAPHY GEO – 422

Economic Geography

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of economic development and natural resources

Aim of the Course: to provide a critical understanding of resource available to be used by humans and how they can be conserved and managed sustainably.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Review and understand the basics of Economic and Resource Geography (Unit 1- OBE level to be achieved – Understand)
II. Describe, discuss and evaluate the concept of development and theory of localisation of economic activity. (Unit 2- OBE level to be achieved – Analyse)
III. Describe and discuss different resource geography models and appraise, relate, compare, and differentiate them particularly the models related to natural resources (Unit 3- OBE level to be achieved – Analyse)
IV. Appraise and Interpret different resources in terms of their conservation and management and summarise their challenges and sustainability (Unit 4- OBE level to be achieved – Evaluate)

Course Contents:

Unit 1. Basics of Economic Geography

1.1. Nature, Scope and Significance of Economic Geography
1.2. Definition and Concept of Resources; Classification of Resources.
1.3. Concept and types of economic activities;

(Covers OBE level – Remember and Understand)

Unit 2. Spatial patterns of Economic development

2.1. Factors affecting location of economic activities-Von Thunen's Agricultural Location Theory; Industrial Location Theory of Weber and smith.
2.2. Economic Development: Concept and Indicators; Global Patterns of development-Classification of countries.
2.3. Rostow's stage model of economic growth
2.4. Environment vs Development Debate

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 3. Natural Resources: Use, Misuse and Future prospects

3.1. Models of Natural Resource Processes: Zimmermann's Primitive and Advance Models of Natural Resource Process, Kirk's Decision Model, Brookfield System Model.
3.2. Soil Resource; Water Resource; Forest Resource and Mineral Resources;

3.3. Impact of globalization on resources; Future Prospects of Natural Resources

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Conservation and Management of Natural Resources

4.1. Meaning and Concept of Conservation of Natural Resources;
4.2. Models of resource management: Biophysical; Economic; Cultural models (Mitchell 1980)
4.3. Resource Conservation and Management Methods of Natural Resources- Soil Resource, Water Resource, and Forest Resource;
4.4. Sustainable Natural resource Management – History; Goals (emphasizing SDGs);
4.5. Problems of Natural Resource Management in India.

(Covers OBE level – Remember, Understand, Apply, Analyse and Evaluate)

Reading List

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.
3. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: A Contemporary Introduction*, Wiley-Blackwell.
4. Eliot Hurst, M.E. (1972) A Geography of Economic Behaviour: An Introduction, Duxbury Press, California.
5. Gautam, Alka, (2013): Geography of Resources, Sharda Pustak Bhawan, Allahabad.
6. Guha, J.L. and P.R.Chattroj (1994) Economic geography- A Study of Resources, The World Press Pvt. Ltd. Calcutta
7. Gurjar, R.K. and Jat, B.C. (2012): Sansadhan Bhugol, Panchsheel Prakashan, Jaipur.
8. Haroon Mohamad. (2007) Geography of Resources, Vasundhara Parkashan, Gorakhpur (Hindi Edition)
9. Martin, R.H. and F.L. Warren. (1959) Natural Resources. McGraw Hill Book Co. London.
10. Maurya, S.D. (2015) Economic Geography. Parwalika Publications, Allahabad (Hindi Edition).
11. Mitchell B., 1997: *Resource and Environmental Management*, Longman Harlow, England.
12. Mitra, A. (2000): Resource Studies; Shridhar Publidhers., Kolkata.
13. Negi, B.S.(2000) Geography of Resources, Kedar Nath and Ram Nath,Meerut
14. Owen, Oliver, S.(1971) Natural Resource Conservation : A Ecological Approach. McMillion New Delhi.
15. Ramesh, A. (1984) Resource Geography (Ed.) R.P. Misra, Contribution to Indian Geography, Vol 5, Heritage Publishers, New Delhi.
16. Singh, A and Raja, M. (1982) Geography of Resources and Conservation (Hindi Edition) Pargati Parkashan, Meerut.

Online Resources

1. Mitchell, Bruce, 1980. Models of resource management, Sage Publication
2. United Nations, 2021. Sustainable Development Goals [online]. Available at: https://sdgs.un.org/goals [Accessed on 14th June 2021]

GEOGRAPHY GEO – 423

Statistical Methods in Geography

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of statistics

Aim of the Course: is to provide an understanding on the statistical interpretation of diverse range of geographical data unfurl geographical patterns and relationships. And also enable students to derive a meaningful inference from the complex observations on the different dimensions of geographical studies.

Course Learning Outcome: After the completion of the course, student will be able to

I. Show proficiency in interpreting geographical pattern of a data and apply basic data skills to organize, manage, and present data; Compare and make a rational choice amongst listed statistical sampling methods, data scaling based on the nature of data and purpose of study. *(OBE level to be achieved – Remembering, understanding, Applying)*

II. Explain basic descriptive statistics to calculate and apply measures of location and measures of dispersion -- grouped and ungrouped data in geographical problems. *(OBE level to be achieved – Remembering, understanding, Applying)*

III. Compute and interpret the results of Bivariate and Multivariate Regression and Correlation Analysis, for forecasting; (*OBE level to be achieved – Understanding, Applying, Analyzing, Evaluating)*

IV. Examine Test of Hypothesis for a population parameter; Demonstrate the practice of statistical thinking by taking a real-life problem; evaluate whether the procedure can be safely applied, explain the implications of statistical outcomes on the geographical study at-hand (*OBE level to be achieved – understanding, Applying, Analyzing, Evaluating)*

V. Demonstrate ability to write reports of the results of statistical analyses (both descriptive and inferential) of geographic questions/problems/issues; Develop statistical software skills to solve geographical issues. (*OBE level to be achieved – Understanding, Applying, Analyzing, Evaluating, Creating)*

Course Contents:

Unit 1: Data and data sampling

1.1 Types of data, scale of data measurement, data presentation, Selection of class interval for mapping.

1.2 Sampling techniques for geographical analysis; sample units and design, sampling frame and procedures, standard error and sample size, testing the adequacy of samples.

1.3 Scaling techniques-rank score; Weighted score; Nearest-neighbour analysis.

1.4 Drawing of histogram, Frequency curve, Frequency polygon, Bar diagram, Ogive using statistical tool (Excel or SPSS)

(OBE level to be achieved – Remembering, understanding, Applying)

Unit 2: Measures of central tendency and dispersion

2.1 Measurement of Mean, Median and mode, Quartile.

2.2 Measurement of Range, quartile deviation, mean deviation,

2.3 Measurement of Standard deviation; coefficient of variation, Lorenz Curve and Gini's Coefficient; location Quotient.

2.4 Graphical estimation and presentation of central tendency and dispersion using statistical tool (Excel or SPSS)

(OBE level to be achieved – Remembering, understanding, Applying)

Unit 3: Measurement of association

3.1 Forms of relation and measuring the strength of association, use of scatter diagram; Spearman's Rank Difference and Karl Pearson's Product Moment Correlation Coefficients, Coefficient of determination.

