

**SOLAPUR UNIVERSITY,  
SOLAPUR**

**B. Sc. III**

**GEOGRAPHY (Optional)**

**SYLLABUS**

**Semester V & VI**

*(w. e. f. June 2015)*

**SOLAPUR UNIVERSITY, SOLAPUR**  
**B. Sc III GEOGRAPHY (Optional) SYLLABUS**  
**Semester V & VI (w. e. f. June 2015)**

**General Structure-** There will be four theory papers of 50 marks for each semester.

The titles of the papers are as follows along with the marks:-

**Semester V**

<b>Code No.</b>	<b>Course No.</b>	<b>Name of the Course</b>	<b>Total marks</b>
TG 5A	TOG- 305A	Paper-IX Geography of India-Physical	50
TG 6A	TOG- 306A	Paper-X Geography of Tourism	50
TG 7A	TOG- 307A	Paper-XI Watershed Management	50
TG 8A	TOG- 308A	Paper-XII Fundamentals of GIS-Part I	50

**Semester VI**

<b>Code No.</b>	<b>Course No.</b>	<b>Name of the Course</b>	<b>Total marks</b>
TG 5B	TOG- 305B	Paper- XIII Geography of India-Human	50
TG 6B	TOG- 306B	Paper-XIV Geography of Health and Nutrition	50
TG 7B	TOG- 307B	Paper-XV Geography of Settlements	50
TG 8B	TOG- 308B	Paper-XVI Fundamentals of GIS-Part II	50

**Practical**

TG 4	TOG-304	Practical IV- Statistical Methods - Morphometric Analysis and Crop Combination	100
TG 5	TOG-305	Practical V - Techniques of soil and water analysis, Project Work / Field Survey Report	100

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**SEMESTER-V**

**Optional Geography –Paper IX**

**Title of the Paper- *Geography of India (Physical)***

**Objectives:** 1. To acquaint the students with the Geography of our Nation.

2. To help the students to understand the interrelationship between the subject and the Society.

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	Introduction-Absolute and relative location of India. Geology of India Physiographic Divisions- Mountains, plateaus, plain, coasts and island. Drainage systems of North India, South India, Islands	13
2	Climate – Factors affecting climate, Seasons-Mechanism of Monsoon, Variability of seasons-summer, winter, monsoon.	08
3	Soils-Major types of soils in India and their distribution. Problems of soils and their conservation.	06
4	Natural Vegetation-Types of forests and their distribution. Importance of forests. Problems and the need of conservation.	06
5	Minerals and power recourses- Important industrial mineral-their distribution and production—Iron ore, manganese, bauxite. Power recourses-coal, petroleum, natural gas.	07

**Reference Books –**

1. Agrawal A.N. - Indian economy, problems of development planning.
2. Chopra S.N. - India, An area study.
3. Dubey & Negi - Economic Geography of India.
4. Gosal singh - India.
5. Memoria C.B. - Geography of India.
6. Sharma R.C. - India.
7. Singh R.L. - Regional Geography of India.
8. Sharma & Cutinho - Economic and commercial Geography of India.

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**SEMESTER-V**

**Optional Geography –Paper X**

**Title of the Paper- *Geography of Tourism***

- Objectives:** 1. To acquaint the students with the concept of tourism.  
2. To understand the importance of tourism potentials in India.

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	Definition, Nature and Scope Geography of Tourism. Historical development of tourism in India.	08
2	Factors affecting tourism – physical, social and economical	08
3	Classification of tourism- Based on Nationality, purpose, travel, time and season	08
4	Important places of tourist interest – Geographical, Historical and Cultural	10
5	Impact of tourism on Economy, society and environment. Tourism planning	06

**Reference Books –**

1. Arun Pratap Singh (1989) – “Himalayan Environment and Tourism” – Chugh Publications, Allahabad.
2. J. K. Sharma (2000) – “Tourism Planning Development” – Kanishka Publishers, Distributors, New Delhi.
3. L. E. Hudman and R. H. Jackson (1999) – “Geography of Travel and Tourism” – Delmar Publishers, New York.
4. Nirmal Kumar (1996) – “Tourism and Economic Development” – APH Publishing Corporation, New Delhi.
5. Pearce Douglas (1981) - “Tourist Development” – Longman, New York.
6. Yogesh Kumar Sharma and Praggya Sharma (2006) – “Handbook of Tourism” – Pointer Publishers, Jaipur.

