Sant Gadge Baba Amravati University, Amravati
Faculty: Humanities
Session- 2023-24
Two years- four semesters Master's Degree Programme – NEP-v23
Syllabus Programme - M. A. (Geography) First Year, First Semester

Part A

POs:

1. Design and conduct independent research in their chosen field in the discipline
2. Demonstrate knowledge of concepts, methods, and theories designed to enhance understanding of the natural world and human society.
3. Communicate the results and significance of their research in both written and oral form
4. Evaluate how historical events have been influenced by, and have influenced, physical and human geographic factors in local, regional, national, and global settings.
5. Follow established ethical guidelines for research and teaching
6. Have an in-depth understanding of and mastery of the literature in, at least one particular geographic subfield.
7. A geographer has better job opportunities in government departments, Cartographer, Researcher, Teacher/Professor, Competitive Examinations, Government employer, GIS specialist, Climatologist, Transportation Manager, Surveyor, GPS Surveyors.

PSOs:

1. Examine social and environmental processes, with a particular focus on space and place, critical theory, practical application, analysis and intervention in chosen field within the discipline of Geography
2. Evaluate causes, consequences, and possible solutions to persistent, contemporary, and emerging global issues
3. Classify processes of environmental change and evaluate the relationship between human beings and their surroundings, bringing to bear knowledge from many disciplines.

Employability Potential of the Programme:

The skills you develop during your degree will equip you for a range of jobs. If you're unsure which career path to follow, try doing some work shadowing to find out what interests you. Geography graduates are more employable, with the skills, knowledge and understanding acquired during a geography degree. It is held in high regard by employers. The nature of working lives is changing as per requirement and needs of the employers. It is less likely that you will spend all of your working life in one organization or even in the same sector. If your career path is to be varied, you will need transferable skills and flexibility. Geography provides you with these:

Transferable skills

Employers seek a mixture of skills, qualifications and experience when they recruit for a post. As a graduate you will be in demand for your transferable skills, such as:

- Being a good communicator with strong presentation skills.
- Being competent with ICT.
- Being able to carry out research.
- Being used to working effectively in a team and taking a variety of roles in a team.
- Being able to manage your time by juggling commitments, meeting deadlines and managing stress.
- Being good at combining information from a variety of sources with excellent writing skills.

Specific skills You will also be in demand for the specific skills and understanding that being a geographer helps you to develop, including:

Scientific and lab skills

- Producing and interpreting maps
- Research and interpretation of data, including GIS skills
- Debate and enquiry

- Environmental and social awareness
- Team-based project work
- Fieldwork techniques

Employability for all graduates is closely linked to the key skills, discipline-specific skills and knowledge which they take from their graduation and post graduation education. Applications of GIS and Remote Sensing' module which incorporated GIS-specific skills, GIS theory and remote sensing techniques, but also developed soft (transferable) skills such as team work and communication skills.
Most graduates will not offer further study and hence need to be awarded of the job market.

Job options

After the M.A. Graduate in Geography career prospects and job scope is as follows :

In many of the diverse career paths available with a degree in this field, geography majors enjoy high earning potential. Studying geography opens up a wide range of careers....

Work experience

The direction your career takes will depend on your interest in physical or human geography. Try to secure work experience in your chosen field to get an insight into the work available and to establish contacts. Fieldwork is a useful way of developing your practical skills and gaining hands-on experience, which is highly valued by employers. Some degree courses include a placement year, which is another great way to get an insight into working practicalities.

Typical employers

A geography degree enables you to embark on a career in a range of fields, including those in the education, commerce, industry, transport, tourism and public sectors. You'll also have many transferable skills, attracting employers from the business, law and finance sectors.

Employers include:

- The armed forces
- Charities
- The Civil Service
- Environmental consultancies
- Environmental protection agencies
- Information systems organizations
- Local government
- Ministry of Defense
- Police service
- Private companies
- Utility companies.

Jobs directly related to your degree:

- Cartographer
- Commercial/residential surveyor
- Environmental consultant
- Geographical information systems officer
- Planning and development surveyor
- Secondary school teacher/professor
- Social researcher
- Town planner

Jobs where your degree would be useful:

- Astronomer
- International aid/development worker
- Landscape architect
- Logistics and distribution manager
- Market researcher
- Nature conservation officer
- Political risk analyst
- Sustainability consultant
- Tourism officer
- Transport planner

BEST PAYING JOBS WITH A GEOGRAPHY DEGREE

Are you interested in making maps, addressing environmental issues, weighing in on political and economic problems in modern society, or using computer programs and high-tech equipment? The study of geography brings together inquiry in the natural sciences and the social sciences, as well as practical skills in the use of computer systems to analyze spatial data. Some examples of high-paying jobs for graduates of

geography degree programs include the following occupations.

1. Cartographers

Cartographers create maps for a living. Today, cartographers don't just rely on their own drawing skills but instead use technological innovations like digital mapping software to produce more accurate maps. With the help of cartography skills many students employed as cartographers in educational and government offices Ex. Town Planning, Bhumi Abhilekh, PWD, B & C Departments. Cartography is art and science of graphically representing a Geographical area, usually on a flat surface such as map or charts.

2. Tourist Guide:

With the help of basic Geographical knowledge of tourist places in different state, Students gets employability as tourist guide at different places in different state and countries. Tourist guides are members of the hospitality and travel industry who show visitors around places of interest. Tour guide may lead groups or individual through historical sites, Museums, Geographical Destination and on outdoor excursions. The Indian institute of tourism and travel management conducts guide training on behalf of the ministry of tourism. Being a tourism guide is one of the most rewarding jobs in the world.

3. Demographer:

Demography is the study and practice of the collecting analysing and presenting data that has a Geographic or Areal dimension such as Census of demographic data. Data collected using GPS technology in the field can be mapped onto digital maps and globes or viewed and analyzed in GIS.

4. Geography Teachers

A geography teacher at the postsecondary level may work for a community college, degree college or university. Depending on their work environment, geography teachers may conduct their own research in addition to educating geography majors and students in other programs of study.

5. Land Surveyors

For students who are primarily interested in the physical features of geographic locations and the technology used to gather and analyze geographical data, land surveyor is a surprisingly high-paying path to consider. The role of a land surveyor is to make the precise measurements needed to establish the boundaries of properties to be used for engineering and construction projects and acquire information about the contour and shape of the properties' surface. Land surveyor jobs may involve a considerable amount of fieldwork. These professionals often work outdoors in less-than-ideal weather and perform physically demanding work, including carrying heavy equipment and walking long distances and for extended periods of time.

6. Geographers

Some geography graduates go on to become, simply geographers. Geographers are scientists who study either the natural environment (physical geography) or human interactions with the environment (human geography) and prepare reports on their findings.

7. GIS Developer

Geographical information systems technology is necessary not only for the scientific study of geography but also for just about every field related to it, from land surveying and environmental planning to emergency management. If the technical services side of the field is what most interests you, a career as a GIS developer may be in your future. GIS Developers are the professionals who design and program GIS computer software applications.

8. Urban Planners

Having an undergraduate degree in geography can help both urban and regional planners do the work to create communities that thrive. An urban planner focuses specifically on urban expansion development, while regional planners may develop plans for areas on a broader scale in terms of distance, population and type of area (urban, suburban or rural).

9. Remote Sensing Analyst

Remote sensing analyst is another career in the specialization of geographic technology. The geographical information systems technology that is so important in the field of geography and in related efforts relies upon data. Remote sensing technology, the use of satellites and aircraft to collect images, is one method of acquiring this data. If you work as a remote sensing analyst, your professional focus is on data analysis as applied to these images.

10. Environmental Consultants

A background in physical geography can also prepare you to work as an environmental consultant. Most commonly, environmental consultants work for government agencies or companies. They do more than just consider compliance with existing legislation, instead drawing upon their expertise in environmental geology and science and their skills in the use of geological technologies to advise organizations on the likely environmental consequences of their policies or projects.

11. Economic Geographers

This career draws on the social science side of geography. Economic geographers study economic conditions, patterns and problems through the lens of how place affects economics. Trade patterns across regions and among countries, the ways different areas exploit their natural resources for economic gain and how economic markets perform across different geographic areas are all potential areas of interest for economic geographers.

12. Geopolitical Analysts

Geopolitical analysts and geopolitical consultants are scholars of the political systems, movements, trends and events of different areas. As experts in politics in various regions, geopolitical analysts and consultants can explain patterns and trends. Predict the outcomes of political activities and events and offer advice to politicians, government officials and agencies, non-profit organizations and for-profit companies that may be affected by these political developments. Students interested in political geography might take classes in the geography of international development and the relationship dynamics that exist between location, political power and culture.

13. Market Research Analysts

In a bachelor's degree program in geography, students learn to analyze data – a versatile skill that transfers to any number of careers. Some geography graduates find jobs in the business field, often in roles like market research analyst. Market research analysts use methods of statistical analysis to interpret data for the purpose of helping companies make business decisions about what products and services to offer and at what price.

