।। सा विद्या या विमुक्तये ।।

स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

"ज्ञानतीर्थ" परिसर, विष्णुपूरी, नांदेड - ४३१६०६ (महाराष्ट्र)

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY NANDED

"Dnyanteerth", Vishnupuri, Nanded - 431606 Maharashtra State (INDIA)

Established on 17th September 1994 – Recognized by the UGC U/s 2(f) and 12(B), NAAC Re-accredited with 'A' Grade

25 1994 - 2019 SILVER JUBILEE YEAR

ACADEMIC (1-BOARD OF STUDIES) SECTION

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प्रस्तुत विद्यापीठाच्या भूशास्त्रे संकुलातील मानवविज्ञान विद्याशाखेतील पदव्युत्तर स्तरावरील M.A. / M.Sc. – I Year – Geography विषयाचा CBCS Pattern नुसारचा अभ्यासक्रम शैक्षणिक वर्ष २०१९–२० पासून लागू करण्याबाबत.

प रि प त्र क

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, **दिनांक ८ जून २०१९ रोजी संपन्न झालेल्या ४४व्या मा. विद्या परिषद बैठकीतील ऐनवेळचा विषय क्र.१२/४४–२०१९** च्या ठरावानुसार **प्रस्तुत विद्यापीठाच्या भूशास्त्रे संकुलातील मानवविज्ञान विद्याशाखेतील पदव्युत्तर स्तरावरील प्रथम वर्षाचा** खालील विषयाचा **C.B.C.S. (Choice Based Credit System) Pattern** नुसारचा अभ्यासक्रम शैक्षणिक वर्ष २०१९–२० पासून लागू करण्यात येत आहे.

1. **M.A. / M.Sc. – I Year – Geography**

सदरील परिपत्रक व अभ्यासक्रम प्रस्तुत विद्यापीठाच्या **www.srtmun.ac.in** या संकेत–स्थळावर उपलब्ध आहेत. तरी सदरील बाब ही सर्व संबंधितांच्या निदर्शनास आणून द्यावी.

'ज्ञानतीर्थ' परिसर,
विष्णुपुरी, नांदेड – ४३१ ६०६.
जा.क्र.: शैक्षणिक–१/परिपत्रक/पदव्युत्तर(संकुल)–
सीबीसीएस अभ्यासक्रम/२०१९–२०/**१३५५**
दिनांक : १४.०९.२०१९.

स्वाक्षरित/–
उपकुलसचिव
शैक्षणिक (१–अभ्यासमंडळ) विभाग

प्रत माहिती व पुढील कार्यवाहीस्तव :

१) मा. कुलसचिव यांचे कार्यालय, प्रस्तुत विद्यापीठ.
२) मा. संचालक, परीक्षा व मूल्यमापन मंडळ यांचे कार्यालय, प्रस्तुत विद्यापीठ.
३) मा. संचालक, भूशास्त्रे संकुल, प्रस्तुत विद्यापीठ.
४) उपकुलसचिव, पात्रता विभाग, प्रस्तुत विद्यापीठ.
५) साहाय्यक कुलसचिव, पदव्युत्तर विभाग, प्रस्तुत विद्यापीठ.
६) सीनिअर प्रोग्रामर, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ.