3.2 Regression analysis- regression equations, construction of regression line-interpolation, prediction, explanation; residual-statistical tests of significance of the estimates; computation of residuals

3.3 Drawing of scatter plot, Estimation of coefficient of correlation, coefficient of determination, fitting of regression line using statistical tool (Excel or SPSS)

OBE level to be achieved – Remembering, understanding, Applying, Evaluating)

Unit 4. Statistical Test

4.1 Hypothesis Testing: Needs and types of hypotheses-goodness of fit and significance and confidence levels-parametric and non-parametric procedures

4.2 Contingency tables, Chi-square test, t-test, Analysis of Variance (ANOVA) and its estimation using statistical tool (Excel or SPSS)

(OBE level to be achieved – Remembering, understanding, Applying, Evaluating)

Reading List

1. David, U. (1981): Introductory Spatial Analysis, Methuen, London.
2. Ebdon, D. (1983): Statistics in Geography: A Practical Approach, Blackwell, London.
3. Gregory, S. (1978): Statistical Methods and the Geographer (4th Edition), Longman, London.
4. Gupta, S.P. (2010): Statistical Methods, Sultan Chand and Sons, Latest Edition
5. Hammond, R. and McCullagh, P.S. (1974), Quantitative Techniques in Geography: An Introduction, Clarendan Press, Oxford.
6. John P. Cole and Cuchlaine, King, A. M. (1968): Quantitative Geography, Wiley, London
7. Mathews, J.A. (1987): Quantitative and Statistical Approaches to Geography, Practical Manual, Pergamon, Oxford.
8. Pal, S.K. (1998): Statistics for Geoscientists; Techniques and Applications, Concept Publishing, New Delhi.
9. Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed, Orient

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GEOGRAPHY GEO – 424

Fundamentals of Remote Sensing and GIS

Credit = 4

F.M. = 100 (Mid Term: 20 + Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of Remote Sensing and GIS

Aim of the Course: is to train students in relevant topics of Remote Sensing and GIS covering its theoretical and practical aspects in order to use the understanding of basic principles of Remote Sensing, satellite image processing, Geographical Information System and its application to natural resource management.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. To learn the basic concepts of remote sensing, understand the fundamental concepts of satellites, platforms, resolution, sensors and its processes (Unit 1 and 2 OBE level to be achieved – Apply)
II. To learn the concept of visual image interpretation and digital image processing (Unit 3 - OBE level to be achieved – Analyse)
III. To understand the application of remote sensing and GIS in natural resource management (Unit 4 - OBE level to be achieved - Understand)

Course Contents:

Unit 1. Principles of Remote Sensing, Satellite and Sensors

1.1. Introduction to Remote Sensing: Fundamental Principle of Remote Sensing; Types of Remote Sensing; Advantages and limitations of Remote Sensing
1.2. Electromagnetic Radiation (EMR); Electromagnetic Spectrum; Energy interacts with the Atmosphere; Energy interacts with the Earth Surface; Spectral Reflectance Curve
1.3. Platforms: Ground based platform; Aerial platform; Satellite platform
1.4. Satellite Orbits: Geostationary Satellites; Sun-synchronous Satellites
1.5. Resolution: Spatial Resolution; Radiometric Resolution; Spectral Resolution; Temporal Resolution
1.6. Multispectral Scanning: Across Track Scanning; Along Track Scanning
1.7. Data Reception, Transmission and Processing

(Covers OBE level – Remember, Understand and Analyse)

Unit 2. Image Interpretation and Digital Image Processing

2.1. Visual Image Interpretation; Elements of Visual Image Interpretation
2.2. Image Pre-processing: Radiometric correction; Geometric correction; Atmospheric correction
2.3. Image Enhancement: Filtering; Band Ratioing, Principal Component Analysis
2.4. Image Classification: Supervised Classification; Unsupervised Classification

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Unit 3. Remote Sensing Applications

3.1. Landuse and Landcover Mapping; Urban Sprawl Mapping
3.2. Agriculture: Crop Type Mapping and Inventory; Crop Monitoring and Damage Assessment
3.3. Forestry: Deforestation, Afforestation Mapping; Species Identification and Mapping; Forest Fire Monitoring and Mapping
3.4. Hydrological Mapping: Ocean and Coastal Area Monitoring and Mapping

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Unit-4. Introduction to Geographical Information System (GIS)

4.1. Definition of GIS; Components of GIS; Spatial and Non-Spatial Data; Digitization
4.2. Raster and Vector Data; Spatial Analysis; Spatial Statistics; GIS Applications
4.3. Global Positioning System (GPS): Concepts; GPS Positioning Types; GPS Systems
4.5. Multi Criteria Decision Making

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Reading List

1. Joseph, G. (2004) Fundamentals of Remote Sensing, Universities Press Pvt. Ltd
2. Lillesand, T.M. and Kiefer, R.W. (2002) Remote Sensing and Image Interpretation, John Wiley and Sons, New Delhi
3. Jensen, J.R. (2003) Remote Sensing of Environment: An Earth Resource Perspective, Pearson Education Pvt. Ltd
4. Haywood, L. Comelius, S. and S, Carver. (1988) An introduction to Geographical information system, Addistion Willey, New York
5. Chrisman, N.R. (1997) Remote sensing and Geographical information systems
6. Sabbins, F. F, (1987) Remote sensing: principles and interpretations, W.H. Freeman and Co, New York

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GEOGRAPHY GEO – 425

Remote Sensing and Geographical Information System Applications (Practical)

Credit = 4

F.M. = 100 (Mid Term: 20 + Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of Remote Sensing and GIS

Aim of the Course: is to train students in relevant topics of Remote Sensing and GIS covering practical aspects in order to use the understanding of basic principles of Remote Sensing, satellite image processing, Geographical Information System and its application to natural resource management.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Overall understanding of potential of Remote Sensing, GIS and GPS
II. Understanding of image interpretation and digital image processing
III. Understanding of GIS analysis workflow and integrated applications in various domains of natural resource management

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Course Contents:

Unit 1. Basics of Remote Sensing

1.1. Display of satellite images; Import and export of file; Layer stacking of image; Geo-referencing (map to image and image to map); Subset of image using AOI; Mosaic of images
1.2. Radiometric correction of image; Geometric correction of image
1.3. Masking of image; Re-project of image

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Unit 2. Digital Image Processing

2.1. Visual interpretation of satellite images
2.2. Image Enhancement: Radiometric Enhancement; Spectral Enhancement; Image Filtering; Band Ratioing, Principal Component Analysis
2.3. Unsupervised Classification of Image (K-Mean and Isodata); Supervised Classification of Image (Maximum Likelihood and Minimum Distance to Mean); Accuracy Assessment;

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Unit 3. Remote Sensing Application in Natural Resource Management

3.1. Landuse and landcover classification
3.2. Forest Cover Classification and area estimation
3.3. Flood Delineation and River watershed Mapping

3.4. Urban Sprawl Mapping

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Unit 4. Geographical Information System (GIS)

4.1. Geographic Data, Input, Storage and Editing: Spatial data and non spatial data integration; Editing of data; Building of topology

4.2. Digitization: point, line and polygon; storage and manipulation of GIS data bases; vector and raster-based models; presentation of GIS output.

