Rayat Shikshan Sanstha's

R. B. Narayanrao Borawake College, Shrirampur

(Autonomous)

(Affiliated to Savitribai Phule Pune University, Pune)

Department of Geography

FYPG Geography Syllabus as per NEP-2020

Implemented

From

Academic Year: 2023-24

Course Structure of F.Y.P.G. Geography (Semester-I and II)

Year	Semester	Course Type	Course Code	Course Title	Theory/ Practical	Credit	No. of Theory/ Practical to be conducted
1	I	Major (Mandatory)	GE-MJ-511T	Principles of Geomorphology	Theory	04	60
			GE-MJ-512T	Principles of Population Geography	Theory	04	60
			GE-MJ-513P	Practicals in Geomorphology	Practical	02	30
			GE-MJ-514P	Practicals in Population Geography	Practical	02	30
			GE-MJ-515P	Practicals in Agriculture Geography	Practical	02	30
		Major (Elective)	GE-ME-516T	Agriculture Geography	Theory	04	60
		Research Methodology (RM)	GE-RM-517T	Research Methodology in Geography	Theory	04	60
	II	Major (Mandatory)	GE-MJ-521T	Principles of Climatology	Theory	04	60
			GE-MJ-522T	Principles of Economic Geography	Theory	04	60
			GE-MJ-523T	Geography of Tourism	Theory	02	30
			GE-MJ-524P	Practicals in Climatology	Practical	02	30
			GE-MJ-525P	Practicals in Economic Geography	Practical	02	30
		Major (Elective)	GE-ME-526T	Industrial Geography	Theory	04	60
		On-Job Training (OJT)/Field Project (FP)	GE-FP-527P	Field visit & Surveying	Training/ Project	04	60

F.Y.P.G. (Geography)

Syllabus for Semester- I

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Principles of Geomorphology

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ- 511T Principles of Geomorphology	4	4	--

- **Course Objectives:**

The course objective of this course is as follows:

1. To describe the concept of a drainage basin and stream network.
2. To understand the basic laws and models of the fluvial processes.
3. To discuss characteristics of drainage basin hydrology.
4. To apply quantitative methods to measure and assess fluvial processes and landforms.
5. To analyze the role of fluvial processes in shaping landscapes.
6. To explain the factors influencing the formation and evolution of river channels.
7. To identify the flow types and to measure the velocity of the river flow.

- **Course Outcomes:**

After completion of this course student will able to:

1. Accurately describe the concept of a drainage basin and stream network, including their components and interconnectedness.
2. Demonstrate a comprehensive understanding of the basic laws and models of fluvial processes, enabling them to explain and apply them to real-world scenarios.
3. Discuss the characteristics of drainage basin hydrology, including aspects such as precipitation, runoff, and stream flow patterns.
4. Apply quantitative methods to measure and assess fluvial processes and landforms, allowing them to collect and analyze data related to river systems effectively.
5. Analyse the role of fluvial processes in shaping landscapes, including erosion, deposition, and landform evolution.
6. Explain in detail the factors influencing the formation and evolution of river channels, such as sediment transport, channel morphology, and boundary conditions.
7. Identify different flow types within a river system and measure the velocity of the river flow, utilizing appropriate measurement techniques and tools.

• Course Contents

Unit-I: Introduction to Geomorphology **(12 Clock Hours)**

1.1 Definition nature and scope of geomorphology

1.2 Basic concepts in geomorphology

1.3 Hierarchy of spatial and temporal scales

1.4 Branches of geomorphology

1.5 Geological times scale

Unit-II: Geomorphology and Tectonics **(12 Clock Hours)**

2.1 Internal structure of the earth

2.2 Seismic waves and types

2.3 Theory of Isostasy

2.4 Concept of Seafloor spreading & Paleomagnitism.

2.5 Theory of Plate Tectonics

2.6 Folds, faults, and landforms

Unit-III: The Slope **(06 Clock Hours)**

3.1 Concepts of slope

3.2 Types of slope

3.3 Theory of slope

Unit IV: Weathering and Mass Movement **(10 Clock Hours)**

4.1 Definition and basic concepts

4.2 Factors affecting weathering and mass movement

4.3 Types :weathering and mass movement

Unit V: Geomorphological Processes **(20 Clock Hours)**

Fluvial-:5.1 Definition and basic concepts

5.2 Process of erosion, transportation, and deposition

5.3 Landforms :erosional and depositional

Coastal-:5.4 Definition and basic concepts

5.5 Process of erosion, transportation, and deposition

5.6 Landforms :erosional and depositional

Aeolian-:5.7 Definition and basic concepts

5.8 Process of erosion, transportation, and deposition

5.9 Landforms :erosional and depositional

Glacial-:5.10 Definition and basic concepts

5.11 Process of erosion, transportation, and deposition

5.12 Landforms :erosional and depositional

- **Reading Books:**

- Bloom, A.L.,2012 :Geomorphology -A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, NewDelhi
- Chorley, R.J., Schumm, S .A .and Sugden, D .E .1984: Geomorphology, Methuen, London.
- Gregory, K.J .and Goudie, A.S. 2014: The SAGE Handbook of Geomorphology, SAGE, London.
- Holmes, 1944: Principles of Physical Geology, Thomas Nelson and Sons Ltd, London.
- Huggett, R.J .2008: Fundamentals of Geomorphology, Routledge, London and NewYork.
- Goudie A.S .2004: Encyclopedia of Geomorphology, Routledge, London, and NewYork.
- Kale, V.S .and Gupta, A .2010: Introduction to Geomorphology, Universities Press, Hyderabad
- Migon, P .2010: Geomorphological Landscapes of the World, Springer, London/NewYork.
- Ollier, C.D .1981: Tectonics and Landforms, Longman, London.
- Singh, S .2011: Geomorphology, Prayag Pustak Bhawan, Allahabad.
- Siddhartha, K .2001: The Earth's dynamic surface, Kisalaya, Delhi.
- Spark, B.W .197: Geomorphology, Longman, NewYork.
- Steers, A .1958: The Unstable Earth, Methuen, London.
- Strahler, A.H .and Strahler, A.N .1992: Modern Physical Geography, John Wiley, New York.