14. Landscape Architects

The geography-related job with the highest median salary is landscape architect. Landscape architecture is the design of outdoor built environments. The study of geography pertains to landscape architecture because the best landscape architects must understand the geographical features of the land and natural environment as well as how humans will use and interact with the outdoor space. However, working as a landscape architect requires a great deal more knowledge of design, including the use of computer-aided design and drafting (CADD) software

15. Environmental Managers

Students majoring in geography develop the tools they need to understand the environment. One way to put your geography degree to work in service of protecting the natural world around us is to pursue a career in environmental management. Environmental managers focus less in their careers on environmental science and more on compliance with environmental regulations. As such, environmental managers often work for government entities – but that isn't always the case. Some environmental managers work for companies and organizations that are required to comply with environmental regulations, especially in the manufacturing, construction and utility industries.

16. Emergency Management Directors

When natural disasters and other types of crises strike, emergency management directors are the leaders who step up with a plan to intervene in the problem and mitigate the harm it causes. Through their strong analytical skills, organizational skills and leadership skills, emergency management directors plan the efforts that can save lives, rescue those in danger and protect the situation from becoming even worse. A geography degree can provide a background in several areas of importance for professionals working in the field of emergency management.
Some of students can start careers in travel agent or travel agency. Travel agents research plan and book trips for groups or individuals also.

Job opportunities in Top Companies: T

The company offering the jobs for M.A. Geography Graduate provide for fresheners through it changes with experience, skill and their capabilities to works.

- Coal India Limited
- Oil India Limited
- Mineral Exploration Corporation Limited
- Institute for social and economic change
- Jharkhand public service commission
- Andhra pradesh public service commission
- Gujarat public service commission
- Government of Assam
- Haryana Space Application Centre

Best Countries:

Below is the list of top countries offering job opportunities to M.A. Geography Graduates

- UK
- USA
- Canada
- Germany

- Sweden

About Geography Career Salary:

MA Geography is a course that helps in the specialization in the field of society and its structure. The salary varies for each sector- government and private and the type of job or even the skills possessed by the aspirant. The average salary of a graduate is around INR 3 LPA to 7 LPA

Instructions :

1) The Theory papers shall have five units each.
2) There will be one question on each unit. Each question will have an alternate choice.
3) The theory paper shall be of three hours durations and each practical examination shall be of four hours duration.
4) The syllabus of each theory is based on four clock hours per week and each practical on six clock hours per week.
5) The strength of students for each practical / seminar batch shall not be more than ten students.
6) There shall be seminar for students of two clock hours per batch per week.
7) The total periods for each theory paper shall be of 60 per semester.
8) The total periods for each practical paper shall be of 90 per semester.
9) The student has to pass Theory, Practical and internal assessment separately.
10) Submission of certified Journal, field Report, Tour Report is compulsory. Without which students will not be allowed to appear for practical examination.

Format of the Question Paper

1. The question paper will be of 100 marks.
2. The distribution of the 100 marks of the question paper will be as follows:

a) 70 marks for written examination.
b) 30 marks for internal examination.

Format of the Theory Examination:
Total Questions: 6
a) Long-answer questions: 2 (12 marks each)
b) Short-answer questions: 3 (12 marks each)
c) Objective questions: 1 (10 questions carrying 1 mark each) (Based on the entire syllabus)

Format of the Internal Examination:

For the internal examination of 30 marks, the concerned subject teacher shall assess the students on following points.

a) Viva-Voce / Seminar - 10 Marks.

b) Assignments - 20 Marks.

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Part B

M.A. (Geography) First Year (Semester – I)

Subject	Code of the Course Subject	Title of the Course Subject	Total Number of Periods	No of Credits
Discipline Specific Core: DSC				
RM & IPR	RM&IPR	Research Methodology and Intellectual Property Rights	60	04
DSC-I.1	POG	Principal of Geomorphology	60	04
DSC-II.1	OCE	Oceanography	60	04
DSE-I /MOOC (Select any One) Discipline Specific Elective				
DSE-I.A	RPD	Regional Planning and Development	60	04
DSE-I.B/ MOOC	EVG	Environmental Geography		
DSC - I.1	GEOP-1	Practical I	75	03
DSC - II.1	GEOP-2	Practical II	75	03
				22

Semester – II

Subject	Code of the Course Subject	Title of the Course Subject	Total Number of Periods	No of Credits
Discipline Specific Core: DSC				
DSC-I.2	CLG	Principles of Climatology	60	04
DSC-II.2	GOT	Geography of Tourism	60	04
DSE-I /MOOC (Select any One) Discipline Specific Elective				
DSE-II.A	BOG	Biogeography	60	04
DSE-II.B	GWR	Geography of Water Resources		
DSC-I.2 Lab	GEOP-3	Practical – I	75	03
DSC-II.2 Lab	GEOP-4	Practical – II	75	03
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Programme: M.A. Geography

Paper – I RM&IPR (Semester - 1)

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)	Total Credit
RM&IPR	**Research Methodology and IPR**	**60 Periods of 1 hours**	**04**

COs

1. Demonstrate the ability to choose methods appropriate to research aims and objectives
2. Understand the limitations of particular research methods
3. Develop skills in qualitative and quantitative data analysis and presentation
4. Develop advanced critical thinking skills
5. Demonstrate enhanced writing skills
6. To understand the importance and use of statistical techniques in geography
7. Form frequency distribution tables and graphically interpret the results.
8. To measure central tendency and dispersion of data.
9. To examine the relationship between two or more variables with correlation and Regression analysis.
10. The main objective of the IPR is to make the students aware of their rights for the protection of their invention done in their project work

Unit	Content
Unit I	a) Meaning , Nature, Characteristics, Objective, Scope, Area, Need of Research b) Classification of Research – Fundamental, Applied, Experimental Research c) Review of Literature. **12 (periods)**
Unit II	Major Steps in Scientific Research : a) Formulation of Research Problem b) Hypothesis - Sources, Characteristics, Types (Null & Alternative), Testing of Hypothesis c) Research Design – Exploration, Formulative Research Design, Descriptive, Diagnostic & Experimental Research Design. d) Data Collection Sampling Types. **(12periods)**
Unit III	Qualitative Research Techniques : a) Techniques & Methods of Qualitative Research b) Data Collection - Primary and Secondary Sources c) Case Study, Content Analysis d) Field Work, Survey, Obstacle, Solution.. e) Test – T test, chi-square test, Importance and Utility **(12 periods)**
Unit IV	Dissertation/Report Writing : a) Use of quotation, Foot / End notes – Pagination, Documentation, Style. b) Linguistics, Textual Literary Criticism, Biographical Criticism, Literary History. c) Punctuations – The Format of a Thesis – From the first Draft to the Final copy.. **(12periods)**

Unit V	a) Introduction to IPR: Meaning of property, Origin, Nature, Meaning of Intellectual Property Rights b) Introduction to IPR: Meaning of property, Origin, Nature, Meaning of Intellectual Property Rights **c)** Patent rights — Origin, Definition of Patent & Types of Patent Right d) Copy right- Origin, & Types of Copy Right **(12periods)**

Reference-

1) Jooda, M. Denteck and Cook – Research Methods in Social Relations.

2) Goode, wand Hattp – Methods in Social Research.

3) Morton Robert – Social Theory of Logical Structure

4) Dr. Wollcinson T.S. and Dr. Bhandarkar P.L. – Methodology, Public House New Delhi.

5) Mukharjee P.N. 2000 – Methodology in Social Research

6) Young P – Scientific Social Surveys & Research.

7) P. Garrett – Statistics in Education & Psychology.

8) Festinger L.D. and Kartg D. – Research Methods in Behavioural Sciences.

9) Punch Deith 1986 – Introduction to Social Research.

10) Mueller & Schuessler – Statistical Research in Sociology

11) Dr. Sharma Priyanka - Research in Social Science Inter-disciplinary Perspective.Social Research Foundation ,Kedwar, Nagpur, Kanpur

12) M. L.A. Handbook for Writers of - Eighth Edition – Joseph Gibaldi Research Papers

13) Thesis Writing - C.J. Parsons Kothari C.R. Research Methodology, Methods and Tech. Book,

14) H.V. Deshpande - Research in Literature and Language : Philosophy, Areas and Methodology

15) Intellectual Property Right and the Law,Gogia Law Agency, by Dr G.B.Reddy

16) IPR by P.Narayanan

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography

Paper – II (DSC – I.1) Semester- 1

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)	Total Credit
POG /Geography	**Principal of Geomorphology**	**60 Periods of 1 hours**	**04**

COs

After completion this introductory oceanography course, a student will be able to

1. Understand the effect of rotation of revolution the Earth
2. Understand interior structure of the earth
3. Know the importance of longitudes& latitudes
4. International Date line and Standard time
5. Understand Theory regarding of Origin of Continents and oceans
6. The students will be able to identify the types of rocks.
7. Understand the work of internal and external forces and their associated Landforms.
8. Identify different geomorphological feature.
9. Understand the concept of mass Wasting Understand the Application of Geomorphology

Unit	Content
Unit I	Meaning, nature and scope of Geomorphology, Geological evolution of earth and Geological Time Scale. Development of Geomorphic Thoughts, A brief review of fundamental concepts in Geomorphology. **12 (periods)**
Unit II	Constitution of earth's interior. Evolution of continents and ocean basins: Continental drift Theory of Taylor and Wegner, Theory of plate tectonics. Geosynclines: Geosynclinal Theory of Kobber, Holme's Convection Current Theory, Theory of Istostasy. Endogenetic earth movements - Types, consequences landforms . **(12periods)**
Unit III	Exogenetic Processes: Concept of gradation, agents and processes of gradation. Causes, Types and classification of Weathering, Mass movements. **(12 periods)**
Unit IV	Geomorphic processes and resulting landforms: Fluvial, Glacial, Aeolian, Coastal and Karst Topography. **(12periods)**
Unit V	Geomorphic processes and resulting landforms: Fluvial, Glacial, Aeolian, Coastal and Karst Topography. Application **(12periods)**
	of Geomorphological knowledge in human life : Hydro-Geomorphology, Urban Geomorphology. Environmental Geomorphology, Geomorphic hazards. **(12periods)**

Course Material/Learning Resources

Anhest, F., (1996) 'Introduction to Geomrphology' Arnold, London, Sydney, Aukland.

