

**Vivekanand College, Kolhapur**  
**(An Empowered Autonomous Institute)**



***Structure & Syllabus in Accordance with***  
***National Educational Policy - 2020***

For the degree of  
**M.A. in Geography**

**Department of Geography**  
**Faculty of Arts**  
**Two- Years PG Programme**

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Department of Geography**  
**Departmental Teaching & Evaluation Scheme**  
(Introduced from June 2025 Onwards)  
**Three / Four – years UG Program**  
**Subject Specific Core or Major (DSC)**  
**(as per NEP-2020 Guidelines)**  
**M. A. I: Semester-I & II**

Sr. No.	Course Abbr.	Course code	Course Name	Teaching Scheme Hours/week		Examination Scheme and Marks				Course Credits
				TH	PR	ESE	CIE	PR	Marks	
<b>Semester-I</b>										
1	DSC-I	DSC35GEO11	Fundamentals of Geomorphology	4	-	80	20	-	100	4
2	DSC-II	DSC35GEO12	Principles of Climatology	4	-	80	20	-	100	4
3	DSE-I	DSE35GEO11	Population Geography	4	-	80	20	-	100	4
		DSE35GEO12	Settlement Geography							
4	RMD	RMD35GEO11	Research Methodology	4	-	80	20	-	100	4
5	DSC-PR-I	DSC35GEO19	Computer Application in Geography	-	12	-	-	150	150	6
<b>Semester –I Total</b>				<b>16</b>	<b>12</b>	<b>320</b>	<b>80</b>	<b>150</b>	<b>550</b>	<b>22</b>
<b>Semester-II</b>										
1	DSC-III	DSC35GEO21	Fundamentals of Soil Geography	4	-	80	20	-	100	4
2	DSC-IV	DSC35GEO22	Climate Change and Disaster Management	4	-	80	20	-	100	4
3	DSE-II	DSE35GEO21	Fundamentals and Applications of GIS and GPS	4	-	80	20	-	100	4
		DSE35GEO22	Tourism Geography							
4	DSC-PR-II	DSC35GEO29	Introduction to GIS Software and GPS –	-	12	-	-	150	150	6
5	FPR/OJT	FPR35GEO21	OJT/Field Project	-	4			100	100	4
<b>Semester –II Total</b>				<b>12</b>	<b>16</b>	<b>240</b>	<b>60</b>	<b>250</b>	<b>550</b>	<b>22</b>
<b>Total Sem I &amp; II</b>				<b>28</b>	<b>28</b>	<b>560</b>	<b>140</b>	<b>400</b>	<b>1100</b>	<b>44</b>

### M. A. I: Semester-III & IV

Sr. No.	Course Abbr.	Course code	Course Name	Teaching Scheme Hours/week		Examination Scheme and Marks				Course Credits
				TH	PR	ESE	CIE	PR	Marks	
<b>Semester-III</b>										
1	DSC-V	DSC35GEO31	Oceanography	4	-	80	20	-	100	4
2	DSC-VI	DSC35GEO32	Fundamentals of RS	4	-	80	20	-	100	4
3	DSE-III	DSE35GEO31	Biogeography	4	-	80	20	-	100	4
		DSE35GEO32	Geography of Environment							
4	DSC-PR-III	DSC35GEO39	Photogrammetry and Remote Sensing	4	-	80	20	-	100	4
5	RPR-I	RPR35GEO39	Research Project	-	12	-	-	150	150	6
<b>Semester –III Total</b>				<b>16</b>	<b>12</b>	<b>320</b>	<b>80</b>	<b>150</b>	<b>550</b>	<b>22</b>
<b>Semester-IV</b>										
1	DSC-VII	DSC35GEO41	Regional Planning and Development	4	-	80	20	-	100	4
2	DSC-VIII	DSC35GEO42	Development of Geographical Thought	4	-	80	20	-	100	4
3		DSE35GEO41	Agriculture Geography	4	-	80	20	-	100	4
		DSE35GEO42	Resource Geography							
4	DSC-PR-IV	DSC35GEO49	Geographical Data Representation Methods – IV	-	12	-	-	150	150	6
5	RPR-II	RPR35GEO49	Research Project	-	4			100	100	4
<b>Semester –IV Total</b>				<b>12</b>	<b>16</b>	<b>240</b>	<b>60</b>	<b>250</b>	<b>550</b>	<b>22</b>
<b>Total Sem I &amp; II</b>				<b>28</b>	<b>28</b>	<b>560</b>	<b>140</b>	<b>400</b>	<b>1100</b>	<b>44</b>

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - I**  
**Principles of Geomorphology, DSC-I**  
**Course Code: DSC35GEO11**

**Course Outcome: -**

1. Students should be able to explain the fundamental concepts, scope, and evolution of geomorphology and interpret the theories related to the earth's origin and structure.
2. Students should be able to apply geomorphic theories (Continental Drift, Plate Tectonics, Seafloor Spreading, Geosynclines) to analyze endogenetic and Exogenetic processes shaping landforms.
3. Students should be able to examine and differentiate the geomorphic systems (fluvial, glacial, karst, aeolian, coastal) and evaluate their processes and resultant landforms.
4. Students should be able to critically assess models of landscape evolution (Davis, Penck, slope development theories) and integrate geomorphological knowledge in explaining environmental changes and landform development.

<b>Module</b>	<b>Principles of Geomorphology</b>	<b>Credits / Lectures</b>
<b>I</b>	<b>Fundamentals of Geomorphology</b>	<b>01/15</b>
	1.1 Meaning nature and scope of geomorphology, 1.2 Geological Evolution of Earth & Geological Time Scale 1.3 Development of Geomorphic thought, Catastrophism, Uniformitarianism, Neocatastrophism	
<b>II</b>	<b>Concepts &amp; Theories in Geomorphology</b>	<b>01/15</b>
	2.1 Constitution of the earth's interior 2.2 Continental Drift Theory of Alfred Wegner 2.3 Plate Tectonic Theory of J. T. Wilson 2.4 Geosynclines: Geosyncline Theory of Kobber, 2.5 Endogenetic & Exogenetic movements	
<b>III</b>	<b>Factors controlling landform development</b>	<b>01/15</b>
	3.1 Fluvial Geomorphic system: processes and resulting landforms 3.2 Glacial Geomorphic system: geomorphic processes and features 3.3 Karst landscape: development and processes 3.4 Aeolian Geomorphic system: processes and landforms 3.5 Coastal Geomorphic system: processes and landforms	
<b>IV</b>	<b>Landscape Evolution</b>	<b>01/15</b>
	4.1 Landscape evolution – Davisian Model of Cycle of Erosion, Penck's Morphological System 4.2 Slope development and related theories	

**Reference:**

1. Anhart, F., (1996), 'Introduction to Geomorphology', Arnold, London, Sydney, Auckland
2. Allaby, Michael (2008): Oxford Dictionary of Earth Science, Oxford University Press, New York.
3. Bloom, A.L. (1991): Geomorphology, 2nd Ed Englewood Cliffs, M.J. Prentice Hall.
4. Chorley, R.J. Schumm, S.A. & Sugden, D.E. (1985): Geomorphology, Methuen & Co. Ltd., London, New York.
5. Brierley, G.J. & Fryirs, K.A. (2005): Geomorphology and River Management, Blackwell Publishing, Oxford UK.
6. Briggs, K. (1985): Physical Geography Process and System, Hodder and Stoughton, London.

