NORTH MAHARASHTRA UNIVERSITY, JALGAON

T.Y.B.Sc

GEOGRAPHY SYLLABUS

WITH EFFECT FROM

JUNE 2014

New Syllabus of T.Y.B.Sc Geography

W.E.F June 2014

Sem - V

Gg.311: Geomorphology
Gg.312: Climatology
Gg.313: Oceanography
Gg.314: Plant Geography
Gg.315: Soil Geography
Gg.316: Monsoon Asia

Sem – VI

Gg.321: Zoogeography
Gg.322: Remote Sensing & GIS
Gg.323: Water Resource Management
Gg.324: Geography of Health
Gg.325: Geo-Statistical Methods
Gg.326: Regional Geography of U.S.A

Practical (Annual)

Gg.301: Morphometric Techniques
Gg.302: Practical of Remote Sensing, GIS & GPS
Gg.303: Techniques of Soil and Water Analysis

New Syllabus of T.Y.B.Sc Geography

JOB OPPORTUNITY

FOR

T.Y.B.Sc. STUDENTS

Board of Study of Geography is attempting to introduce new advance courses in the syllabus such as Oceanography, Plant Geography, Soil Geography, Zoogeography, Remote Sensing & GIS, Water Resource Management and Geography of Health. It is welcoming to note that practical courses are closely related to above courses. When the students do their practical with the help of remote sensing data by using GIS software, they should have the knowledge of spatial distribution of plans and forests, soils, water resource and pollution.

When students complete their graduate with geography they have an opportunity of job as below:

1) The syllabus is designed by considering competitive examination- MPSC, UPSC, NET/SET etc. Obviously there is an opportunity to overcome vent of job.
2) Good hands of students with remote sensing data analysis using GIS software create several opportunities of jobs in government as well as private sectors.
    1) Digital data analysis IT companies: every year IT companies require number of candidates those are trained in GIS.
    2) GPS and DGPS trained students could get the job in survey companies, such as Pvt. Ltd. Civil builders, road surveyors, town planner, etc.

Equivalent Courses

T. Y .B .Sc. **GEOGRAPHY (Old Courses)** (W. e. f. June 2009)	**New Syllabus of T.Y.B.Sc** **Geography** **W.E.F June 2014**
Semester I	**Sem - V**
Gg 311 : Geomorphology	Gg.311: Geomorphology
Gg 312 : Climatology	Gg.312: Climatology
Gg 313 : Soil Geography	Gg.315: Soil Geography
Gg 314 : G.I.S & Remote Sensing	Gg.314: Plant Geography
Gg 315 : Disaster Management	Gg.313: Oceanography
Gg 316 : Physical Geography of India	Gg.316: Monsoon Asia
Semester II	**Sem - VI**
Gg 321 : Oceanography	Gg.321: Zoogeography
Gg 322 : Geo-statistical Method	Gg.325: Geo-Statistical Methods
Gg 323 : Geography of Tourism	Gg.323: Water Resource Management
Gg 324 : Agricultural Geography	Gg.324: Geography of Health
Gg 325 : Industrial Geography	Gg.322: Remote Sensing & GIS
Gg 326 : Economic Geography of India	Gg.326: Regional Geography of U.S.A
Practical (Annual)	**Practical (Annual)**
Gg 301 : Practicals in Geomorphology & Soil Analysis	Gg.301: Morphometric Techniques
Gg 302 : Computer Application in Geography Interpretation of Aerial Photographs & Satellite Imageries	Gg.302: Practical of Remote Sensing, GIS & GPS
Gg 303 : Advanced Statistical Method, Project Work &Excursion	Gg.303: Techniques of Soil and Water Analysis

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – V

Gg 311 : GEOMORPHOLOGY

(With Effect From June, 2014)

Unit. No.	Topic	Sub-topic	Periods
1	Introduction	A) Definition, Nature & Scope of Geomorphology. B) Development of Geomorphic thoughts i) Ancient ii) Medieval iii) Recent	10
2	Origin of Primary relief of the Earth	A) Sea floor spreading theory. B) Plate tectonic theory.	10
3	Geomorphic processes	A) Mass movements. B) Factors conditioning mass movement. C) Types of mass movements. D) Effects of mass movements	15
4	Work of River	A) Fluvial erosion & Deposition. i) Process of erosion ii) Process of deposition iii) Landforms of erosion iv) Landforms of deposition	15
5	Cycle of Erosion	A) Divisions cycle of Erosion. Criticisms B) Interruption of cycle	10