Bloom, A.L. (1991) 'Geomorphology, 2nd Ed. Englewood cliffs,' M.J. Prentice Hall.

Bloom, A.L. (2002) 'Geomorphology: A Systematic Analysis of Late Cenozoic

landforms,' Pearson Education Pvt. Ltd., Singapore.
Brierley G.J. & Fryirs, K.A. (2005) 'Geomorphology and River Management,' Blackwell Publishing, Oxford U.K.
Briggs, K. (1985) 'Physical Geography : Process and System,' Hodder and Stoughton, London.
Chorley, R.J. & (1985) 'Geomrphology,' Methuen & Co. Ltd., London, New York.
Chorley R.J. (1972) 'Spatial Analysis in Geomorphology,' Methuen, London.
Cook, R.U. & (1974) 'Geomorphology in Environmental Management- An Doornkamp, J.C. Introduction.' Clarendon Press, Oxford.
Dayal, P. (1996) 'A Textbook of Geomorphology,' Shukla Book Depot, Patna.
Dury, G.H. (1959) 'The face of the Earth,' Penguin Harmonds worth.
Engeln, O.D. Von (1944) 'Geomorphology,' The Macmillan Company, New York.
Embleton and King 'Glacial and Periglacial Geomorphology'.
Enayat Ahmad 'Geomorphology'
Fairbridge, R.W. (1968) 'Encyclopaedia of Geomorphology,' Reinhold, New York.
Garner H.F. (1974) 'The Origin of Landscape – A Synthesis of Geomorphology, Oxford University Press, London.
Hart, M.G. (1986) 'Geomorphology – Pure and Applied, George Allen and Unwin, London.
Kale V.S. & (2010) 'Introduction to Geomorphology,' University Press, Hyderabad. Gupta, A.
King L.C. (1962) 'The morphology of the Earth,' Hafner, New York.
Lal D.S. 'Physical Geography.
Leopold, L.B., (1964) 'Fluvial Processes in Geomorphology,' W.H. Freeman, San Wolman M.G. & Miller Francisco. J.P.
Lobeck A.K. (1939) 'Geomorphology,' Mc Graw Hill, New York.
Mitchell, C.W. (1973) 'Terrain Evaluation' Longmans, London.
Morgan R.S. & (1959) 'Outline of Geomorphology : The Physical basis of Geography,' Wooldridge S.W. Longman Green, London.
Melhorn, W.N. (1976) 'Theories of Landform Development,' State University of New and R.C. Flemal York, Binghamton.
Ollier, C.D. (1979) 'Weathering,' Longman, London.
Pitty, A.F. (1971) 'Introduction to Geomorphology,' Methuen, London.
Ritter D.F., (1995) 'Process Geomorphology,' Wim C. Brown Publishers, Chicago. Kochel R.C., Miller, J.R.
Robinson, Harry (1969) 'Morphology and Landscape,' University Tutorial Press Ltd., London.
Stoddart D.R (ed.) (1996) 'Process and Forms in Geomorphology,' Routledge, New York.
Skinner, B.J. & (1995) 'The Dynamic Earth,' John Wiley, New York. Porter, S.C.
Sparks B.W. (1960) 'Geomorphology' Longman, London.
Sharma, H.S.(ed) (1980) 'Perspectives in Geomorphology,' Concept Publication, New Delhi
Singh Savindra (1998) 'Geomorphology,' Prayag Publication, Allahabad.
Strahler, A.H. (1992) 'Modern Physical Geography,' John Wiley and Sons, New and Strahler A.N. Jersey.
Thornbury, W.D. (1960) 'Principles of Geomorphology,' John Wiley, New York.

Weblink to Equivalent MOOC on SWAYAM if relevant:

Weblink to Equivalent Virtual Lab if relevant:

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography

Paper –III (DSC – II.1) Semester 1

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)	Total Credit
OCE / Geography	**Oceanography**	**60 Periods of 1 hours**	**04**

COs

After completion this introductory oceanography course, a student will be able to

1. Identify reasons why sustainable practices regarding ocean resources (e.g. fisheries, hydrocarbons) are important and affect students' present and future life and the world economy.
2. Demonstrate how the oceans are connected to and drive major Earth processes, such as atmospheric and oceanic circulation, climate and weather, plate tectonics, and sustainability of human and marine populations.
3. Discuss the importance of oceanography in global initiatives and political decisions for the present and future.
4. Explain the theory of plate tectonics and its relationship to the formation of major features of the seafloor.
5. Analyze atmospheric and oceanic circulation systems as well as their interconnections and driving forces.
6. Describe the principles involved in the generation of waves and tides and evaluate their effects on coastal processes and marine ecosystems.
7. Summarize the major physical and chemical properties of seawater and how each affects marine life.
8. Explain the relationship between plants and animals in the ocean and how they affect the cycling of matter and energy across the ocean, atmosphere and lithosphere.
9. Identify the consequences of a rise in sea-level on the coastal zone and society and possible mitigation and adaptation

Unit	Content
Unit I	Nature and scope of Oceanography. – History of Oceanography. Distribution of land and water, Age and Origin of oceans, Major features of ocean basins: Continental shelf, Slope, Rise, Submarine channels, Hills, Ridges, Trenches and Abyssal plains. Bottom relief features of Pacific, Atlantic and Indian ocean. **(12periods)**
Unit II	Physical and Chemical properties of sea water: Chemical Composition, Distribution of temperature, salinity and density of oceans and seas, Ocean circulation: Interlink between atmospheric circulation and circulation patterns in the oceans. Ocean currents: Factors affecting on ocean currents, Currents of Pacific, Atlantic and Indian ocean, Oceanic waves tsunamis and tides, **(12periods)**
Unit III	Marine Biological Environment: Bio-geochemical cycles in the Ocean, Biozones, Types of organism: Plankton, Nekton and Benthos. **(12 periods)**
Unit IV	Marine deposits : Classification of marine deposit, formation of coral reef, coral bleaching. Marine Resources: Biological resources, Mineral resources and Energy resources. Ocean as a store house of natural resources. **(12 periods)**
Unit V	Human Impact on Marine Environment: Exclusive economic zones, Law of Sea, Effect of pollution on Marine Environment. Man and Marine Environment, Ocean and

	World geopolitics.	**(12periods)**

Course Material/Learning Resources

Text books:

Reference Books: **:**

- Anikouchine, W.A. and Sternberg, R.W. : 'The world oceans : An Introduction to Oceanography.'
- Davis Richard J.A. (1986) : 'Oceanography- An Introduction to the Marine Environment' Wm. C. Brown, Iowa.
- Duxbury, C.A. and (1996) Duxbury B. : 'An Introduction to the World's oceans' – C. Brown, Iowa, 2nd ed.
- Davis R., and (2003) : 'Beaches and Coasts,' Wiley – Blackwell,
- Fitzgerald, D. Hoboken, New Jersey.
- Day, T. (2008) : 'Oceans (Rev.Ed.),' Facts on File, New York.
- Garrison, T. (2001) 'Oceanography – An Introduction to Marine Science,' Brooks/Cole, Pacific Grove, U.S.A.
- Garrison, T. (2012) 'Essentials of Oceanography' (Sixth Edit) Brooks/Cole, Cengage Learning U.S.A.
- Gross, M. Grant (1987) 'Oceanography – A view of the earth,' Prentice – Hall Inc, New Jersey
- King C.A.M. (1962) 'Oceanography for Geographers.'
- Lal D.S. 'Oceanography.'
- Pinet, P.R. (2009) 'Invitation to Oceanography (5th Ed.),' Jones and Bartlet Publishers, Sudbury, Massachusetts.
- Peter K.W. 'An Introduction to Marine Environment.'
- Sharma R.C. & Vatel M. 'Oceanography for geographers.'
- Stewart, R.H. (2008) 'An Introduction to Physical Oceanography.'
- Singh S. (2014) 'Oceanography' Prayag Publication, Allahabad
- Stewart R.H. (2008) 'An Introduction to Physical Oceanography.'
- Ummerkutty, A.N.P. (1985) 'Science of The Oceans and Human Life,' N.B.T. New Delhi.
- Weisberg J and Howard 'Introductory Oceanography.'

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography

Paper –IV (DSE -I . A) Semester 1

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
RPD/ Geography	**Regional Planning and Development**	**60 Periods of 1 hours**

COs

After completion this introductory oceanography course, a student will be able to

1. Understand the definition and concept of regional geography study about the principles and importance of Regional Geography.
2. Understand regional approach for the study regionalization and planning.
3. Understand theoretical structure of planning by central place theory, Growth pole Theory, and Gunnar mydal's cumulative causation.
4. Study about causes, effect of regional disparities and remedies on disparities.
5. Develop some models like economic model
6. Student presentations on any one topic related to regional geography with issues and solutions.