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Principles of Population Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-512T Principles of Population Geography	4	4	--

- **Course Objectives:**

The course objective of this course is as follows:

1. This paper intends to acquaint the students with various dimensions of population geography, and its challenges.
2. To acquaint the students with the utility and application of population geography in different regions and environments.
3. To make the students aware of the need and importance of population and policies.
4. To be aware knowledge about the distribution of populations in different regions.
5. To give information about the growth and population density of different regions of the world.
6. This course gives an idea to collect population data.
7. To notify the students about different structures and characteristics of the population.

- **Course Outcomes:**

After completion of this course student will able to:

1. Aware of basic principles and concepts in population geography.
2. Knows the various theories in population geography
3. Understood the dynamics of population and its role in population policies
4. Realize the worldwide distribution of population
5. By understanding about population structure and characteristics of different countries, they can also predict the future population scenario of the country.
6. Understand the population growth of different countries, they can also predict the future population setting of the country.
7. Apply knowledge of population geography in development planning.

- **Course Contents**

Unit-I: Introduction to Population Geography (10 Clock Hours)

1.1 Meaning and definition of population and population geography

1.2 Nature and scope

1.3 Sources of population data

1.4 Application of population geography

Unit-II: Population Distribution (10 Clock Hours)

2.1 Population distribution of world and India

2.2 Factors affecting the distribution of the population

2.3 Density: definition and types

2.4 Factors affecting on population density

2.5 Population density in India

Unit-III: Population Growth and Trend (12 Clock Hours)

3.1 Concept of population growth

3.2 Component of population growth (fertility, mortality, migration, and nuptiality)

3.3 Malthus theory

3.4 Demographic transition theory

3.5 Population growth and trend in India

Unit IV: Population Structure and Characteristics (14 Clock Hours)

4.1 Age and sex structure

4.2 Concept of aging of populations

4.3 Dependency ratio

4.4 Sex Ratio :definition and factors affecting on sex ratio

4.5 Sex ratio in India

4.6 Population composition :religious, linguistics, ethnic, marital, and educational

4.7 Literacy :definition and measures of literacy

4.8 Literacy in India

Unit V: Population Development and Population Policies (14 Clock Hours)

5.1 Human Development Index (HDI)

5.2 Gender Development Index (GDI)

5.3 Relation between population and development

5.4 Population policy of India

5.5 Policy of China, Germany

- **Reading Books:**

- Bhende, A .and Kanitkar, T) .2011 :(Principles of Population Studies, Himalaya Publishing House, Bombay.
- Beaujeu, G .J) .1966 :(Geography of Population, Longman Group Ltd.

- Chandna, R.C) .Rep.2010 :(Geography of Population, Concepts, Determinants and Patterns, Kalyani Publishers, New 777Delhi.
- Clark, J .I) .1973 :(Population Geography, Pergamon Press Ltd., Oxford.
- Clark, J.I).1984:(Geography and Population :Approaches and Applications, Pergamon Press Ltd., Oxford .
- Musmade Arjun, Sonawane Amitand Jyotiram More,)2015 (Population & Settlement Geography)Marathi- (Diamond Publication Pune.

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Practical's in Geomorphology

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-513P Practical's in Geomorphology	2	--	**2**

- **Course Objectives:**

The course objective of this course is as follows:

1. To gain knowledge about the drainage network and patterns.
2. To get knowledge of the identification of geographical landforms.
3. To acquaint with the geomorphological symbols.
4. To interpret the geomorphological forms and processes .
5. To gain knowledge about geographical landforms through field visits/surveys.

- **Course Outcomes:**

After completion of this course student will able to:

1. Understand the stream ordering methods of stahlers and harton and calculate the stream orders and bifurcation ratio
2. Getting knowledge of the drainage basin analysis and preparing the relative relief map, absolute relief map, and hypsometric analysis.
3. Understand the slope profile and their types and draw the block diagram
4. Understand a river's cross-section through toposheet.

- **Course Contents**

Unit-I: Drainage Network **(12 Clock Hours)**

1.1 Calculation of Basin perimeter, shape, and area

1.2 Stream ordering and Bifurcation ratio

Strahler's Method

Horton's Method

1.3 Linear Aspects of Drainage Basin

Measurement and calculation of Stream length

Mean stream length,

Stream length ratio

Drainage density

Unit-II: Drainage Basin Relief Analysis **(12 Clock Hours)**

2.1 Relief analysis (for 3 to 5-order drainage basin; based on grid method)

Absolute relief map

Relative relief map

Hypsometric analysis

Dissection index

Slope map

Unit-III: Field Visit **(06 Clock Hours)**

3.1 Visit a geographical place and identification of landforms.

- **Reading Books:**

- Aackombe, R .V .and Gardiner, V .1983: Geomorphological Field Manual
- Chorley, R .J., Schumm, S .A., and Sugden, D.E .1984: Geomorphology, Methuen, London
- Goudie, A .1990: Geomorphological Techniques, Unwin Hyman, London
- Hart, M .G .1986: Geomorphology, Pune and Applied George Allen and Unwin
- Kale, V .S .and Gupta, A .2001: Introduction to Geomorphology, Orient Longman, Calcutta
- King, C.A.M .1966: Techniques in Geomorphology
- Singh. 2002 : Geomorphology, Prayag Pustak Bhawan, Savindra Allahabad
- Miller, Austin. 1953: The skin of the Earth, Methuen & Co. Ltd. London
- Strahler: Physical Geography
- Wilson, J., Gallant, and J. 2000: Terrain Analysis: Principles and Applications. New York: John Wiley and Sons.