Reference Books

1. Morphology and Landscape : Harry Robinson, University Tutorial Press(1977)

2. Principals of Physical Geography : Monkhouse F.J., Hodder and Stoughton,London.

3. A Test book of Geomorphology : Dayal P., Shukala book Depot, Patana (1996)

4. Principals of Physical Geomorphology : Thournbury W.D. & Wiley Eastern(1960)

5. Physical Geography : Tikka, Kedarnath Ramnath & Co.(1995)

6. Geomorphology: Sparks B.W. , Longmans, New York (1972)

7. Geomorphology : Sarvindar Singh, Prayag Pustak Bhavan; Allahabad (2002)

8. The Earth's Dynamic Surface : K. Siddharth, Kisalaya Publication Pvt. Ltd.(2001)

9. Geomorphology : Wooldridge, Longman; New York

Weightage of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – V

Gg:312: CLIMATOLOGY

(With Effect From June, 2014)

Objectives:

- *To acquaint the students with basic knowledge of atmosphere, weather and climate*
- *To know the fundamental concepts of climatology*
- *To understand various weather phenomena*
- *To identify climatic differentiation on the earth*
- *To acquire the knowledge of weather forecasting*

Unit. No.	Topic	Sub-topic	Periods
I	Introduction to Climatology	A) Structure and composition of atmosphere B) Meaning and concept of weather and climate C) Elements of weather and climate (Temperature, Pressure, Winds, Humidity, Clouds, Precipitation etc.) D) Definition, nature and scope of climatology E) Applications of climatology F) Sub-divisions of climatology	10
II	Atmospheric Disturbances	A) Cyclones and Anticyclones (Tropical & Temperate) B) Thunderstorms – origin, structure and characteristics C) Jet Stream D) Western disturbances	12
III	Classification of Climate	A) Koppen's classification (basis, types, merits and demerits) B) Thornthwait's classification (1931) (basis, types, merits and demerits) C) Trewartha's classification	14

IV	Climatic Changes	A) Meaning and concept B) Scale dimension (Short term and Long term changes) C) Indicators of climatic changes D) Causes of climatic changes E) Theories of climatic changes a) Dust theory b) Carbon dioxide theory	12
V	Weather Forecasting	A) Importance B) Types of weather forecasting (Short, Medium and Long range) C) Weather forecasting methods i) Synoptical ii) Numerical iii) Statistical D) Role of satellite in weather forecasting E) El-Nino and La-Nino F) Important parameters of Indian Monsoon Forecasting	12

Reference Books:

1. *Climatology : D.S. Lal, Chaitany Book Trust, New Delhi (1986)*
2. *General Climatology: H.J. Critchfield, Prentice Hall, New Delhi, India (1993)*
3. *Climatology: Dr. Savindra Singh*
4. *The Atmosphere and Introduction to Meteorology : Frederick K. Lutgens and Edward J. Tarbuck*
5. *An Introduction to Weather and Climate: G.T. Trewartha, McGraw Hill, New York, 1980*
6. *Foundation of Climatology : E.T. Stringer Surjeet publications, Delhi, 1982*
7. *The Monsoon: P.K. Das, National Book Trust, New Delhi, 1968*

Weightage of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – V

Gg. 313: OCEANOGRAPHY

(With Effect From June, 2014)

Unit. No.	Topic	Sub-topic	Periods
I	Nature and Scope of Oceanography	A) Definition B) Place in Geography C) Nature D) Scope and Importance E) Submarine relief of Ocean	10
II	Waves	A) Wave Generating factors B) Wave Refraction C) Wave Types	10
III	Tides	A) Definition B) Tide Generating forces C) Equilibrium theory D) Types of tide i) Diurnal, Semidiurnal ii) Spring and Neap tide	15
IV	Ocean Deposits	A) Classification according to Source and Nature of deposits B) Transportation of marine sediment Deposition of marine sediments C) Vertical distribution of marine sediments D Horizontal distribution of marine sediments	15
V	Man and Oceans	A) Oceans and climate B) Marine environment C) Ocean and food resources D) Ocean and eco-system E) Significance of ocean	10

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Reference Books:

1. *Oceanography for Geographers : King C.A.M. Anado, London (1970). Principles Of Oceanography : Sharma Vithal M. Chetana Publication House Allahabad (1970).*
3. *Oceanography – Introduction to Marine Environment: Davis Richard J.A., C. Brown, lowa.*
4. *Science of oceans and Human life : Vmmarkutty A.N.P. (1985) NBT, New Delhi.*
5. *Introduction to world ocean : Duxbury C.A. and Duxbury B,C, Brown lawa(1996).*
6. *Introduction to Oceanography: Sharma Vithal M. Chetana Publiction House Allahbad (1977).*
7. *Oceanography-Introduction to Marine Science : Garrison T., Book Cole Pacific Grove U.S.A. (2001).*
8. *Oceanography view of the Earth: Gross M. Grant, Prentice Hall; Inx New Jersey (1987).*
9. *Oceanography for Geographer- R.C. Sharma, M. Vatal Published by C.S.Jain for Chaitanya Publishing House Allahabad.*