Unit	Content
Unit I	Region – A conceptual frame work. Types of region: Formal and Functional, Uniform and Nodal, Single purpose and Composite region, Hierarchy of region, Methods of delineation of region. **(12periods)**
Unit II	Meaning, aims and objectives of regional planning, Types of planning, Merits and limitations of regional planning, Role of Geography in Planning., **(12periods)**
Unit III	Concept of growth and development, indicators of development, Measures of regional development, Models of Economic Growth – Rastow's model, Myrdal's concept of internal growth, Central place theory, Growth Pole, Growth foci approach. **(12 periods)**
Unit IV	Planning in India – Regional disparities in India – Agricultural, Industrial, Rural-Urban, Need for regional planning in India, Rural and Urban planning, Planning for tribal areas, Hilly areas, Drought prone areas. **(12 periods)**
Unit V	Salient features of Indian five year plans, Role of 'NITI Aayog' in the process of planning in India, Bottom-up approach in planning, Natural and cultural orientation of regional planning in India. **(12periods)**

Course Material/Learning Resources

Reference Books: :

- Abler, R., (1971) : 'Spatial Organization : The Geographers view of the world, Prentice Hall, Englewood Cliff, N.J.
- Alden, J (1974) and Morgan : 'Regional Planning : A comprehensive view,' Leonard, Hill Book, Beds.
- Adrill J (1974) : 'New Citizens Guide to Town and Country Planning,' Charies Knight and Company Ltd., London.
- Bhat L.S. (1973) : 'Regional planning in India,' Statistical Publishing society, Kolkata.
- Chand, M (2003) and Puri, V.K. : Regional Planning in India,' Allied Publishers Pvt. Ltd., New Delhi.
- Chandana R.C. (2000) : Regional Planning – A comprehensive Text,' Kalyani Pub Ludiana.
- Cook, P. (1983) : 'Theories of planning and spatial development,' Hutchinson and company Ltd., London.
- Chorley, R.J. (1967) and Hagget, P. : 'Models in Geography,' Methuen, London.
- Christaller W. (1966) : 'Central Places in South Germany, Translated by C.W. Baskin, Prentice Hall, Eaglewood Cliff, New Jersey.
- Diamond, D (ed) (1982) : 'Regional Disparities and Regional Policies,' Pergamom Press, Oxford.
- Dickinson R.E. (1964) : 'City and Region- A geographical interpretation,' Routledge and Keagan Paul.
- Dube, K.N. (1990) : 'Planning and Development in India,' Asia Publishing House, New Delhi.
- Friedmann, J (1967) and Alonson, W. : 'Regional Development and Planning – A Reader,' MIT Press, Cambridge.
- Glasson, J (2007) and Marshall, T. : 'Regional Planning,' Routledge, New York.
- Glikson, Arthur (1955) : Regional Planning and Development,' Netherlands's Universities Foundation for international Co-operation, London.
- Gosal, G.S. (1984) and Krishman, G. : 'Regional disparities in level of Socio-Economic Development in Punjab,' Vishal Publications, Kurukshetra
- Government of India (1961) : 'Planning Commission : Third five year plan,' Chapter on Regional imbalances in development, New Delhi.
- Johnson, E.A.J. (1970) : 'The Organization of space in developing countries,' Harvard University Press, Cambridge.
- Kulklinski, A.R. (1972) : 'Growth Poles and growth centers in Regional planning,' Mouton, The Hague
- Kundu, A (1982) and Raza Moonis : 'Indian Economy – The Regional Dimension,' Spectrum Publishers, New Delhi.
- Losch, A. (1954) : 'The Economics of location,' University Press, Yale, New Haven.
- Mishra R.P. (2002) : 'Regional Planning in India,' Concept Publication Company, New Delhi.
- Mishra H.N. (2005) : 'Regional Planning,' Rawat Publication, Jaipur.
- Myrdal, G. (1957) : 'Economic Theory of Under Development region' Gerald Duckworth, London.
- Sundaram, K.V. (ed.) : 'Geography of Planning, Essays in Honour of V.L.S. Prakasa Rao,' Concept Publishing Company, New Delhi.
- NITI AAYOG : Website www.niti.gov.in (National Institution for Transforming India.)

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography

Paper –IV (DSE -I .B) Semester 1

Code of the Course/Subject	Title of the Course/Subject	Total Number of Periods
EVG/ Geography	**Environmental Geography**	**60 Periods of 1 hours**

Cos:-

1. The students acquired the information about environment.
2. Acquired information about climatic, earth's and anthropogenic movement and environment changes.
3. The students improved their role in environment
4. The students increased the knowledge in research.
5. To create awareness about environment in the society

Unit	Content
Unit I	Meaning, scope and importance of Environmental Geography, and necessity of public awareness, Environment: Definition, Structure, Types,Components, Approaches to the study of environmental geography, Geography and ecology, Ecological concepts and principles. **(12periods)**
Unit II	Ecosystem : Concept of ecosystem, Structure and function, Types, Energy flow in ecosystems, Eological succession – Types of succession, Food chains, food webs and Ecological pyramids, Stability of eco system. **(12periods)**
Unit III	. Major ecosystems of the world – 1) Forest, 2) Grass Land, 3) Desert, 4) Aquatic, - Their types, Characteristics, Structure and Functions, Biodiversity and its conservation – Levels of Biodiversity, Diversity of Biotic communities and ecosystems, Biogeographic classification of India, India as a mega diversity nation, Hot spots of biodiversity, Threats to biodiversity, Conservation of Bio diversity – In-Situ and Ex-situ conservation of biodiversity, Bio-diversity Act. **(12 periods)**
Unit IV	Environmental pollution – Causes, Effects and control measures of Air,Water, Soil, Marine, Noise, Thermal pollution and Nuclear hazards, Solid waste management, Disaster management – Earthquake, Volcanoes, Tsunami, Cyclones, Droughts, Floods, Famines, Landslides. Disaster management in Maharashtra and India. **(12 periods)**
Unit V	Environment Legislation : The Stockholm conference, The Rio-de-Janeiro conference, The Kyoto Conference, Environmental laws in India –Environmental Protection Act, Wildlife protection Act, Forest conservation Act. **(12periods)**

References :

1) Aarmin (2000) Resencranz, et al, (eds) : 'Environmental law and policy in India Oxford.

2) Abbott, P.L. : 'Natural Disasters,' McGraw Hill, London.

3) Agarwal Anju : 'Environmental studies, Ram Prasad and Sons, Agra.

4) Bharucha Erach (2005) : 'Text Book of Environmental Studies,' Universities Press (India) Pvt. Ltd., Hyderabad.

5) Bodkin, E (1982) : 'Environmental Studies,' Charles E. Merril Pub. Co., Columbus, Ohio.

6) Botkin, D.B., (2007) Keller, E.A. : ‘Environmental Science: Earth as a living Planet,’ John Wiley and Sons, New York.
7) Chandana R.C. (2002) : ‘Environmental Geography,’ Kalyani Publishers, Ludhiana.
8) Cunninghum, W.P. (2004) and Cunninghum, M.A. : ‘Principles of Environmental Science, Inquiry and
Applications,’ Tata McGraw Hill, New Delhi.
9) Cunnighum W. (2010) and Cunninghum Mary : ‘Environmental Science : A Global Concern,’ Mac Graw Hill, London.
10) Deshpande A.P. (2006) & Others : ‘Environmental Studies,’ Pimplapure & Co., Publishers, Nagpur.
11) Eyre, S.R. (1966) and Jones, G.R.J. (eds) : ‘Geography as Human Ecology,’ Edward Arnold,London.
12) Goudie, A (2001) : ‘The Nature of the Environment,’ Blackwell, Oxford.
13) Government of India (2010) : ‘Status of Environment Report,’ New Delhi.
14) Kormondy, E.J. (1989) : ‘Concepts of Ecology,’ Prentice Hall.
15) Keller, E.A., Vecchio, D.E. : ‘Natural Hazards : Earth’s processes as Hazards, Disasters, and Catastrophes,’ Prentice Hall, New York.
16) Leela Krishnan, P. (1999) : ‘The Environmental Law in India,’ Eastern, Lucknow.
17) Marsh, W.M., (2005) Grossa J : ‘Environmental Geography : Science, Land Use and Earth Systems,’ John Wiley, New York
18) McKinney, M.L., (2003) Schoch, R.M. : ‘Environmental Science: Systems and solutions.’ Jons and Bartlett learning.
19) Miller G.T. (2004) : ‘Environmental Science: Working with Earth,’ Thomson Brooks Cole, Singapore.
20) Miller G.T., (2011) Spoolman, Scott : ‘Environmental Science’: Brooks Cole, London.
21) MOEF (2006) : ‘National Environmental policy 2006’ - Ministry of Environment and forest, Govt. of India, New Delhi.
22) Nobel and Wright (1996) : ‘Environmental Science: prentice Hall, New York.
23) Odum, E.P. (1971) : ‘Fundamentals of Ecology,’ W.B. Saunders, Philadelphia.
24) Richard L, Riversz et al (eds) (2000) : ‘Environmental Law, The Economy and Sustainable Development, Cambridge.
25) Singh Savindra (1997) : ‘Environmental Geography,’ Prayag Pustak Bhawan, Allahabad.
26) Sharma B.K. (1996) and Kaur H : ‘An Introduction to Environmental Pollution,] Goel Publishing house, Meerut
27) Verma P.S. (1998) and Agarwal Y.K. : Concept of Ecology, S. Chand & Co. Ltd., New Delhi.
28) UNEP (2007) : ‘Global Environment Outlook,’ United Nations Environment Programme.