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Practical's in Population Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-514P Practical's in Population Geography	2	--	**2**

- **Course Objectives:**

The course objective of this course is as follows:

1. To enable the students to use various techniques of calculating rates .
2. To acquaint the students with population models .
3. To familiarize students with different theories related to population.
4. To make awareness about dependency ratio and growth of population.
5. To intimate gender scene scenarios in different countries.
6. To make knowledge about the future population and age structure of different countries .
7. To acquaint the students with the projection, hdi and gdi

- **Course Outcomes:**

After completion of this course student will able to:

1. Understand calculation techniques of growth rates .
2. Calculate projection and apply it to various states of India.
3. Studying in hdi and gdi gives me knowledge of society .
4. Apply various theories in population geography to their society .
5. Understood the dynamics of population and its role in population policies
6. By understanding about population structure and characteristics of different countries, they can also predict the future population scenario of the country .
7. Understand the population growth of different countries, they can also predict the future population setting of the country .

- **Course Contents**

Unit-I: Population growth rates and Projection **(12 Clock Hours)**

1.1 Population growth rate

1.2 Decadal growth rate

1.3 Population projection using linear equation regression

1.4 Age-sex pyramid

1.5 Dependency ratio

Unit-II: Demographic Indices / Measures **(08 Clock Hours)**

2.1 Fertility

2.2 Mortality

2.3 Migration

Unit-III: Index and Survey **(10 Clock Hours)**

3.1 Human development index

3.2 Regional development index

3.3 Demographic transition applied to state wise for India

3.4 Methods to collect population data

- **Reading Books:**

- Carter, H, 1977:The study of Urban Geography, Edward Arnold, London.
- Hans, R .1978: Fundamentals of Demography, Surjeet, Delhi.
- Hudson F.S .1976: Geography of Settlements, Estover, Macdonald & Evans, England.
- Liendsor, J.M .1997: Techniques in Human Geography, Routledge.
- Lloyd, P .and Dicken, B .1972: Location in Space -A theoretical approach to economic geography, Harper and Row, NewYork.
- Michael, E .and Hurse, E, 1974: Transportation Geography, McGraw-Hill, NewYork.
- Pollard, A.H., and Farhat Yusu, 1974: Demographic Techniques, Rushcutters Bay, N.S.W., Pergamon Press, Australia.

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Practical's in Agriculture Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-515P Practical's in Agriculture Geography	2	--	**2**

- **Course Objectives:**

The course objective of this course is as follows:

1. To acquaint the student with agricultural activities.
2. To familiarize the students with the methods of statistical analysis used in agriculture geography.
3. To enable the students to acquire knowledge about crop concertation diversification.

- **Course Outcomes:**

After completion of this course student will able to:

1. Students will be able to calculate the level and index of agricultural productivity
2. Students will able to calculate crop combination using various methods
3. Students will be able to calculate agricultural efficiency.

- **Course Contents**

Unit-I: Crop Concentration and Diversification (12 Clock Hours)

1.1 Levels in agricultural productivity – crop yield and concentration Indices ranking coefficient (Jasbir Singh)

1.2 Enyedi's productivity index of agriculture

Unit-II: Crop Combination Methods (12 Clock Hours)

2.1 Weaver's method

2.2 Doi's method

Unit-III: Measurement of Agricultural Efficiency (06 Clock Hours)

3.1 Kendall's method

- **Reading Books:**

- Asis Sarkar (2015): Practical Geography, A Systematic Approach, Orient Black Swan
- Carter, H. (1977): The study of Urban Geography, Edward Arnold, London.
- Hans, R. (1978): Fundamentals of Demography, Surjeet, Delhi.

- Hudson F.S. (1976): Geography of Settlements, Eastover, Macdonald & amp; Evans, England.
- Liendsor, J.M. (1997): Techniques in Human Geography, Routledge.
- Lloyd, P. and Dicken, B. (1972): Location in Space - A theoretical approach to economic geography, Harper and Row, New York.
- Michael, E. and Hurse, E. (1974): Transportation Geography, McGraw-Hill, New York.
- Pollard, A.H. and Farhat Yusu. (1974): Demographic Techniques, Rushcutters Bay, N.S.W., Pergamon Press, Australia.
- http://mospi.nic.in/agriculture-statistics
- https://www.indiastat.com/data/agriculture
- http://studymaterial.unipune.ac.in/

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Agriculture Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-ME-516T Agriculture Geography	4	4	--

- **Course Objectives:**

The course objective of this course is as follows:

1. To describe the concept of agriculture geography.
2. To notify the student's significance and approaches of agriculture geography in geography.
3. To familiarize the students with types of agriculture and sustainable development of agriculture geography.
4. To develop the knowledge of problems and prospects of agriculture.

- **Course Outcomes:**

After completion of this course student will able to:

- Understand the introduction to agriculture, nature, scope, significance, and approaches of agriculture geography.
- Understand the influence of physical, economic, and technological factors on agriculture patterns.
- Getting ideas of the agricultural system its meaning and concept, whittlesey's classification of the agricultural system.
- Understand the definition and characteristics of arid and semi-arid regions and study droughts and famines, and the role of irrigation and dry farming .
- Understand types of agriculture and problem and prospects of agriculture and study sustainable agricultural development in India.

- **Course Contents**

Unit-I: Introduction to Agricultural Geography **(12 Clock Hours)**

1.1 Definition, nature, scope, and significance

1.2 Approaches: systematic, commodity, regional, and recent

1.3 Recent trends in agriculture geography

Unit-II: Significance of Agriculture **(12 Clock Hours)**

2.1 Significance of agriculture in the world

2.2 Importance of agriculture in the Indian economy

2.3 Role of agro-based industry in regional development

Unit-III: Determinants of Agriculture (12 Clock Hours)

3.1 Physical factors

3.2 Economic factors

3.3 Social factor

3.4 Technological factors

Unit-IV: Agricultural Type & Problems and Prospects of Agriculture. (12 Clock Hours)

4.1 Intensive subsistent farming, mixed farming, horticulture, plantation agriculture, commercial grain farming, shifting cultivation, precision agriculture.