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – V

Gg-314: PLANT GEOGRAPHY (Phytogeography)

(With Effect From June, 2014)

Unit. No.	Topic	Sub-topic	Periods
I	Nature and Scope	Introduction-Biogeography, Functions and types of Biogeography. Bio-Geographical regions of India. Plant Geography- Nature and Scope an Overview	15
II	Environment Controls	Evolutionary Factors, Innate Factor, Environmental and Geographical Factors (Location, Area, Climate, Edaphic Factors, Physiographic Factors, Biotic Factors, Human Factors), Geological Factors.	15

III	Plant Geographical (Phytogeographical) Regions of India	Western Himalayas, Eastern Himalayas, Indus plain, Gangetic plain, Assam, Central India, Western coast of Malabar, Deccan, Andman and Nicobar Natural Vegetation of India- Forest of India - Moist tropical forests, Dry tropical forests, Montane sub-tropical forests, Temperate forests, Alpine forests. Grasslands of India- Xerophilous grasslands, Mesophilous grasslands (Savannahas), Hygrophilous grasslands (Wet savannahas)	15
IV	Soil Types of India and Their Agricultural Potential	Alluvial soil, Black soil (Regur), Red soils, Laterite soils, Forest, peat and organic soils, Mountainous and skeletal soils, Desert soils, Alkali and saline soils. The functions of the soils.	15

Weight age of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*15*
IV	*15*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Reference Books:

1. Agarwal, D.P.: Man and Environment in India Through Ages, 1992.

2. Bradshaw, M.J.: Earth and Living Planet, ELBS. London, 1979.

3. Cox,C.D. and Moore, P.D.: Biogeography : An Ecological and Evolutionary approach 5th edn. Blackwell 1993.

4. Gaur, R: Environment and Ecology of Early man in Northern India, R.B. Publication Corporation 1987.

5. Hoyt. J.B.: Man and the Earth, Prentice Hall, U.S.A. 1992.

6. Huggett. R.J.: Fundamentals of Biogeography. Routledge, U.S.A. 1998.

7. IIIies, J: Introduction to Zoogeography, McMillan, London 1974.

8. Khoshoo, T.N. and Sharma, M. (eds): Indian Geosphere – Biosphere Har-Anand Publication, Delhi 1991.

9. Lapedes, D.N. (ed): Encyclopedia of Environmental Science, McGraw Hill, 1974.

10. Kochhar P.L.:Plant Ecology,Ratan Prakashan Mandir, Agra-2, 1990.

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – V

Gg-315 SOIL GEOGRAPHY

(With Effect From June, 2014

Aims and objectives:

1. To study the physical, chemical and biological factors associated with the maintenance of soil fertility
2. To understand the principles involved in practical use, care and management of soil.
3. To study the general principle and basic relationship between man and soil.

Unit. No.	Topic	Sub-topic	Periods
I	Introduction	A) Definition, B) Nature & Scope of Soil geography C) Soil as a resource D) Functions of soil	10
II	Soil Development	A) Factor of soil development (i) Parent material (ii) Rainfall (iii)Temperature (iv) Vegetation (v) Organism B) Soil profile C) Soil structure	10
III	. Physical properties of soils	A) Morphology B) Structure C) Texture D) Colour E) Water F) Air G) Temperature	10
IV	Chemical properties of soil	A) Chemical Composition of Soil B) Soil reaction	10

	and their importance	C) Factors of controlling soil reaction D) Soil pH	
V	Soil Taxonomy	. A) Classification of soils i) Physical classification ii) Genetic classification iii) American classification B) Land suitability classification C) Food security and soil quality D) Soils of India	10

Weight age of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Reference Books

1. A Text Book of Soil Science : Daji J.A. ; Tata Mc Grow Hill, Mumbai

2. Soil Science : Rade A. A.

3. A text book of Soil Science : Biswas T.D.& Mukharji ; Tata Mc Grow HillMumbai

4. Soil Geography : Sarkar Himanshu ; (Nikhil) K.D. Kolkatta

5. Fundamentals of Soil Science : Miller A.A., Turk L.M. & Forth

6. Soil Geography : James G. Cruikshant ; Newtone Abbot Devon

Soil Geography : Buntice B.T.