7. Christopherson, R.W. (1995): *Elemental Geosystems: A Foundation in Physical Geography*, Prentice Hall Englewood Cliffs, New Jersey.
8. Cook, R.U. & Doornkamp, J.C.(1974): *Geomorphology in Environmental Management, an Introduction*. Clarendon Press. Oxford.
9. Dayal, P. (1996): *A Textbook of Geomorphology*, Shukla Book Depot, Patna.
10. Fairbridge, R.W., ed. (1968): *Encyclopaedia of Geomorphology* Reinhold, New York.
11. Hart, M.G. (1986): *Geomorphology Pure and Applied*, George Allen and Unwin, London.
12. Leopold, L.B. Wolman, M.G. & Miller, J.P.(1964): *Fluvial Processes in Geomorphology*, W.H.Freeman, San Fransisco.
13. Lobeck, A.K. (1939): *Geomorphology*, McGraw Hill, New York. .
14. Moor, W.G. (1949): *A Dictionary of Geography*, Penguin Books, England.

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - I**  
**Principles of Climatology, DSC-II**  
**Course Code: DSC35GEO12**

**Course Outcome: -**

1. Students should be able to explain the nature, scope, and relationship of climatology with meteorology, and describe the structure, composition, and controlling elements of the atmosphere.
2. Students should be able to apply concepts of insolation, heat balance, temperature variations, and inversion of temperature to understand Earth's thermal regime.
3. Students should be able to analyze atmospheric pressure distribution, general circulation, wind systems, jet streams, and monsoon mechanisms to interpret global and regional climate dynamics.
4. Students should be able to evaluate the role of air masses, fronts, and cyclones in weather development, and integrate climatic classification systems (Koppen & Thornthwaite) with water balance concepts to interpret climatic problems and prospects.

<b>Module</b>	<b>Principles of Climatology</b>	<b>Credits / Lectures</b>
<b>I</b>	<b>Foundations of Climatology</b>	<b>01/15</b>
	1.1 Nature and scope of Climatology 1.2 Relationship of Climatology with Meteorology 1.3 Structure and composition of Atmosphere 1.4 Weather elements and climatic controls	
<b>II</b>	<b>Insolation &amp; Inversion of Temperature</b>	<b>01/15</b>
	2.1 Insolation and heat balance of the Earth 2.2 Temperature - Vertical, horizontal and seasonal variations 2.3 Processes of heat energy transport 2.4 Inversion of temperature	
<b>III</b>	<b>Atmospheric Dynamics and Monsoon System</b>	<b>01/15</b>
	3.1 Atmospheric pressure – vertical and horizontal distribution 3.2 General Circulation of atmosphere 3.3 Types of winds – Geotropic, Gradient and local winds 3.4 Modern views about space wind system, Tricellular meridional circulation, Jet stream 3.5 Origin of Monsoon: classical and recent views	
<b>IV</b>	<b>Air Masses, Cyclones and Climatic Classification</b>	<b>01/15</b>
	4.1 Air masses: Origin, classification, types 4.2 Fronts: frontogenesis and frontolysis – classification of fronts 4.3 Extra-tropical cyclones: formation and impacts 4.4 Climatic Classification: Koppen and Thornthwaite, concept of water balance problems and prospects	

**References: -**

1. **Aguado, E.,** and Burt, J.E. (2013): *Understanding Weather and Climate*, Pearson, New York, 552pp.
2. **Anderson, T. R.,** Hawkins, E., and Jones, P. D. (2016). CO<sub>2</sub>, the greenhouse effect and global warming: from the pioneering work of Arrhenius and Callendar to today's earth system models. *Endeavour*, 40(3):178–187.
3. **Barry, R.G.,** and Chorley, R.J. (2010): *Atmosphere, Weather and Climate*, Routledge, London, 516pp.
4. **Byers R.H. (1974):** *General Meteorology*, McGraw Hill BKCo New York.

5. **Critchfield, H.J. (2009):** *General Climatology*; Prentice Hall, London.
6. **Das P. K. (1995):** *The Monsoon*, Prayag pustak Bhavan, Allahabad, National Book Trust. India.
7. **Ela Dean, (2017):** **Principles of Atmospheric Science**, Larsen and Keller Education, 249 pp.
8. **Hobbs, J.E. (1980):** *Applied Climatology*, Butterworth, London.
9. **Lal, D.S.:** *Climatology*. Prayag pustak Bhavan, Allahabad.
10. **Lutgens, F.K., and Tarbuck, E.J. (2013):** *The Atmosphere – An Introduction to Meteorology*. Prentice Hall, Boston, 506pp.
11. **Mather J. R. (1975):** *Climatology: Fundamentals & Applications*. Mc Graw Hills Book Co., New York.
12. **Miller A., et. al. (1983);** *Elements of Meteorology*, Merrill, Columbus.
13. **Oliver J. E. (1973):** *Climate & Mans Environment*, John Wiley & Sons; New York.
14. **Robert V. Rohli, Anthony J. Vega, (2017):** *Climatology*, Jones & Bartlett Learning; 4 edition, 418 pp.
15. **Robinson, P. J., & Henderson-Sellers, A. (2014).** *Contemporary climatology*. Routledge.
16. **Singh, Savindra. (2006):** *Climatology*, Prayag Pustak Bhavan, Allahabad.
17. **Trewartha G.T. (1968):** *An Introduction to climate*, McGraw Hill BK Co. New York.
18. **Vlado Spiridonov, Mladjen Ćurić. (2021):** *Fundamentals of Meteorology*, Springer Nature, Switzerland, pp 437.

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - I**  
**Population Geography & Human Resource, DSE-I**  
**Course Code: DSE35GEO11**

**Course Outcome: -**

1. Students should be able to explain the nature, scope, and sources of population data, and interpret demographic concepts such as fertility, mortality, migration, and population growth with reference to global, national, and regional patterns
2. Students should be able to apply classical and modern population theories (Malthus, Marx, Demographic Transition, Migration and Epidemiological Transition) to analyze population dynamics and related issues.
3. Students should be able to **examine and compare** the characteristics of population composition (age, sex, occupation, education, rural-urban) at different spatial scales, and **evaluate** concepts of over, under, and optimum population in relation to human resources.
4. Students should be able to **critically assess** patterns of human development, gender equity, and quality of life, and **evaluate** population policies of India and other nations to **formulate perspectives** for sustainable population and resource management.

