

NORTH MAHARASHTRA UNIVERSITY, JALGAON.

GEOGRAPHY SYLLABUS.

Faculty of Science

Science Stream.

T.Y.B.Sc. (Geography)

- Geog. 310 (1) Principles of Geomorphology & oceanography.
Geog. 320 (2) Climatology and Major climates.
Geog. 330 (3) Geography of Soils.
Geog. 340 (4) (a) Agriculture geography.
OR
(b) Settlement geography.
Geog. 350 (5) (a) Political geography.
OR
(b) Geography of Transportation & Communication.
Geog. 360 (6) (a) Monsoon Asia.
OR
(b) South West Asia.
Geog. 301 (7) Practicals - Ist
Geog. 302 (8) Practicals - IInd
Geog. 303 (9) Practicals - IIIrd.
Geog. 310 - Principles of Geomorphology & Oceanography.

(Geomorphology)

1. Definition, nature & scope, development of Geomorphic thoughts.

i) Ancient.

ii) Medieval.

iii) Recent.

2. Weathering and Mass-movement and development of slopes and their types.

3. Davisian Concept of erosion and evolution of slope. Wood and pencks theories.

4. Fluvial erosion, transportation and deposition and associated features.

5. Work of underground Water and Karst Topography.

6. Work of Glaciers and their features.

(oceanography)

1. Definition, nature and scope of oceanography.

2. Waves : Capillary, gravity, shallow water, deep water waves, wave refraction and breaking of waves.

Long waves and seismic waves.

3. Coral reefs and Islands - favourable geographical conditions for the growth of corals, Types. Darwin,

Murry's and Dally's Hypothesis.

4. Tides : Tide producing forces, Equilibrium theory of Tides Tidal Currents and their channels, Tidal bores.

5. Life in the oceans : The basis of marine life.

Phytoplankton, Zooplankton, Life on the ocean floor.
and Food Pyramid.

BOOKS :

1. The Unstable Earth - Steers.
2. Introduction to Geomorphology - Thornburg.
3. Physical Geography - Tikka.
4. Oceanography for Geographers - King.
5. Principle of oceanography - S.Vithal.

Geog.320 - Climatology and Major Climates.

1. Nature and scope of climatology :-

- i) Definition nature and scope of climatology.
- ii) Structure and composition of atmosphere.
- iii) Elements of weather and climate.
- iv) Ozone problem.

2. Temperature.

- i) Concept of solar Radiation.
- ii) Terrestrial and Latitudinal heat balance.
- iii) Distribution of temperature- Vertical and Horizontal. Factors affecting the distribution of temperature.
- iv) Inversion of temperature.

3. Atmospheric Circulation-

- i) Global arrangement of pressure belts:
- ii) Shifting of pressure belts.
- iii) General circulation of atmosphere.

4. Winds -

- i) Planetary wind system.
- ii) Seasonal winds- Monsoon.
- iii) Local winds - Land and sea breezes, Föhn, chinook, Mountain and valley breezes.

5. Humidity -

- i) Types of humidity.
- ii) Evaporation and condensation.
- iii) Types of condensation.
- iv) Forms of precipitation.
- v) Types of precipitation.
- vi) Cloud Types.

6. Atmospheric disturbances--

- i) Airmass - Source regions and Classification.

- ii) Stability and Instability of air mass.
- iii) Fronts - Types of fronts.
- 7. Climatic classification -
 - i) Bases of climatic classification.
 - ii) Koppens classification of climate.
 - iii) Thorathwaite's classification of climate.
- 8. Climates dominated by equatorial and tropical air masses -
 - i) Rainy tropics.
 - ii) Monsoon tropics.
 - iii) Tropical arid climate.
 - iv) Tropical semi arid climate.
- 9. Climates dominated by tropical and polar air masses -
 - i) Mid latitude arid climate.
 - ii) Mid latitude semi-arid climate.
 - iii) Humid continental warm summer climate.
 - iv) Humid continental cool climate.
- 10. Climates dominated by polar and arctic air masses -
 - i) Taiga climate.
 - ii) Tundra climate.
- 11. Climatic changes -
 - i) Changes during recorded history.
 - ii) Recent climatic trends.
 - iii) Theories of climatic change.-
 - i) Carbon dioxide theory.
 - ii) Volcanic dust theory.

BOOKS :-

- 1. Introduction to weather and climate - Trewartha.
- 2. Climatology - Kendrew.
- 3. General climatology - Critch field.
- 4. Introduction to Meteorology - Patterson.
- 5. Climatology - J Bucknell.
- 6. Climatology - A Miller.
- 7. Climatology - D.S.Lal.

Geog. 330 Geography of Soils.

- 1. Definitions Nature and scope. The development of Pedology in modern time. American, Russian and European schools of pedology. Importance of soil as a resource.
- 2. Factors and processes of soil formation.