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – V

Gg-316 MONSOON ASIA

(With Effect From June, 2014

UNIT No.	Topic	Sub topic	Periods
1	Monsoon Asia at a Glance	A) Location : Site and Situation B) Countries and Sub-Regions of Monsoon Asia C) Economic and Political Importance. (Region as a geographical entity and as a component of global system.)	10
2	Physioigraphy and River Basins	**A) Major Physiographic Features** I) Himalaya Mt. II) Kun Lun Shan Range III) Western Ghats IV) Japanese Alps V) Annamalai Cordillera (Laos, Vietnam) VI) Northern Plain (Gangetic Plane) VII) North China (Manchurian) Plain VIII) Deccan Plateau IX) Tibetian Plateau X) Gobi Desert XI) Korat Plateau XII) Yunan and Shan Plateau XIII) Ilands **B) Drainage:** i) Ganges River System ii) Brahmaputra River System iii) Indus River System iv) Irrawaddy River System v) Mekong River System vi) Yangtze ki Yang River System vii) Huang He River System	10
3	Climate, Soil and Natural Vegetation	**Climate:** **A) Climatic Regions of Monsoon Asia** i. Tropical Rain Forest ii. Tropical Savanna	10

		iii. Humid Subtropical iv. Warm Humid Continental v. Cold Humid Continental vi. Desert vii. Steppe viii. Undifferentiated Highland **B) Monsoon :** i) Characteristics of Monsoon ii) South West and North East Monsoon **C) Soil:** Major soil types **D) Natural Vegetation:** Major Vegetation Types, Distribution and Their Economic importance	
4	Agriculture	**A) Major Agriculture Types:** i. Intensive Subsistence Agriculture ii. Plantation Agriculture iii. Shifting Agriculture **B) Major Crops** i. Rice ii. Tea iii. Cotton	10
5	Population	**Population:** A) General Distribution of Population B) Density of Population **C)** Capitals and Metropolitan Centers	10

Weightage of Marks:

Unit	Marks
I	10
II	10
III	10
IV	10
V	10
External Exam	40

Internal Test	10
Total Marks	50

Reference :

1. Dudely Stamp : Asia
2. Fisher, Charles, A : South East Asia
3. Dobby : South East Asia
4. Dr. Jagdish Singh - Monsoon Asia
5. Dr. V.K. Srivastava - Asia
6. Vishwanath Tiwari Asia Ka Bhugolik Swaroop
7. Dr. M.N. Nigam & B.L. Garg - Mansoon Asia

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – VI

Gg-321 ZOOGEOGRAPHY

(With Effect From June, 2014

Course Objectives:

1) To introduced the awareness about animals in the students.
2) To understand the ecology and taxonomy of animals with relation to geography.
3) To motivate the students, how significance and conserve the animals.
4) To realize the geographical dispersal of animals in the Indian context.
5) To discuss the theories of distribution of animals with relation to geographical background.

Unit. No.	Topic	Sub-topic	Periods
I	Introduction to Zoogeography	Subject matter – History. Theory of evolution .Concepts- taxonomy ecology and zoogeography. Definitions, Nature, Scope, Principles, Disciplines – Geography, Plant ecology and evolution, Geology, Ethnology, Physiology and Morphology	10
II	Classification and Mapping of Animals	Classification of animals according phylum- Protozoa, Coelenterta, Platyhelminthes,	10

		Annelida, Arthropoda, Mollusca, Echinodermata, Chordate. Factors of animal mapping: Shape of area, Structure of area, Ecology of area, History of area, Relict area, Geography of area, Dynamic of area, Community area, areas of Aquatic animals.	
III	Animal Dispersal	Factors of Animals dispersal: – Climate, Vegetation, Physical barriers, other animals. Types of Animals dispersal- Active, Passive, Gradual, Rapid, Seasonal, Forced, Anthropogenic. Barriers of Animals dispersal – Physical, Water, Ecological, Living environment, Time and distance. Modes of dispersal, Dispersal routes of faunas.	15
IV	Areography of Animals	Types of distribution of animals-Continues, Discontinues, Bipolar. Distributional Regions and sub regions of animals- Ethiopian, Australian, New world, oriental, Pala arctic, Neo tropical. Theories of distribution of animals-climatic and evolution theory of Matthew, age and area theory of Willis	15
V	Eco- Geographic System	Concept, Allen's Eco-geographic system, evolution of new species and their causes, faunal main and sub-regions-land, aquatic. Factors affecting on ecology of animals - light , weather , food , temperature, space, mobility, shelter, soil , plant formation and size of population.	10

Weight age of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

References Books:

- *Carl L. Hubbs (Editor), 1974. Zoogeography, Ayer Co Pub.*
- *Darlington P.J. (1957): The zoogeography: The geographical distribution of animals. Wiley Publ. New York. Krieger Pub. Co.*
- *Frank Evers Beddard (2008): A Text-Book of Zoogeography, Published by BiblioBazaar,*
- *John R. Merrick (2006): Evolution and Biogeography of Australasian Vertebrates. Publisher*
- *Miklos D. F Udvardy (1969): Dynamic zoogeography: With special reference to land animals, Van Nostrand Reinhold.*
- *Paul Muller, 1974. Aspects of Zoogeography. Junk Pub.*
- *Savindra Singh (1997): Environmental science, Prayang Pustak Bhawan, Allahabad*
- *Tiwari S.K. (1985): Zoo-Geography of India and South East Asia. International Book Dist. Dehra Dun.*
- *Tiwari Shivkumar (1985): Readings in Indian Zoogeography (vol.1). Today & Tomorrow Printers & Publishers*
- *Tiwari, S. K Wallace.(2006): Fundamentals of World Zoogeography. Vedams eBooks (P) Ltd (India)*
- *Wallace A.R., (1962): The geographical distribution of animals. Hafner Publ. Co.*
- *Wallace Alfred Russell (1876): The Geographical Distribution of Animals, with a Study of the Relations of Living and Extinct Faunas as Elucidating the Past Changes of the Earth's Surface. New York: Harper and Brothers*
- *Wilma George (1962): Animal geography. Heinemann Edu. Books Ltd.*

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – VI

Gg. 322: REMOTE SENSING AND GIS

(With Effect From June, 2014

Unit No	Unit	Sub unit	Periods
1	Introduction to Remote Sensing	A) Definition, nature and scope of Remote sensing B) History of Photogrammetry C) Types of Remote Sensing D) Basic concept of EMR	10
2	Aerial Photography , Land Sat-imageries	A) Introduction to Aerial Photography i) Type of Aerial Photography ii) Type of Cameras	15

		iii) Type of Films B) Satellite Imageries i)) Type of Satellite & data product ii) Use of Remote Sensing techniques in different branches of geography iii) Recent development of Indian Remote Sensing	
3	Introduction to GIS	A) Definition and History of GIS B) Component of G.I.S. D) Geospatial data i) Spatial data ii) Attribute data iii) Joining spatial & Attribute data E) G.I.S. Function i) Spatial data input ii) Attribute data management iii) Data Output iv) Data Exploration	15
4	G.I.S. Data Models	A) Spatial data model i) Raster data model ii) Vector data Model B) Non- Spatial data model i) Hierarchical ii) Net work iii) Relational	10
5	Co-ordinate System	A) Geographic Co-ordinate System B) Projected Co-ordinate System i) U.T.M. ii) U.P.S. iii) S.P.C. iv) P.L.S.S. C) Introduction to GPS i) Function of GPS ii) Application of GPS	10

Unit	*Marks*
I	*10*
II	*10*
III	*15*
IV	*15*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Reference Books

1. Remote Sensing & Photogrammetry : M.L.Jhanwar, T.S.Chouhan; Vigyan Prakashan, Jodhpur

2. Applied Remote Sensing & Photo-Interpretation : T.S.Chouhan, K.N.Joshi Vigyan Prakashan, Jodhpur
3. Space Today : Mohan Sundara Rajan, National Book Turst, India 4. Remote Sensing in Geography, Rashid S.M.; Manak Publication Pvt. Ltd. (1995)
5. Themotic Cartography and Remote Sensing : Prithvish Nag; Concept Publication Com. New Delhi (1992)
6. Maps & Air Photographs : Dickinson G.C. , Edward Arnold; London (1969)
7. Principles of Remote Sensing : Curran P. Longman; Londan(1989)
8. Fundamentals of Remote Sensing : University Press Pvt.Ltd. Hyderabad (2004)
9. Remote Sensing : Dr. S.N.Karlekar, Diamond Publication Pune (2007)
10. Geographical Information Systems : Dr. S.N.Karlekar, Diamond Publication Pune (2007)

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – VI

Gg. 323: WATER RESOURCE MANAGEMENT

(With Effect From June, 2014

Unit No	Unit	Sub unit	Periods
1	Introduction to Water Resource	A) Water as most important and renewable resource B) Hydrological Cycle – Evaporation, Precipitation, percolation and runoff. C) Distribution of World's surface and surface water resources: including glaciers, ice caps, river channels, lakes and reservoirs and ground water.	10
2	Water Supply and utilization for Agriculture and its Management	A) Agricultural cropping pattern B) Water requirement of crop : Soil – water – crop relationships C) Moisture surplus and deficit regions D) Water balance and drought – measure and minor irrigation E) Methods of distribution of water to farms, water harvesting techniques,	15

		soil, water conservation	
3	Water Utilization for Different Purposes	A) Industrial demand for water and utilization type wise, region wise industrial affluents, B) Water pollution and treatment. C) Use of water for Commercial, Institutional and Domestic	15
4	Problems of Water Resources	A) Problems of water resource – abundance and scarcity – floods and draughts. B) Measures of water managements – including afforestation , channel improvement, river embankments and land use regulation.	10
5	Conservation and Planning of Water resources	A) Conservation and planning for the development of water resource B) Special remedies for collection of rain water so as to increase of ground water level C) Water shed management	