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography (Semester- 1)

DSC- I.1 Lab Practical Paper –I

Code of the Course/Subject	Title of the Course/Subject (Laboratory/Practical/practicum/hands-on/Activity)	No. of Periods/Week	Total Credit
GEOP-1/Geography	**Practical I**	**6 Periods/Week**	**03**

COs

1 Topographical Information;- International Series, South East Asia Series, Indexing, Classification and interpretion of topographical sheets, profiles

2. Morphometric Analysis;- Hypsometric curve, Altimetric curve, histogram, Clinograph, Slope Analysis, Wentworths Method

3. Identification and Mapping of drainage pattern

4. Themetic Mapping ; Choropleth, Isopleth , Dot method , flow map

5. Intervisibility Methods

*** List of Practical/Laboratory Experiments/Activities etc.**

1	A) Methods of representation of relief : 1) Pictoral, 2) Mathematical B) Map – 1) Definition, 2) Types of Maps, 3) Map as a data Model, 4) Tools of Map making: Lettering and symbolization of Map. C) Study and interpretation of topographical map : Importance of topographical maps, Indexing – nomenclature, and numbering of topographical sheet, signs and symbols, colour system, Interpretation of SOI Topographical maps with reference to physical and cultural elements 1) Plains, 2) Plateau, 3) Mountains, 4) Sea coast, 5) Desert
2	A) Identification & Mapping of Drainage Pattern : 1) Dendritic, 2) Trellis, 3) Radial, B) Drainage Analysis : 1) Calculation of Bifurcation ratio and drainage density, 2) Ordering, 3) Frequency, 4) Longitudinal Profile, C) Identification and Mapping of slopes – 1) Steep, 2) Uniform, 3) Gentle, 4) Concave, 5) Convex and 6) Terraced slopes.
3	Morphometric Analysis : A) Graphical Methods: Drawing of Profiles- 1) Serial 2) Superimposed 3) Projected 4) Composite 5) Transverse or Cross Profile 6) Longitudinal B) Gradient and Slope : Calculation of gradient, Calculation of scales of slopes - I) Methods of representation of Gradients : 1) Fraction, 2) Percentage, 3) Mills, 4) Degrees. C) Methods of Average slope determination. 1) Wentworth's Method, 2) Smith's Method, 3) Robinson's Method
4	Drawing and interpretation of following graphs 1) Hypsographic curve, 2) Clinographic curve, 3) Altimetric frequency curves. Inter-visibility : Methods of determining inter-visibility
5	Viva Voce and practical Record Book.

Reference Books:

Basak N.N. (1994)	:	'Surveying and leveling,' Tata Mc Graw Hill, Publishing Company Ltd., New Delhi.
Bygott, G.L.	:	'Map Works and Practical Geography.'
Davis, Peter (1974)	:	'Science in Geography : Data Description and Presentation, Vol.3, Oxford University Press, London.
Derk C.L. and Brown, U.S.	:	'Interpretation of Topographical and Geological Maps.'
Deshpande R.S. (1958)	:	'A Text Book of Surveying and leveling,' United Book Corporation, Poona.
King, C.A.M. (1978)	:	'Techniques in Geomorphology, Edward Arnold Ltd., London.
Khullar Dr. (1997)	:	'Practical Geography,' King Books Delhi.
कुंभार अर्जून डॉ. (1994)	:	'प्रात्यक्षिक भूगोल' सुमेरू प्रकाशन, ठाणे.
Monkhouse F.J. (1971) and Wilkinson H.R.	:	'Maps and Diagrams, Methuen & Co. Ltd. London.
Mishra R.P. (1969) and Ramesh A.	:	'Fundamentals of Cartography,' Concept Publication, New Delhi.
Mahmood, Aslam (1977)	:	'Statistical Methods in Geography,' Rajesh Publications, New Delhi.
Negi, Balbir Singh (1995)	:	Practical Geography, Kedarnath Ramnath, Mecrut and Delhi.
शिंदे एस.बी. (2002)	:	'नकाशाशास्त्र: प्रात्यक्षिक भूगोल' फडके प्रकाशन, कोल्हापूर
Singh R.L. (1990)	:	'Elements of Practical Geography,' Kalyani Publishers, New Delhi and Ludhiana.
Singh R.L. & Singh R.	(1991) :	'Map Works and Practical Geography,' Central Book Depot, Allahabad.
Strahler, A.N. (1964)	:	'Quantitative Geomorphology of Drainage Basins and Channel Network : Handbook of Applied Hydrology,' Yen Te Chow, Ed., Section 4-II, McGraw Hills Book Company, New York.
Zakir Alvi (1998)	:	'A Text Book of Practical Geography,' Vikas Publishing House Pvt. Ltd., New Delhi.

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography (Semester- 1)

DSC- II.1 Lab Practical Paper –II

Code of the Course/Subject	Title of the Course/Subject (Laboratory/Practical/practicum/hands-on/Activity)	No. of Periods/Week	Total Credit
GEOP-2/Geography	**Practical II**	**6 Periods/Week**	**03**

COs

After completion this introductory oceanography course, a student will be able to

1 Know the stages in remote sensing & How to work in India

2. Knowing about EMR

3. Interpretation of areal photograph.

4. Know the fundamentals of photogrammetry

5. Interpretation and Analysis of GIS data

*** List of Practical/Laboratory Experiments/Activities etc.**

1	Remote Sensing : Definition, Principles of Remote Sensing, Stages in remote sensing, Remote Sensing in India, Electromagnetic radiation, Interaction of EMR with earth's surface, Interaction with atmosphere, Platforms and Sensors, Multi-spectral scanners – Modes of scanning : Across-track (Whiskroom) and Along-track scanning (Pushbroom), Data Reception, Processing and product generation, Corrections : Radiometric, Atmosperic, Geometric corrections, Ground Investigation in support of Remote sensing, Signature – Spectral, Spatial, Temporal and Polarization.
2	Air photos and Photogrammetry : Elements of photographic system, Types, Scales and ground coverage, Resolution, Radiometric characteristic, Films, Filters, Aerial cameras, Film exposures, Geometric Fundamentals of Photogrammetry: Elements of Vertical Photographs Relief dis-placement, Image parallax, Aerial mosaics, Radial line methods, Air Photo interpretation – Instruments used, Elements : Shape, size, pattern, tone, texture, shadows, site.
3	Geographic information system : Introduction to GIS, Components and elements of GIS, Nature of GIS data – Spatial and Attribute data, Data interpolation methods, Topographic representation model : Digital Elevation Model (DEM) and Triangulated. Irregular Network (TIN), Application of GIS: GIS as a decision support system, Application of GIS in land information system, Urban management, Environmental management and Emergency response system.
4	Application of Computer : Basics of Computer, Computer as a tool of digital cartography, Use of computer and application in geography, Preparation of map and diagrams with the help of computer – Columnar diagrams, Divided Rectangles, Divided circles, Chorochromatic maps, Isopleth maps and Choropleth maps.
5	Viva Voce & Practical Record Book

Reference Books:

- Aronoff, S. (1989) : 'Geographic Information System: Management Perspectives,' DDI Publication.
- Ashish Sarkar : 'Practical Geography : A Systematic Approach,' Orient Longman Ltd, Kolkatta
- Avery Thomas (1977) Eugene : 'Interpretation of Aerial Photographs, Burgess Publishing Co., Minnesota.
- Avery T.E. (1992) and Berlin G.L. : 'Fundamental of Remote Sensing and Air Photo Interpretation,' Macmillan, New York.
- Burrough P.A. (1986) : 'Principles of Geographic Information System for Land Resources Management,' Oxford University Press, New York.
- Barrett E.C. (1992) : 'Fundamental of Remote Sensing and Air Photo Interpretation,' Macmillan, New York.
- and Curtis L.F.
- Campbell J. (1989) : 'Introduction to Remote Sensing,' Guilford, New York.
- Curran Paul, J. (1988) : 'Principles of Remote Sensing, Longman, London.
- Khullar (1997) : 'Practical Geography,' King Books Delhi.
- Lo, C.P. Albert (2002) : 'Concepts and Techniques of Geographic Information System, Prentice Hall of India Pvt. Ltd., Delhi
- & K.W. Yeung
- Monkhouse F.J. (1971) and Wilkinson HR. : 'Maps and Diagrams,' Methuen & Co. Ltd., London.
- Singh R.L. (1979) : 'Elements of Practical Geography,' Kalyani Publishers, Ludhiana, Delhi.

