

Savitribai Phule Pune University, Pune
B.Sc. (Geography) as per NEP 2020

Name of the Programme	:	B.Sc. (Geography)
Class	:	F.Y.B.Sc.
Semester	:	I
Name of Vertical Group	:	Subject I
Course Code	:	GEO(S)101-T
Course Title	:	Fundamentals of Physical Geography
Type of course	:	Theory
Total Credits	:	02
Workload	:	(15 hours/credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To acquaint students with basic principles of Physical Geography
2. To introduce the processes and patterns in the atmosphere, hydrosphere and lithosphere.
3. To develop scientific insights into dynamics of the earth system.

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Physical Geography	i. Meaning, Definition and Introduction of Geography ii. Definition and Introduction of Physical Geography iii. Nature and Scope of Physical Geography iv. Branches of Physical Geography v. Importance of Physical Geography	08
2	Lithosphere	i. Interior of the Earth –Structure and Composition ii. Wegener’s Continental Drift Theory	06
3.	Atmosphere	i. Concept of Weather and Climate. ii. Composition and Vertical structure of the Atmosphere iii. Factors affecting of distribution of temperature	08
4.	Hydrosphere	i. General structure of ocean floor ii. Movements of ocean water a. Tides- meaning, causes and types	08

Course Outcome:

By the end of this course, student will be able to:

- CO 1** : Understand fundamental concepts, theories and approaches of Physical Geography
- CO 2** : Recognize functions of complex interactive earth systems.
- CO 3** : Demonstrate scientific explanation of physical processes of the atmosphere, hydrosphere and lithosphere.

CO 4 : Describe general structure of the atmosphere and ocean tides

References:

1. Bergwan, Edward E., (1995), Human Geography: Culture, Connections and Landscape, Prentice-Hall, New Jersey.
2. Chandna, R.C., (2000), Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
3. Dayal P., (1996), Text Book of Geomorphology, Shukla Book Depot, Patna.
4. Fellman, J.L., (1997), Human Geography-Landscapes of Human Activities. Brown and Benchman Pub., U.S.A.
5. Husain, M., (2001), Fundamentals of Physical Geography, Rawat Publication, Jaipur.
6. Johnston, R.J., (1994), Dictionary of Human Geography, Blackwell, Oxford.
7. Karlekar Shrikant (2019), Introduction to Physical Geography, Daimond Publication, Pune
8. Kale V.S. and Gupta A., (2001), Elements of Geomorphology, Oxford Univ. Press.
9. Lal, D. S., (1998), Climatology, Chaitanya Publishing House, Allahabad.
10. Lutgens, F.K. and Tarbuck, E.J., (2007), The Atmosphere, Pearson Prentice Hall, New Jersey.
11. Monkhouse F.J., (1951), Principles of Physical Geography, McGraw Hill Pub - New York.
12. Siddhartha, K., (2001), The Earth's Dynamic Surface, Kisalaya Publications Pvt. Ltd, New Delhi.
13. Singh Savindra., (2000), Oceanography, Prayag Pustak Bhavan, Allahabad.
14. Singh Savindra., (2000), Physical Geography, Prayag Pustak Bhavan, Allahabad.
15. Strahler Alen (1994) Introducing Physical Geography, Wiley
16. वाणी, बी.के., आणि पाटील एन.एम., (२०२०), प्राकृतिक व मानवी भूगोल, अथर्व प्रकाशन, जळगाव.

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Name of the Programme	:	B.Sc. (Geography)
Class	:	F.Y.B.Sc.
Semester	:	I
Name of Vertical Group	:	Option 1
Course Code	:	GEO(S)102 - P
Course Title	:	Practicals in Physical a Geography
Type of course	:	Practical
Total Credits	:	02
Workload	:	2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To acquaint students with methods of relief representation
2. To understand landform and slopes using characteristics and pattern of contours

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
01	Qualitative Methods of Relief Representation	Characteristics and use of a. Hachures b. Hill Shading c. Color shading or tinting	17
02	Quantitative Methods of Relief Representation	Characteristics and use of a. Spot Height b. Bench Mark c. Triangulation Method d. Contours	17
03	Representation of slope and landforms by contours	i.Representation of slope by contours a. Gentle and steep slope b. Even and uneven slope c. Concave and convex slope ii.Representationof landforms by contours a. Conical hill b. Cliff c. Valley d. Ridge e. Plateau f. Spur ii.Identification of Relief/Landforms-Use Google Earth programme to show various slope types and landforms using 3D View, Vertical exaggeration tools	26