<b>Module</b>	<b>Population Geography &amp; Human Resource</b>	<b>Credits / Lectures</b>
<b>I</b>	<b>Introduction to Population Geography</b>	<b>01/15</b>
	1.1. Meaning, nature and scope of Population Geography; 1.2. Population Geography and Demography; 1.3. Sources of population data – Census, Sample surveys and vital statistics; 1.4. Population dynamics: Population distribution and growth - measures, patterns and determinants with reference to World, 1.5. India and States; Fertility, Mortality - Concepts; Indices, Trends and Determinants -India; 1.6 Migration- Types, Determinants and consequences; Measures & methods of estimations.	
<b>II</b>	<b>Population Theories</b>	<b>01/15</b>
	2.1 Theories of population: Malthus, Marx, Sadler, 2.2 Demographic Transition Model; 2.3 Migration theories: Ravenstein and Everette Lee; 2.4 Epidemiological Transition.	
<b>III</b>	<b>Characteristics of population resource</b>	<b>01/15</b>
	3.1 Characteristics of population composition and change: 3.2 India and States – age, sex, rural-urban, occupational structure, and educational levels; 3.3 Over, under & optimum population; 3.4 Population resource regions of the world.	
<b>IV</b>	<b>Human Development and Population Policies</b>	<b>01/15</b>
	4.1 Human development Index: Concepts, Pillars, Approaches; 4.2 Human development Patterns World & India,	

	4.3 Gender Equity, Social well-being and quality of life; 4.4 Status of women – social, economic and health; 4.5 Population Policies in developed and developing nations, 4.6 National Population Policy of India.	
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## References:

### Books & Reports:

1. **Barrett H.R. (1992):** Population Geography, Oliver and Boyd Longman House, Harlow.
2. **Bogue, Donald. (1968):** Principles of Demography, John Wiley and Sons, Inc. New York.
3. **Bhende A., Kanitkar T. (2006):** Principles of Population Studies, Himalaya Publishing House, Bombay. 18th revised.
4. **Birdsell N., Kelley A.C., Sinding S. (2003):** Population Matters: Demographic Change, Economic Growth and Poverty in Developing Countries. Oxford University Press.
5. **Bruce Newbold, K. (2010):** Population Geography: Tools and Issues. Rowman& Littlefield Publishers, Inc., UK.
6. **Clark, J. I. (1972):** Population Geography. Pergamon Press, Oxford.
7. **Crispin J., Jegede J. (2000):** Population, Resource and Development. Harpercollins Education; 2nd edition.
8. **Chandana, R.C. (1984):** Geography of Population, Kalyani Publisher, Ludhiana.
9. **Davis K. (1951):** Population of India and Pakistan, Princeton University Press, Princeton.
10. **Demeny Paul & McNicoll (eds) (2003):** Encyclopedia of Population, Macmillan Reference, New York.
11. **Dyson T. (2010):** Population and Development: Demographic Transition. Zed Books Ltd.; 1st edition.
12. **Ehrlich, P.R. and Ehrlich, A.H. (1996):** Ecoscience: Population, Resources, Environment. 6th edition, W.H. Freeman and Company, San Francisco.
13. **Gould WTS. (2009):** Population and Development: Perspective on Development. Routledge: 1st edition.
14. **Newell C. (1990):** Methods and Models in Demography. The Guilford Press; 1st edition.
15. **Pacione M. (2011):** Population Geography: Progress and Prospects. Routledge; Reissue edition.
16. **Peters G.L., Larkin R.P. (2008):** Population Geography: Problems, Concepts and Prospects. 9th edition. Dubuque, IA: Kendall Hunt Publishing.
17. **Preston S., Heuveline P., Guillot M. (2000):** Demography: Measuring and Modelling Population Processes. Wiley-Blackwell; 1st edition.
18. **Ross, John A. (ed.) (1982):** International Encyclopaedia of Population. Free Press, New York.
19. **Rowland DT. (2003):** Demographic Methods and Concepts. Oxford University Press, USA.
20. **Salkind (2006) Neil J.:** Encyclopedia of Human Development Vol, I, II, III, Sage
21. **Swanson DA., Siegel JS. (2004):** Methods and Materials of Demography. Emerald Group Publishing; 2nd edition.
22. **Todaro MP, Smith S. (2011):** Economic Development. 11th edition Printice Hall.
23. **Weeks JR. (2004):** Population: An Introduction to Concepts and Issues. Wadsworth Publishing; 9th edition.
24. **UNDP (2022):** Human Development Report, UN Pub.

**Journals:**

Demography: <https://link.springer.com/journal/13524>

International Migration Review: <https://journals.sagepub.com/home/mrx> Journal of Population Research:

<https://link.springer.com/journal/12546> Population and Environment:

<https://link.springer.com/journal/11111> Population Bulletin: <https://www.prb.org/population-bulletins/>

Population Development Review: <https://onlinelibrary.wiley.com/loi/17284457> Population, Space, and

Place: <https://onlinelibrary.wiley.com/journal/15448452> Population Studies:

<https://www.tandfonline.com/loi/rpst20>

Studies in Family Planning: <https://onlinelibrary.wiley.com/journal/17284465> The Professional

Geographer: <https://www.tandfonline.com/loi/rtpg20>

**Useful Websites:**

Census of India: <http://censusindia.gov.in/>

National Commission for Women:

<http://ncwapps.nic.in/default.aspx> Population

Council: <https://www.popcouncil.org/>

[Population](#) Division of United Nations:

<https://www.un.org/en/development/desa/population/index.asp> Population Reference

Bureau: [www.prb.org](http://www.prb.org)

The World Bank: [www.worldbank.org](http://www.worldbank.org)

United Nations Development Program: <http://hdr.undp.org/en/>

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - I**  
**Settlement Geography, DSE-I**  
**Course Code: DSE35GEO12**

**Course Outcomes: -**

1. Students should be able to explain the nature, scope, and significance of settlement geography and describe the origin, growth, types, and locational factors of rural and urban settlements.
2. Students should be able to apply different approaches to analyze the socio-economic structures of rural and urban settlements and interpret patterns of dispersion, service centers, and rural-urban interactions in India.
3. Students should be able to examine and differentiate the processes of urbanization, suburbanization, urban sprawl, and functional classification of cities, and analyze urban hierarchies, settlement patterns, and related challenges.
4. Students should be able to **evaluate** classical and modern settlement theories and models (Christaller, Burgess, Hoyt, Harris & Ullman) and **integrate** them in assessing urban poverty, slums, and urban planning strategies for sustainable development.