4.2 Problems and prospects with reference to India

4.3 Droughts and famines

4.4 Role of irrigation in agriculture development

4.5 Agricultural productivity in India

Unit-V: Sustainable Agricultural Development and Characteristics of Indian Agriculture (12 Clock Hours)

5.1 Wasteland management

5.2 Organic farming

5.3 Crop rotation

5.4 Group farming & agro-forestry

5.5 Pest and weed management

5.6 Agro-tourism

5.7 Green revolution in India: problems associated with Indian agriculture

5.8 Sustainable agriculture developments goals- zero hunger, food security.

5.9 National agricultural policy & recent changes in Indian agriculture.

- **Reading Books:**

- Aiyer, A.K.Y.N. (1949): Agricultural and Allied Arts in Vedic India.
- Bayliss Smith, T.P. (1987): The Ecology of Agricultural Systems. Cambridge University Press, London.
- Berry, B.J.L. et. al. (1976): The Geography of Economic Systems. Prentice Hall, New York.
- Brown, L.R. (1990): The Changing World Food Prospects - The Nineties and Beyond. World Watch Institute, Washington D.C.

- Dyson, T. (1996): Population and Food, Global Trends and Future Prospects. Routledge, London.
- Gregor, H.P. (1970): Geography of Agriculture. Prentice Hall, New York.
- Grigg, D.B. (1974): The Agricultural Systems of the World. Cambridge University Press, New York.
- Grigg. D.G. (1974): The Agricultural Systems of the world An Evolutionary Approach.
- Hartshorn, T.N. and Alexander, J.W. (1988): Economic Geography. Prentice Hall, New Delhi.
- Illbery, B.W. (1985): Agricultural Geography, Social & Economic Analysis, Oxford University Press.
- Mannion, A.M. (1995): Agriculture and Environment Change. John Wiley, London.
- Morgan, W.B. (1987): Agriculture in the Third World - A Spatial Analysis. Westview Press, Boulder.
- Morgan. W.B. and Monton, S.C. (1971): Agricultural Geography Methuen, London.
- Patil S. G., Suryawanshi R. S., Pacharne S. and Choudhar A. H. (2014): Economic Geography, AtharavPrakashan, Pune.
- Pagar S. D., More J. C. &Thorat A. M. (2015): Agricultural Geography,Atharva Publication, Pune.
- Randhawa, M.S. (1980):An History of Agriculture in India Vols. I, II, III, IV, ICAR, New Delhi.
- Saptarshi P.G., More J.C., Ugale V.R., Musmade A.H. (2009): India A Geographical Analysis, Diamond, Pune.
- Sauer, C.O. (1969): Agricultural Origins and Dispersals. M.I.T. Press, Mass, U.S.A.
- Singh, J. and Dhillon, S.S. (1988): Agricultural Geography, 2nd edition, Tata McGraw-Hill, New Delhi.
- Singh, J. and Dhillon, S.S. (1994): Agricultural Geography, Tata McGraw Hill, Publishing Co.
- Symons, Leslie (1970): Agricultural Geography, G. Belt and Sons Ltd., London.
- Tarrent, J.R. (1970): Agricultural Geography, David and Charles, Newton Abbot.
- Wigley, G. (1981): Tropical Agriculture: The Development of Production, 4th edition, Arnold, London

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Research Methodology in Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-RM-517T Research Methodology in Geography	4	4	--

- **Course Objectives:**

The course objective of this course is as follows:

1. To provide an introduction to research methods and the research process.
2. To learn the principles of research design, data collection, and data analysis .
3. To provide students with the skills necessary to design and conduct research studies.
4. To understand the methods of data collection and data analysis.
5. To aware students of research ethics and plagiarism.
6. To introduce new trends and approaches in research methodology.
7. To develop research aptitude among students.

- **Course Outcomes:**

After completion of this course student will able to:

1. Understand the research process and different types of research designs
2. Identify research problems and formulate research questions
3. Choose appropriate research methods and data collection techniques
4. Analyze and interpret research data
5. Write research reports and communicate research findings effectively
6. Understand the new trends and approaches in research methodology.Analyze and apply the research aptitude in their research work.

- **Course Contents**

Unit-I :Introduction to Research Methodology **(12 Clock Hours)**

1.1 Meaning and objectives of research

1.2 Characteristics of research

1.3 Types of research

1.4 Various steps in research process

1.5 Research methods versus methodology

Unit-II :Research Problem and Research Design **(12 Clock Hours)**

2.1 Definition and identification of the research problem

2.2 Technique involved in defining a problem

2.3 Definition and purpose of research design

2.4 Characteristics of good research design

Unit-III: Sampling Design (12 Clock Hours)

3.1 Sampling design –definition of population, sample, and sampling design

3.2 Advantages and disadvantages of sampling

3.3 Characteristics of a good sample

3.4 Types or methods of sampling

Unit-IV :Methods of data collection and Data Analysis (12 Clock Hours)

4.1 Primary data :questionnaire, interview, and observation /field work

4.2 Sources of secondary data

4.3 Hypothesis -definition and types

4.4 Measure for central tendency and dispersion

4.5 Correlation and regression and time-series analysis

4.6 Parametric and non-parametric tests

Unit-V: Report writing and research ethics (12 Clock Hours)

5.1 Dissertation and thesis, research paper, review article,
short communication, conference presentation, meeting report, etc.

5.2 Structure and organization of research reports; literature review

5.3 Research ethics and plagiarism

5.4 Use of plagiarism detection software

5.5 Research opportunities and funding agencies

5.6 Journals :citations and references

- **Reading Books:**

- Gaum, Carl G., Graves, Harold F., and Hoffman, Lyne, S.S.,)1950 :(Report Writing, 3rd ed., New York :Prentice-Hall.
- Kothari, C.R) .2004 :(Research Methodology :Methods and Techniques, New Age International)P (Ltd., New Delhi –110002.
- Kothari, C.R.,)1984 :(Quantitative Techniques, 2nd ed., New Delhi :Vikas Publishing House Pvt .Ltd.
- Mishra Shanti Bhushan and Shashi A) .2011 :(Handbook of Research Methodology, Educreation Publishing, New Delhi –110075
- Pandey, P .and Pandey, M.M) .2015 :(Research Methodology :Tools and Techniques,

Bridge Center, Romania, European Union.

