

North Maharashtra University, Jalgaon

NEW SYLLABUS OF

F.Y.B.Sc.

W.E.F. JUNE 2015

North Maharashtra University, Jalgaon

F.Y.B.Sc. – Semester- I

Paper- I: Physical Geography (Lithosphere-- Part-I)

(With effect from June, 2015)

Objectives:-

1. To introduce the students to the basic concepts of Physical Geography.
2. To acquaint the students with utility and applications of Physical Geography in different areas and environment.
3. Aim to aware this students with the study of processes and patterns in the natural environment.
4. To understand the [surface](#) of the Earth and the processes by which it is shaped, both at the present as well as in the past.

Unit	Topic	No. of Period
1.Introduction to Physical Geography	a. Introduction & Definition of Physical Geography b. Nature of Physical Geography c. Scope of Physical Geography d. Branches of Physical Geography	09
2. The Earth	a. Axis of Earth, Equator, Parallels of Latitude, Tropic of Cancer, Tropic of Capricorn, Arctic Circle, Antarctic Circle b. Meridians of Longitude c. Interior of the earth-structure and composition d. Theories Regarding the present distribution of land & water i. Wegener's Continental Drift Theory-Description, Evidences & Criticism. ii. Theory of Plate Tectonics- Description & Criticism.	12
3. Minerals and Rocks	a. Definitions of Rocks & Minerals b. Difference between Minerals & Rocks. c. Rocks i. Classification of rocks on the basis of formative ii. Characteristics of igneous, sedimentary & metamorphic rock with Indian examples. d. Economic Importance & Uses of Following Rocks Marble, Sandstone, Granite, Coal, Clay.	12
4. Earth Movements	a. Meaning and classification of earth's movements. b. Folds- Definitions, types and associated landforms c. Faults- Definitions, types and associated landforms d. Earthquake- Definition, effects & Causes	12

Weight age of Marks

Unit No.	Marks	Periods
1	12	09
2	16	12
3	18	12
4	14	12
University Exam	60	45
Internal Exam	40	

References:-

1. Ahirrao, W.R., Alizad, S.S. and Dhapte, C.S., 1998. Morphology and Landscape, Nirali Prakashan, Pune
2. Bloom, A.L., 1998. Geomorphology. A Systematic Analysis of Late Cenozoic Landforms. Pearson Education (Singapore) Pte. Ltd.
3. Chaudhari S.R., V.J. Patil & Arvind Badgujar (2014) : Physical Geography Prashant Publication Jalgaon
4. Chorley R. J. (ed.), 1972: Spatial Analysis in Geomorphology, Harper and Row.
5. Christopher son, R.W. 2000, Geo-systems, Prentice Hall, INC. USA
6. Hamblin, W.K., 1989. The Earth's Dynamic Systems, Macmillan Publishing Company, New York.
7. Husain, M., 2001. Fundamentals of Physical Geography, Rawat Publication, Jaipur.
8. Kale, V.S. and Gupta, A., 2001. Introduction to Geomorphology, Orient Longman, Calcutta.
9. Monkhouse, F.J., 1996. Principles of Physical Geography, Hodder and Stoughton, London.
10. Strahler A. H., 2008: Modern Physical Geography(4 Edition), Wile
11. Singh, Savindra : Physical Geography (Eng./Hindi)
12. Suryawanshi D.S., & Others, 2011. Geography (Lithosphere & Hydrosphere), Vrinda publication, Jalgaon
13. Trewartha, G.T: Elements of Physical Geography) McGraw Hill, New York.

North Maharashtra University, Jalgaon

F. Y. B. Sc. Semester -I

PAPER II: PHYSICAL GEOGRAPHY (ATMOSPHERE)

(With effect from June, 2015)

Objectives:

- To acquaint the students with basic knowledge of atmosphere, weather and climate.
- To understand different characteristics and processes of atmosphere.
- To know the fundamental concepts of insolation and heat budget.
- To acquaint the students with weather forecasting.