<b>Module</b>	<b>Settlement Geography</b>	<b>Credits/Lectures</b>
<b>I</b>	<b>Fundamentals of Settlement Geography</b>	<b>01/15</b>
	Settlement Geography – The nature, scope and significance; origin and growth of rural and urban settlements; Definition and types of settlements; Site, situation and locational factors of settlements. Spacing, dispersion and localization. Characteristics of rural settlements.	
<b>II</b>	<b>Geography of Rural Settlements</b>	<b>01/15</b>
	Introduction to rural settlement geography, Approaches to rural settlement geography; socio- economic structure of rural settlements; Rural-service centers-nature, hierarchy, service area and interaction; Indian villages-evolution and multiplicity, regional characteristics, Rural planning and integrated development in India.	
<b>III</b>	<b>Geography of Urban Settlements</b>	<b>01/15</b>
	Introduction to urban settlement geography, Concept & processes of urbanization, suburbanization, Rural-urban fringe, urban sprawl, Functional classification of urban settlements; Conurbation, Size and spacing of cities-rank-size rule, law of primate city, urban hierarchies; Urban problems, Urban planning and challenges, Concept of smart city, Garden city movement, Urban agriculture.	
<b>IV</b>	<b>Theories and Models in Settlement Geography</b>	<b>01/15</b>
	Multiple nuclei model by Harris and Ullman; Central place theory by W. Christaller; Concentric zone model by E. W. Burgess; Sector model by Homer and Hoyt. Urban poverty,	

**References: -**

1. Carter, H. (1975): The study of urban geography. Edward Arnold, London.
2. David, P., Hopkinson M. (1983): The Geography of Settlements, Oliver & Boyd; 2<sup>nd</sup> Revised edition.
3. Deniel, P. (2002): Geography of Settlements. Rawat Publications, Jaipur and New Delhi.
4. Gosh, S. (1998): Introduction to Settlement Geography. Orient Longman.
5. Haggett, Peter (1991): Geography-A Modern Synthesis, Harper & Row, New York.
6. Hornby, WF., Jones M. (1991): An Introduction to Settlement Geography. Cambridge University Press.
7. Johnston, J.H. (1974): Urban Geography, Pergoman Press, Oxford.
8. Johnston, R, .J. (1984): City & Society. Unwin, London.
9. King, L.J., Golledge R.G. (1978): Cities, Space & Behavior, Prentice Hall, Engle wood cliff, New Jersey.
10. Mandal, R.B. (2000): Urban Geography, Concept Publishing Co., New Delhi.
11. Mayer, H.M., Cohen (1967): Readings in Urban Geography, Central Book Depot. Allahabad.
12. Mosely, M.J. (2005): Rural Development: Principles and Practice. Sage Publication, London.
13. Northamray, M. (1975): Urban Geography, John Willey & Sons, New York.
14. Pacione, M. (2009): Urban Geography-A Global Perspective. 3rd edition. Routledge, London.
15. Ramachandran, R. (1991): Urbanization and Urban Systems in India, Oxford Uni. Press. Delhi.
16. Robinson, Brian T. (1973): Urban growth, Mathuen& Company, London.
17. Rykwert, J. (2004): Settlements. University of Pennsylvania Press, University Park, USA.
18. Sidhartha, K. and Mukherjee, S. (2000): Cities-Urbanizations & Urban Systems. Kisalaya Pub. Pvt. Ltd., New Delhi.
19. Singh, RY. (1994): Geography of Settlements. Rawat Publications. New Delhi, Jaipur.
20. Singh, R.L. (eds.) (1973): Rural Settlements in Monsoon Asia, National Geographical Society of India, Varanasi.
21. Singh, R. L., Singh, K.N. and Singh, Rana P.B., (eds.) (1975): Readings in Rural Settlement Geography, National Geographical Society of India, Varanasi.
22. Singh, R. L. and Singh, Rana P. B. (eds.) (1978): Transformation of Rural Habitat in Indian Perspective, National Geographical Society of India, Varanasi, Pub. 19.
23. Singh, R.L. and Singh, Rana P.B., (eds.) (1979): Place of Small Towns in India. National Geographical Society of India, Varanasi.
24. Singh, R.L., Singh, K.N and Singh Rana P.B., (eds.) (1976): Geographic Dimensions of Rural Settlements. National Geographical Society of India, Varanasi.
25. Wood, M. (2005): Rural Geography: Processes, Responses and Experiences of Rural Restructuring. Sage Publication, London.
26. Yeates & Garner (1971): Readings in Urban Geography. The North American City. Harper & Row. New York
27. William F. Hornby, Melvyn Jones (1991): An Introduction to Settlement Geography, Cambridge University Press

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - I**  
**Research Methodology, RMD**  
**Course Code: RMD35GEO11**

**Course Outcomes: -**

1. Students should be able to explain the fundamentals of research, research problems, design, sampling, and hypothesis.
2. Students should be able to apply appropriate methods of data collection, preparation, analysis, and presentation.
3. Students should be able to analyze literature, write abstracts, reports, and research papers using proper referencing and documentation.
4. Students should be able to evaluate recent trends, tools, and publication ethics in geography and produce quality research for academic publication.

<b>Module</b>	<b>Research Methodology</b>	<b>Credits/ Lectures</b>
<b>I</b>	<b>Research Methodology: An Introduction</b>	<b>01/15</b>
	Exercise(s): 1-3: Definition, meaning, objectives and significance of research, approaches in research. 4: Defining research problem 5: Meaning and Need of research design 6-7: Sampling methods and sampling size 8: Concept of hypothesis	
<b>II</b>	<b>Data collection and Preparation</b>	<b>01/15</b>
	Exercise(s): 9-11: Data types, Data sources and data collection methods 12-13: Preparation of schedule & questionnaire 14-15: Concept of qualitative and quantitative analysis of data 16-17: Presentation and interpretation of data	
<b>III</b>	<b>Effective Research Writing</b>	<b>01/15</b>
	Exercise(s): 18-19: Literature review; writing styles and manuals 20-22: Writing of abstracts, project report and research papers 23-24: Referencing system, references, webliography, bibliography 25-26: Footnotes, glossary, appendices	
<b>IV</b>	<b>Recent Trends in Geographical Research and Publication</b>	<b>01/15</b>
	Exercise(s): 27-28: Recent trends in Physical and Human Geographical research 29-30: Applications of Computer, Remote Sensing and GIS in Geographical research 31-32: Publication metrics: h-index, g-index, i10-index, altimetric, citation and measuring impact of research 33-34: Research publishers and Open access publishing: Journal finders Elsevier, Springer 35-36: Research ethics in publication, Predatory publishers & journals	