- Tandon, B.C.,)1979 :(Research Methodology in Social Sciences .Allahabad, Chaitanya Publishing House.
- Ullman, Neil R) .1978 :(Elementary Statistics, New York :John Wiley & Sons, Inc.
- Yamane, T., Statistics)1973 :(An Introductory Analysis, 3rd ed., New York :Harper and Row.

F.Y.P.G. (Geography)

Syllabus for Semester- II

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Principles of Climatology

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-521T Principles of Climatology	4	4	--

- **Course Objectives:**

The course objective of this course is as follows:

1. To introduce the students to the basic principles and concepts in Climatology.
2. To acquaint the students with the applications of Climatology in different areas and environments.
3. To make the students aware of Planet Earth and thereby enrich the student's life.

- **Course Outcomes:**

After completion of this course student will able to:

1. Understand the difference between weather & climate and nature, scope, origin, composition, and structure of the atmosphere.
2. Getting facts about Heat Budget and factors that effects Heat Budget .
3. Understand the concept of horizontal, vertical temperature, and inversion of temperature .
4. Identify the Atmospheric pressure and winds humidity and the concept of precipitation and its types.
5. Understand the Air masses and Fronts and the Weather Forecasting.
6. Students will understand the insolation, mechanism of heat transfer, lapse rate, and inversion of temperature.
7. Students will recognize atmospheric pressure, pressure belts, and their relation with the wind system.

- **Course Contents**

Unit-I: Introduction to Climatology **(06 Clock Hours)**

1.1 Meteorology and climatology

1.2 Nature and scope of climatology

1.3 Branches of climatology

1.4 Development of climatology

1.5 Tropical climatology

Unit-II: Earth's Atmosphere **(06 Clock Hours)**

2.1 Evolution

2.2 Structure and composition of the atmosphere

2.3 The ozone layer depletion

2.4 Aurora - types

Unit-III: Insolation **(12 Clock Hours)**

3.1 Solar and terrestrial radiation

3.2 Electromagnetic spectrum

3.3 Factors affecting insolation

3.4 Latitudinal and seasonal variation

3.5 Effect of atmosphere

3.6 Greenhouse effect

3.7 Heat budget

3.8 Mechanisms of heat transfer

Unit-IV: Temperature **(06 Clock Hours)**

4.1 Heat and temperature

4.2 Temperature measurements and controls

4.3 Lapse rate

4.4 Temperature inversion and their types

Unit-V: Atmospheric Pressure and Winds **(12 Clock Hours)**

5.1 Pressure measurement and distribution

5.2 Factors affecting the distribution of pressure

5.3 Wind observation and measurement

5.4 Factors affecting wind

5.5 Geostrophic wind and gradient Wind

5.6 Models of the general circulation of the atmosphere

5.7 Local winds

5.8 Jet stream

5.9 Cyclones and anticyclones

Unit-VI: Atmospheric Moisture **(06 Clock Hours)**

6.1 Atmospheric moisture

6.2 Hydrologic cycle

6.3 Evaporation and condensation

6.4 Forms of condensation

6.5 Precipitation

6.6 Types of precipitation

6.7 Measurement of humidity

Unit-VII: Atmospheric Stability (06 Clock Hours)

7.1 Lapse Rate: normal, environmental, dry adiabatic lapse rate and wet adiabatic lapse rate

7.2 Stable and unstable air

7.3 Absolute stability

7.4 Absolute instability

7.5 Conditional instability

Unit-VIII: Air Masses and Fronts (06 Clock Hours)

8.1 Introduction to air masses and fronts

8.2 Types of air masses

8.3 Types of fronts

- **Reading Books:**

- Critchfield, H.J. (Rep. 2010): General Climatology. Prentice Hall, New Delhi.
- Lal, D.S. (1998): 'Climatology', Chaitanya Publishing House, Allahabad.
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DISCIPLINE SPECIFIC CORE COURSE (DSC)

Principles of Economic Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-522T Principles of Economic Geography	4	4	--

- **Course Objectives:**

The course objective of this course is as follows:

1. To develop in students an understanding of basic concepts, principles, and theories relating to economic activities .
2. To enable the pupils to acquire a knowledge of national and international trade and its impact on development
3. To enable the students to acquire a piece of knowledge about economic development and understand the economic development in India

- **Course Outcomes:**

After completion of this course student will able to:

1. Students understand the nature, scope, approaches, production, exchange, consumption, and recent trends of economic geography .
2. Understand the fundamental theories in economic geography .
3. Review, understand and apply the modes of economic development by various models .
4. Understand the economies scale, transportation and communication, nature, and role of international trade in the economic development of India.

- **Course Contents**

Unit-I: Introduction to Economic Geography **(06 Clock Hours)**

1.1 Definition, nature, and scope

1.2 Approaches: traditional and modern

1.3 Recent trends in economic geography

Unit-II: Economic Activities **(08 Clock Hours)**

2.1 Definition and classification of economic activities

2.2 Factors of the location of economic activities: physical, social, economic, and technical

2.3 Location of economic activities: Weber's and Von Thunen's model

Unit-III: Resources (08 Clock Hours)

3.1 Definition and classification of resources

3.2 Significance of natural and human resources in economic development

3.3 Importance of non-conventional energy resources for sustainable development

Unit-IV: Economic Development (10 Clock Hours)

4.1 Definition and concept of economic development

4.2 Measures of economic development

4.3 Classification of countries on the basis of economic development

4.4 Rostow's and Myrdal's model

Unit-V: Transport and Communication (06 Clock Hours)

5.1 Various modes of transport

5.2 Geographical factors and transportation

5.3 Various means of communication

5.4 Role of transport and communication in the economy

Unit-VI: Trade (06 Clock Hours)

6.1 Definition and types of trade

6.2 Factors affecting international trade

6.3 Problems and prospects of international trade with reference to India

6.4 E-commerce

Unit-VII: Economic Development in India (06 Clock Hours)

7.1 Pre-and post-independence economic development in India

7.2 Green revolution in India

7.3 Need for a new green revolution in India

7.4 Regional disparities in India

7.5 Impact of globalization and privatization on economic development

Unit-VIII: Contemporary Issues (10 Clock Hours)

8.1 regional disparities in Maharashtra

8.2 Role of IT industry in economic development in Maharashtra

8.3 A case study of one local agro-based industry: economic analysis, problems, and prospects (sugar factory/ winery/ agro-tourist center, etc.)