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**SEMESTER-V**

**Optional Geography –Paper XI**

**Title of the Paper- Watershed Management**

- Objectives:** 1. To acquaint the students with the concept of watershed management.  
2. To help the students to understand the importance of watershed management.

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	Introduction: Water as important resource. Hydrological cycle. Distribution of world water- surface, underground and atmosphere.	10
2	Utilization of water: Agriculture - cropping. Industry- chemical, fishing and navigation. Domestic – urban and rural.	10
3	Conservation of water – Methods of water harvesting and conservation. Water storage- capacity building.	10
4	Problems of water as a resource: Abundance and deficiency – Floods and droughts sustainability, food security.	10

**Reference Books –**

1. Agarwal, Anil and Sunita Narayan, (1997) : Dying Wisdom : Rise, Fall and Potentials of India's Traditional water Harvesting System.
2. John, J. A. (1997): Global Hydrology: Processes, Resources and Environment Management, Longman Publishers.
3. Kates, R. W. and Buston, T. (Ed. 1980): Geography, Resources and Environment, Ottawa.
4. Law, B. C. (Ed. 1968): Mountains and Rivers of India, IGU National Committee for Geography, Calcutta.
5. Matter, J. R. (1984): Water Resources Distribution, Use and Management, John Wiley, Maryland.

6. Michel, A. M. (1978) : Irrigation : Theory and Particles, Vikas Publishing House Pvt. Ltd., New Delhi.
7. Newson, M. (1992) : Land , Water and Development, River Basin Systems and their Sustainable Management, Row fledge, London.
8. Rao, K. L. (1979) : India's Water Wealth, Orient Longman, New Delhi.
9. Singh, R. A. and Singh, S. R. (1979) : Water Management Principles and Practices, Tara Publication, Varanasi.
10. Tideman, E. M. (1996) : Water Shed Management : Guidelines for Indian Conditions, Omega, New Delhi.

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**SEMESTER-V**

**Optional Geography –Paper XII**

**Title of the Paper- *Fundamentals of GIS-Part I***

- Objectives:** 1. To acquaint the students with the importance of GIS in Geography  
2. To help the students to understand the application of GIS in Geography.

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	Introduction: Definition, History of GIS, Components of GIS, Functions of GIS, GIS tasks-Input, Manipulation, Management, Query analysis, Visualisation.	08
2	Sources and types of GIS- Data Toposheet, Surveying, Aerial photographs, Satellite images, Data types-Spatial and Non spatial.	08
3	GIS data structures: Raster data and their characteristics, Vector data and their characteristics.	08
4	Data base management- Spatial measurements (measuring lengths and areas) Modeling surfaces (DEM and DTM)	10
5	Remote sensing and GIS- Integration: Applications in Urban, Agriculture, Land forms studies	06

**Reference Books –**

1. Clarke, Keith C. (1999) Getting Started with Geographic Information Systems, Prentice Hall, New Jersey.
2. DeMers Michel N.(2000): Geographic Information Systems, John Wiley and Sons.
3. Kang-tsung Chang (2003) Geographic Information Systems, Tata Mc Graw Hill, New Delhi.
4. Lo Albert, C.P., and Young, K.W (2003) Concepts and Techniques of Geographical Information Systems, Prentice Hall of India Pvt. Ltd., New Delhi.

5. Michael F. Goodchild and Karen K. Kemp (1990) Introduction to GIS, National Center for Geographic Information and Analysis, University of California, Santa Barbara.
6. Star J, and J. Estes, (1994), Geographic Information Systems: An Introduction, Prentice Hall, New Jersey.
7. Williams J. (1995): Geographic information from space, John Wiley and Sons, England.



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**Optional Geography –Paper XIII**

**Title of the Paper- Geography of India (Human)**

- Objectives:** 1. To acquaint the students with the Geography of our Nation.  
2. To help the students to understand the interrelationship between the subject and the Society.  
3. To make the students aware of the magnitude of problems and prospects at national level.