4.1. Coordinate systems and map projections. Multi Criteria Decision Making.

4.2. GPS: Meaning and history of GPS, GPS Satellite Constellation, Segment and Application of GIS

4.3.

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Course Learning Outcomes: After completion of this course successfully, the students will be able to:

IV. To learn the concept of satellite data processing, image geometric correction, radiometric correction and its processes, digital image classification and accuracy assessment (Unit 1 and 2 OBE level to be achieved – Apply)

V. To learn use of satellite image in different natural resource management (Unit 3 - OBE level to be achieved – Analyse)

VI. To understand the application of GIS in spatial data analysis, modeling and management (Unit 4 - OBE level to be achieved - Understand)

Reading List

1. NY. Burrough P.A. (1986) Principles of GIS for land assessment. University press London
2. Burrough, P.A. and McDonnell, R.A. (1998) *Principles of Geographic Information Systems*, Oxford University Press
3. Chang, K-t. (2006) *Introduction to Geographic Information Systems*, Tata McGraw-Hill
4. DeMers, M. (2009) *Fundamentals of Geographic Information Systems*, 4th Edition, John Wiley & Sons.
5. Heywood, I. Cornelius, S. Carver, S. (2011) *An Introduction to Geographic Information Systems,* 4th Edition, Pearson Education.
6. Jensen, J.R. (2006) *Remote Sensing of the Environment: An Earth Resource Perspective*, 2nd Edition, Pearson Education
7. Joseph, G. (2005) *Fundamentals of Remote Sensing*, Orient Blackswan.
8. Lillesand, T.M., Kiefer, R.W. and Chipman, J.W. (2004) *Remote Sensing and Image Interpretation*, 5th Edition, Wiley.

INTER DISCIPLINE-COURSE GEO – AC GEO 02

Geography of Tourism

Credit = 3

F.M. = 100 (Internal: 20+02 Project (10+10) +Term End: 60)

Prerequisite Course / Knowledge (If any): Familiarity with Tourism.

Aim of the Course: to examine geographies of tourism on different scales (global, national and local) along with their impacts (economic, social, cultural, political, and environmental).

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Define, describe and relate the basics characteristics and trends of tourism covering India and world (Unit 1 - OBE level to be achieved – Remember)
II. Review, classify and distinguish classification and characteristics of tourism (Unit 2 - OBE level to be achieved – Understand)
III. Relate and Analyze spatial variation in tourism (Unit 3 - OBE level to be achieved – Analyze)
IV. Evaluate opportunities, impact and management of tourism (Unit 4 - OBE level to be achieved – Evaluate)

Course Contents:

Unit 1. Basics of Tourism

1.1. Tourism: Definition, nature and scope;
1.2. Factors affecting tourists flow and movements;
1.3. Recent trends in tourists' flow and movements;

Unit 2. Spatial variation in tourism

3.1. Traditional and recent tourist destinations of India and world
3.2. Factors affecting tourism development across countries;
3.3. Major and minor tourism generating countries, and their tourism policies

Unit 3. Tourism – Opportunities, Impact, management

4.1. Tourism opportunities (e.g. eco-tourism, mining tourism, adventure tourism, home stay local tourism)
4.2. Impacts of tourism on economies, societies, and environments;
4.3. Planning and management issues associated with tourism.

Reading List -

1. Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects.

Kanishka, New Delhi.
2. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London.
3. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
4. Page, S. J. (2011) Tourism Management: An Introduction, Butterworth-Heinemann- USA. Chapter 2.
5. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge, USA, www.cabi.org.
6. Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow
7. Singh Jagbir (2014) "Eco-Tourism" Published by - I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

MASTER OF ARTS IN GEOGRAPHY
SEMESTER – III

GEOGRAPHY GEO – 511

Oceanography

Credit = 4

F.M. = 100 (Mid Term: 20 + Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of Oceanography

Aim of the Course: is to train students in relevant topics of Oceanography covering its theoretical and practical aspects in order to understand different process in ocean water and its relatedstudies.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Review, interpret and describe different perspectives of relief features of ocean basins (Unit 1- OBE level to be achieved – Apply).
II. Review, interpret, discuss, relate and critic different fundamental concepts of ocean temperature and salinity and its processes (Unit 2 - OBE level to be achieved – Analyse)
III. Identify the concept of understanding in oceanographic studies developed in Unit 2, 3 and 4
IV. Review, interpret and describe different perspectives in Oceanography (OBE level to be achieved – Apply).
V. Review, interpret, discuss, relate and critic different fundamental concepts of Oceanography covered in Unit 2 and 3 of this module (OBE level to be achieved – Analyse.
VI. Critically understand the oceanic environment and its different processes, study of marine environment in different dimensions (OBE level to be achieved – Understand)

Course Contents:

Unit 1. Perspectives in Oceanography

1.1. Introduction to ocean and its relief features: A general view of ocean; Continental Shelf; Continental Slope; Deep Sea Plain; Mid Oceanic Ridges; Submarine Canyons; Sea Mounts; Sea Guyots
1.2. Bottom Relief of Ocean: Atlantic Ocean; Pacific Ocean; Indian Ocean
1.3. Ocean-Atmosphere Interaction: significance of ocean atmosphere interaction; coupling phenomenon; concept of boundary layers; ocean –atmosphere interaction near the tropics

(Covers OBE level – Remember, Understand and Analyse)

Unit 2. Fundamental Concepts – I

2.1. Ocean Temperature and Salinity: Factors affecting horizontal distribution of temperature of ocean water; Controlling factors of the density of ocean water
2.2. Factors controlling distribution of salinity; Horizontal and Vertical distribution of Salinity

(Covers OBE level – Remember, Understand, Analyse and Apply)

Unit 3. Fundamental Concepts – II

6.1. Tide: Concept of Tides; Types of Tide; Progressive Wave Theory on Tide; Equilibrium Theory on Tide

6.2. Ocean Current: Concept of ocean current; Factors associated with ocean current; Currents of Atlantic Ocean; Currents of Pacific Ocean; Currents of Indian Ocean