## References: -

1. **Ahuja, R. (2001):** *Research Methods*, Rawat, New Delhi.
2. **Bhattacharyya, D. K. (2005):** *Research Methodology*, Excel Books, New Delhi.
3. **Bryman, Allan (2008):** *Social research methods* Oxford University Press, Oxford.
4. **Dautherty, R (1969):** Science in Geography Data Collection (2) 2. Board, Christopher (Ed) (1969): Progress in Geography Volume 1-8. Edward, Oxford.
5. **Davis, P (1969):** Science in Geography (3) Data description and presentation
6. **Denzin, N.K. and Lincoln, Y.S. (eds.) (2000):** *Handbook of Qualitative Research*, Sage Publications, Thousand Oaks, CA.
7. **Flick, Uwe (2010):** *An Introduction to Qualitative Research*, Research Project Sage Publications, New Delhi.
8. **Flowerdew, R. and Martin, D. (2005):** *Methods in Human Geography: A Guide for Students Doing a Research Project*, Prentice Hall, Harlow.
9. **Gomez, B. and Jones, J. P. III (2010):** *Research Methods in Geography: A Critical Introduction*, John Wiley and Sons.
10. **Guthrie, Gerard (2010):** *Basic Research Methods*, Sage Publications, New Delhi.
11. **Hay, I. (ed.) (2000):** *Qualitative Research Methods in Human Geography*. Oxford University Press, New York.
12. **Henn, M., Mark W., and Nick F. (2006):** *A Short Introduction to Social Research*, Vistaar Publications, New Delhi.
13. **Kitchin, R. and Fuller, D., (2003):** *The Academic's Guide to Publishing*, Vistaar Publications, New Delhi.
14. **Kitchin, R. and Tate, N., (2001):** *Conducting Research into Human Geography. Theory, Methodology and Practice*. Prentice-Hall, London.
15. **Krishnan, G. and Singh, Nina (2017):** *Researching Geography*, Routledge, London.
16. **Kumar, Ranjit (2011):** *Research Methodology: A Step by Step Guide for Beginners* Sage Publications, New Delhi.
17. **Mc Callagh (1969):** Science in Geography (4) Data use and Interpretation
18. **Misra, R.P. (1989):** *Research Methodology – A Hand Book*, Concept Publishing Company.
19. **Montello, D. and Sutton, P. (2013):** *An Introduction to Scientific Research Methods in Geography and Environmental Studies*, SAGE Publications, New Delhi.
20. **Parsons, A. J. and Knight, P. G. (2005):** *How to Do Your Dissertation in Geography and Related Disciplines*, Routledge, Abingdon.
21. **Stoddard, R. H (1982):** *Field Techniques and Research Methods in Geography*, Kendall/Hunt.

## Useful Web Resources:

*Elsevier Journals:*

<https://www.elsevier.com>

*Google Scholar:*

<https://scholar.google.co.in/>

*Web of Science:* [https://clarivate.com/products/web-](https://clarivate.com/products/web-of-science/)

[of-science/](https://clarivate.com/products/web-of-science/) Scopus: <https://www.scopus.com/home.uri>

*JSTOR:* <https://www.jstor.org/>

*Directory of Open Access Journals (DOAJ):*

<https://doaj.org/> Science Open:

<https://www.scienceopen.com/>

*Microsoft Academic:* <https://academic.microsoft.com/home>

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - I**  
**Computer Application in Geography, DSC-PR-I**  
**Course Code: DSC35GEO19**

**Course Outcome: -**

1. Students should be able to use advanced office applications (Word, Excel, PowerPoint) for geographic data handling and presentation.
  2. Students should be able to apply data management and visualization techniques to analyze and interpret geographical information.
  3. Students should be able to examine cybersecurity practices and online tools for safe communication, storage, and collaboration.
- Students should be able to design surveys, access digital resources, and create e-research outputs with academic integrity.

Module	Computer Application in Geography	Credits/ Practicles
<b>I</b>	<b>Advanced Office Applications and Data Management</b>	<b>2/30</b>
	<p><b>1.1 Advanced MS Word:</b> Auto styles, TOC, footnotes, referencing tools (APA, MLA), Inserting maps, figures, equations, and smart art</p> <p><b>1.2 MS Excel:</b> Data entry, formulas, pivot tables, lookup functions, Statistical analysis: mean, median, SD, correlation, regression, Charts: bar, pie, line, scatter, trend line</p> <p><b>1.3 MS PowerPoint:</b> Visual design for geography-based presentations, Slide masters, transitions, charts, and embedded multimedia</p>	
	<p><b>Practical Exercise(s):</b></p> <ol style="list-style-type: none"> <li>1 Demonstration of computer hardware, useful software and their uses.</li> <li>2 Writing / formatting of text paragraphs</li> <li>3 Inserting, creating, and editing of text box, smart art, pictures and graphs.</li> <li>4 Construction and editing of tables</li> <li>5 Reference writing styles using MS word with examples</li> <li>6 Preparation of MS power point presentation</li> <li>7 Dara handling and editing using MS Excel</li> <li>8-12 Presentation and analysis of geographic data using MS Excel – preparation of graphs/charts (bar graph, line graph, pie diagram, scatter diagram and trend line)</li> <li>13. Map editing and labelling</li> </ol>	
<b>II</b>	<b>Cyber Security through Online Tools &amp; Survey Design</b>	<b>2/30</b>
	<p><b>2.1 Cybersecurity:</b> Email, password safety, phishing awareness, Two-factor authentication and secure storage</p> <p><b>2.2 Google Workspace:</b> Google Drive: file management, sharing, collaboration, Google Docs/Sheets/Slides for collaborative academic work</p>	

	<b>Practical Exercise(s):</b> 14. Computer, email and password security 15. Create a secure email ID with 2FA 16. Demonstrate phishing email detection 17. Storing and retrieving of data/ documents using online data storage facilities (Google Drive, OneDrive etc.).	
<b>III</b>	<b>E-Research Skills</b>	<b>2/30</b>
	<b>3.1 Google Forms:</b> Designing surveys/questionnaires for fieldwork or feedback, Collecting and exporting responses for analysis <b>3.2 Online Learning &amp; Digital Libraries:</b> SWAYAM, NPTEL, e-PG Pathshala, National Digital Library, Research databases: Google Scholar, DOAJ, JSTOR (intro only) <b>3.3 Data Ethics:</b> Academic integrity, plagiarism checking, referencing tools	
	<b>Practical Exercise(s):</b> 18. Preparation of online questionnaire / online survey through google forms. 19. Identification, browsing, and storing of online educational resources. 20. Comprehensive browsing and listing of useful geographical websites. 21. E-learning objectives, methods, and listing of open online e-learning websites. 22. Collect responses and analyze in Excel 23-24. E-learning through e-content and open online courses: e-PG Pathshala, digital library, MOOCS – SWAYAM.	

**References: -**

1. कुलकर्णी, एस. एन. (2011). भूगोल पर्यावरण व वनस्पतीशास्त्र. पुणे: डायमंड पब्लिकेशन्स.
2. जाधव, बी. जी. (2017). वनस्पती भूगोल आणि प्राणी भूगोल. कोल्हापूर: फडके प्रकाशन.
3. देशमुख, एम. ए. (2013). जैवविविधता आणि संवर्धन. नाशिक: संकल्प प्रकाशन.
4. Agarwal, D. P., & Narain, H. (2000). *Environmental Issues and Themes*. New Delhi: Shree Publishers & Distributors.
5. Bradshaw, M. J., & Weaver, R. J. (1995). *Physical Geography: The Basics*. New York: Cambridge University Press.
6. Cox, C. B., & Moore, P. D. (2010). *Biogeography: An Ecological and Evolutionary Approach* (8th ed.). Hoboken, NJ: Wiley-Blackwell.
7. Primack, R. B. (2010). *Essentials of Conservation Biology* (5th ed.). Sunderland, MA: Sinauer Associates.
8. Savindra Singh. (2008). *Environmental Geography* (Hindi Medium also available). Allahabad: Prayag Pustak Bhavan.