Unit	*Marks*
I	*10*
II	*10*
III	*15*
IV	*15*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Reference Books:

1. John, J. A. (1997) : Global Hydrology : Processes, Resources and Environment Management, Longman Publishers
2. Law, B. C. (Ed. 1968) : Mountains and Rivers of India, IGU National Committee for Geography, Calcutta.
3. Matter, J. R. (1984) : Water Resources Distribution, Use and Management, John Wiley, Maryland.
4. Newson, M. (1992) : Land , Water and Development, River Basin Systems and their Sustainable Management, Rowfledge, London.
5. Rao, K. L. (1979) : India's Water Wealth, Orient Longman, New Delhi
6. Singh, R. A. and Singh, S. R. (1979) : Water Management Principles and Practices, Tara Publication, Varanasi
7. Kates, R. W. and Buston, T. (Ed. 1980) : Geography, Resources and Environment, Ottawa
8. Tideman, E. M. (1996) : Water Shed Management : Guidelines for Indian Conditions, Omeaga, New Delhi.
9. Agarwal, Anil and Sunita Narayan, (1997) : Dying Wisdom : Rise, Fall and Potentials of India's Traditional water Harvesting System.
10. Michel, A. M. (1978) : Irrigation : Theory and Practicles, Vikas Publishing House Pvt. Ltd., New Delhi

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – VI

Gg. 324: GEOGRAPHY OF HEALTH

(With Effect From June, 2014

Significance of Study:

Most of the diseases are associated with contaminated water, polluted air and malnutrition. In the study of environmental science all students learn the causes of different types of pollution. To take up the further step, this course is introduced. In this course effects of polluted air, water and malnutrition on health status of the society are explained with examples.

Learning objectives:

- *To understand the ecology and etiology of epidemic diseases*
- *To describe the geographical aspects of disease diffusion and its chain.*
- *To Know and understand how the social context and other determinants affect health.*
- *To understand the changing global context of public health.*
- *To enlighten the problems of nutritional diseases especially found in tribal and poor income communities*
- *To understand the process of health care delivery and health care planning in India*
- *To understand the changing and future directions of the geography of health.*

Unit No	Unit	Sub unit	Periods
1	Introduction to Subject	I) Nature, Scope and Significance of Geography of Health and Nutrition II) Development of this area of specialization	10
2	Geography and Human Health	Geographical factors affecting human health and diseases arising from them. i) Physical Factors: Relief, Climate and Vegetation ii) Social Factors: Density, Literacy, Customs and Traditions and Poverty iii) Economic Factors: Food, Nutrition,	15

		Occupation Standard of Living. iv)Environmental factors: Urbanization and Different types of Pollution	
3	Etiology of Diseases and Disease Pattern	I) Classification of Diseases: Communicable and Non-Communicable Diseases II) World Distribution of Major Diseases III) Ecology, Etiology and Transmission of Major Diseases. (i) Malaria (ii) Dengue (iii)Cholera (iv)Cancer (v) AIDS IV) Nutritional Deficiency Diseases	15
4	Health Care System	I) International Health Care System: WHO, UNICEF, Red Cross II) National Level Health Care System: i) Health Care System in India ii) Health Care Planning and Policies in India	10

Weight age of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Books:

1. Hazra J. (Ed.)(1997): Health care planning in developing countries, University of Kolkata,

2. May J.M (1959): Ecology of Human diseases, M.D. Publications, New York.

3. Philips D.R (1990): Health and health care in Third World, Longman, London

4. Rais A. and Learmonth A.T.A.: Geographical aspects of health and diseases in India

5. Stamp L.D (1964): Geography of life and death,Cornell University, Ithaca

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

7. May J.M (1970): The World Atlas of diseases National Book Trust, New Delhi

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NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – VI