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography (Semester- II)

Paper –I (DSC – I.2)

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**No. of Periods/Week**	**Total Credit**
CLG/ Geography	**Principles of Climatology**	**60 Periods of 1 hours**	**04**

COs

After completion this introductory oceanography course, a student will be able to

1. Know the importance of Atmosphere
2. Understand heat balance.
3. Understand the types of winds
4. Understand the structure, composition of Atmosphere.
5. Understand weather phenomena winds, humidity and precipitation
6. Indentify the types of clouds solutions.
7. Awareness about Climatic Changes

Unit	**Content**
Unit I	Nature and scope of Climatology, Relationship of Climatology with Meteorology, Composition and Structure of Atmosphere, Weather Elements and Climatic Controls. **(12periods)**
Unit II	Insolation and Heat balance of the earth, Green House effect, Vertical and Horizontal distribution of temperature and its seasonal variations, Process of heat energy transport, Lapse rate & Inversion of Temperature, Atmospheric Moisture: Humidity, Condensation, Precipitation . **(12periods)**
Unit III	Atmospheric Pressure and Wind : Pressure measurement and distribution, General circulation of the atmosphere, Factors affecting winds, Types of Winds – Geostrophic wind, Gradient wind and local winds, Jet stream, Origin and Mechanism of Monsoon : Classical and recent views. . **(12periods)**
Unit IV	Air Masses : Origin, classification and Types, Fronts : Front genesis and frontolysis – classification of fronts, Polar front Theory, Tropical, Extra – tropical and temperate cyclones, Anticyclones. Water spouts, Weather forecasting, Role of satellite in weather forecasting. **(12periods)**
Unit V	Climatic classification: Koppen's, Thornthwaite's and Genetic classification. Evidences of climatic change, Global warming, Impact of climate on soils, agriculture,. **(12periods)**

Course Material/Learning Resources
Reference Books:

Ayoade, J.O. (1983)	:	'Introduction to climatology for Tropics, John Wiley and Sons Ltd., New York.
Barry, R.G. (1998) and Chorley R.J.	:	'Atmosphere, Weather and climate, Routledge,' London and New York.
Bhutani, Smita (2000)	:	'Our Atmosphere,' Kalyani Publishers, Ludhiana.
Byers R.H. (1974)	:	'General Meteorology' McGraw Hill BK Co., New York.
Critchfield, H.J. (1990)	:	General climatology (Fourth edi) 'Prentice Hall, India, New Delhi.
Das P.K. (1987)	:	'Monsoon, National Book Trust, New Delhi.
Fein, J.S. (1987)and Stephens, P.N.	:	'Monsoon, Wiley Inter science.
Frederick K (1995) and Edward J. Tarbuck	:	'The Atmosphere : An Introduction to Meteorology, Prentice Hall of India Pvt. Ltd., New Delhi.
Griffiths, J.F. (1966)	:	'Applied Climatology- An Introduction,' Oxford University Press, London.
Harp, H.J. (1990) and Trinidade, O.D. (eds)	:	'Climate and Development, Springer Verlag U.S.A.
Hobbs, J.E. (1980)	:	'Applied Climatology' Butterworth, London.
Lal D.S. (1997)	:	'Climatology,' ShardaPustakBhavan, Allahabad.
Lutgens, F.K., (2012) Tarbuck, E.J. and Tasa D.G.	:	The Atmosphere : An Introduction to Meteorlogy, Prentice Hall, New Jersey.
Lutgens, F.K., (2012) Tarbuck, E.J. and Tasa D.G.	:	The Atmosphere : An Introduction to Meteorlogy, Prentice Hall, New Jersey.
Lydolph, P.A. (1989)	:	'The climate of the Earth,' Rowman.
Menon, P.A. (1989)	:	'Our Weather, NBT New Delhi.
Miller, A (1983)	:	'Elements of Meteorology,' Merrill, Columbia.
Navarra,J.G. (1979)	:	'Atmospere, Weather and Climate,' W.B. Saunder's Company, Philadelphia
Oliver J.E. (1973)	:	'Climate and Mans Environment, John Wiley and Sons, New York
Peterson, S. (1969)	:	'An Introduction to Meteorology,' McGraw hill Book, London.
Robinson, P.J. (1999) and Henderson, S.	:	'Contemporary Climatology,' Henlow
Savindra Singh (2000)	:	'Climatology' PrayagPustakBhavan, Allahabad.
Shastri Rama	:	'Weather and Weather forecasting, Ministry of Information and Broadcasting, Delhi.
Subramanyam, V.P. (ed) (1983)		Contribution to Indian Geography, Heritage Publishers, New Delhi, a) Vol. III- General Climatology, b) Vol. IV – Applied Climatology.
Thompson, R.D. (1997) and Perry A. (ed)	:	'Applied Climatology – Principles and Practices, Routledge London.
Trewartha, G.T. (1980)	:	'An Introduction to climate,' McGraw Hill, New York.

Syllabus Prescribed for M.A. Year PG Programme

Programme: M.A. Geography (Semester II)

Paper –II (DSC –II.2)

Code of the Course/Subject	Title of the Course/Subject	Total Number of Periods	Total Credit
Geography -GOT	**Geography of Tourism**	**60 Periods of 1 hours**	**04**

COs

After completion this introductory oceanography course, a student will be able to

1. Possess a working knowledge of the geography of the world in relation to tourism and be able to locate areas on the map.
2. Illustrate the relationships between the physical and cultural factors influencing tourism.
3. describe the tourism geography and cognitive framework related to the tourism geography and explain the importance of strategy and planning to improving sustainable tourism
4. evaluate the natural geographic resources and classes of tourism.
5. evaluate the human and cultural geographic resources and classes of tourism.
6. explain the inter-national tourism transportation and tourist flow.
7. recognize the tourism regions of the world.
8. relate the natural environment characteristics and tourism.
9. relate the human and cultural environment characteristics and tourism.
10. Interprets the importance of cultural environment characteristics on tourism.
11. Work as a tourist guide and travel agent

Unit	Content
Unit I	Definition, nature scope and significance of Geography of Tourism, Types of Tourism, Geographical basis of Tourism : Relation between Geography and Tourism, Factors affecting Tourism, Elements of Tourism, Tourism as an industry. **(12 periods)**
Unit II	Impact of tourism: Physical, economical, social and cultural, Perceptional, Positive and negative impacts of Tourism, Concept of eco-tourism and Sustainable tourism, New trends in Tourism, Globalization and Tourism. **(12 periods)**
Unit III	Tourism planning and development: Concept and issues, Strategic tourism planning, Infra structure and support system for tourism, Role of accessibility of Tourist places in the development of Tourism industry, Evaluation of Tourism potential. **(12 periods)**
Unit IV	Indian Tourism Industry: Regional dimensions of tourism industry in India, Evolution of Tourism, Promotion of Tourism, Role of ITDC and MTDC in the promotion of Tourism, Indian Hotel industry, Government policies for planning and promotion of Tourism in India with special reference to Maharashtra. **(12 periods)**
Unit V	Role of foreign Capital in The development of Tourism industry, Environmental laws and Tourism. The organization of Tourism, The

	National Tourism organization, Dimensions of world Tourism, International Tourist movements. **(12 periods)**

Course Material/Learning Resources

Text books:

Reference Books: :

1. Bhatia A.K. (1978) : 'Tourism in India, Sterling Publication, New Delhi.
2. Bhatia A.K. (1996) : 'Tourism Development : Principles and practices,' Sterling Publishers, New Delhi.
3. Bhatia A.K. (1991) : 'International Tourism – Fundamental and Practices, Sterling Publishers New Delhi.
4. Burkal, A.J. (1974) : 'Tourism, Past Present and Future,' Heineman London.
5. Chandra R.H. (1998) : 'Hill Tourism : Planning and Development,' Kanishka Publisher, New Delhi.
6. C. Michell Hall : 'Tourism Planning, Policies and Relationship.
7. Das, M (1999) : 'India-A Tourist Paradise, Sterling Publishers, New Delhi.
8. Gearing charles, E (1976) : 'Planning for Tourism Development,' Praeger Publication, New Delhi.
9. Hunter C (1995) and Green H : 'Tourism and The Environment : A Sustainable Relationship,' Routledge, London.
10. Inskeep, E. (1991) : 'Tourism planning : An Integrated and Sustainable Development Approach,' Von Nostrand and Reinhold, New York.
12 Kaul R.K. (1985) : 'Dynamics of Tourism and Recreation,' Inter-India, New Delhi.
13 Kaur J. (1985) : 'Himalayan Piligrimages and New Tourism,' Himalayan Book, New Delhi.
14 Lea J. (1988) : 'Tourism Development in the Third World,' Routledge, London.
15 Lawbon, F. &Bauet B (1977) : 'Tourism and Recreation Development,' CBI Publication.
16 Lunderg, D.E. (1996) : 'Tourist Business, Cehners Book International, Boston.
17 Milton D. (1993) : 'Geography of World Tourism,' Prentice Hall, New York.
18 Pearce D.G. (1987) : 'Tourism Today : A Geographical Analysis,' Logman, Harlow.
19 Robinson, H. (1996) : 'A Geography of Tourism,' Macdonald and Evans,' London.
20 Sharma J.K. (ed) (2000) : 'Tourism Planning and Development – A new perspective,' Kanishka Publishers, New Delhi.
21 Shaw G (1994) & Williams A.M. : 'Critical issues in Tourism – A geographical perspective,' Oxford, Black well.
22 Sinha P.C. (ed) (1998) : 'Tourism Impact Assessment,' Anmol Publishers, New Delhi.
23 Smith, L.J.S. (2010) : 'Tourism Analysis : A Hand-Book,' Halstead Press, Sydney.
24 Theobald (ed) (1994) : 'Global Tourism : The Next decade,' Oxford, Butterworth, Heinemann.
25 Voase R. (1995) : 'Tourism : the Human Perspective,' Hodder& Stoughton London.
26 William A.M. and Shaw G. (eds) : 'Tourism and economic development - Western European Experiences,' Belhaven, London.
27 White, J. (1967) : 'History of Tourism,' Leisure Arts, London.