- **Reading Books:**

- Alexander, J.W. (1977): Economic Geography, Prentice Hall of India Pvt. Ltd., New.

- Chorley, R.J. and Haggett, P. (1970): Socio Economic Models in Geography, Concept publishing Company Pvt. Ltd., New Delhi.
- Garnier, B.J. and Delobez, A. (1979): Geography of Marketing, Longman.
- Hartshorne, T.A. and Alexander, J.W. (2010): Economic Geography, PHI Learning, New Delhi
- KananChatterjee (2015): Basics of Economic Geography.
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- Lloyd, P. and Dicken, B. (1972): Location in Space: A Theoretical Approach to Economic Geography, Harper and Row, New York Methuen.
- Mitra, A. (2002): Resource Studies, Sreedhar publishers, Kolkata.
- Patil, S.G., Suryawanshi, R.S., Pacharne, S. and Choudhar, A.H. (2014): Economic Geography, AtharavPrakashan, Pune.
- Ray, P.K. (1997): Economic Geography, New Central Book Agency (P) Ltd., Calcutta.
- Saptarshi, P.G., More, J.C. Ugale, V.R. and Musmade, A.H. (2009): India A Geographical Analysis Diamond, Pune.
- Saxena, H.M. (2013): Economic Geography, Rawat publication, Jaipur.
- Siddhartha, K. (2000): Economic Geography: Theories, Process and Patterns, Kisalaya Publications, New Delhi
- Smith, D.M. (1971): Industrial Location: An Economic Geographical Analysis, John Wiley and Sons, New York
- Pagar, Thorat& More (2015): Agriculture Geography, (Marathi), Atharv Publication, Pune
- More J. (2014): Geography & Agriculture For MPSC Examination, (Marathi), Atharv Publication, Pune

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Geography of Tourism

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-523T Geography of Tourism	2	2	--

- **Course Objectives:**

The course objective of this course is as follows:

1. To acquaint the students with concepts in tourism.
2. To make the students aware of the tourism potential of the area.

- **Course Outcomes:**

After completion of this course student will able to:

1. To students understand the tourism influencing factors: historical, natural, social-cultural, and economic.
2. Study tourism motivating factors for pilgrimages, leisure, recreation, and elements.
3. Understand the tourism types: eco-ethno coastal and adventure tourism, national and international tourism, globalization, and tourism.
4. Study and understand the environmental laws and tourism-current trends, spatial and recent changes, tourism circuits-short and longer, accommodation and supplementary accommodation other facilities, Indian hotel industry.

- **Course Contents**

Unit-I: Introduction to Geography of Tourism **(04 Clock Hours)**

1.1 Definition: tourist and tourism

1.2 Concept of recreation and leisure

1.3 Importance of tourism

1.4 Impact of tourism on nation's economy

Unit-II: Classification and Recent Concepts of Tourism **(04 Clock Hours)**

2.1 Classification on the basis of nationality time of travel, number of tourists and purpose

2.2 Recent concepts: agro-tourism, eco-tourism, heritage tourism and adventure tourism

Unit-III: Factors Affecting Tourism **(12 Clock Hours)**

3.1 Physical factors: relief, climate, vegetation, wildlife, and water bodies

3.2 Socio-cultural factors: religious, historical and cultural, economic, transportation, and accommodation

Unit-IV: Role of Accommodation in Tourism **(06 Clock Hours)**

4.1 Hotels, motels, inn, saraies, dharmashalas

4.2 Government accommodation, tourist homes

4.3 Youth hostels, cottages, tents, caravans

4.4 Rail yatribhavan, houseboats

4.5 Private accommodations, home stay and unrecognized accommodations

Unit-V: Indian Tourism **(04 Clock Hours)**

Case studies

5.1 Hill stations: Manali, Mahabaleshwar

5.2 Beaches: Kalangut (Goa), Diveeagar

5.3 Historical centres: Agra, Pratapgad

5.4 Caves: Badami, Ajanta

5.5 Religious Centres: Prayagraj (Allahabad), Shirdi

5.6 National Parks: Kaziranga, Tadoba

5.7 Dams: SardarSarovar, Koyna

5.8 Waterfalls: Nohkalikai Fall, Thoseghar

- **Reading Books:**

- Bhatia A.K. (1996): Tourism Development: Principles and Practices, Sterling Publishers, New Delhi
- Bhatiya, A.K.(1991): International Tourism - Fundamentals and Practices, Sterling, New Delhi,
- Chandra, R.H.(1998): Hill Tourism: Planning and Development, Kanishka Publishers, New Delhi,
- Hunter, C and Green, H.(1995): Tourism and the Environment: A Sustainable Relationship, Routledge, London,
- Inskeep, E. (1991): Tourism Planning: An Integrated and Sustainable Development Approach,Van Nostrand and Reinhold, New York,
- Kaul, R.K.(1985): Dynamics of Tourism & Recreation. Inter-India, New Delhi.
- Kaur, J.(1985): Himalayan Pilgrimages & New Tourism Himalayan Books, New Delhi,
- Lea, J.(1988): Tourism and Development in the Third World, Routledge, London,
- Milton, D.(1993): Geography of World Tourism Prentice. Hall, New York,