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - II**  
**Fundamentals of Soil Geography, DSC-III**  
**Course Code: DSC35GEO21**

**Course Outcomes-**

1. Students should be able to explain the fundamentals of soil geography and soil-forming processes.
2. Students should be able to apply knowledge of soil physical and chemical properties to analyze soil quality.
3. Students should be able to differentiate soil types, classify soils, and evaluate soil fertility and productivity.
4. Students should be able to **assess** soil degradation problems and **recommend** suitable conservation and management practices.

<b>Module</b>	<b>Fundamentals of Soil Geography</b>	<b>Credits/ Lectures</b>
<b>Module I</b>	<b>Introduction to Soil Geography</b>	<b>01/15</b>
	Introduction to Soil Fundamentals: Definition, Nature & Scope of Soil Geography, Process of origin of soil, pedogenesis, Weathering and soils, Soil forming Physical, Chemical & Biotic processes, soil profile.,	
<b>Module II</b>	<b>Physical Properties and Soil Health Management</b>	<b>01/15</b>
	Physical properties of soil: Soil morphology, Soil texture, Soil Structure, Soil consistency, Soil: - moisture, colour, porosity and permeability etc.	
<b>Module III</b>	<b>Chemical Properties and Soil Nutrients</b>	<b>01/20</b>
	Chemical properties of soil: Chemical composition of soils, Ion exchange, Cation exchange, Determination of soil pH, Management of soil pH, Soil clays, humus, Soil organic matter, and NPK. Soil Analysis: Saline & Alkaline, Trace metals, Soil Contamination, Micronutrients and Toxic Elements in soils: Iron, manganese, Copper and zinc. Conservation of soil, Methods of Soil reclamation.	
<b>Module IV</b>	<b>Soil Classification, Degradation and Conservation</b>	<b>01/10</b>
	Soil Classification & Conservation: Marbat's Genetic Classification of soils, Soil as a medium for plant growth, Soil fertility and soil productivity, Soil erosion, Soil Management Practices to Improve Soil Health.	

**References: -**

1. **Miller, R. W.** and Donahue, R. L. (1992): Soils: An Introduction to Soils and Plant Growth, Prentice-Hall of India, New Delhi
2. **Brady, N. C.,** and Weil, R. R. (2008): The Nature and Properties of Soils, Prentice Hall, New Jersey
3. **Pitty, A. F. (1978):** Geography and Soil Properties, Methuen and Co., London

4. **Bridges, E. M.** and Davidson, D. A. (1982): Principles and Applications of Soil Geography, Longman Group, London
5. **Daji, J. A.** (1970): A Textbook of Soil Science, Asia Publication House, New York
6. **Birkeland, P. W** (1999): Soils and Geomorphology, Oxford University Press, New York
7. **Backman, H.O** and Brady, N.C. (1960), The Nature and Properties of Soils, McMillan, New York.
8. **fennet, Hugh H.** , Soil Conservation, McGraw Hill, New York.
9. **De, N.K.** and Ghos, P. (1993): India: A Study in Soil Geography, Sribhumi Publishing Co., Calcutta.
10. **Russell, Sir Edward J.** (1961), Soil Conditions and Plant Growth, Wiley, New York

**Research Journals:**

*Journal of Soils and Sediments (JSS)* (<https://www.springer.com/journal/11368>)

*Soil and Sediment Contamination: An International Journal* (<https://www.tandfonline.com/toc/bssc20/current>)

*International Journal of Sediment Research* (<https://www.journals.elsevier.com/international-journal-of-sediment-research>)

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - II**  
**Climate Change and Disaster Management, DSC-IV**  
**Course Code: DSC35GEO22**

**Course Outcomes-**

1. Students should be able to explain causes and impacts of climate change and global climatic phenomena.
2. Students should be able to apply paleoclimatic knowledge and recent climate change trends to interpret environmental impacts.
3. Students should be able to analyze natural and man-made disasters and evaluate regional vulnerabilities.
4. Students should be able to assess disaster management strategies and formulate plans for prevention, preparedness, and mitigation.

<b>Module</b>	<b>Climate Change and Disaster Management</b>	<b>(No. of Credits/ Lectures)</b>
<b>I</b>	<b>Global Climate Change Issues and Impacts</b>	<b>1/25</b>
	History and relevance of climate change studies; Role and impact of climate on human being, soils and agriculture; Global climatic regions; Climatic classification of Koppen and Thornthwaite; World pattern of temperature and precipitation; Causes, impacts and society's response to change in air quality and atmospheric pollution; Causes and impacts of greenhouse gas (GHGs) emission, ozone layer depletion, acid rain; El-nino and southern oscillation (ENSO).	
<b>II</b>	<b>Paleoclimatology and Climate Change Observations</b>	<b>1/13</b>
	Paleoclimatology - climate dynamics and water balance with reference to evolution of the earth systems; General overview of the climate change – observed changes and its impacts; Recent trends of climate change and its impact on natural and human subsystems; Significant climate anomalies and extreme weather events; Future climate changes – risks and impacts; Adaptation and mitigation options of climate change.	
<b>III</b>	<b>Natural Hazards and Disasters</b>	<b>1/12</b>
	Meaning and types of hazards and disasters; Causes and impacts of natural and man-made disasters (earthquake, volcanic eruption, landslides, avalanches, cyclones, floods, droughts, tsunamis, forest fire, nuclear, biological and chemical disasters); Disaster exposure and vulnerabilities in Maharashtra, India and the world.	
<b>IV</b>	<b>Disaster Management</b>	<b>1/10</b>
	Prevention and mitigation of disasters; Disaster preparedness and response plan; Disaster management cycle; Administration and multiple stakeholders' response to disaster management; Disaster management acts and regulations; Use of modern technologies for disaster management	

**References: - Books & Reports: -**

1. Abott, P.L. (2020): Natural Disasters. McGraw-Hill Education, USA, 560pp.
2. Aguado, E., and Burt, J.E. (2013): Understanding Weather and Climate, Pearson, New York, 552pp.
3. Ahrens, C.D. (2008): Essentials of Meteorology – An Invitation to the Atmosphere, Thomson Learning, Belmont, 485pp.
4. Ahrens, C.D., and Samson, P. (2011): Extreme Weather and Climate, Brooks/Cole, Belmont, 508pp.
5. Barry, R.G., and Chorley, R.J. (2010): Atmosphere, Weather and Climate, Routledge, London, 516pp.