6.3. Concept of El-Nino; La-Nino effects

(Covers OBE level – Remember, Understand, Analyse and Apply)

Unit 4. Perspectives in

4.1. Coral Reef: Coral reef; Types of Coral reef; Ideal Condition for the growth of Coral reef

4.2. Theory of Coral reef: Subsidence theory of Darwin; Standstill theory of Murray; Coral Bleaching; Marine resource and its types

4.3. Marine and Coastal Area Management Policies – EEZ ,CRZ ,ICZM

(Covers OBE level – Remember, Understand, Analyse, Apply and Evaluate)

Reading List

1. Davis, R.J.A. (1986) Oceanography: An Introduction to Marine Environments, Winc-Brown Publication, Iowa
2. Sharma, R.C. and Vatal, M. (2018) Oceanography: Surjeet Publications, New Delhi
3. Lal, D.S. (2008) Climatology and Oceanography, Sharada Pustak Bhawan, Allahabad, 2008
4. Garrison, T.S. (2015) Oceanography: An Invitation to Marine Science, Cengage Publication
5. Siddartha, K. (2016) Oceanography, *Kitab Mahal Publication*
6. Singh, S. (2009) Physical Geography, Pravalika Publications, Allahabad
7. Khullar, D.R. (2012) Physical Geography, Kalyani Publishers, New Delhi

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GEOGRAPHY GEO – 512

Social and cultural geography

Credit = 4

F.M. = 100 (Mid Term: 20+Term End:80)

Prerequisite Course / Knowledge (If any): None.

Aim of the Course: is to provide essential understanding of the social and cultural side of Geography with emphasis on India.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Recognise, define and describe the evolution and relevance of Social Geography (OBE level to be achieved – Understand)
II. Identify, summarise and compute elements of Social Geography with particular emphasis on India (OBE level to be achieved – Apply)
III. Recognise, define and describe the evolution and relevance of Cultural Geography (OBE level to be achieved – Understand)
IV. Identify, summarise and compute elements of Cultural Geography with particular emphasis on India (OBE level to be achieved – Apply)

Course Contents:

Unit 1. Social Geography- evolution and relevance

1.1. Definition: Nature and Scope and evolution of Social Geography;
1.2. Philosophical Bases of Social Geography (Positivism, Structuralism);
1.3. Social Structure & Social Processes;
1.4. Concept of Social Space;

(Covers OBE level – Remember and Understand)

Unit 2. Elements of Social Geography (with emphasis on India)

2.1. Ethnicity, Tribe, Dialect, Language, Caste & Religion;
2.2. Socio-Cultural Regions of India;
2.3. Linguistic Elements in India.

(Covers OBE level – Remember, Understand and Apply)

Unit 3. Cultural Geography-evolution and relevance

3.1. Definition: Nature and Scope and evolution of Cultural Geography;
3.2. Culture: Definition, Elements & Components;
3.3. Themes and Concepts in Cultural Geography: Culture Area, Cultural Region, Cultural Diffusion and Assimilation, Cultural ecology, Cultural Interaction, Cultural Landscape
3.4. Concepts of Culture –Traits, Diffusion, Acculturation;

(Covers OBE level – Remember and Understand)

Unit 4. Components of Cultural Geography (with emphasis on India)

4.1. Types and Pattern of World Cultural regions;
4.2. Language, Religion, Ethnicity;
4.3. Cultures and cultural regions in India;
4.4. Ethnicities in India

(Covers OBE level – Remember, Understand and Apply)

Reading List

1. Ahmad, A. (1999). Social Geography. Jaipur: Rawat Publications.
2. Crang, Mike (2013). Cultural Geography. London: Routledge.
3. Dreze. Jean and A. Sen (2004). An Uncertain Glory: India and its Contradiction. New Delhi: Penguine India
4. Eyles, John (1979). An Introduction to Social Geography, London: OUP
5. Mitchell, D. (2000). Cultural Geography: A Critical Introduction, Oxford: Blackwell Publishers Ltd.
6. Price, M., and M. Lewis (1993). "The Reinvention of Cultural Geography". Annals of the Association of American Geographers, 83 (1):1-17.
7. Robertson, I. and Richards, P. (2003). (eds.): Studying Cultural Landscapes. London: Arnold
8. Subbarao, Bendapudi (1958). The Personality of India, Faculty of Arts, Baroda: MS University
9. Khilnani, Sunil (2004). The Idea of India. Delhi: Penguine India
10. Thrift, Nigel (2005) Cultural Geography: Critical Concepts in the social Sciences. London: Routledge

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GEOGRAPHY GEO – 513

Settlement Geography

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): None.

Aim of the Course: is to provide a thorough understanding of settlements across the globe including their importance, trends and growth.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Recognize and state basic concepts of Settlement Geography (Unit 1: OBE level to be achieved – Remember)
II. Understand, discuss and describe fundamentals of Rural Settlement (Unit 2: OBE level to be achieved – Understand)
III. Understand, discuss and describe fundamentals of Urban Settlement (Unit 3: OBE level to be achieved – Apply)
IV. Review, understand, discuss and describe settlement hierarchies and policies (Unit 4: OBE level to be achieved – Analyse)

Course Contents:

Unit 1. Introduction to Settlement Geography

1.1. Nature, scope, significance and approaches to study Settlement Geography;
1.2. Development of Settlement Geography;
1.3. Theories of evolution of settlements and Geographical factors affecting growth of settlement distribution;
1.4. Types of Settlement: Rural and Urban Rural-urban dichotomy and continuum

(Covers OBE level – Remember)

Unit 2. Rural Settlement

2.1. Site, location, types and pattern;
2.2. Morphology of rural settlement;
2.3. Rural House types: planned and architectural style in different geographical environment;
2.4. Types and pattern of rural settlements

(Covers OBE level – Remember and Understand)

Unit 3. Urban Settlement

3.1. Origin of the cities: Ancient and Medieval;
3.2. Industrial growth and urban expansion;
3.3. Functional classification of urban centres: Harris and Nelson
3.4. Functional classification of Indian cities: Ashok Mitra and others

(Covers OBE level – Remember, Understand and Apply)

Unit 4. Settlement Hierarchy and Policies

4.1. Rural service centre;

4.2. Central Place theory (Christaller);
4.3. Theory of Losch and its application
4.4. Issues and policies of Settlements, settlement planning

(Covers OBE level – Remember, Understand, Apply and Analyse)