Unit. No.	Topic	Sub-topics	Periods
I	Introduction to Atmosphere	A) Definitions of Atmosphere B) Composition of Atmosphere i)The Gases, ii) Water Vapour & iii) Particulates C) Structure of Atmosphere I) On the Basis of Chemical Composition: a) Homosphere & b) Heterosphere II) On the Basis of Physical Properties: i) Troposphere, ii) Stratosphere, iii) Mesosphere, iv)Thermosphere a) Ionosphere and b) Exosphere	09
II	Insolation and Heat Budget	A) Meaning and Definition of Insolation, Solar Constant and Albedo of the Earth B) Distribution of Insolation - Factors affecting the distribution of Insolation C) Heat Budget of the Earth and Atmosphere	12

III	Elements of Weather and Climate	<p>A. Meaning and Definition of Weather and Climate</p> <p>B. Elements of Weather and Climate:</p> <p>1) Temperature</p> <p>a) Meaning and Definition of Heat and Temperature.</p> <p>b) Distribution of Temperature</p> <p>i) Factors affecting the distribution of temperature.</p> <p>ii) Horizontal Distribution of Temperature</p> <p>2) Atmospheric Pressure</p> <p>a) Horizontal Distribution of Pressure</p> <p>b) Formation of Pressure Belts</p> <p>c) Shifting of Pressure Belts and their Effects</p> <p>3) Winds</p> <p>a) Factors affecting Winds</p> <p>i) Pressure Gradient</p> <p>ii) Coriolis Force</p> <p>iii) Frictional Force</p> <p>b) Classification of Winds</p> <p>i) Planetary Winds: Trade, Antitrade and Polar</p> <p>ii) Periodical Winds: Land and Sea Breezes, Monsoon Winds (Indian Monsoon)</p> <p>iii) Variable Winds: Cyclones and Anticyclones</p> <p>3) Humidity</p> <p>a) Definition</p> <p>b) Types of Humidity : Absolute, Specific and Relative Humidity</p> <p>c) Meaning of Evaporation, Saturation and Condensation</p> <p>d) Forms of Condensation: Fog, Dew, Frost and Clouds Precipitation</p> <p>b) Forms of Precipitation: Rain, Drizzle, Snow, Sleet, Hail</p> <p>c) Types of Rainfall:</p> <p>i) Convectonal Rainfall</p> <p>ii) Orographic Rainfall</p> <p>iii) Cyclonic or Frontal Rainfall</p>	18
IV	Weather Forecasting	<p>I Meaning and Importance</p> <p>Ii Procedure of Weather Forecasting</p> <p>Iii Tools in Weather Forecasting</p> <p>Iv Methods of Weather Forecasting:</p> <p>Synoptic, Statistical and Numerical Method</p> <p>V Weather Forecasting in India</p>	06

Reference Books:

1. Aguado, E. and Burt, J.E. (2001): *Understanding Weather and Climate*, Printice Hall, Upper Saddal River, New Jersey.
2. Barry, R.G. & Chorly, R.J.(1995) : *Atmosphere, Weather and Climate*, Routledge, London and New York.
3. Critchfield, H. J.(2002) : *General Climatology*, Prentice Hall, New Delhi, India.
4. Das, P.K.(1968): *Monsoon*, National Book Trust, New Delhi.
5. Lal, D.S. (1986): *Climatology*, Chaitany Book Trust, New Delhi.
6. Lal, D.S. (2009): *Climatology and Oceanography*, Sharda Pustak Bhavan, Allahabad
7. Lutgents, F.K. & Tarbuck E.J. (2001): *The Atmosphere*, Prentice Hall, Upper Saddal River, New Jersey.
8. Majid Hussain: *Climatology*
9. Millar A. et.al. (1983): *Elements of Meteorology*, Merrill, Columbus

10. Siddharth, K. (2001): *Atmosphere, Weather and Climate*, Kisaliya Publications Pvt. Ltd., New Delhi.
11. Singh Savindra (2005): *Climatology*, Prayag Pustak Bhawan, Allahabad.
12. Strahler, A.N. (1965): *Introduction to Physical Geography*, Willey, New York.
13. Stringer E.T.(1982) : *Foundation of Climatology*, Surjeet publications, Delhi.
14. Trewartha, G.T. (1980): *An Introduction to Weather and Climate*, McGraw Hill, New York.