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - II**  
**Fundamentals and Applications of GIS and GPS, DSE-II**  
**Course Code: DSE35GEO21**

**Course Outcomes-**

1. Students should be able to explain the fundamentals, components, and data models of GIS and identify digitization techniques and topological relationships.
2. Students should be able to apply spatial analysis techniques (overlay, buffer, interpolation, network, terrain) and use database management concepts in GIS.
3. Students should be able to analyze the working principles, segments, and errors of GPS, and evaluate its integration with GIS and GNSS.
4. Students should be able to assess and apply geospatial technologies in diverse fields such as urban planning, water and soil management, agriculture, forestry, land use/cover studies, and disaster management.

<b>Module</b>	<b>Fundamentals and Applications of GIS and GPS</b>	<b>(No. of Credits/ Lectures)</b>
<b>I</b>	<b>Introduction to GIS</b>	<b>1/20</b>
	Definition of GIS, History and development of GIS, Components and Future of GIS, Types of Geographic data; Raster and Vector data model; Spatial data input: Digitization and Conversion; Point, line and polygon; Concept of Arc, node and vertices; Digitization errors; Topology and topological relationship.	
<b>II</b>	<b>GIS Analysis</b>	<b>1/12</b>
	Spatial analysis: Overlay and Buffer Analysis, Interpolation techniques in GIS; Network analysis; Terrain analysis: DEM, DTM and TIN; Data quality issues; Database Management system (DBMS); Types of attribute data, Relational Model, Normalization and SQL.	
<b>III</b>	<b>Introduction to GPS</b>	<b>1/12</b>
	Introduction to GPS; types of GPS System; Space, Control and User Segment; GPS satellite; Working principle of GPS; Source of GPS errors; Differential GPS; GNSS & GIS Integration, Applications of GPS.	
<b>IV</b>	<b>Applications of Geospatial Technology</b>	<b>1/16</b>
	Geospatial Technology in Urban and Regional planning, Water resource management, Soil resource Management, Agricultural Management, Forestry and Environment, Land use/ and Land cover mapping, Natural hazards assessment.	

1. Longley, P., Goodchild, M., Maguire, D., & Rhind, D. (2015). Geographic information science and systems. John Wiley & Sons.
2. Tomlin, C. D. (1990). Geographic Information Systems and Cartographic Modeling. Prentice Hall.
3. Burrough, P. A., & McDonnell, R. A. (1998). Principles of geographical information systems. Oxford University Press.
4. Aronoff, S. (1991). Geographic information systems: A management perspective. WDL Publications.

5. Cressie, N. (1993). *Statistics for spatial data* (revised edition). Wiley.
6. Fotheringham, A. S., Brunson, C., & Charlton, M. (2000). *Quantitative geography: Perspectives on spatial data analysis*. Sage.
7. de Smith, M. J., Goodchild, M. F., & Longley, P. A. (2018). *Geospatial analysis: A comprehensive guide to principles, techniques, and software tools*. Troubador Publishing Ltd.
8. Kang-Tsung, C., & Hung-Jen, Y. (2013). An open-source GIS toolbox for analyzing movement data. *ISPRS International Journal of Geo-Information*, 2(3), 725-741.
9. O'Sullivan, D., & Unwin, D. J. (2018). *Geographic Information Analysis*. Wiley.
10. Maguire, D. J., Batty, M., & Goodchild, M. F. (Eds.). (2005). *GIS, spatial analysis, and modeling*. ESRI Press.

### **Web References:**

<https://docs.qgis.org/2.18/pdf/en/QGIS-2.18-UserGuide-en>. <https://qgis.org/en/site/>  
<https://www.esri.com/en-us/arcgis/about-arcgis/overview>  
[http://downloads.esri.com/support/documentation/ao\\_/698Wh at\\_is\\_ArcGis.p](http://downloads.esri.com/support/documentation/ao_/698Wh at_is_ArcGis.p) <https://academy.autodesk.com/explore-and-learn>  
[http://downloads.esri.com/support/documentation/ao\\_/698Wh at\\_is\\_ArcGis](http://downloads.esri.com/support/documentation/ao_/698Wh at_is_ArcGis)

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - II**  
**Tourism Geography, DSE-II**  
**Course Code: DSE35GEO22**

**Course Outcomes:**

1. Students should be able to explain the concepts, scope, components, and forms of tourism, and analyze its physical, socio-cultural, and economic impacts.
2. Students should be able to apply geographical knowledge (physiography, climate, world regions, time zones) to evaluate patterns of tourism and their influence on destinations.
3. Students should be able to analyze tourism systems, models, and marketing strategies, and differentiate between types of travel agencies, tour operators, and tourism products.
4. Students should be able to evaluate tourism development and planning in India, assess challenges, and formulate strategies for sustainable tourism at regional and national levels.

<b>Module</b>	<b>Tourism Geography</b>	<b>Credits/ Lectures</b>
<b>I</b>	<b>Foundations of Tourism</b>	<b>1/15</b>
	Concept of Tourism, nature, scope and importance of tourism. Definition of Traveler – Tourist - Excursionist –Tourism - Basic Components of Tourism - Attraction, Geographical approach in tourism. Multidisciplinary approach. Accommodation, Amenities, Accessibility and Awareness. Types and forms of tourism, Types of accommodation and transportation. Physical, socio cultural and economic impact of tourism.	
<b>II</b>	<b>Geography and Tourism</b>	<b>1/15</b>
	Geography: Meaning, features, branches, and relationship with tourism. Climatic regions of the world, latitude & longitude lines, time zones, international date line, Indian standard time. Importance of Geography in Tourism, Impacts of physiography, Climate and Weather on tourist destination. Geographical patterns of tourism and the tourism characteristics of selected world regions	
<b>III</b>	<b>Tourism Systems and Marketing</b>	<b>1/15</b>
	Marketing of tourism, STP, Marketing Mix, Tourism Product. Meaning of tour and travel agency. Types of travel agency. Types of tour operator. Characteristics of tour and travel agency. History and development of tourism in world. Different Tourism Systems- Leiper’s Geospatial Model, Mill-Morrison, Mathieson & Wall, Butler’s Tourism Area Life Cycle (TALC) - Doxey’s Index – Demonstration Effect – Crompton’s Push and Pull Theory, Stanley Plog’s Allo-centric and Psycho-centric Model of Destination Preferences, Tourism Area life cycle (TALC)	
<b>IV</b>	<b>Tourism Development and Planning</b>	<b>1/15</b>
	Planning for tourism development. Tourism in India – resources for tourism in India. Growth and development of tourism in India. Problems of tourism in India. Tourism planning in India. Tourism	

**References:**

1. Robinson H. (1976): A Geography of Tourism. Mac Donald and Evans Ltd; London
2. Manoj Dixit & Charu Sheela, (2007) Tourism Products, 2nd Edition, New Royal Books, Lucknow.
3. Douglas, Pearce (1981): Topics in Applied Geography, Tourist Development. Longman london New York
4. Bhatia, A.K (2012), "The Business of Travel Agency and Tour Operations Management", Sterling Publications, New Delhi. 2. Bhatia, A.K (2014), "Tourism Development - Principles & Practice", Sterling Publications, New Delhi.
5. Saxena, H.M (2016), "India and World Geography", Rawat Publications, New Delhi
6. Boniface and Coopers, (2016) Worldwide destinations: The Geography of Travel and Tourism, 7th Edition, Rutledge, New Delhi.
7. Khullar, D.R (2018) India - A comprehensive Geography, 1 st Edition, Kalyani Publications, Chennai.