- 2.1 Soil Components.
 - * Living organisms and organic matter.
 - * Mineral matter.
 - * Soil solution.
 - * Air or gases.
- 2.2 Functions of soil- (A biological factor)
- 3. Classification of soils. -
 - * Zonal.
 - * Intra zonal.
 - * Azonal and their sub types.
- 4. Soil Properties.-
 - * Physical Properties - .
 - * Chemical properties.
- 5. Role of soil water. Factors affecting on soil water.
 - * Soil pH.
 - * Soil reaction.
 - * Cation exchange and Anion exchange.
 - * Soil water : Importance.
 - * Hydroscopic and capillary water.
 - * Wetting and Drying (swelling and shrinkage of soil)
- 6. Soil Temperature, Soil Air.
 - 6.1 Importance of soil Temperature.
 - 6.2 Factors affecting soil Temperature (controlling)
 - 6.3 Soil aeration and its importance.
- 7. Soil fertility and Productivity:
 - Soil erosion and conservation.
 - 7.1 Soil pollutants & soil pollution.
 - 7.2 Soil conservation, Remedies to conserve the soil.
 - 7.3 Use of fertilizers & productivity of soil.

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BOOKS :

1. Soil Science - Rode A n.
2. Bunding - Geog. of Soils.
3. Forth & Turk - Principles of soil Geography.
4. Text book of soil science. J.A.Daji.
5. Soil Geography - James C. Cruicksham.
6. Soils of India - Raj Chaudhari.
7. Water, Earth, Man - Chorley.
8. Text book of soil science - Biswas.

T.Y.B.Sc. Geography
 Geog. 340 (a) Agricultural Geography

Part Ist.

1. Origin & Development of Agriculture -
 - a) Origin of Agri. in the world.
 - b) Development of Agri. -
 - 1) Initial age.
 - 2) Middle age.
 - 3) Present or Modern age. (Agrarian Revolution)
2. Nature & scope of Agri. Geography -
 - a) Nature of Agri Geography.
 - b) Scope of agri geography.
 - c) Importance to study the agri geography.
 - d) Place of agri. in Indian Economy.
 - e) Approaches to study the agri geography.
3. Physical factors influencing the agriculture -
 - a) Surface configuration (Topography, slope etc)
 - b) Climate.
 - c) Soils.
4. Socio-economic factors influencing the agriculture -
 - a) Size of land - holding.
 - b) Agricultural population.
 - c) Economic level of pasent.
 - d) Marketing.
 - e) Transport.
 - f) Tarrifs & import restrictions.
 - g) Marginal production & Marginal analysis.
 - h) Type of Enterprise & farm Income.

PART IIInd

5. Types of Agriculture in the world -
 - a) Subsistance farming.
 - b) Plantation farming.
 - c) Commercial food grain farming.
 - d) Mixed farming.
 - e) Extensive farming.
6. Distribution & production of important crops -
 - a) Food crops :- 1) Rice. 2) Wheat. 3) Maize.
 - b) Cash crops :- 1) Cotton. 2) Sugarcane. 3) Tea. 4) Coffee.
7. Green Revolution & after in India, Current problems & challenges to Indian agriculture.
8. Agricultural development in India -
 - a) Regional impalance in agri development in India.
 - b) Agricultural development through five year plan periods in India (Ist to VIIIth five year plans)

BOOKS :-

1. Agriculture Geography - L. Symons.
2. Agricultural Geography - Jasbir Singh & other.
3. An agri. Atlas of India - Jasbir Singh.
4. Indian Agriculture - R.S. Bhatia.
5. Agricultural Geography - Majid Husi.

T.Y.B.Sc. 340 (b) Settlement Geography.

1. Introduction :-
 - a) Defination.
 - b) Nature and scope.
 - c) Relations with other branches of Geography.
2. Rural settlement :-
 - a) Selection of site and situation of rural settlement - factors influencing physical, Economic, Historical, social & cultural.
 - b) Shapes & size of villages.
 - c) Geographical aspects - Nucleation & Disperation of the villages.
 - d) Indian villages patterns- Linear, square, Rectanugular, Raidal, Horseshoe polygonal, Enlongatedx, chocker board, Double Nucleation.
3. Functions of Rural Settlements :-
 - a) Administrative.
 - b) Defensivc.
 - c) Cultural.
 - d) Industrial.
 - e) Political.
4. Rural dwellings :-
 - a) House types in India/Maharashtra.
 - b) Impact of geographical aspect on building material in Maharashtra.
5. Urban settlement :-
 - a) Distiction between rural & urban settlement.
 - b) Origin and growth of urbanization.
 - c) Factors influencing the development of urban settlement.
 - d) decay of urban settlement.
6. Patterns of urban settlement :-
 - a) Linear, chackerboard, circular, Radial, coastal Fanlike.
 - b) Functional classification of urban settlement.
7. Various characteristic of urban settlement :-
 - a) Nodal Towns.
 - b) Umland & Hinterland demarcation & characteristics.
 - c) Theoritical aspects of central place theory.
 - d) Population and Ranking.

