Punyashlok Ahilyadevi Holkar Solapur University, Solapur

NAAC Accredited-2015

'B' Grade (CGPA 2.62)

Name of the Faculty: Science and Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: Geography

Name of the Course: B. Sc. II (Sem-III & IV)

Syllabus to be implemented w.e.f. June 2020

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Choice Based Credit System (CBCS)

Subject – Geography (Optional)

Course Structure

Name of the Paper	Category	Paper No	Per Week			Total Marks	UA	CA	Credit
			L	T	P				
B. Sc. II Semester - III									
Climatology	C 5	V	3	-	-	50	40	10	4
Geography of India		VI	3	-	-	50	40	10	
B. Sc. II Semester - IV									
Economic Geography	C 8	VII	3	-	-	50	40	10	4
Environmental Geography		VIII	3	-	-	50	40	10	
Statistical Methods in Geography	C 5	Practical III	-	-	4	50	40	10	4
Field Work and Research Methodology	C 8	Practical IV	-	-	4	50	40	10	

* Practical examination will be held at the end of the year.

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B. Sc. II Semester III

Subject – Geography

Paper No- V (Geography C 5)

Title of the Paper- Climatology

Total Lectures: 45

Objectives:

- To make the students familiar with new terms and concept of climatology.
- To know the constituents of atmosphere and its dynamic nature
- To know the contribution of atmosphere in the making of earth habitable.

Unit I: Atmosphere, Weather and Climate **10**

1.1 Climatology- Meaning and Definition

1.2 Elements of Weather and climate

1.3 Atmospheric Composition

1.4 Atmospheric Structure

Unit II: Insolation and Temperature **10**

2.1 Factor affecting on insolation

2.2 Distribution of insolation

2.3 Terrestrial Heat Budget

2.4 Temperature- Factor, Distribution and Inversion

Unit III: Atmospheric Pressure and Winds **10**

3.1 Atmospheric Pressure Belt

3.2 Planetary Winds

3.3 Forces affecting Winds

3.4 Jet Stream

Unit IV: Atmospheric Moisture and Cyclone **15**

4.1 Concept of Evaporation and Condensation

4.2 Types of Humidity and Precipitation

4.3 Climatic Regions (Koppen)

4.4 Tropical Cyclones

4.5 Monsoon - Origin and Mechanism

References:

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

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B. Sc. II Semester III

Subject – Geography

Paper No- VI (Geography C 5)

Title of the Paper- Geography of India

Total Lectures: 45

Objectives:

- To synthesize students with various geographical facts of India viz. Physiography, Climate, Soil, Vegetation and Resources
- To synthesize students with various facts of India viz. Agriculture, Industries, Population, Social and Regionalization of India

Unit I: Physical Set-up **15**

1.1 Location and Physiographic division of India

1.2 General climatic regions

1.3 Types of Soil

1.4 Types of forest

Unit II: Population **10**

2.1 Growth of Population

2.2 Distribution of Population

2.3 Structure of Population- Age and Sex composition

Unit III: Resources and Economic Activities **10**

3.1 Mineral Resource: Distribution and production of Iron ore and Manganese

3.2 Power resources: Distribution and production of Coal and Petroleum

3.3 Agriculture production and distribution - Rice and Wheat

3.4 Industrial development - Automobile and Information Technology

Unit IV: Social Structure and Regionalization of India **10**

4.1 Distribution of Population by- Religion, Caste, Language and Tribes

4.2 Regionalization of India- Physiographic (R. L. Singh) and Economic (Sengupta)

References:

1. Deshpande C. D., 1992: *India: A Regional Interpretation*, ICSSR, New Delhi.
2. Johnson, B. L. C., ed. 2001. *Geographical Dictionary of India*. Vision Books, New Delhi.

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

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B. Sc. II Semester IV

Subject – Geography

Paper No- VII (Geography C 8)

Title of the Paper- Economic Geography

Total Lectures: 45

Objectives:

- To acquaint the students with economic activities i.e. Agriculture, Manufacturing, Transport, Trade and Services.
- To acquaint the students with economic activity models.