Reading List

1. Ambrose, Peter, Concepts in Geography Vol.-I Settlement Pattern, Longman 1970.
2. Baskin, C., (Translator), Central Places in Southern Germany, Prentice-Hall Inc.
3. Fyfe N. R. and Kenny J. T., 2005: *The Urban Geography Reader*, Routledge.
4. Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures,Technological Mobilities and the Urban Condition*, Routledge.
5. Hall T., 2006: Urban Geography, Taylor and Francis.
6. Haggett, Peter, Andrew D. Cliff and Allen Frey (editer), Locational Models Arnold Heinemann 1979.
7. King, Leslie, J., Central Place Theory, Saga Publications, New Delhi 1986.
8. Mayer, M. Harold and Clyde F. Kohn (editors), Readings in Urban Geography, Central Book Depot, Allahabad 1967.
9. Nangia, Sudesh, Delhi Metropolitan Region, K.B. Publications, New Delhi 1976.
10. Prakasa, Rao, V.L.S., Urbanisation in India; Spatial Dimensions, Concept Publishing Co., New Delhi 1983.
11. Ramachandran, R., Urbanisation and Urban Systems in India, Oxford University Press, New Delhi 1992.
12. Singh R.L. and Kashi, Nath Singh (editors), Readings in Rural Settlement Geography, National Geographical Society of India, Varanasi 1975.
13. Sinha, VPN, Usha Verma and Anuradha Sahay, Introduction to Settlement Geography, Rajesh Publication, 2017. (ISBN 10: 938368433X / ISBN 13: 9789383684335)
14. Srinivasan, K. and M. Vlassoff, (editors), Population-Development Nexus in India: Challenges for the New Millennium, Tata McGraw-Hill Publishing Co. Ltd., New Delhi 2001.
15. Ucko, M.J., Ruth Tringham and G.W. Dimbleby (editors), Man, Settlement and Urbanism, Duckworth 1972.

GEOGRAPHY GEO – 514

Human Geography

Credit = 4

F.M. = 100 (Mid Term: 20+Term End:80)

Prerequisite Course / Knowledge (If any): None.

Aim of the Course: is to provide a thorough understanding of distribution and compositions of humans.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Recognize and state basic concepts of Human Geography (Unit 1: OBE level to be achieved – Remember)
II. Review, understand and summarise population dynamics (Unit 2: OBE level to be achieved – Understand)
III. Review and analyse demographic characteristics (Unit 3: OBE level to be achieved – Analyze)
IV. Examine social composites (Unit 4: OBE level to be achieved – Analyze)

Course Contents:

Unit 1. Basics about Human Geography

1.1. Definition, nature and scope of Human Geography;
1.2. Culture - meaning and elements; Cultural Regions of the world;
1.3. Races of the world

(Covers OBE level – Remember)

Unit 2. Population dynamics

2.1. World Population: Growth and Distribution;
2.2. Rural and Urban composition – world and India;

(Covers OBE level – Remember and Understand)

Unit 3. Demographic characteristics

3.1. Age, sex, literacy, fertility, mortality, occupational structure and migration.
3.2. Demographic Transition Theory;

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Social composites

4.1. Race, Religion and language;
4.2. Settlements - Types and patterns
4.3. Trends and Patterns of Urbanization – world and India

(Covers OBE level – Remember, Understand, Apply and Analyse)

Reading List –

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur
3. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
4. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
5. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
6. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
7. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.

Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

GEOGRAPHY GEO – 515

Field Survey Methods (Practical)

Credit = 4

F.M. = 100

Prerequisite Course / Knowledge (If any): Basic understanding of surveying and field requirements would be preferable.

Aim of the Course: is to provide essential field related skills to the students in order to take cutting-edge research of any problem in real world (preferably local at this education stage).

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Understand basics of field work and identify field techniques to be used (Unit 1 - OBE level to be achieved – Analyse)
II. Compare, differentiate and evaluate which data to collect from field and how (Unit 2 - OBE level to be achieved – Evaluate)
III. Assess, design and develop field reports after evaluating and synthesizing the available information (Unit 3 – OBE level to be achieved – Create)
IV. Asses and synthesize the information collected during field work and summarise the outcome (Unit 4 – OBE level to be achieved – Create)

Course Contents:

Unit 1. Field Survey - basics

1.1. Basics of Field work: objective of field work (physical or socioeconomic), Identifying the case-studies and defining the field model (conceptual geographical model)
1.2. Identification of field techniques to be used:
  1.2.1. Measurement – nature of measurement (nominal, ordinal, interval and ratio); Key aspects (validity, reliability, Precision and Accuracy)
  1.2.2. Sampling – Key elements (Population, bias, sample size etc.); methods (simple random, stratified and systematic), errors

Practical: Study area is to be conveniently finalized as per the identified objective of field work for stressing on any local problem or any contemporary issue. Field model should be determined.

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 2. Collecting data from field

2.1. Data source and collection – primary and secondary;
2.2. Surveying (Physical) – Plane Table Survey; Prismatic Compass Survey; Theodolite, and Dumpy level; Global Positioning System (GPS)
2.3. Surveying (Socioeconomic) - Observation (Participants and non-participants), Questionnaire (Open, close, structured and non-structured) and interview (individual and focus groups)

Practical: Identify data source and collection methods as per the designed field model for the selected problem in unit 1. Collect data. Note: Field work must not exceed 7 days.

(Covers OBE level – Remember, Understand, Apply, Analyse and Evaluate)

Unit 3. Field report writing

3.1. Text of the Report should ideally be divided into the following sections: Introduction and Statement of problem(s), Aim and Objectives, Materials and methods, Analysis and Results, Discussions, Conclusion, References/ Bibliography (API for Harvard Format) and Appendices (if any).

Practical: Perform the analyses from collected data and write a report with Figures and Tables captioned properly. Note: Report should not exceed 5,000 words (max 15 pages excluding references).

(Covers OBE level – Remember, Understand, Apply, Analyse, Evaluate and Create)

Unit 4. Final report

4.1. Seminar Presentation (based on socioeconomic survey) would carry 20% of total marks.

4.2. Record & Viva would carry 20% of total marks

Note: Final copy of the report (along with soft copy) must be submitted to the department.

Reading List

1. Bhopal Singh R L and Duttta P K (2012) Prayogatama Bhugol, Central Book Depot, Allahabad
2. Rice, S. 2003. Ch 17: *Sampling in Geography*. *In: Clifford, N., French, S., Valentine, G. (Eds) Key Methods in Geography*, London: Sage Publication.
3. Robinson A. H., 2009: *Elements of Cartography*, John Wiley and Sons, New York.
4. Sharma J. P., 2010: *Prayogic Bhugol*, Rastogi Publishers, Meerut.
5. Singh R. L. and Singh R. P. B., 1999: *Elements of Practical Geography*, Kalyani Publishers.
6. Stoddard, R.H. 1982: *Field Techniques and Research Methods in Geography*, National Council for Geographic Education Pacesetter Series, Lounsbury/Sommers/Fernald.