Weightage of Marks

Unit	Periods
I	09
II	12
III	18
IV	06
	45

Internal Examination: 40 Marks

External Examination 60 Marks

North Maharashtra University, Jalgaon

F. Y. B. Sc. Semester –I

PAPER -III: PRACTICAL GEOGRAPHY (CARTOGRAPHIC TECHNIQUES)

(With effect from June, 2015)

(Work Load – 15 students per batch and 4periods per week per Batch)

Objectives:

Geography is an amalgam of physical as well as social sciences and as such, it is necessary for the students to go through laboratory exercises, particularly the techniques of drawing cartograms showing physical, climatic and socio-economic attributes of a region. To achieve this objective, the concept of scale is to be understood at the initial stage.

Period: 48

Unit No.	Topic	Sub Topic	Periods	Marks
1	Scale	1. Definition of scale 2. Methods of Representing scales a) Verbal scale , b) Numerical scale c) Graphical scale 3. Conversion of scale (British and Metric system) 4. Drawing the Diagonal and comparative scale (only metric) 5. Construction of following scales a) Simple Graphical scale b) Time and Distance Scale	09	10
2	Graph	1. Uses of line-graphs 2. Advantages of line graph 3. Kinds of graphs	12	15

		<ul style="list-style-type: none"> i. Simple Line Graph ii. Bar Graph iii. Combine Graph iv. Climograph 		
3	Statistical Diagram	<ul style="list-style-type: none"> 1. Concept and Uses of Statistical Diagrams 2. construction of the following <ul style="list-style-type: none"> i. Wind Rose/Star Diagram ii. Divided Circle iii. Pie diagram 	12	15
4	Distribution Maps	<ul style="list-style-type: none"> 1. Meaning of Distribution Maps 2. Kinds of Distribution Maps <ul style="list-style-type: none"> i. Dot Map ii. Choropleth Map iii. Isopleth Map 	12	20

Each batch of 15 students with four periods.

Weightage of Marks:

Unit No	Periods	Marks
1	09	10
2	12	15
3	12	15
4	12	20
Total Marks (University Level)	45	60
Internal Marks (College Level)		40

Reference Books:

1. Balbir Singh Negi: Practical Geography, Kedarnath Ramnath Publishers, Meerut Delhi,.
2. Gopal Singh: Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd.,
3. Mishra R. P. & Ramesh A.: Fundamental of Cartography, McMillan Co., New
4. Monkhouse F. J. & Wilkusion H. R.: Maps and Diagram, Methuen & Co. Ltd. London. New Delhi.
5. Pal, S.K. Statistics for Geoscientists — Techniques and Applications, Concept, New
6. Robert H. & Patrick M.: Quantitative Techniques in Geography, Oxford University Press.
7. Robinson, A.H. et al.: Elements of Cartography, John Wiley & Sons, U.S.A.,
8. Sarkar A.K Practical Geography: A Systematic Approach, Oriental Longman, Calcutta,
9. Singh, R.L. and Dutt, P.K.: Elements of Practical Geography, Kalyani Publishers, New Delhi,

North Maharashtra University, Jalgaon

F.Y.B.Sc. – Semester- II

PAPER- I: PHYSICAL GEOGRAPHY (LITHOSPHERE- PART-II)

(With effect from June, 2015)

Objectives:

- 1) To enable students to acquire knowledge of their physical environment.
- 2) To understand basic concepts, principles and geographical processes.
- 3) To study external forces operating on the Earth surface.
- 4) To study landforms associated with these forces.
- 5) To understand impact of human activities on environment.

Sr. No.	Topic	Sub Topic
I	Weathering	a) Definition of weathering b) Types of weathering with examples: i. Mechanical weathering ii. Chemical weathering iii. Biological weathering c) Weathering and Soil Formation
II	Mass Movement (Mass Wasting)	a) Meaning and Definition of Mass Movement b) Cause of Mass Movement (Natural and Anthropogenic) c) Types of Mass Movement i. Slow Movement:- Rock Creep, Soil Creep ii. Rapid Movement:- Earth Flow, Mud Flow iii. Very Rapid Movement:- Slump, Land Slide, Debris Slide, Rock Slide, Rock Fall d) Effects of Mass Movement
III	Work of River	a) River System, Stream Order, Drainage Density b) Mechanism of river erosion and deposition c) Features associated with the work of river i. Erosional features: 'V' shaped valley, Gorge, Waterfall, Rapid, Pot holes. ii. Depositional features: Meander, Ox-bow lake, Flood Plain & levee, Delta
IV	Work of Sea waves	a) Mechanism of Marine erosion and deposition b) Land forms associated with the work of sea waves: i. Erosional features: Sea cliff, Wave-cut platform, Sea caves, Sea arch, Sea stack ii. Depositional features: Beach, Offshore bar, Spit, Lagoon, Mudflat, Salt marsh