Course Outcome:

By the end of this course, student will be able to:

- CO 1** : Identify different methods of relief representation
CO 2 : Acquire knowledge of quantitative and qualitative method of
CO 3 : reliefrepresentation
CO 4 : Apply methods of relief representation in landform identification
Recognize slope types using contour patterns

References:

1. Ahirrao, D. Y. And Karanjkehe, E.K., (2002), PratyakshikBhugol, Sudarshan Publication, Nashik.
2. Chandana, R. C., (2015), Geography of Population, Kalyani Publisher, New Delhi.
3. Hans Raj, (1978), Fundamentals of Demography: (population Studies with Special Reference to India), Surjeet Publication, Delhi.
4. Jadhav, S., Chaudhari, A. and Chaudhari, A., (2020), PratyakshikBhugol, Prashant Publication, Jalgaon.
5. Nagtode P. M., and Lanjewar H.D., (2009), Nakashashtra, Pimplapure Publication, Nagpur
6. Sarkar Ashis, (2015), Practical Geography: A Systematic Approach, Orient Blackswan Pvt Ltd, Hydrabad
7. Singh, G., (2005), Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
8. Singh, R.L., (2005), Elements of Practical Geography. Kalyani Publishers, New Delhi.
9. Singh, J. and Dhillon, S., (1994), Agricultural Geography. McGraw Hill Education India Pvt Ltd, New Delhi.

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Name of the Programme	:	B.Sc. (Geography)
Class	:	F.Y.B.Sc.
Semester	:	I
Name of Vertical Group	:	Open Elective (V-4)
Course Code	:	OE-101-T GEO(S)
Course Title	:	Geography of Rural Development
Type of course	:	Theory
Total Credits	:	02
Workload	:	(15 hours/credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To understand the concept, nature and scope of rural development in India.
2. To overview various approaches to rural development.
3. To discuss some important issues related to rural development.
4. To study various schemes and policies of rural health in India.

Topics and Learning Points

Topic No.	Topic Name	Sub Topics	No. of Hours
1.	Introduction	1.1 Concept of rural development 1.2 Definition and meaning of rural development 1.3 Causes of rural backwardness 1.4 Nature and scope of rural development	8
2.	Approaches to Rural Development in India	2.1 Gandhian approach 2.2 Decentralized planning approach 2.3 Sectoral approach 2.4 Participatory approach	10
3.	Issues of Rural Development	3.1 Lack of potable drinking water 3.2 Sanitation problems and programs 3.3 Green revolution and its benefits to urban and rural sectors 3.4 Urban-rural divide 3.5 Health care services	12

Course Outcome:

By the end of this course, student will be able to:

- CO 1** : Learn the concept, nature and importance of rural development to India
- CO 2** : Understand different approaches of rural development for successful applications of schemes.
- CO 3** : Describe different issues and post-implantation of different schemes in rural area.
- CO 4** : Know about health care services in rural areas.

References:

1. S. K. Bansal, *Intermation Technology and Globalization* APII Publishing Corp. Ansari Rd. Dayraganj Delhi.
2. Anand, Subhash (2013), *Dynamics of Rural Development*. Delhi, India: Research India Press.
3. Mukundan, N., *Rural Development and Poverty eradication in India*.
4. Krishnamurthy, J. (2000), *Rural Development - Problems and Prospects*. Jaipur, India: Rawat Publs.
5. Ramachandran, H. and Guimaraes, J. P. C. (1991). *Integrated Rural Development in Asia– Learning from Recent Experience*, New Delhi, India: Concept Publishing.
6. Palione, M. (1984), *Rural Geography*. London, UK: Harper and Row.
7. Dutt and Sundaram (2013), *Indian Economy*, S. Chand Publications, New Delhi.
8. Mishra, S. K. and Puri V. K. (2012), *Economics of Development and Planning*, Himalaya Publishing House, Mumbai.
9. K. Vijayakumar, *Empowerment of weaker section future planning and strategies for Rural Development in India*.
10. Shankar Chatterjee, *Implementation of Rural Development*.
11. Singh, R. B. (1985), *Geography of Rural Development*. New Delhi, India, Inter India.
12. Gilg A. W. (1985), *An Introduction to Rural Geography*, Edwin Arnold, London.
13. Misra R. P. and Sundaram, K. V. 1979, *Rural Area Development: Perspectives*
14. Mukherjee, Neela (1993). *Participatory Rural Appraisal: Methodology and Application*. Delhi, India: Concept Publs Co.
15. *Rural Development* Satya Sundaram, Himalaya publication House, Mumbai
16. *Indian economy*, R. D. Sudharam Chand and Co. Ramnagar, New Delhi.
17. Dr. B. S. Nagi, *Commercial Geography*, Kedarnath Ramnath publications, Meerut.
18. T. Y. Rao, *Human Resource Development*, SAGE Publication, New Delhi.
19. Katar Singh, *Rural Development: Principles, Policies and Management*.
20. Jasbir singh and S.S. Dhillon, *Agricultural Geography (Second edition)*, Tata McGraw Hill.
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Name of the Programme	:	B.Sc. (Geography)
Class	:	F.Y.B.Sc.
Semester	:	I
Name of Vertical Group	:	OE
Course Code	:	OE 101-T GEO(S)
Course Title	:	Agriculture Geography
Type of course	:	Theory
Total Credits	:	02
Workload	:	(15 hours/credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To introduce students with the concept and practice of agricultural
2. To make aware students about the significance of sustainable agricultural economics.
3. To make attentive of agriculture revolution in Indian

Topics and Learning Points

Topic No.	Topic Name	Sub Topics	No. of Hours
1.	Introduction to Agriculture Geography	i. Definition of Agricultural Geography ii. Nature and Scope of Agricultural Geography iii. Significance of Agricultural Geography iv. Physical and Economic Factors Affecting on Indian Agriculture	12
2.	Types of Agriculture	i. Basis of Agricultural Classification ii. Agricultural Types: Intensive, Subsistence, Extensive, Mixed, Commercial and Plantation Agriculture iii. New Perspectives on Types of Agriculture	12
3.	Agricultural Revolution	Agricultural Revolution in India: Introduction, Merits and Demerits of i. Green revolution ii. White revolution iii. Blue revolution	06

Course Outcome:

By the end of this course, student will be able to:

- CO 1** : Understand the significance of agriculture
- CO 2** : Analyse conventional and modern of agriculture
- CO 3** : Classified major types and characteristics of agriculture.

CO 4 : Learn significance of agricultural policy and its impacts on sustainable farming.

References:

- Barkley, A., & Barkley, P. W. (2016). Principles of agricultural economics. Routledge.
- Cramer, G. L., Jensen, C. W., & Southgate Jr, D. D. (2001). Agricultural economics and agribusiness (No. Ed. 8). John Wiley and Sons.
- Ellis, F. (1992). Agricultural policies in developing countries. Cambridge university press.
- Gray, L. C. (2013). Introduction to agricultural economics. Read Books Ltd.
- Grigg, D. (2003). An introduction to agricultural geography. Routledge.
- Hill, B. E. (2023). The common agricultural policy: past, present and future (Vol. 14). Taylor & Francis.
- Morgan, W. B., & Munton, R. J. C. (1971). Agricultural geography. Routledge.
- Newbury, P. A. (1980). A geography of agriculture. Macdonald and Evans Ltd.
- Symons, L. (2019). Agricultural geography. Routledge.

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Name of the Programme	:	B.Sc. (Geography)
Class	:	F.Y.B.SC.
Semester	:	I
Name of Vertical Group	:	SEC
Course Code	:	SEC101-TGEO(S)
Course Title	:	Introduction to Cartography
Type of course	:	Theory
Total Credits	:	02
Workload	:	Total Workload: -2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To understand the principles and historical development of cartography and its evolution over time.
2. To introduce the students with the fundamental concepts and techniques of cartography.
3. To enable students to use various data visualisation techniques in Cartography.
4. To recognize the importance of cartography in various fields and applications.

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1	Introduction of Cartography	i. Meaning and definition of cartography ii. Importance of cartography iii. Elements of map iv. Applications of cartographic techniques	16
2	Map Scale	i. Definition of Map Scale ii. Types of Map Scale a. Verbal scale b. Representative fraction c. Graphical scale iii. Globe and Earth	20
3	Concept of Time	i. Latitudes-Characteristics ii. Longitudes –Characteristics iii. Time a. Local Time b. Standard Time c. International/Greenwich Time iv. International date line	24

Course Outcome:**By the end of this course, student will be able to:**

- CO 1** : Recognize the key terminologies and principles associated with cartography.
- CO 2** : Describe the major technological advancements in cartographic techniques over time.
- CO 3** : Develop skills needed to create meaningful maps and data visualisations, enhancing their ability to convey information and represent geographical data.