Unit I: Introduction and Location of Economic Activity **15**

1.1 Concept and Classification of Economic Activity

1.2 Factors Affecting location of Economic Activity

1.3 Agriculture Landuse Model by Von Thunes

1.4 Industrial Location Theory by Alfred Weber

Unit II: Primary Activities **10**

2.1 Subsistence and Commercial Agriculture

2.2 Forestry

2.3 Fishing and Mining

Unit III: Secondary Activities **10**

3.1 Manufacturing- Cotton Textile and Iron and Steel

3.2 Concept of Manufacturing Regions

3.3 Special Economic Zones and Technology Parks

Unit IV: Tertiary Activities **10**

4.1 Transport

4.2 Trade

4.3 Services

Reference:

1. Alexander J. W., 1963: *Economic Geography*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Coe N. M., Kelly P. F. and Yeung H. W., 2007: *Economic Geography: A Contemporary Introduction*, Wiley-Blackwell.

3. Hodder B. W. and Lee Roger, 1974: *Economic Geography*, Taylor and Francis.
4. Combes P., Mayer T. and Thisse J. F., 2008: *Economic Geography: The Integration of Regions and Nations*, Princeton University Press.
5. Wheeler J. O., 1998: *Economic Geography*, Wiley..
6. Durand L., 1961: *Economic Geography*, Crowell.
7. Bagchi-Sen S. and Smith H. L., 2006: *Economic Geography: Past, Present and Future*, Taylor and Francis.
8. Willington D. E., 2008: *Economic Geography*, Husband Press.
9. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The *Oxford*

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B. Sc. II Semester IV

Subject – Geography

Paper No- VIII (Geography C 8)

Title of the Paper- Environmental Geography

Total Lectures: 45

Objectives:

- To acquaint students with concept of environmental geography.
- To study the relation between human and environment.
- To introduce the students with environmental problems, programmes and policies.

Unit I: Introduction **10**

1.1 Definition of Environmental Geography

1.2 Nature of Environmental Geography

1.3 Scope of Environmental Geography

1.4 Importance of Environmental Geography

Unit II: Human and Environment Relationships **10**

2.1 Historical Progression

2.2 Adaptation in different Biomes

Unit III: Ecosystem **10**

3.1 Concept & Structure of Ecosystem

3.2 Functions of Ecosystem- food chain and web

3.3 Major Ecosystem (Forest, Grassland and Marine)

Unit IV: Environmental Problems, Programmes and Policies **15**

4.1 Environmental Problems – Pollution, Climate Change, Global Worming, Acid rain, Desertification.

4.2 Environmental Programmes and Policies **–** Global, National and Local levels

References:

1. Chandna R. C., 2002: *Environmental Geography*, Kalyani, Ludhiana.
2. Cunninghum W. P. and Cunninghum M. A., 2004: *Principals of EnvironmentalScience: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
3. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford.

4. Singh, R.B. (Eds.) (2009) Biogeography and Biodiversity. Rawat Publication, Jaipur
5. Miller G. T., 2004: *Environmental Science: Working with the Earth,* Thomson BrooksCole, Singapore.
6. MoEF, 2006: *National Environmental Policy-2006,* Ministry of Environment and Forests, Government of India.
7. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies, Springer
8. Odum, E. P. et al, 2005: *Fundamentals of Ecology*, Ceneage Learning India.
9. Singh S., 1997: *Environmental Geography*, Prayag Pustak Bhawan. Allahabad.
10. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme.
11. Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Climate change and biodiversity: Proceedings of IGU Rohtak Conference, Volume 1. Advances in Geographical and Environmental Studies, Springer
12. Singh, R.B. (1998) Ecological Techniques and Approaches to Vulnerable Environment, New Delhi, Oxford & IBH Pub..
13. Singh, Savindra 2001. *Paryavaran Bhugol*, Prayag Pustak Bhawan, Allahabad. (in Hindi)

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B. Sc. II

Subject – Geography

Practical Paper No- III (Geography C 5)

Title of the Paper- Statistical Methods in Geography

Total Lectures: 60

Objectives:

- To introduce the students about statistical data and tabulations.
- Acquaint the student with statistical techniques.

Unit I: Statistical Data **10**

1.1 Significance of Statistical Methods in Geography

1.2 Sources of Data

1.3 Scales of Measurement -Nominal, Ordinal, Interval and Ratio

Unit II: Tabulation and Descriptive Statistics **20**

2.1 Frequencies - Deciles and Quartiles

2.2 Measures of Central Tendency - Mean, Median and Mode

2.3 Measures of Dispersion - Standard Deviation, Variance and Coefficient of Variation

Unit III: Sampling and Theoretical Distribution **20**

3.1 Types of sampling- Purposive, Random Systematic and Stratified

3.2 Theoretical Distribution- Probability and Normal Distribution

Unit IV: Association and Correlation **10**

4.1 Rank Correlation- Spearman's

4.2 Product Moment Correlation- Carl Pearson's

4.3 Simple Regression

Class Record: Each student will submit a record containing five exercises:

1. Construct a data matrix of about (10 x 10) with each row representing an areal unit (districts or villages or towns) and about 10 columns of relevant

attributes of the areal units.