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	Agriculture - Factors Affecting on Agriculture. Major crops (Production and distribution) Wheat, Rice, Sugarcane, Cotton. Green revolution and White revolution. Problems of Agriculture	08
2	Industries- Factors affecting on industrial location. Weber's theory of industrial location Iron and steel industry, Cotton textile industry. Major Industrial region in India, New industrial policy.	08
3	Population-Growth & Distribution of population, factors affecting distribution of population, Composition of population, Rural - urban migration, Urbanization and related problems.	08
4	Transport and communication - Types of transports - Roads, Railways, Waterways, Airways, pipelines and their complementary role in regional development. Important ports in India	10
5	Trade- Type of trade- International and interstate. Major import and export items	06

**Reference Books –**

1. Agrawal A.N. - Indian economy, problems of development planning.
2. Chopra S.N. - India, An area study.
3. Dubey & Negi - Economic Geography of India.
4. Gopal Singh - India.

5. Memoria C.B. - Geography of India.
6. Sharma R.C. - India.
7. Singh R.L. - Regional Geography of India.
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**Optional Geography –Paper XIV**

**Title of the Paper- *Geography of Health and Nutrition***

**Objectives:** 1. To acquaint the students with the Geographical aspects of disease diffusion and its chain.

2. To help the students to understand social context and other determinants which affect the health?

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	Introduction- Definition, Nature and Scope. Significance of Geography of Health and Nutrition. Recent trend in Health and Nutrition.	08
2	Factors affecting human health and diseases arising from them: Physical Factors- Relief, Climate and Vegetation. Social Factors- Density, Literacy, Customs and Traditions. Economic Factors- Food, Nutrition, Occupation Standard of Living, Poverty. Environmental factors- Urbanization and Pollution	08
3	Classification of Diseases: Contagious and Non Contagious Diseases. Vector born diseases and water born diseases. World Distribution of Major Diseases	08
4	Ecology, Etiology and Transmission of Major Diseases-Malaria, Dengue, Chicken guinea, Cholera, Typhoid, Cancer, AIDS and Nutritional Deficiency Diseases. Under and mall nutrition.	10
5	International Health Care System: WHO, UNICEF, Red Cross. Health Care System in India. Health Care Planning and Policies in India.	06

**Reference Books –**

1. Banarjee, B. & Hazra J.: (1980): Geo-ecology and Cholera in West Bengal, Uni. of Kolkata.

2. Hazra J. (Ed.)(1997): Health care planning in developing countries, University of Kolkata,
3. May J.M (1959): Ecology of Human diseases, M.D. Publications, New York.
4. May J.M (1970): The World Atlas of diseases National Book Trust, New Delhi
5. Philips D.R (1990): Health and health care in Third World, Longman, London
6. Rais A. and Learmonth A.T.A.: Geographical aspects of health and diseases in India
7. Stamp L.D (1964): Geography of life and death,Cornell University, Ithaca

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**Optional Geography –Paper XV**

**Title of the Paper- Geography of Settlements**

**Objectives:** 1. To acquaint the students with the conceptual, theoretical and empirical development in settlement Geography.

2. To provide the student an idea about international and national concerns on settlement issues.

Sr.No.	Topic	Periods
1	Geography of settlement- Definition, Nature & Scope. Importance of settlement studies. Approaches to the study of settlements. Historical development.	08
2	Sites and situation of settlements. Factors affecting on location of settlements.	08
3	Patterns and distribution of rural settlements	08
4	Classification of settlement – Rural and Urban, Functional classification of towns and cities.	10
5	Problems of settlements – Rural and Urban.	06

**Reference Books –**

1. Bose A. : Indias urbanization 1974-2000 Tata Mc Craw Hill New Delhi.
2. Carter H. (1972): the study of urban geography, Edward Arnold Landon.
3. Deckinson R E (1964): city and region roulade London.
4. Rao V.L.S.P.: urbanization in India special dimensions concept publication Co. New Delhi.
5. Singh R. L.: Regional of geography India.

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**Optional Geography –Paper XVI**

**Title of the Paper- Fundamentals of GIS-Part II**

- Objectives:** 1. To acquaint the students with the new concepts in Geography.  
2. To help the students to understand the importance of GIS in various fields of planning.