8. Distribution of urban settlement in Maharashtra.:-

- a) Western Maharashtra.
- b) Kekan.
- c) Marathwada.
- d) Vidharbha.
- e) Uttar Maharashtra.

9. Important cities in Uttar Maharashtra.:-

Study with reference to Location, site, size, shape, pattern, morphology function & development of the following cities.

Nasik, Manmad, Malegaon, Dhule, Nandurbar, Navapur, Jalgaon, Bhusawal, Chalisgaon, Chopda, Shirpur, Shahada.

BOOKS :-

1. F.S.Hudson - Geography of Settlement.
2. R.E.Mandal - Introduction to Rural Settlement.
3. Jhonson - Urban Geography.
4. Mayer & kohn - Readings in urban Geography.
5. Smalies A.P. - Geography of towns.

Geog. 350 (a) Political Geography.

1. Nature & scope of Political Geography and its Relation to Geopolitics and other social sciences.
2. Historical development of Political Geography - The classical period - Kant, Ritter and Ratzel. Developments during the early twentieth century and during the last half century.
3. Global strategic views : Theories of heartland and Rimland.
4. Physical, Economic and human elements of Political Geography.
5. Approaches to the study of Political Geography. Functional approaches, Genetic approaches and system analysis approaches.
6. Nation and state : Geographical perspectives on state formation and nation building.
7. Core Area, Ecumene and capital city.
8. Nature and Functions of boundaries; classification of boundaries and Territorial waters.

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1. Political Geography a Contemporary perspective
- R.D. Dikshit.
 2. Fundamentals of Political Geography.
- R.L. Dwivedi.
 3. Geostrategics - S.T.Das (Kitab Mahal).
 4. Political Geography of oceans - J.R.V., Prescott.
 5. Geography and Politics in world divided - S.B.Cohen.
 6. Political Geography - N.J.Pounds.
 7. Political Geography - D.E.Dliji.

Geog. 350 (b) Geography of Transportation and Communication.

1. Importance of transportation in the world and regional economics.
2. Modes of Transport factors associated with their growth. Comparison of different modes of transportation. Distributional patterns of different modes of transportation. Major sea routes and their significance in world economics.
3. Ports and Harbours - factors related to the growth of major - sea - ports (physical and economic factors.) Major sea-ports of the world.
4. Models of network changes.
 - i) Route development substitution model.
 - ii) Gravity model.
5. Importance of Transportation in the world and regional economics.
6. Modern means of communication.
7. Satellites as a mean of communication and its role in nation's development.
8. Economic activities and role of Communications.

BOOKS :-

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| 1. Railways & Geography | - O'Dell & Richards. |
| 2. Geog. of Air Transportation | - Sealy |
| 3. Ports & Harbours | - Morgan. |
| 4. Transport Geography | - Janki. |
| 5. Geography of Economic activities- | Thoman. |
| 6. Transport and Trade | - Barke M. |
| 7. Geog. of Transportation | - Pandey N.P. |

Geog. 360 (a) Regional Geography of Monsoon Asia.

Section I

1. Location and Extent : Geographical Location and its role in economic development.
2. Structure, Relief and Drainage. Structure mountain, plateau plains.
3. Climate. Climatic condition in summer and winter major climatic regions Asia.
4. Vegetation and soil. Major soils and vegetation types and economic development.
5. Agricultural Major agricultural types Asia. Distribution and production of Rice, cotton, Tea, Sugar cane.

Section II

6. Minerals Role of minerals in modern economic development of Asian countries.
Ironore, Mica, Bauxite.
7. Power resources Coal, Mineral oil, Hydroelectricity, Atomic power.
8. Industries Location, Distribution production and changing pattern of cotton textile Iron and steel chemical.
9. Population. Distribution and role of popu in eco-development of Asia.
10. Transport and Trade Major transportation media in Asia. Changing pattern of Asian foreign trade and factors associated to it.

BOOKS :-

1. Asia - D. Stamp.
2. Asia - Cornish W.B.
3. Pattern of Asia - Ginsburg.
4. Lands and peoples of Asia - G.B. Gresser.

(T.Y.B.Sc. GEOGRAPHY)Geog. 360 (b) Regional Geography of South West Asia.SECTION - I

Chap No.	Unit	Learning points
1.	Location and Extent :-	Geographical Location
2.	Structure, relief and drainage pattern	Distribution of physiographic elements. Its role on eco-development.
3.	Climate :-	Seasonal variation in climatic elements.
4.	Vegetation and soils	Types and role of vegetation soil in economy of this region.
5.	Agriculture	Major types of farming use of new technique in Agriculture. Study of distribution and production of food crops. Horticulture.