Gg. 325: GEO-STATISTICAL METHODS

(With Effect From June, 2014

No	Unit	Sub Unit	Periods
1	Introduction	A) Definition of Statistical methods B) Importance of Statistical Geography C) Types of statistics i) Descriptive ii) Inferential	10
2	Geographical Data	A) Nature i) Spatial & Temporal ii) Discrete & Continuous data iii) Grouped & Ungrouped B) Scales of measurements i) Nominal ii) Ordinal iii) Internal iv) Ratio	20
3	Measures of Central Tendency	Meaning, Description, & calculation A) Mean B) Median C) Mode D) Deviation i) Quartile ii) Standard	10
4	Time Series Analysis	A) Meaning & Definition B) Properties of time series, Trends & Periodicity C) Calculation & Plotting of moving average	10
5	Correlation & Regression	A) Correlation: i) Concept ii) Person's correlation iii) Spearman's correlation B) Regression: i) Concept ii) Simple regression	10

Weight age of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Reference Books:

1. Statistical Geography : Dr. B. S. Negi, Gdamath, Ramnath
2. Statistical Geography : Saroj K. Poul
3. Statistics for Geography : Ebdon David
4. Statistical Geography : King
5. Statistical Techniques : Saroj K. Poul
6. Quantitative Techniques in Geography : Robret H. and Patrick M. , Oxford University Press (1974)
7. Statistical Methods in Geography Studies : Aslam Mahmood & Prof. Moonis Raza; Rajes Publication New Delhi (19)
8. Statistical Mapping and Presentation of Statistical Data: Dickinson G.C, London(1963)

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY PRACTICAL

Semester – VI

Gg.326: REGIONAL GEOGRAPHY OF USA

(With Effect From June, 2014

Unit	Topic	Sub Topic	Periods
1	Physical Settings	1. Location 2. Geological Settings 3. Relief 4. Drainage 5. Climate – Major Climatic types & Characteristics 6.Soils – Major Soil types & distribution	10

		7.Vegetation – Major Vegetation types and distribution	
2	Resources and Agriculture	1. Resource appraisal 2. Energy resources 3. Mineral resources 4. Water and Land resources 5. Salient features of agriculture 6. Irrigation 7. Problems & prospects of agriculture	10
3	Industries	1. Development of industrial activities 2. and evolution of industrial regions 3. Majo*r* Industries and their distribution 4. Problems and Prospects of Industrialization.	10
4	Population and Settlement	1. Growth and distribution of population 2. Population composition (Age, Sex, Education, Occupation) 3. Migrations 4. Population resource	10
5	Settlements	1. Growth and distribution of settlement 2. Urbanization 3. Problems of urbanization 4. Development of megalopolis	10

Weight age of Marks

Unit	*Marks*
I	*10*
II	*10*
III	*10*
IV	*10*
V	*10*
External Exam	*40*
Internal Test	*10*
Total Marks	*50*

Reference Books :

1. Charles B. Hunt (1967) : Physiography of the Unites States.

2. George T.Miller and Parkins B. Hudgis : Geography of North America.
3. John Fraser Hart (1972) : Regions of the Unites States.
4. G.H.Dary and Mathieacu (1970) : United sStates and Canada.
5. E.S.Shaw and Farland J.M. (1959) : Anglo America- Regional Geography.
6. L.Ongdon , C.Foscue (1954) : Regional Geography of Anglo- America.
7. J.W.Watson (1982) :The United States

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY PRACTICAL

Semester – VI

Gg.301: (Practical) MORPHOMETRIC TECHNIQUES

(With Effect From June, 2014

Unit	Topic	Sub-Topic	Period
I	Profile Analysis	A) Construction of profiles i. Cross Profile ii. Longitudinal profile iii. Superimposed iv. Projected v. Composite B) Methods of Representation of Relief i. Bench Mark ii. Spot Heights iii. Triangulation Method iv. Contours	20
II	Slope Analysis	A) Slope map- Smith Method B) Slope map- Wenthworth Method C) Dissection Index D) Ruggedness Number	20
III	Linear Aspects of Drainage	A) Demarcation of & Estimation of Drainage Basin B) Stream Ordering i. Strahler ii. Horton and Shreves Method C) Drainage Frequency D) Drainage Density E) Bifurcation Ratio F) Law of Stream Numbers	20
IV	Areal	A) Basin Shape Index	30

	aspects of Basin	B) Circularity Ratio C) Elongation Ratio D) Stream Frequency E) Drainage Density	
V	A) Relief Aspect B) Geological Maps	A) Average Slope B) Relative Relief C) Absolute Relief D) Dissection Index A) Study of Cross Section B) Measurement of Dip Angle C) Measurement of Thickness of rock strata	30

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

Weight age of Marks

Unit	*Marks*
I	*15*
II	*15*
III	*15*
IV	*15*
V	*10*
Oral & Journal	*10*
Internal	*20*
External Exam	*80*
Total Marks	*100*

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – VI

Gg 302: (Practical) APPLICATION OF REMOTE SENSING, GIS AND GPS

(With Effect From June, 2014

Aims and Objectives:

1) *To acquaint the students with advance techniques in geography.*
2) *To train the students with GIS and Remote sensing application in geography.*

No	Unit	Sub Unit	Periods
1	Introduction to Remote Sensing	(I) Definition, Significance and Development of Remote Sensing & GIS (II) Types of Remote Sensing: i) Active (ii) Passive (III) Electromagnetic Spectrum	30
2	Practical of Active Remote Sensing	(I) Photographic System of Active Remote Sensing and their uses: (i) Vertical (ii) Tilted (iii) Oblique Aerial Photographs (II) Camera Calibration:- Fiducial Marks, Principal and Conjugated Principal Points, Photo base Distance. (III) Calculation of Scale: Scale, Focal Length & Height of Camera (IV) Stereoscopic overlapping & its calculation. (V) Mapping and Interpretation of Aerial Photographs	30
3	Practical of Passive Remote Sensing	(I) Satellite Imageries: Introduction to Annotation Strip, Drawing of Lat-long, Measurement of Scale with the help of Lat-long. Drawing of Sketch and Interpretation of Satellite Image.	30
4	Practical with the help of GIS & GPS	I) Introduction to GIS softwares and their applications. II) Interface with GIS software (any one) III) Raster and Vector Map IV) Georeferencing/ coordinate system/ scale and Topology. V) Scanning and import of map in GIS software. VI) Introduction to GPS, Application of GPS in the survey.	30

Unit	*Marks*
I	*15*

II	*15*
III	*15*
IV	*15*
V	*10*
Oral & Journal	*10*
Internal	*20*
External Exam	*80*
Total Marks	*100*

Books:

1. Remote Sensing & Photogrammetry : M.L.Jhanwar, T.S.Chouhan; Vigyan Prakashan, Jodhpur

2. Applied Remote Sensing & Photo-Interpretation : T.S.Chouhan, K.N.JoshiVigyan Prakashan, Jodhpur

3. Space Today : Mohan Sundara Rajan, National Book Turst, India

4. Remote Sensing in Geography, Rashid S.M.; Manak Publication Pvt. Ltd.(1995)

5. Themotic Cartography and Remote Sensing: Prithvish Nag; Concept Publication Com. New Delhi (1992)

6. Maps & Air Photographs : Dickinson G.C. , Edward Arnold; London (1969)

7. Principles of Remote Sensing : Curran P. Longman; Londan(1989)

8. Fundamentals of Remote Sensing : University Press Pvt.Ltd. Hyderabad (2004)

9. Remote Sensing : Dr. S.N.Karlekar, Diamond Publication Pune (2007)

10. Geographical Information Systems : Dr. S.N.Karlekar, Diamond Publication,Pune (2007)

NORTH MAHARASHTRA UNIVERSITY, JALGAON

NEW SYLLABI OF T.Y.B.Sc. GEOGRAPHY

Semester – VI

Gg 303: (Practical) TECHNIQUES OF SOIL AND WATER ANALYSIS

(With Effect From June, 2014

Aims and Objectives:

1) *Considering the importance of natural resources and their preservation, concept of water and soil analysis techniques are incorporated in the syllabus*
2) *To acquaint the students with deferent techniques of soil and water analysis in geography.*
3) *To aware the students with importance of water in the era of increasing population.*

Unit	Topic	Sub-Topic	Period
I	Soil Analysis	1) Soil Profile Study A) Soil horizons- i) O horizons ii) A Horizon iii) E Horizon	30

		iv) B Horizon v) C 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.	
II	Water Analysis	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 Wamples	30
III	Water Analysis	Physical properties Determination of Following Properties A) Color – Platinum Cobalt Method Feral – Yule color method B) Temperature – a) measurement of surface temperature. b) Measurement of subsurface temperature c) Thermos Flask Sampler Method d) Reversing Thermometer method C) Transparency D) Turbidity	30
IV	Water Analysis	Chemical properties 1) pH – Determination of pH with pH Meter 2) Electric Conductivity (soluble salts concentration) 3) Total Dissolved Solids (T.D.S.)	30

Unit	*Marks*
I	*15*
II	*15*
III	*15*
IV	*15*
V	*10*
Oral & Journal	*10*
Internal	*20*
External Exam	*80*
Total Marks	*100*

Reference Books

1) Techniques in Geomorphology : King C.A.M (1966) Edward Arnold, London.
2) Maps & diagrams: Monkhous F. J. & Wilkusion H.R (1976), Methuen & Co. Ltd. London.
3) Hand book of Methods in Environmental Studies.- Amity S.K.(2004) ,ABD Publisher,Jaipur.

4) Soil science – Daji
5) Soil & Sediment Analysis – Trivedi
6) Physical Properties of Soil - Narayanan