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	Digital Images: RGB format, BIP, BIL, BSQ formats, Pixels	08
2	Image Processing: Registration, Geo referencing. Enhancement: Filtering, Band Ratioing Supervised, Unsupervised Classification	08
3	Analysis in GIS: Spatial analysis, Multi criteria analysis, Overlay analysis, Topographic analysis.	08
4	Query in GIS: Spatial, Non spatial, Spatio temporal	10
5	Project in GIS: Types of Reports, Design in GIS, Utility	06

**Reference Books –**

1. Chang Kang-Tsung (2002): Introduction to Geographic Information Systems, Tata
2. De Mers Michel N. (2000): Geographic Information Systems, John Wiley and Sons McGraw Hill, New Delhi
3. Good child M.F (1993): Environmental Modeling with GIS ,1 Oxford University Press, London
4. Williams J. (1995): *Geographic information from space*, John Wiley and Sons, England,

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**Optional Geography –Practical IV**

**Title of the Paper- Statistical Methods - Morphometric Analysis and Crop Combination**

**Objectives:** 1. To acquaint the students with the techniques of watershed management and planning.

2. To help the students to understand importance of water as a recourse.

Sr.No.	Topic	Periods
1	Profile Analysis A) Construction of profiles:- i. Cross Profile, ii. Longitudinal, iii. Superimposed, iv Projected v. Composite Geological Maps-cross section, Measurement of angle of Dip, Thickness of rock strata.	18
2	Slope Analysis Preparation of Slope map- Smith's Method- Wentworth's Method	18
3	Drainage Analysis:-A)Demarcation of & Estimation of Drainage Basin B) Stream Ordering:-i. Strahler's Method ii. Horton's Method C) Drainage Frequency D) Drainage Density E) Bifurcation Ratio F) Law of Stream Numbers	18
4	Basin Shape Index:- Circularity Ratio ,Elongation Ratio, Stream Frequency, Drainage Density	18
5	Techniques of Crop combination:- Doi's method and Bhatia's method	18

**Reference Books –**

- 1) Geomorphology : Savindra Singh (2002), Prayag Pustak Bhavan, Allahabad.
- 2) Maps & diagrams: Monkous F. J. & Wilkusion H.R (1976), Methuen & Co. Ltd. London.
- 4) The Skin the Earth : Miller Anstin (1953) Methuen & Co. Ltd. London.
- 5) Techniques in Geomorphology : King C.A.M (1966) Edward Arnold, London.

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**SEMESTER-V**

**Optional Geography –Practical V**

**Title of the Paper-** *Techniques of soil and water analysis, Project Work / Field Survey Report*

- Objectives:** 1. To acquaint the students with the advanced techniques in Geography.  
2. To train the students with importance of different techniques of analysis.

<b>Sr.No.</b>	<b>Topic</b>	<b>Periods</b>
1	1) Soil Profile Study A) Soil horizons :- i) O horizons ii) A Horizon iii) B Horizon iv) C Horizon v) E Horizon B) Examination of Soil Profile C) Record of Field Data D) Representation of Profile Data.(Observation Sheet) E) Estimation of Soil texture :- i) International Pipette method (Analysis of one sandy & one clayey sample plotting of data on probability graph paper & estimation of grain size parameter ) ii) Decantation Breaker Method iii) Triangulation Diagram & Its Use F) pH and Eclectic Conductivity.	18
2	A) Collection of Water Samples i) Ruttener water Sampler ii) Van Dorn Water Sampler iii) Dussart Water Sampler B) Collection of Water Samples for Irrigation Quality C) Handling & Preservation of Water Samples	18
3	Physical properties:- Determination of Following Properties A) Color – Platinum Cobalt Method, Feral – Yule color method B) Temperature :- a) Measurement of surface and subsurface temperature. b) Thermos Flask Sampler Method c) Reversing Thermometer method C) Transparency D) Turbidity	18



4	Chemical properties 1) pH – Determination of pH with pH Meter 2) Electric Conductivity ( soluble salts concentration) 3) Total Dissolved Solids (T.D.S.)	18
5	Project work/Field visit report	18

**Reference Books –**

- 1) Hand book of Methods in Environmental Studies.- Amity S.K.(2004) ,ABD Publisher,Jaipur.
- 2) Maps & diagrams: Monkhous F. J. & Wilkusion H.R (1976), Methuen & Co. Ltd. London.
- 3) Physical Properties of Soil - Narayanan
- 4) Soil science – Daji
- 5) Soil & Sediment Analysis – Trivedi
- 6) Techniques in Geomorphology : King C.A.M (1966) Edward Arnold, London.