SECTION - II

1. a) Minerals Distribution production of metallic and non-metallic minerals.
- b) Power resources Distribution and production of mineral oil, Atomic power.

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|---------------|---|
| 2. Industries | Oil refineries chemical, food processing industries. |
| 3. Population | Distribution composition of population. Ethnic problems in this region. |
| 4. Transport | Regional variation in Roads railway, airways, waterways, pipe line transport. |
| 5. Trade | Changing pattern of trade of this region. |

BOOKS :-

1. Lands and peoples of Asia. - G.B. Gressy.
2. Asia - D. Stamp.
3. Asia - Cornish V.B.
4. Pattern of Asia. - Ginsburg.

Geog. 301 Practicals in Cartographic and statistical Techniques.

1. Cartographic Techniques.

- 1) Definition, Co-ordinate systems, direction, scale and scale transformation.
- 2) Cartographic symbolism and processing of data, point, line and area symbols.
- 3) Quantitative maps of a district - Population map (Dot method), Climatic map (line and bargraph) Industrial map (proportional symbols) crop map (wheel, diagram) Traffic flow diagram.
- 4) Qualitative maps - Choropleth and colour tint map.

2. Statistical Methods.

- 1) Evaluation of Mean, mode and Median.
- 2) Frequency distribution, Polygon, Histogram and ogive curve.
- 3) Measures of dispersion and standard deviation.
- 4) Standard error, t and F test and χ^2 test, R test.
- 5) Simple regression analysis.
- 6) Correlations- Spearman's Rank order coefficient of correlation and Pearson's product moment coefficient of correlations.

BOOKS :-

1. Singh and Karanjia - Map work and practical Geography.
2. Miller A - Skin of the earth.
3. Aslam Mahmood - Statistical methods in Geographical studies.
4. Tamaskar and Dechmukh - Geographic interpretation of Indian Topographical map.
5. K. Rammurthy - Map Interpretation.
6. Gregory - Statistical Methods and Geographer.
7. King - Quantitative Geography.

Geog. 302 Geomorphology and soil analysis.

(A) Geomorphology

1. Relief analysis, Profiles.
 - (a) Longitudinal Profile.
 - (b) Superimposed/Composite & Projected profile.
 - (c) Wentworth's Methods, Smith method.
2. Morphometry of drainage basin.
 - (a) Hierarchical order - Horton and Strahler's method.
 - (b) Linear aspect of drainage basin.
 - i) Order, number, bifurcation ratio.
 - ii) Order, length length ratio.
 - iii) Order Area Area ratio.
 - iv) Order number relationship.
 - (c) Area properties of drainage basin.
 - i) Demarcation and estimation of catchment area.
 - ii) Drainage frequency.
 - iii) Drainage density.
 - iv) Constant of channel maintainance.
 - v) Sinosity index.
3. Arid aspects of drainage basin.

(B) Soil analysis

1. Soil analysis - Concept of soil sampling, study of orders sampling techniques, Actual collections of few samples from the fields.
2. Physical properties of soil - Soil texture, Bulk density, Decantation beaker Method, Specific Gravity, porosity, PH and double salts in the soil.
3. Chemical properties of soil- Determination of CaCO_3 , Fe_2O_3 , Al_2O_3 and organic carbon SiO_2 .

Geog. 303 Specialized study of toposheets, project work and excursion.

A study of toposheets.

1. Introduction to survey of Indian topographical maps: Index number system, Grid reference and marginal information of 1:10,00,000 1:250,000 1:50,000 and 1:25,000 sheets and the corresponding Toposheets in British system.
2. Coast and shoreline - type of coast; erosional and depositional landforms (one toposheet)
3. Study of Local toposheet - Study the interrelationship between physiography and cultural aspect.
4. Arid landscape - Process, structure and drainage.

5. Interpretation of settlements - Site, situation, pattern, form and function in Rural and urban centres.
6. Study and interpretation of two town maps.

B Project work and field excursion.

Project work on any one of the following.

1. Preparing a set of ten maps of either Tahasil or districts showing Geographical aspects.
OR
2. Landuse survey of a village.
OR
3. Morphology of a town or city.
4. Study of 'tribe'/Measurement of Noise & water Pollution.
and
5. Excursion (study tour)

BOOKS:-

1. Singh and Kanjuja - Map work and practical.
2. Tamaskar and Deshmukh - Geographical Interpretation of Indian topographical maps.
3. K. Rammurty - Map interpretation.
4. Durg + Map interpretation.