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - II**  
**Introduction to GIS Software and GPS, DSC-II**  
**Course Code: DSC35GEO29**

**Course Outcomes-**

1. Students should be able to explain the fundamentals of QGIS, including interface, projections, and data sources, and understand the role of GIS and GPS in spatial analysis.
2. Students should be able to apply basic QGIS tools for georeferencing, digitization, integration of WMS/Google Earth data, and create map layouts.
3. Students should be able to analyze spatial and attribute data through queries, time-series animation, interpolation, travel time, and service area analysis.
4. Students should be able to operate GPS instruments, evaluate survey data through coordinate setting and waypoint demarcation, and integrate GPS data with GIS software for decision-making.

<b>Modules</b>	<b>Introduction to GIS Software and GPS</b>	<b>(No. of Credits/ Lectures)</b>
<b>Module 1</b>	<b>Fundamentals of QGIS</b>	<b>2/30</b>
	Exercise 1: Interface of QGIS Exercise 2: Working with Projections Exercise 3: Online GIS Data Sources Exercise 4: Georeferencing: Toposheet & Image Registration Exercise 5: Digitization of Map Data Exercise 6: Working with WMS Data Exercise 7: Working with Google Earth Exercise 8: Making a Map Layout	
<b>Module 2</b>	<b>Spatial Data Exploration and Analysis</b>	<b>2/30</b>
	Exercise 9: Data Query: Spatial and Attribute Exercise 10: Animating Time Series Data Exercise 11: Interpolating Point Data Exercise 12: Travel Time Analysis with Traffic Movement Exercise 13: Service Area Analysis using Open Route Service	
<b>Module 3</b>	<b>GPS and GIS Integration</b>	<b>2/30</b>
	Exercise 14: GPS Instrument Exercise 15: Basic Functions Exercise 16: GPS Surveying – Setting of GPS Coordinates, Waypoints Demarcation, Area Calculation through GPS, Navigation by Mobile GPS Application Exercise 17: Transfer of Data in GIS Software	

11. Longley, P., Goodchild, M., Maguire, D., & Rhind, D. (2015). Geographic information science and systems. John Wiley & Sons.
12. Tomlin, C. D. (1990). Geographic Information Systems and Cartographic Modeling. Prentice Hall.

13. Burrough, P. A., & McDonnell, R. A. (1998). Principles of geographical information systems. Oxford University Press.
14. Aronoff, S. (1991). Geographic information systems: A management perspective. WDL Publications.
15. Cressie, N. (1993). Statistics for spatial data (revised edition). Wiley.
16. Fotheringham, A. S., Brunson, C., & Charlton, M. (2000). Quantitative geography: Perspectives on spatial data analysis. Sage.
17. de Smith, M. J., Goodchild, M. F., & Longley, P. A. (2018). Geospatial analysis: A comprehensive guide to principles, techniques, and software tools. Troubador Publishing Ltd.
18. Kang-Tsung, C., & Hung-Jen, Y. (2013). An open-source GIS toolbox for analyzing movement data. ISPRS International Journal of Geo-Information, 2(3), 725-741.
19. O'Sullivan, D., & Unwin, D. J. (2018). Geographic Information Analysis. Wiley.
20. Maguire, D. J., Batty, M., & Goodchild, M. F. (Eds.). (2005). GIS, spatial analysis, and modeling. ESRI Press.

### **Web References:**

*<https://docs.qgis.org/2.18/pdf/en/QGIS-2.18-UserGuide-en>. <https://qgis.org/en/site/>  
<https://www.esri.com/en-us/arcgis/about-arcgis/overview>  
[http://downloads.esri.com/support/documentation/ao\\_/698Wh at\\_is\\_ArcGis.p](http://downloads.esri.com/support/documentation/ao_/698Wh at_is_ArcGis.p) <https://academy.autodesk.com/explore-and-learn>  
[http://downloads.esri.com/support/documentation/ao\\_/698Wh at\\_is\\_ArcGis](http://downloads.esri.com/support/documentation/ao_/698Wh at_is_ArcGis)*

**Vivekanand College, Kolhapur (An Empowered Autonomous Institute)**  
**Syllabus, M.A. (Part I), Semester - II**  
**Field Project, FPR/OJT**  
**Course Code: FPR35GEO21**

**Title of Course: Field Project**

**Course Code: FPR35GEO21**

**Total Credits: 04**

**Course Outcomes (COs):** *Upon successful completion of this course, students will be able to:*

- 1. Carry out field project on their own;*
- 2. Formulate project design and methodologies;*
- 3. Organize and carry out field visits, collect field data and/or conduct review of literature;*
- 4. Effective writing and dissemination of project output having scientific and/or social relevance.*

**Duration:** One month during summer vacation

**Topic:** Project topic should be related to finding, reporting and/or disseminating geographical knowledge having scientific and/or social relevance.

**Total Contact**

**Hours: 120 Hrs.**

**Note (s):**

- 1. Field project is applicable only to those students who are unable to find placement for on job training.*
- 2. They have to work under the guidance of a supervisor to carry out the field project.*
- 3. Students are expected to carry out field work and use primary data, analyse it and prepare / submit the project report for evaluation.*
- 4. They are also expected to make a presentation on the project work details.*

**Or**

**Title of Course: On Job Training**

**Course Code: FPR35GEO21**

**Total Credits: 04**

**Course Outcomes (COs):** *Upon successful completion of this course, students will be able to:*

- 1. Improve their professional skills related to their employability;*
- 2. Effectively manage the assigned workload and complete given task;*
- 3. Learn new concept and improve their knowledgebase;*
- 4. Do team work and manage on job practical difficulties.*

**Duration:** One month during summer vacation

**Joining Report of On Job Training:** Students are expected to join for their on job training with prior intimation to the department. They are expected to carry out work under the guidance of job supervisor.

**On Job Training Placement:** Student can join any institution/ corporation/ industry as per their choice but within the scope of the subject area.

**Total Contact**

**Hours: 120 Hrs.**

**Note (s):**

- 1. Students need to submit report of their work in prescribed format.*
- 2. Internal assessment while on job training will be done by the job supervisor and need to be forwarded to the Department/ University.*