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography (Semester – II)

Paper –III (DSE –II.A)

Code of the Course/Subject	Title of the Course/Subject	Total Number Period
BOG/Geography	**Biogeography**	**60 Periods of 1 hours**

COs

After completion this introductory oceanography course, a student will be able to

1. Students will get familiarized with interface between biology & ecology.
2. Geography converging and forming our biosphere.
3. Students will be able to discuss about ecosystem services.
4. apply interaction of biotic and abiotic resources.
5. They can identify ecological aspects of environment.

Unit	Content
Unit I	Nature, scope and development of Biogeography, Elements of Biogeography, Plant and Animal classification: Taxonomic, Ecological and Climatic. Raunkiaer's and Grime's classification. of plant and animal. **(12 periods)**
Unit II	Biogeographic processes, Evolution, Adoption, Speciation, Extinction, Succession, Colonization and Dispersal. Environment Habital and Plant-animal association, Biome types and biodiversity in India. **(12 periods)**
Unit III	Plant Geography : Elements of plant geography, factors influencing on very existence and distribution of plants, Plant and soil association, Plants and climate association, Distribution of forest in the world, National forest policy in India, Laws of forest conservation in India. **(12 periods)**
Unit IV	Zoogeography – Introduction to Zoogeography, Evolution of animals: Review of evolutionary principles. Animal characteristics, Environmental adaptations, Camouflaging and luminescence, Zoogeographical regions of the world, Species invasions and biotic homogenization, Environmental control on animals. **(12 periods)**
Unit V	Geological Time scale - flora and fauna associated with specific period. Preservation and conservation of flora and fauna through resource management. **(12 periods)**

Course Material/Learning Resources

Text books:

Reference Books: :

1) Agarwal, D.P. (1992) : 'Man and Environment in India through Ages, Book and Book.
2) Barry C. (1977) : 'Biogeography – An Ecological and Evolutionary Approach, oxford.
3) Bradshaw, M.J. (1979) : 'Earth and living planet,' ELBS, London.
4) Cole M.M. (1975) : 'Recent development in biogeography,' Longman, London.
5) Danserau P. (1957) : 'Biogeography-An ecological perspective, Renold press New York.
6) Darlington, P.J. (1957) : 'Zoogeography : The geographical distribution of animals, John Wiley and Sons, New York.
7) Furley P.A. (1983) & Newly W.N. : 'Geography of Biosphere, Butterworth, London.
8) Gaur, R. (1987) : 'Environment and Ecology of Early Man in Northern India,' R.B. Publication corporation.
9) Hoyt J.B. (1992) : 'Man and The earth,' Prentice Hall, U.S.A.
10) Huggett, R.J. (1998) : 'Fundamental of Biogeography, Routledge, U.S.A.
11) Illis, J. (1974) : 'Introduction to Zoogeography,' Mcmillan, London.
12) Khoshoo, T.N.(1991) and Sharma M (eds) : 'Indian Geosphere – Bio-sphere,' Har-Anand Publication, New Delhi.
13) Mathur H.S. (2003) : 'Essentials of Biogeography,' Pointers Publishers, Jaipur.
14) Martin C. (1975) : 'Plant Geography,' Methuen, London.
15) Muller P.(1986) : 'Biogeography, Harper and Row,' New York.
16) Pears N. (1985) : 'Basic Biogeography Longman, London.
17) Robinson, H. (1972) : 'Biogeography, Mac-Donald and Evans, London.
18) Seddon, B.A. (1971) : 'Introduction to Biogeography, Gerald Duckwork and Co.

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography (Semester – II)

Paper –III (DSE –II B**)**

Code of the Course/Subject	Title of the Course/Subject	Total Number Period
GWR /Geography	**Geography of Water Resources**	**60 Periods of 1 hours**

COs-

1)Understand the Significance of Water as a Resource

2) It will help them to understand regional problems related to water resource.

3) Understand the importance of hydrology in terms of natural/environmental hazards

4) Analyzing the Problems associated with over-exploitation of Ground water

5) On completion of the course the students will be understand water management

Unit	Content
Unit I	Nature, scope and significance of Geography of water resources, Water as a focus of geographical Interest, inventory and distribution of world'swater resources (surface and sub-surface), world hydrological cycle:Quantitative estimates, The basic hydrological cycle: Precipitation,Evaporation and Evapotran- spiration, Spatio-temporal variations inhydrological cycle **(12 periods)**
Unit-II	Water demand and use : Methods of estimation – Agricultural, Industrial and Municipal uses of water. Agricultural use of water : Estimation ofcrop– water requirement, Soil-water-crop relationship Water balance anddrought, Major and minor methods of distribution of water to farms,Water harvesting techniques, Problems associated with over-exploitationof Ground water, Problems related to water use : Salinity Alkalinity and Water logging **(12 periods)**
Unit III	Industrial use of water : Methods of estimation, Demand of water in the industrial sector of India, Role of water as a primary determinant of Industrial location. Municipal use of water: General trends in water supply to the urban and rural communities in India, Internal navigation, Hydelpower and recreation. **(12 periods)**
Unit-IV	Problems of water resource management: Water resource management in Disaster area - Foods, Droughts, Water quality management and pollution control, Water management in Urban area, Watershed Management ,National water policy **(12 periods)**
Unit- V	Conservation and planning for the development of water resources Social and institutional considerations, Integrated basin planning, Conjunctiveuse of surface and ground water

	resources, International and interstateriver water disputes and treaties	**(12 periods)**

References :

1) Agrawal, Anil (1997)and Sunitanarain: 'Dying Wisdom : Rise, Fall and Potential of India's Traditional Water Harvesting System, Centre for Science and Environment, new Delhi.

2) Andre Musy (2011) : 'Hydrology : A Science of Nature,' Science Publishers, New Hampshrine.

3) Andrew A Dzurik,(2002): 'Water Resources Planning,' Rowman & Littlefield Publishers, Inc., Savage, Maryland.

4) Brooks, K.N., (2012) Falliott, P.F. and Magner. J.A.: 'Hydrology and the Management of Watershed,' Wiley Blackwell, Oxford.

5) Cech, T.V. (2009) : 'Principles of Water Resources : History, Development, Management and Policy (3rd Ed.), John Wiley and Sons, Hoboken, New Jersey.

6) Chorley, R.J. (1967) : 'Water, 'Earth and Man,' Methuen, London.

7) Chorley, R.J. (1969) : 'Introduction to Physical Hydrology,' Methuen, London.

8) Chow, V.T., (1988) Maidment D.R. and Mays, L.W.: 'Applied Hydrology,' McGraw Hill, New York.

9) Daniel P. Louck (2005)and Beek, E.V.: 'Water Resources Systems Planning and Management : An Introduction to Methods, Models and Applications,' UNESCO Publishing.

10) Dingman, S.L. (2002) : 'Physical Hydrology,' Prentice Hall Inc. New Jersey.

11) Economic and Social(1989) Commission for Asia and the Pacific 'United Nations Guidelines for the Preparation of National Master Water plans.'

12) Fitts, C.R. (2002) : 'Ground water Science,' Academic press.

13) Govt. of India, (1972) Ministry of Agriculture: 'Report of the Irrigation commission,' vol. I to IV, New Delhi.

14) Govt. of India, (1980)Ministry of Energy and Irrigation: 'Rashtriya Barh Ayog Report,' National Commission on Floodsvol. I &II, New Delhi.

15) Gulhati, N.D. (1972) : 'Development of Interstate Rivers : Law and Practice in India,' Allied Publishers, Bombay.

16) Husain Majid (1994) : 'Resource Geography,' Anmol Publication Pvt. Ltd., New Delhi.

17) International Water(1975) Resource Association and Central Board of Irrigation and Power: 'Water for Human Needs,' Vols. I to V, Proceedings of the Second World Congress on Water Resources, 12-16 December, New Delhi.

18) Jones, J.A. (1997) : 'Global Hydrology : Processes, Resources and Environmental Management,' Longman, London.

19) Kates, R.W. (1980) and Burton, I (ed) : 'Geography, Resources and Environment,' Ottowa.

20) Krutilla, John V (1958) and Eckstein, O : 'Multiple Purpose River Development : Studies in Applied Economic Analysis,' John Hopkin's Press, Boston.

21) Law. B.C. (ed) (1968) : 'Mountains and Rivers of India,' IGU National Committee for geography, Calcutta.

22) Lvovich, M.I. (2010) : 'Climatology, Hydrology, Glaciology,' John Wiley and Sons, London.

23) Mattern, J.R. (1984) : 'Water Resources Distribution, Use and Management,' John Wiley, Maryland.