2. Based on the above table, a frequency table, measures of central tendency and dispersion would be computed and interpreted for any two attributes.
3. Histograms and frequency curve would be prepared **on the entire data set** and attempt to fit a normal curve and interpreted for one or two variables.
4. From the data matrix a sample set (20 Percent) would be drawn using, random - systematic and stratified methods of sampling and locate the samples on a map with a short note on methods used.
5. Based on of the sample set and using two relevant attributes, a scatter and regression line would be plotted and residual from regression would be mapped with a short interpretation.

References:

1. Berry B. J. L. and Marble D. F. (eds.): *Spatial Analysis – A Reader in Geography*.
2. Ebdon D., 1977: *Statistics in Geography: A Practical Approach*.
3. Hammond P. and McCullagh P. S., 1978: *Quantitative Techniques in Geography: An Introduction,*
   Oxford University Press.
4. King L. S., 1969: *Statistical Analysis in Geography*, Prentice-Hall.
5. Mahmood A., 1977: *Statistical Methods in Geographical Studies,* Concept.
6. Pal S. K., 1998: *Statistics for Geoscientists*, Tata McGraw Hill, New Delhi.
7. Sarkar, A. (2013) Quantitative geography: techniques and presentations. Orient Black Swan Private Ltd., New Delhi
8. Silk J., 1979: *Statistical Concepts in Geography*, Allen and Unwin, London.
9. Spiegel M. R.: Statistics, *Schaum's Outline Series.*
10. Yeates M., 1974: *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill, New York.
11. Shinha, Indira (2007) Sankhyiki bhugol. Discovery Publishing House, New Delhi

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B. Sc. II

Subject – Geography

Practical Paper No- IV (Geography C 8)

Title of the Paper- Field Work and Research Methodology

Total Lectures: 60

Objectives:

- To introduce the students about field techniques and tools.
- To introduce the students to design the field report
- Acquaint the student with writing of project report.

Unit I: Field Work and Identifying the Case Study **10**

1.1 Field Work –Role, Value and Data and Ethics

1.2 Identifying the Case Study - Rural/Urban/Physical/Human/ Environmental

Unit II: Field Techniques **10**

2.1 Merits and Demerits

2.2 Selection of the Appropriate Technique:

2.2.1 Observation (Participant / Non Participant),

2.2.2 Questionnaires (Open/ Closed / Structured / Non-Structured),

2.2.3 Interview with Special Focus on Focused Group Discussions

2.2.4 Space Survey (Transects and Quadrants, Constructing a Sketch)

Unit III: Field Survey **20**

Collection of Material for Physical and Socio-Economic Surveys

Unit IV: Designing the Field Report **20**

4.1 Aims and Objectives

4.2 Methodology

4.3 Analysis

4.5 Interpretation

4.6 Writing the Report

Practical Record

1. Each student will prepare an individual report based on primary and secondary data collected during field work.
2. The duration of the field work should not exceed 10 days.
3. The word count of the report should be about **8000 to 12,000** excluding figures, tables, photographs, maps, references and appendices.
4. One copy of the report on A 4 size paper should be submitted in soft binding.

References:

1. Creswell J., 1994: *Research Design: Qualitative and Quantitative Approaches* Sage Publications.
2. Dikshit, R. D. 2003. The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
3. Evans M., 1988: "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, eds. J. Eyles and D. Smith, Polity.
4. Mukherjee, Neela 1993. Participatory Rural Appraisal: Methodology and Application. Concept Publs. Co., New Delhi.
5. Mukherjee, Neela 2002. Participatory Learning and Action: with 100 Field Methods. Concept Publs. Co., New Delhi
6. Robinson A., 1998: "*Thinking Straight and Writing That Way*", in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioural Sciences*, eds. by F. Pryczak and R. Bruce Pryczak, Publishing: Los Angeles.
7. Special Issue on "Doing Fieldwork" *The Geographical Review* 91:1-2 (2001).
8. Stoddard R. H., 1982: *Field Techniques and Research Methods in Geography*, Kendall/Hunt.
10. Wolcott, H. 1995. The Art of Fieldwork. Alta Mira Press, Walnut Creek, CA.