Weightage of Marks:

Unit No.	Marks	Periods
I	15	09
II	15	12
III	15	12
IV	15	12
University Exam	60	45
Internal Examination	40	

Reference Books

1. Alan H. Strahler & Mark Potosnak: Physical Geography, John Wiley & Son, New York
2. Alan Strahler (2011) Introducing Physical Geography John Wiley & son ,New York
3. Geomorphology, Kasalaya Publications Pvt.Ltd. B- 5/4, Poorvi Marg, MEA, Opp. Sir Ganga Ram Hospital, New Delhi. ISBN81-87481-0103, Email publications.kasalaya@gmail.com
4. H. J. DeBlij & Peter O Mullar. (2004): Physical Geography III Edit Johan Wiley and Sons, New York.
5. K.Siddhartha : (II Edt. 2007) The Earth's Dynamic Surface, A Text on London Press, Ltd.
6. Majid Husen: Fundamental of Physical Geography, McGraw Hill Books company, New York
7. Monkhouse J. (1971) : Principles of Physical Geography, University of Oxford University Press.

8. Strahler A. N., & Strahler A. H. (1978): Elements of Physical Geography
9. Strahler A.N., & A.H.Strahler: Modern Physical Geography, (1978)
10. Suryawanshi D.S., & Others, 2011. Geography (Lithosphere & Hydrosphere), Vrinda publication, Jalgaon
11. Tikkaha R.N Physical Geography
12. Trewartha Robinsin (1967) Physical Elements of Geography, Hammond
13. William D Thornnsory (2011): Principles of Geomorphology, New Age

North Maharashtra University, Jalgaon

F. Y. B. Sc. Semester -II

PAPER II: PHYSICAL GEOGRAPHY (HYDROSPHERE)

(With effect from June, 2015)

Objectives

- i) To study the basic part of oceanography
- ii) To get the information about salinity and temperature of ocean water
- iii) To study the relationship between the temperature and ocean currents
- iv) To study the origin and effects of tsunami
- v)

UNIT	TOPIC	SUB TOPIC	PERIODS
1	Configuration and Submarine Relief of Ocean Floor	(a) Meaning and concept of Hydrosphere (b) Importance of the study of Hydrosphere (c) Surface configuration of ocean Floor (submarine relief) (d) submarine relief of Atlantic & Indian ocean	09
2	Properties of ocean water	(a) Temperature of ocean water i) Distribution of Temperature of ocean water (b) salinity of ocean water i) Definition and meaning ii) Isohalines (c) Factors affecting the distribution of Salinity of ocean water (d) Distribution of salinity- open ocean, Partially enclosed sea, inland sea & lakes	12
3	Ocean currents	(a) Definition, meaning and types of ocean Currents (b) causes of origin of the ocean currents (c) Ocean currents of Atlantic and Indian Ocean, El Nino and La Nina current (d) Effects of ocean currents	12
4	Ocean coast and ocean Tides	(a) Definition and nature of ocean coast (b) Types of ocean coast i) submergence coast ii) emergence coast (c) Ocean Tides i) Definition and meaning of ocean tides ii) Types of tides i) Spring ii) Neap	

		iii) Importance of Tides (d) Tsunami waves i) Definition and characteristics ii) Effects of Tsunami waves	12
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Weightage of marks