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- Robinson, H.A.(1996): Geography of Tourism. Macdonald and Evans, London,
- Sharma, J.K. (ed.)(2000): Tourism Planning and Development - A new perspective, Kanishka Publishers, New Delhi,
- Suryawanshi, R.S.(2012): Assessment of Potential for Eco- Tourism, Northern Thane District, Maharashtra. Lap Lambert Academic Publishing, Germany
- Shaw, G. and Williams, A.M.(1994): Critical issues in Tourism-A Geographical Perspective, Oxford: Blackwell,
- Sinha P. C. (ed.)(1998): Tourism Impact Assessment, Anmol Publishers, New Delhi,
- Theobald, W. (ed.)(1994): Global Tourism: The Next decade, Oxford, Butterworth, Heinemann, Oxford,
- Voase, R.(1995): Tourism: The Human Perspective Hodder& Stoughton, London

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Practical's in Climatology

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-524P Practical's in Climatology	2	--	2

- **Course Objectives:**

The course objective of this course is as follows:

1. To acquaint the students with the weather instruments and their utility and applications in geographical phenomena
2. To develop the skill of the climograph, hydher graph, and climate graph.
3. To acquaint the knowledge and make familiar with classifying climatic regions.

- **Course Outcomes:**

After completion of this course student will able to:

1. Students will able to measure weather elements using weather instruments
2. Students will able to represent climatic data using appropriate methods
3. Students will classify climate using Koppen's and Thornthwaite's methods

- **Course Contents**

Unit-I: Weather Elements **(08 Clock Hours)**

1.1. Instruments and measurement techniques of weather elements

Unit-II: Representation of Climatic Data **(10 Clock Hours)**

2.1 Climatograph

2.2 Climograph

2.3 Simple wind rose

2.4 Compaund wind rose

2.5 Hythergraph

2.6 Water Budget

Unit-III: Climatic Classification **(04 Clock Hours)**

3.1 Koppen's classification

Unit-IV: Station Model **(08 Clock Hours)**

4.1 Coding, decoding and plotting of weather data

- **Reading Books:**

- Asis Sarkar (2015): Practical Geography, A Systematic Approach, Orient Black Swan
- Carter, H. (1977): The study of Urban Geography, Edward Arnold, London.
- Hans, R. (1978): Fundamentals of Demography, Surjeet, Delhi.
- Hudson F.S. (1976): Geography of Settlements, Estover, Macdonald & amp; Evans, England.
- Liendsor, J.M. (1997): Techniques in Human Geography, Routledge.
- Lloyd, P. and Dicken, B. (1972): Location in Space - A theoretical approach to economic geography, Harper and Row, New York.
- Michael, E. and Hurse, E. (1974): Transportation Geography, McGraw-Hill, New York.
- Pollard, A.H. and Farhat Yusu. (1974): Demographic Techniques, Rushcutters Bay, N.S.W., Pergamon Press, Australia.
- Singh, J. and Dhillon, (1984): Agricultural Geography, Tata McGraw-Hill Publishing Company Limited, New Delhi.
- Yeats, M.H. (1974): An Introduction to Quantitative Analysis in Human Geography, McGraw-Hill, New York.
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DISCIPLINE SPECIFIC CORE COURSE (DSC)

Practical's in Economic Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-MJ-525P Practical's in Economic Geography	2	--	2

- **Course Objectives:**

The course objective of this course is as follows:

1. To acquaint the student with the economic activities.
2. To familiarize the students with the methods of statistical analysis used in economic geography.
3. To make the students aware of the theories and model

- **Course Outcomes:**

After completion of this course student will able to:

1. Understand concepts of crop combination, agricultural efficiency, and agricultural productivity.
2. Examine Location Quotient, Lorenz Curve, Gini's Coefficient, and Von Thunean.
3. Understand transport network analysis
4. Get information about the gravity potential population surface model
5. Understand the application of the breaking point theory (trade area)

- **Course Contents**

Unit-I: Techniques in Agricultural Geography **(06 Clock Hours)**

1.1 Crop-diversification techniques – Gibs and Martin

1.2 Crop-diversification techniques –Bhatia's method

1.3 Cropping intensity and irrigation intensity

Unit-II: Techniques in Industrial Geography **(10 Clock Hours)**

2.1 Location quotient

2.2 Lorenz curve

2.3 Gini's coefficient

2.4 Von Thunean Model

Unit-III: Techniques in Transport Geography **(08 Clock Hours)**

3.1 Graph theoretical measures of transport network indices

3.2 Gravity potential population surface.

3.3 Breaking point theory - trade area delimitation, law of retail trade gravitation.

Unit-IV: Case study **(06 Clock Hours)**

4.1 A case study of one local agro-based industry: Economic analysis, problems, and prospects (Sugar factory/ winery/ agro-tourist center, etc.)

- **Reading Books:**

- Singh, J. and Dhillon, S. S. (1994): Agricultural Geography, Tata McGraw Hills, New Delhi
- Yeats, M. H. (1978): An introduction to quantitative analysis in human geography
- Monkhouse, F. J. and Wilkison, H. R. (1976): Map and Diagrams, Methuen and Co.
- Kansky, N. T. (1965): Structure of Transport Network.
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DISCIPLINE SPECIFIC CORE COURSE (DSC)

Industrial Geography

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-ME-526T Industrial Geography	4	4	--

- **Course Objectives:**

The course objective of this course is as follows:

1. To explain to the student with the industrial activities in different parts.
2. To make the students aware of locations of industry, activities primary and secondary, and the factors responsible.
3. To help the student to understand industrial hazards.

- **Course Outcomes:**

After completion of this course student will able to:

1. Understand the study of industrial geography, its nature, scope, and different study methods.
2. Is Aware of the locations of industries and their activities primary and secondary and the factors responsible for the same
3. Understand a review of the world distribution of some industries and selected countries.
4. Getting the global nature of industrialization and related problems, methods of measuring the spatial distribution of manufacturing.
5. Understand the environmental degradation, industrial hazards and occupational health, manufacturing industry, role, and factors affecting the same.