Online Resources:

1. Brunet, R. 2001. *Models in geography? A sense to research*, CyberGeo, 204. https://doi.org/10.4000/cybergeo.4288
2. Rana, L. 2021. Models, Theory & Systems Analysis In Geography [online]. Available at: http://ags.geography.du.ac.in/Study%20Materials_files/Lalita%20Rana_SC.pdf
3. Manson, S. M. (ed) (2017). *Mapping, Society, and Technology*. Minneapolis, Minnesota: University of Minnesota Libraries Publishing. URL: https://open.lib.umn.edu/mapping

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MASTER OF ARTS IN GEOGRAPHY
SEMESTER – IV

GEOGRAPHY GEO – 521

Regional development and planning

Credit = 4

F.M. = 100 (Mid Term: 20+Term End:80)

Prerequisite Course / Knowledge (If any): None.

Aim of the Course: is to provide essential understanding of the social and cultural side of Geography with emphasis on India.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Recognise, define and describe the basic elements of Regional development and planning (OBE level to be achieved – Understand)
II. Outline, distinguish and relate theories, models and indicators of Regional Planning (OBE level to be achieved – Apply)
III. Examine planning regions with particular emphasis on India (OBE level to be achieved – Analyze)
IV. Examine, compare and explain different concepts and contemporary issues with particular emphasis on India (OBE level to be achieved – Analyze)

Course Contents:

Unit 1. Basics elements

1.1. Concept of Planning; Types of Planning; Regional Planning;
1.2. Region: Types of Region;
1.3. Methods of Delineation of Different Types of Region.

(Covers OBE level – Remember and Understand)

Unit 2. Regional Planning Theories, models and indicators (With emphasis on India)

2.1. Growth Pole Theory;
2.2. Spatial Diffusion Theory;
2.3. Cumulative Causative Model;
2.4. Human Development Index & its Indicators;
2.5. Regional Disparity in India;

(Covers OBE level – Remember, Understand and Apply)

Unit 3. Planning Regions (With emphasis on India)

3.1. Planning Regions of India (Macro, Meso & Micro);
3.2. Planning for Command Area Development;
3.3. Watershed Management; Hill & Tribal Area Development.

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Concepts and contemporary issues (With emphasis on India)

4.1. Concept of Multi-Level Planning
4.2. Decentralised Planning;
4.3. People Participation in Planning Process;
4.4. Panchayati Raj System;

4.5. Environmental Issues in Regional Planning;
4.6. Sustainable Development Planning.

(Covers OBE level – Remember, Understand, Apply and Analyse)

Reading list

1. Chandana R.C. (2015); Regional Planning and Development, Kalyani Publishers, New Delhi.
2. Chand, M., & Puri, V. K. (1983). Regional Planning in India. New Delhi: Allied
3. Dawkins, D. J. (2003). Regional Development Theory: Conceptual Foundations, Classic Works, and Recent Developments. Journal of Planning Literature, 18 (2), 131-172.
4. Issard, W. (1956). Location and Space Economy. Massachuesetts: MIT Press.
5. Hall, P. 2002. Urban &Regional Planning, Routledge Publication: London & New York. Available online at: http://www.pnu.ac.ir/portal/file/showfile.aspx?id=66559f80-6bb9-4498-b821-aff9faf455e9
6. Issard, W. (1971). Methods of Regional Analysis : An Introduction to Regional Science. Cambridge: MIT
7. Maboguje, A. L., & Mishra, R. P. (1995). Regional Development Alternatives: International Perspectives. Nagoya: United Nations Centre for Regional Development Series (1-7), on Regional Development.
8. Mishra, R. P. (1992). Regional Planning: Concepts, Tools, Techniques and Case Studies. New DelhI (Revised Edition): Concept.
9. Mitra, A. (1968). Levels of Development in India, Census of India 1961. Monograph No.7.
10. Mohapatra, A. C., & Pathak, C. R. (2003). Economic Liberalisation and Regional Disparities in India. Shillong: Star Publication House.
11. Raza, Moonis. 1988. Regional Development, Heritage, New Delhi.
12. Sundaram, K. V. (1985). Geography and Planning. New Delhi: Concept. 10. Richardson, H. W. (1969). Urban and Regional Economics. London: World Univ Press.

GEOGRAPHY GEO – 522

Environmental Geography

Credit = 4

F.M. = 100 (Mid Term: 20 + Term End: 80)

Prerequisite Course / Knowledge (If any): Basic knowledge of Environmental studies

Aim of the Course: is to train students on fundamental issues that raised due to the intersection of geography and environmental science, with a precise focus on different geographical approaches, humans effect on physical environment and initiatives to control modification of environment.

Course Learning Outcome: On completion of the course, student will able to

I. Tell the components of environment with their geographical aspect; interpret the historical geographical perspective on man-environment interaction, choose and compare the different geographical approach for complex environmental problems.

(OBE level to be achieved – Remembering, understanding, Applying)

II. Classify the source of major environmental pollutions, identify their effect; compare different pollution control measurements and decide the right way to control the pollution in a geographical set up.

(OBE level to be achieved – Remembering, understanding, Applying, Evaluating)

III. Recognize the role of global warming for climate change; show how these global environmental phenomena pose threat to sustainability; outline the actionable measurement that can be taken at local to global scale to combat the problem ofclimate change and global warming; Explain the cause and effect of natural hazards and its interlinkage with global environmental problem; Prepare an action plan for reducing the effect of natural disaster in different geographical set up.

(OBE level to be achieved – Remembering, understanding, Applying, Evaluating)

IV. Outline the various global initiatives towards making earth a sustainable planet by measurable actions of member nations; outline the various national laws for safeguards natural environment; Formulate the scope and procedures for assessing the environmental effect of any developmental project across its life cycle

(OBE level to be achieved – Remembering, understanding, Applying)

Course Contents:

Unit 1. Concept and approach to Environmental Geography

1.1 Fundamentals of environment; components of environment, Environmental Geography- Concept, Significance, objective and scope;

1.2 Man-environment relationship on historic perspective; Environmental deterministic approach; Possibilistic approach.

(OBE level to be achieved – Remembering, understanding, Applying)

Unit 2. Environmental pollution

2.1 Sources and effect of Water Pollution. Water pollution control, Water Conservation Strategies;

2.2 Source and cause of Air pollution and impact on health; Measure to control air pollution

2.3 Sources, characteristics and control of Noise Pollution; solid waste pollution and its management.

(OBE level to be achieved – Remembering, understanding, Applying, Evaluating)

Unit 3. Environmental challenges

3.1 The concept of Climatic Change; Global Warming- cause, effect and remedies;

3.2 Natural hazards- Flood, Earthquake, Tsunami.

(OBE level to be achieved – Remembering, understanding, Applying, Evaluating)

Unit 4. Environmental initiative and Legislation

4.1 Earth Summit 1992 and its subsequent proceedings such as Rio+10 and Rio+20

4.2 Wildlife protection act of India 1972, The environment protection act of 1986, National Environmental Tribunal Act of India 1995.