References:

1. Bhopal Singh, R. L., and Dutta, P. K., (2012), PrayogatamaBhugol, Central Book Depot, Allahabad.
2. Cuff J. D. and Mattson M. T., (1982), Thematic Maps: Their Design and Production, Methuen Young Books.
3. Dent B. D., Torguson J. S., and Holder T. W., (2008) Cartography: Thematic Map Design (6th Edition), Mcgraw-Hill Higher Education
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5. Kraak M. J. and Ormeling F., (2003), Cartography: Visualization of Geo-Spatial Data, Prentice-Hall.
6. Mishra R. P. and Ramesh A., (1989), Fundamentals of Cartography, Concept, New Delhi.
7. Sarkar, A., (2015), Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
8. Sharma J. P., (2010), PrayogicBhugol, Rastogi Publishers, Meerut.
9. Singh R. L. and Singh R. P. B., (1999), Elements of Practical Geography, Kalyani Publishers.
10. Singh, L. R. and Singh, R., (1977), Manchitra or Pryaogatamek Bhugol , Central Book, Depot, Allahabad
11. Slocum T. A., McMaster R. B. and Kessler F. C., (2008), Thematic Cartography and Geo visualization (3rd Edition), Prentice Hall.
12. Tyner J. A., (2010), Principles of Map Design, The Guilford Press.

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Class	:	F.Y.B.Sc.
Semester	:	I
Name of Vertical Group	:	SEC
Course Code	:	SEC102-TGEO(S)
Course Title	:	Introduction to Digital Mapping
Type of course	:	Theory
Total Credits	:	02
Workload	:	(15 hours/credit) 2 Credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To introduce the students about GIS components
2. To enable students with basics of map layout and GIS data
3. To enhance the students' knowledge of digital mapping using GIS Techniques
4. To acquaint students with analysis of spatial data and attribute data

Topic and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1	Introduction	Definitions of GIS, History of GIS, Objectives of GIS, Components of GIS, Hardware and Software Requirements, Applications of GIS	10
2	Spatial Data	Concept of Point, Line and Polygon Digitization Editing Types of geographic data Representation of geographic features in vector	12
3	Non-spatial data	Attribution Tables and relationships Normalization Manipulation	08

Course Outcome:

By the end of this course, student will be able to:

- CO 1** : Understood the techniques of digital mapping
CO 2 : Describe the use of GIS spatial data and techniques
CO 3 : Acquire skills of differentiate the spatial data and non- spatial data
CO 4 : Elaborate the GIS techniques applications in the thematic mapping

References:

1. Burroughs, P. A. and McDonnell, R. A. (2002): Principles of Geographical Information System, Oxford University Press.
2. Clarke, Keith C. (1999) Getting Started with Geographic Information Systems, Prentice Hall, New Jersey
3. DeMers Michel N.(2000): Geographic Information Systems, John Wiley and Sons.
4. George J. (2004): Fundamentals of Remote Sensing, Universities Press Pvt. Ltd., Hyderabad.
5. Jensen, J. R. (2003): Remote Sensing of Environment, An Earth Resource Perspective, Pearson Education Pvt. Ltd., New Delhi.
6. Kang-tsung Chang (2003) Geographic Information Systems, Tata McGraw Hill, New Delhi
7. Lillesand, T. M. and Kiefer R. W. (2002): Remote Sensing and Image Interpretation, John Wiley and Sons, New Delhi.
8. Lo Albert, C.P., and Young, K.W (2003) Concepts and Techniques of Geographical Information Systems, Prentice Hall of India Pvt. Ltd., New Delhi.
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10. Paul A. Lonfley, Michel F. Goodchild, D J. Maguire and D W. Rhind, (2002): Introduction to Geographic Information Systems and Science, John Wiley and Sons Ltd.
11. Shrikat Karlekar (2014) Geographic Information Systems, Dimand publication, Pune
12. Star J, and J. Estes, (1994), Geographic Information Systems: An Introduction, Prentice Hall, New Jersey.
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