- **Course Contents**

Unit-I: Introduction to Industrial Geography **(06 Clock Hours)**

1.1. Definition, nature, and Scope

1.2. Manufacturing and regional economies

1.3. Importance of Industries in India's economic development

Unit-II: Industrial Location **(06 Clock Hours)**

2.1 Factors of industrial location: physical, economic, political and socio-cultural

2.2 Centralization and Decentralization of Industries

2.3 Agglomeration of industries

2.4 Industrial linkages

2.5 Footloose industry

Unit-III: Models in Industrial Geography (12 Clock Hours)

3.1 Weber's model

3.2 Losch's model

3.3 Greenhut's model

3.4 Israd's model

Unit-IV: Problems and Prospects of Industries in India (06 Clock Hours)

1.1 Iron and steel

1.2 Cotton textile

1.3 Sugar industries

1.4 Automobile

1.5 Chemical

1.6 Tourism industry

Unit-V: Industrial Regions of India (12 Clock Hours)

1.1 Industrial regions of India

1.2 Characteristics of industrial regions

1.3 India's industrial policy

1.4 Agro-based industries in India

1.5 SEZ

1.6 Small Scale Industries in India

Unit-VI: Industrial Regions (06 Clock Hours)

1.1. Western Europe

1.2. Anglo-America

1.3. Japan

1.4. China

Unit-VII: IT Industries in India (06 Clock Hours)

7.1 Currents scenario of the IT Industry in India

7.2 Major IT Hubs in India

7.3 Problems and Prospects of IT Industry in India

7.4 Impact of Globalization on IT Industry in India

Unit-VIII: Currents Scenario of Industry Sector in India (06 Clock Hours)

8.1 Role of MIDC in the economic development of Maharashtra.

8.2 Role of FDI in the development of Indian Industry

8.3 Problems and Prospects of agro-based industries in Maharashtra

• Reading Books:

- Alexander, JW. (1973): Economic Geography, Prentice Hall, New Jersey.
- Baghla, S. (2017): Industrial Geography, Book Enclave Publication.
- Estall and Buchanan (1969): Industrial Activity and Economic Geography.
- Smith, David, M. (1971): Industrial Location- An Economic Geographical Analysis, John Wiley and Son, New York.
- Miller, E.C. (1977): Manufacturing-A study of Industrial Location, Penn State University, University Park, U.S.A.
- Shaw, E.B. (1979): An Anglo-America- A Regional Geography.
- Riley, R.C. (1973): Industrial Geography, Progress Publication, Moscow.
- Watts, H.D. (1989): Industrial Geography, Longman Group Ltd. Hong Kong.
- Carlo, G., Mehdi, J. and Dino, M. (2003): Fundamentals of Software Engineering, Pearson Edu. Pte. Ltd. New Delhi.
- Richard, E. Fairley: Software Engineering- Concepts, Tata Mc-Graw Hill Publishing Company, New Delhi.
- Shahid, Y. and Kaoru, N. (2010): Changing the Industrial Geography in Asia, the Impact of China &India, World Bank Publications.
- Robinson, H. (1996): Geography of Tourism, Macdonald and Evans, London.

DISCIPLINE SPECIFIC CORE COURSE (DSC)

Field visit & Surveying

Course Code & Title	Credits	Credit distribution of the course	
		Theory	Practical
GE-FP-527P Field visit & Surveying	4	--	4

- **Course Objectives:**

The course objective of this course is as follows:

1. To acquaint the students with new concepts and the potential of surveying in geography
2. To develop skills and understand the students about the surveying methods.
3. To train students in Total Station, Theodolite, and Dumpy Level surveying instruments.
4. To familiarize the students with the wide application of surveying various fields of geography.

- **Course Outcomes:**

After completion of this course student will able to:

1. Understand methods and important concepts of surveying
2. Students are well aware of components of dumpy level and will be able to use it for surveying
3. Students will be well aware of the components of theodolite and will be able to use it for surveying
4. Students will be well aware of the components of the total station and will be able to use it for surveying
5. Students will be well aware of components of Total Station and will able to use it for surveying

- **Course Contents**

Unit-I: Introduction to Surveying **(08 Clock Hours)**

1.1 Definitions and methods

1.2 Benchmarks

1.3 Spot heights

1.4 Reduced levels

1.5 Interpolation and Contouring

Unit-II: Dumpy/Auto level **(10 Clock Hours)**

2.1 Various components and common terms used in the dumpy level survey

2.2 Collimation Method and Rise and Fall Method

2.3 Profile drawing and block contouring

Unit-III: Transit Theodolite **(18 Clock Hours)**

3.1 Various components and common terms used in Theodolite

3.2 Intersection method

3.3 Tacheometric method

Unit-IV: Total Station **(18 Clock Hours)**

4.1 Introduction of Total Station

4.2 Various Components and common terms used in Total Station

4.3 Collection of points and analysis of the data

4.4 Area and profile drawing

4.5 Applications of Total Station

Unit-V: Field Visit **(06 Clock Hours)**

5.1 Dumpy level/Theodolite /Total station survey of a beach, river profiles, and hill slope.

- **Reading Books:**

- AsisSarkar (2015): Practical Geography, A Systematic Approach, Orient Black Swan
- Duggal, S.K. (2013): Surveying Vol. 2, McGraw Hill Publication, New York.
- Kanetkar, T.P. and Kulkarni, S.V. (2010): Surveying and Leveling Vol. II, Pune Vidyarthi Publication, Pune.
- Maslov, AV., Gordeev, A.V. and Batrakov, Yu.G. (1984): Geodetic surveying, Mir Publishers, Moscow.
- Rangwala, S.C. (2011): Surveying and Leveling, Charotar Publishing HousePvt. Ltd. Anand, (Gujarat), India.
- Punmia, B.C., Jain A. and Jain A. (2011): Surveying, Vol. II. And III, Laxmi Publication - New Delhi.