4.3 The concept, scope, procedure of Environmental Impact Assessment (EIA).

(OBE level to be achieved – Remembering, understanding, Applying, Evaluating)

Reading List

1. Chandna R. C., 2002: Environmental Geography, Kalyani Publication, Ludhiana.
2. Cunninghum W. P. and Cunninghum M. A., 2004: Principals of Environmental Science: Inquiry and Applications, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: The Nature of the Environment, Blackwell Publication, Oxford.
4. Miller G. T., 2004: Environmental Science: Working with the Earth, Thomson BrooksCole, Singapore.
5. MoEF, 2006: National Environmental Policy-2006, Ministry of Environment and Forests, Government of India.
6. Odum, E. P. et al, 2005: Fundamentals of Ecology, Ceneage Learning India.
7. Singh S., 1997: Environmental Geography, Prayag Pustak Bhawan. Allahabad.
8. UNEP, 2007: Global Environment Outlook: GEO4: Environment for Development, United Nations Environment Programme.
9. Trivedy R. K., 2009: Handbook of Environmental Laws, Acts, Guidelines, Compliances & Standards, EM International, Pune
10. Shrivastava A.K., 2021: Text Book of Disaster Management, Scientific Publishers

GEOGRAPHY GEO – 523

Disaster Management

Credit = 4

F.M. = 100 (Mid Term: 20+Term End: 80)

Prerequisite Course / Knowledge (If any): None.

Aim of the Course: To provide basic conceptual understanding of disasters, approaches to manage disasters in order to build skills to respond to disasters

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Recognize, discuss and distinguish basic elements and typs of disasters (Unit 1: OBE level to be achieved – Understand)
II. Understand, discuss and discover cycle of disaster management (Unit 2: OBE level to be achieved – Apply)
III. Review and appraise measures for Rehabilitation, Reconstruction and Recovery (Unit 3: OBE level to be achieved – Analyze)
IV. Assess the role of information technology in disaster management (Unit 4: OBE level to be achieved – Evaluate)

Course Contents:

Unit 1. Introduction

1.1. Concept of Hazard, Risk and Disaster;
1.2. Classification of Disaster;
1.3. Meaning and Dimensions of Disaster Management.
1.4. Major categories: Hydrological Disasters (Flood and Drought); Geological Disasters (Earthquakes and Landslides); Meteorological Disasters (Cyclone, Tidal waves); Manmade Disasters (Chemical disasters, Biological disasters, Radiological disasters, Nuclear disasters).

(Covers OBE level – Remember and Understand)

Unit 2. Disaster Preparedness, Mitigation and Response

2.1. Concept and Nature of disaster preparedness;
2.2. Disaster Preparedness Plan.
2.3. Disaster Mitigation and Disaster Mitigation Strategies.
2.4. Disaster Response Plan, Role of Multiple Stakeholders in Disaster Response.

(Covers OBE level – Remember, Understand and Apply)

Unit 3. Rehabilitation, Reconstruction and Recovery

3.1. Damage Assessment, Reconstruction and Rehabilitation
3.2. Role of various government and non-governmental agencies in Recovery Measures.

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Role of Information Technology in Disaster Management

4.1. Disaster management Information System;
4.2. Role of Geospatial Technologies;
4.3. Role of Communication in Disasters management –HAM radio, Satellite, Video Conferencing, Electronics devices, social media.

(Covers OBE level – Remember, Understand, Apply, Analyse and Evaluate)

Reading list

1. Blaikie, P., Cannon, T., & Davis, I. (1994). At Risk: Natural Hazards, People's Vulnerability, and Disasters. London: Routledge.
2. Council, N. R. (2006). Facing Hazards and Disasters: Understanding Human Dimensions. Washington: National Academies Press.
3. Damon, P. Copola, (2006) Introduction to International Disaster Management, Butterworth Heineman.
4. Disaster Management Guidelines, GOI-UND Disaster Risk Program (2009-2012)
5. Documents, G. O. (Various Years). Vulnerability Atlas (2004), Disaster Management Act (2005), Disaster Management Policy (2009).
6. Flynn, S. (2007). The Edge of Disaster: Rebuilding A Resilient Nation. New York: Random House.
7. Gupta A.K., Niar S.S and Chatterjee S. (2013) Disaster management and Risk Reduction, Role of Environmental Knowledge, Narosa Publishing House, Delhi.
8. Modh S. (2010) Managing Natural Disasters, Mac Millan publishers India LTD.
9. Murthy D.B.N. (2012) Disaster Management, Deep and Deep Publication PVT. Ltd. New Delhi.
10. Pal, I., & Shaw, R. (2017). Disaster Risk Governance in India and Cross Cutting Issues, Singapore: Springer.
11. Paraswamam, S., & Unikrishnan, P. V. (2000). India Disaster Report. New Delhi: Oxford.
12. Platt, R. H. (1999). Disasters and Democracy: The Politics of Extreme Natural Events. Washington: Island Press.
13. Quarantelli, E. (1998). What is a Disaster? Perspectives on the Question. London: Routledge.
14. Schneid, T., & Collins, I. (1998). Disaster Management and Preparedness. UNU-EHS. Various years. World Risk Reports. Washington: Lewis.
15. Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). At Risk: Natural Hazards, People's Vulnerability and Disasters (2nd Ed.). London and New York: Routledge
16. United Nations, 2021. Sustainable Development Goals [online]. Available at: https://sdgs.un.org/goals [Accessed on 14th June 2021]

GEOGRAPHY GEO – 524

Urbanisation and Migration

Credit = 4

F.M. = 100(Mid Term:20+Term End:80)

Prerequisite Course / Knowledge (If any): Familiarity with concepts of urbanization and migration.

Aim of the Course: To acquaint students with the concepts of urbanization, its theories, processes and measurements; concepts of internal and international migration their types, streams, patterns, theories and measurement and implications of migration trends on urbanization.