24) Michael, A.M. (1978) : 'Irrigation : Theory and Practices,' Vikas Publishing House Pvt. Ltd., New Delhi.

25) Murthy J.V.S. (1994) : 'Watershed Management in India,' Wiley Eastern Ltd., New Delhi.

26) Mutreja, K.N. (1990) : 'Applied Hydrology,' Tata McGraw- Hill Publication Co. Ltd., New Delhi.

27) Negi B.S. (1977) : 'Geography of Resources ,' Kedar Nath Ram Nath, Meerut.

28) Neil S. Grigg (1996) : 'Water Resources Management,' McGraw Hill Book Co., New York.

29) Newson M (1992) : 'Land, Water and Development : River Basin System and Their Sustainable Management, Routledge, London.

30) Pinder G.F. (2006) and Celia M.A. : 'Subsurface Hydrology,' Wiley, Hoboken, Jew Jersey.

31) Rao. K.L. (1979) : 'India's water Wealth,' Orient Longman, New Delhi.

32) Singh R.A. and Singh

S.R. (1979): 'Water Management : Principles and Practices,' Tara Publication, Varanasi.

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Programme: M.A. Geography (Semester II)

DSC-I.2 Lab(Practical - I)

Code of the Course/Subject	Title of the Course/Subject (Laboratory/Practical/practicum/hands-on/Activity)	(No. of Periods/Week)	Total Credit
GEOP-3/Geography	**Practical – I**	**6 Periods/Week**	**03**

Cos

After completion this introductory oceanography course, a student will be able to

1 Identify the weather condition with the help of sign and symbols

2. Construct the weather station model

3. Weather forecasting .

4. Analyse the climatic data using different techniques

5. Represent climatic data using maps and diagrams

*** List of Practical/Laboratory Experiments/Activities etc.**

Unit 1	Nature and sources of climatic data, Indian daily weather report and its format, Reproduction of weather details by weather signs and symbols, Interpretation of Indian daily weather maps-Winter season, Summer season, Rainy season. Construction of Weather Station Models, Weather forecasting.
Unit 1I	Techniques of climatic data analysis – Graphs 1) Climograph – Griffith Taylor and E.E. Foster's Climograph 2) Climatograph 3) Hythergraph 4) Running means and Trend graph 5) Frequency graph
Unit 1II	Techniques of climatic data analysis Maps - Diagrams 1) Equivariables and equipluves 2) Rainfall dispersion diagram 3) Simple, Compound and Octagonal Wind rose. 4) Index of Aridity and index of Moisture. 5) Isopleth maps.
Unit 1V	Identification and Mapping of Landforms from Topographical maps 1) Ridge, 2) Saddle 3) Col 4) Pass 5) Spur 6) Plateau 7) Escarpment 8) Cliff 9) Waterfall 10) River Terraces 11) 'U'-shaped valley 12) 'V' shaped valley

Unit V	Viva voce and Practical Record.

References-

- Cried H. (1990) - General Climatology, Prentice Hall Of India, New Delhi.
- Khullar Dr.91997) - Practical Geography, King Books, Delhi
- Loween, G.R.P.- Cartographic Methode Mathur Co. London
- Mather, JR. (1974)- Climatology, Fundamentals and Applications," McGraw
- Hill Book Co. New York
- Miss R.P. (1986) and Ramesh A - Fundamental of Cartography
- Monk, FIR (1971) and Wilkin H.R. - Maps and Diagrams, Methuen, London
- Negi B.S. ((995)- Practical Geography 3 Edn. Kedar Nath Ram Nath Meerut and Delhi
- Robinson, AH (1995)- Elements of Cartography, John Wiley & Sons, U.S.A
- Sarkar A.K: (1977) - Practical Geography: A Systematic Approach Orient Longman, Kolkata
- Singh and Kanojia (1972) - Map Work and Practical Geography, Central Book Depot Allahabad.
- Singh Gopal (2001) - Map Works and Practical Geography, Vikas Publishing House Pvt. Ltd.
- Singh RL (2004) and Singh R.B.- 'Elements of Practical Geography." Kalyani Publishers, New Delhi, Ludhiana
- Seph RL. (2011) - Fundamentals of Practical Geography," Sharda PustakBhavan, Allahabad
- Trewartha G.T. (1980)- 'An Introduction to Climate, McGraw Hill Book Co. New York

Syllabus Prescribed for M.A. First Year PG Programme

Programme: M.A. Geography (Semester II)

DSC-II.2 Lab (Practical - II)

Code of the Course/Subject	Title of the Course/Subject (Laboratory/Practical/practicum/hands-on/Activity)	No. of Periods/Week	Total Credit
GEOP-4/Geography	**Practical - II**	**6 Periods/Week**	**03**

COs

After completion this introductory oceanography course, a student will be able to

1 Surveying –Importance of field survey, principles and application of selected survey

2. Dumpy level and Theodolite surveying

3. Measure the land and altitude.

4. Prepare the Maps

5. Conduct the Socio-economic & Population survey by preparing questionnaire

*** List of Practical/Laboratory Experiments/Activities etc.**

Unit I	Surveying A) Definition, Principles of surveying Uses of surveying, Types of Surveying, Classification of Survey, Methods of Surveying. B) Surveying and preparation of Contour Map Cadastral Map using i) Thedolite ii) Total station
Unit II	A) Dumpy level survey: Plotting the longitudinal profile. B) Measurement of height by Indian Clinometer, accessible and inaccessible Method.
Unit III	Village Survey with the help of plane table, measurement of height Indian Clinometer. Identification and plotting of soil types, cropping pattern in the field area, and general land use. Collection of socio-economic data with the help of Questionnaire. Preparation and submission & survey report.
Unit IV	Visit to any tourist place for: perception studies, Analysis of Tourism impacts, Preparation and submission of Tour Report with photograph.
Unit V	Viva voce and Practical Record Book.

References-

1) Deshpande R.S. (1958) – Atext Book of Surveying andleveling United Book Corporation Poone

2) KhullarDr (1997)- Practical Geography King Books, Delhi

3) Lawrence, G.R.P.- Cartographic Methods, Mathur CO.London

4) Mishra R.P-(1986) and Ramesh A – Fundamental of Cartography

5) Negi B.S- Practical Geography, 3 Edn Kedar Nath Ram Naths Meerut and Delhi

6) Pearce., D (1987) – Tourism Today: A Geographical Analysis,Longman scientific and Technical,

New York

7) sRobinson A .H (1995) – Elements of Cartography john willy and sons

8) Sarkar .A.K (1977) - Practical Geography A Systematic Approach, Orient Longman, Kolkat

9)) Singh and Kanojia (1972) - "Map Work and Practical Geography Central Book Depot, Allahabad

10) Singh Gopal (2001) - Map Work and practical Geography vikas publishing Housepvt Ltd.

11) Singh RL (2011) - Fundamental of practical Geography shardapustak Bhavan Allahabad

12) Smith, LJS (2010) - Tourism Analysis A Handbook, Halstead Press, Sydney

On Job Training Internship/Apprenticeship/Field Projects (4 Credit)

(Illustrative Examples)

(120 Hours cumulatively during vacations of Semester I and Semester II)

Internships

- Environmental conservation organizations: Assisting with fieldwork, data collection, and analysis related to ecological studies and conservation efforts.
- Urban planning and development firms: Working on projects related to city planning, transportation, and sustainability.
- Geographic Information Systems (GIS) companies: Gaining experience in mapping, spatial analysis, and data visualization.
- Government agencies: Assisting with geographic research, data management, and policy analysis.

Apprenticeship

- Cartography and mapmaking: Learning the craft of creating and updating maps for various purposes.
- Geospatial surveying: Gaining hands-on experience with surveying equipment and techniques for mapping land and other geographical features.
- Climatology and meteorology: Assisting with weather data collection, analysis, and forecasting.

FIELD PROJECT

Project Components:

1. **Research and Planning:**
    - Identify the key geographical concepts and topics .
    - Select a suitable study area that exemplifies these concepts (e.g., urban area,rural area river basin, etc.).
    - Conduct background research on the chosen area to understand its geography, history, and relevant issues.
2. **Data Collection:**
    - Use a combination of primary and secondary data collection methods:
    - Primary data: Field observations, surveys, interviews, and measurements.
    - Secondary data: Maps, satellite imagery, census data, government reports, etc.
    - Gather information on elements like landforms, climate, population, land use, economic activities, etc.
3. **Fieldwork:**
    - Conduct on-site visits to the study area to gather primary data.
    - Observe and document geographical features and processes
4. **Data Analysis:**

- Organize and analyze the collected data using appropriate geographical techniques (e.g., GIS software, statistical analysis).

5. **Interpretation and Findings:**
    - Interpret the results obtained from data analysis.
    - Draw conclusions about the geographical patterns and processes observed in the study area.
6. **Presentation and Report:**
    - Create a comprehensive report or presentation summarizing your field project.
    - Include maps, charts, images, and graphs to support your findings.

Topics to Explore:

- Urbanization and its impact on the environment and society.
- Climate change and its effects on local ecosystems.
- Human migration patterns and factors influencing them.
- Economic activities and their spatial distribution.
- Analysis of local vegetation and biodiversity.
- Socio Economic Status of Rural / Urban Population
- Impact of Urban center on Rural Population
- Spatio Temporal Analysis of cropping pattern
- Any subject related to Geography