Unit No.	Marks	Periods
I	15	09
II	15	12
III	15	12
IV	15	12
Total Marks	60	45

Reference Books

- 1) Ahirao, Alizad and Dhapate(2002), Climatology and oceanography
- 2) Bharambe, Dhake and Dr. V.J.Patil, Physical Geography Part-II (atmosphere and Hydrosphere
- 3) Bhartwaj K. , Physical Geography-Oceanography, Discovery publishing house New Delhi.
- 4) Davis Richard J.A., (1987), Oceanography- An introduction to the marine Environment, W.M.C.,Brooth Flow.
- 5) Garison T. (1998), Oceanography, Wardsworth Company, USA
- 6) Gralds S. (1980), General Oceanography- An introduction, Jon Waley and Sons, New York.
- 7) lake P. , Physical Geography, Cambridge, University Press
- 8) Majid Husain (2001), Fundamental of Physical Geography, Ravat publication jaipur
- 9) Negi B.S., Climatology and oceanography, Kedarnath and Ramnath Publishing , Meerut.
- 10) Padey, P.N. (2002), Physical Geography, Nirali Prakashan, Pune
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- 11) Sharma R.C. and M. Vatal 1970, Oceanography for Geographers, Chaitanya Delhi.
- 12) Strahler N. (1976), Elements of physical Geography, Willey Nework
15. Suryawanshi D.S., & Others, 2011. Geography (Lithosphere & Hydrosphere), Vrinda publication, Jalgaon
- 13) Tikha R.N., Physical Geography, kedarnath and ramnath and co. Merrut
- 14) Trewartha Robinson, Physical Elements of Geography, McGraw Hill Books Company, New Delhi
- 15) Ummerkutty A.N.P. (1999), Science of the Oceans, National Book Trust, New

North Maharashtra University, Jalgaon

F. Y. B. Sc. Semester -II

PAPER - III: PRACTICAL GEOGRAPHY (MAP PROJECTION)

(With effect from June, 2015)

(Work Load – 15 students per batch and 4periods per week per Batch)

OBJECTIVES

1. To enable the students to use various Projections.
2. To acquaint the students with basic Projection and preparation of maps.
3. To acquaint the students with the principles of Classification and Choice of map projections.

Unit No.	Unit	Sub Unit	Periods

1	Map Projections	a) Introduction to Map Projections b) Definition of Map and Globe c) Parallels of Latitudes d) Meridians of Longitudes e) Great Circles f) Definition of Map Projections (Graticule) g) Necessity of Map projection	09
2	Classification of Map Projection	Classification of Map Projection on the basis of their development a) Perspective Projections b) Non Perspective Projections (Homolographic, Orthomorphic, Azimuthal) c) Conventional	06
3	Construction of Map Projections	Construction of Map Projections with Graphical Methods only a) Zenithal projections. i) Zenithal polar orthographic projection. ii) Zenithal polar stereographic projection. b) Conical projections i) Conical projection with two standard parallels. ii) Bonne's projection. c) Cylindrical projections. i) Cylindrical equal area projection. ii) Mercator's projection. d) Conventional map projections. i) Sinusoidal projection. ii) Mollwede's projection.	24
4	Choice of Map projections.	a) Usefulness of all projections. b) Problems with the choice of map projection. c) Choice of Map projections for different Purposes and Regions. d) Distortion (shape, size, direction, area)	06

Weightage of marks

Unit No.	Marks	Periods
I	10	09
II	10	06
III	30	24
IV	10	06
University Exams.	60	45
Internal Exam.	40	

Reference Books:

- 1) F R.P.Mishra & A.Ramesh undamental of Cartography :
- 2) James Alfred Steers, An Introduction to the Study of Map Projections, University of London Press,
- 3) Erwin Raisz Elements of Cartography : 12. Elements of Practical Geography : Robbinson A.H. & Sleep R.D.
- 4) Kellaway, G.P., 1979: Map Projections, B.I. Publications, New Delhi
- 5) Monkhouse, F.J. and Wilkinson, H.R. 1980: Maps and Diagrams
- 6) Singh, R.L. and Singh, R.P.B. 1992: Elements of practical Geography.
- 7) Steers, J.A.1954: An Introduction to the Study of Map Projections, University of, New York.
- 8) R.Sing & Kanaujia :Map work and Practical Geography
- 9) R.C.Sing & Dutta : Elements of Practical Geography
- 10) F.J.Mankhouse & H.R.Wilkinson :Map & Diagrams
- 11) Gopal Singh: Map work and Practical Geography
- 12) George Kallawy Map Projection: London Press, London. Publications**

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