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Define, describe and relate the basics characteristics and trends of urbanization in India and world (Unit 1 - OBE level to be achieved – Remember)
II. Classify the migrants and understand the theories of migration (Unit 2 - OBE level to be achieved – Understand)
III. Analyze magnitude of slums and slum problems (Unit 3 - OBE level to be achieved – Analyze)
IV. Evaluate the problems and prospects of urbanization and migration (Unit 4 - OBE level to be achieved – Evaluate)

Course Contents:

Unit 1. The Process of Urbanization

1.1. Urbanization: Definition and concept; economic, sociological, demographic and geographical connotation of urbanization; measurement of urban growth
1.2. Global patterns of urbanization
1.3. Urbanisation in India- The emergence of Indus urbanisation; Urbanisation in post-independent India

(Covers OBE level – Remember)

Unit 2. Migration

2.1. Definition of the migrants: Internal and international migration; Migration selectivity: Streams; distance; age; gender; education and skills; Measurement of migration.
2.2. Theories of migration: Revenstein; Stouffer; Lee; Zelensiky; Lewis; Todaro.
2.3. Causes and consequences of migration, relevance of push and Pull factors.

(Covers OBE level – Remember and Understand)

Unit 3. Urbanization and Development

3.1. Urbanisation, industrialisation and economic Development in historical context
3.2. Slums: concept, typologies and theories;
3.3. Growth of slums in India
3.4. Urban informal sector.

(Covers OBE level – Remember, Understand, Apply and Analyse)

Unit 4. Urbanisation, Migration and Sustainable Development Agenda

4.1. Urbanisation and the urban problems
4.2. Urbanisation and the Agenda for sustainable development

4.3. Migration and the Agenda for sustainable development

(Covers OBE level – Remember, Understand, Apply, Analyse and Evaluate)

Readings List

1. Aijaz, R. 2017. Measuring Urbanisation in India, ORF Issue Brief, Issue no 2018 IB # 218 (orfonline.org) [Accessed on 5th Sept 2021]
2. Beall, Jo and Fox, Sean (2009): Cities and Development, Routledge Perspectives on Development, Routledge, London 2. Birch, Eugenie L. and Wachter, Susan M. (2011): Global Urbanization: The City in the Twenty-First Century, University of Pennsylvania Press 3. Carter, Harold (2010): The Study of Urban Geography, Rawat Publications, Jaipur, 4th Edition.
3. Bhagat, R.B. and Mohanty, S., 2009. Emerging pattern of urbanisation and the contribution of migration in urban growth in India. Asian Population Studies, 5(1), pp.5-20.
4. Bhagat, R.B. 2017. Urbanisation in India: Trend, Pattern and Policy Issues, IIPS Working Paper No-12. IIPS, Mumbai.
5. Chandrasekhar, S. and Sharma, Ajay (May 2014): "Urbanization and Spatial Patterns of Internal Migration in India", Indira Gandhi Institute of Development Research, Mumbai, WP-2014-016, Available at: http://www.igidr.ac.in/pdf/publication/WP-2014-016.pdf
6. Davis, Kingsley. 1961. Urbanisation in India: Past and Future in Roy Turner (ed.) India's Urban Future, University of California Press, Berkeley, pp. 3-26
7. Fyfe N. R. and Kenny J. T., 2005: *The Urban Geography Reader*, Routledge.
8. Graham S. and Marvin S., 2001: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge.
9. Hall T., 2006: Urban Geography, Taylor and Francis.
10. Possehl, G.L. 1990. Revolution in the urban revolution: the emergence of Indus urbanization, Annual Review of Anthropology, 19:261-82.
11. Kundu, Amitabh (2011): "Trends and Processes of Urbanisation in India", Urbanization and Emerging Population Issues – 6, Human Settlements Group, IIED Population and Development Branch, UNFPA
12. Morris, R.N. (2007): Urban Sociology, George Allen and Unwin Ltd., London
13. Prakasa, Rao, V.L.S., Urbanisation in India; Spatial Dimensions, Concept Publishing Co., New Delhi 1983.
14. Ramachandran, R., Urbanisation and Urban Systems in India, Oxford University Press, New Delhi 1992.
15. United Nations, 2021. Sustainable Development Goals [online]. Available at: https://sdgs.un.org/goals [Accessed on 14th June 2021]
16. Young, A. F. (2013). Urbanization, environmental justice, and social-environmental vulnerability in Brazil. In Urbanization and Sustainability (pp. 95-116). Springer Netherland
17. UN, 2009. The World Urbanisation Prospects: The 2009 Revision, Department of Economic and Social Affairs, Population Division, UN, New York.
18. UN, 2019. The World Urbanisation Prospects: The 2018 Revision, Department of Economic and Social Affairs, Population Division, UN, New York.
19. UN, 2003. The Challenge of Slums Global Report on Human Settlements 2003, UN-HABITAT, Earthscan publication ltd, London.

GEOGRAPHY GEO – 525

Project Work Report and Viva-voce (Practical papers)

Credit = 4

F.M. = 50+50

Prerequisite Course / Knowledge (If any): Basic idea of research methods.

Aim of the Course: is to provide essential research skills to the students in order to take cutting-edge research of any problem in real world (up to regional scale at this education stage).

Course Learning Outcomes: After completion of this course, the students will be able to:

I. Design a research project for any topic of choice (OBE level to be achieved – Analyse)
II. Use understanding developed in different course to identify the methods to be used in designed research (OBE level to be achieved – Evaluate)
III. Manage data and perform analyses under designed research (OBE level to be achieved – Evaluate)
IV. Design and write report on the outcome and explain the limitations and future prospect of the research carried out (OBE level to be achieved – Create)
V. Summarise and represent the research outcomes to audiences (OBE level to be achieved – Create).

Course Contents:

Unit 5. Dissertation

5.1. Time-line in phases

i. 0-4 Weeks – Identification of the problem; literature review and conceptual model of research
ii. 5-10 Weeks – Finalizing methods; data collection
iii. 11-16 Weeks – Data analyses and results
iv. 16- 20 weeks –Report writing; submission at the end of working day of 20th Week.

Note: Research progress should be reported at the end of each phase.

5.2. General Guide Lines:

→ The final report should cover the following structure:

i. Introduction to the problem with Aim and objectives of the study
ii. Literature review (aim and objective of study could also come here if not in previous section)
iii. Material and Methods
iv. Results
v. Discussion
vi. Conclusions
vii. References/Bibliography

→ Report should be typed with 1.5 Line Spacing, Arial/ Times New Roman/ Calibri Font, and 12 Font Size (Table and Figure captions 11 Font Size).

→ The list of references should be given at the end in the API or Harvard format.

→ Every table, figure, photograph should have a caption and source (if any).

→ The total word should not exceed 10,000 in number (maximum 50 including text, figures, tables, photographs, references and appendices.

Note: Computer typed Report duly endorsed by the Supervisor(s) is to be produced individually by the students. A soft copy should be submitted to department along with dissertation.

(Covers OBE level – Remember, Understand, Apply, Analyse, Evaluate and Create)

Unit 6. Seminar and Viva

The students will

→ Present the research carried out in the departmental seminar.

→ Face a Viva Voce based on their research.

(Covers OBE level – Remember, Understand, Apply, Analyse, Evaluate and Create)