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

M.A. / M.Sc. Geography (2 years, 100 Credits) Syllabus : wef 2019-2020

Type	Code	Semester 1	cdt	Code	Semester 2	cdt	Code	Semester 3	cdt	Code	Semester 4	cdt
Core Theory 1	Gg-C101	Geomorphology	4	Gg-C201	Agriculture Geography	4	Gg-C301	Political Geography	4	Gg-C401	Oceanography	4
Core Theory 2	Gg-C102	Geographical Thoughts	4	Gg-C202	Economic Geography	4	Gg-C302	Climatology	4	Gg-C402	Social and Cultural Geography	4
Core Theory 3	Gg-C103	Population Geography	4	Gg-C203	Fundaments of Remote Sensing	4	Gg-C303	Fundaments of GIS	4	Gg-C403	Dissertation	4
Subject/ School Elective Theory	Gg-E101	Geography of Environment	3	Gg-E201	Industrial Geography	3	Gg-E301	Trade and Transportation Geography	3	Gg-E401	Research Methodology in Geography	3
	Gg-E102	Physical Geography of Maharashtra	3	Gg-E202	Human Geography of Maharashtra	3	Gg-E302	Geographical Planning of Region	3	Gg-E402	Rural Settlement	3
	Gg-E103	Physical Geography of India	3	Gg-E203	Human Geography of India	3	Gg-E303	Regional Development	3	Gg-E403	Urban Geography	3
	Gg-E104	Geography of Health and Sanitation	3	Gg-E204	Conservation of Resources	3	Gg-E304	Elements of Climate	3	Gg-E404	Man and Ocean	3
	Gg-E105	Town Planning	3	Gg-E205	Forest and Wild Life	3	Gg-E305	Bio-geography	3	Gg-E405	Surveying and Land Measurement	3
	Gg-E106	Environmental Tragedies and Movements	3	Gg-E206	Global Navigation System	3	Gg-E306	Water Conservation Methods	3	Gg-E406	Geography of World	3
Open Elective Theory 1	Gg-OE101	Physical Geography of Marathwada	2	Gg-OE201	Human Geography of Marathwada	2	Gg-OE301	Climate Change	2	Gg-OE401	Fundaments of Tourism	2

Open Elective Theory 2	Gg-OE102	Cartography	2	Gg-OE202	Map Reading	2	Gg-OE302	Physical Geography of World	2	Gg-OE402	Tourism in Maharashtra	2
Open Elective Theory 3	Gg-OE103	Remote Sensing	2	Gg-OE203	Geographical Information System (GIS)	2	Gg-OE303	Global Positioning System (GPS)	2	Gg-OE403	Cultural Geography of World	2
Practical 1	Gg-C104	Morphometric Analysis	2	Gg-C204	Practical in Agriculture Geography	2	Gg-C304	Surveying	2	Gg-C404	Practical in Settlement Geography	2
Practical 2	Gg-C105	Representation of Demographic Data	2	Gg-C205	Practical in Economic Geography	2	Gg-C305	Practicals in GIS	2	Gg-C405	Statistical Methods in Geography	2
Practical 3	Gg-C106	Representation of Landforms and Slope	2	Gg-C206	Practicals in Remote Sensing	2	Gg-C306	Practicals in Climatology	2	Gg-C406	Dissertation	2
Practical 4	Gg-C107	Interpretation of Topographical Maps	1	Gg-C207	Interpretation of Climatic Data	1	Gg-C307	Computer Applications in Geography	1	Gg-C407	Soil Analysis	1
Practical 5	Gg-C108	Seminar / Field Report	1	Gg-C208	Seminar / Field Report	1	Gg-C308	Seminar / Field Report	1	Gg-C408	Seminar / Field Report	1
	Total Credits		**25**	**Total Credits**		**25**	**Total Credits**		**25**	**Total Credits**		**25**

NOTE: 1) Core theory papers are compulsory papers.

2) Select any one theory paper from subject/school electives papers

3) All Practical papers are compulsory papers.

4) Additional credits can be obtained from MOOCS/NPTL/SWAYAM

5) Open electives are for other schools in the university.

6) At least one open elective should be provided in each semister and 8 credit need to be completed in two year

Gg-C101: Geomorphology

Credits- 4 Theory Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C101: Geomorphology
Course Contents

Unit	Teaching and Learning points
I	**A) Nature and Scope of Geomorphology:** Definition of Geomorphology, Fundamental Concepts in Geomorphology, **B) Basic Theories in Geomorphology:** Wegener's Continental Drift, Plate Tectonics, 1) W M Davis's Concept of Geomorphic Cycle
II	**A) Endogenic Forces:** Epiorogenic and Orogenic Movements, Compression, Tension, Folds, Faults **B) Denudational Processes:** Weathering, Mass Movement, Erosion and Comparison of these processes
III	**Land Forms:** 1) Associated with Fluvial, Glacial, Arid and Coastal processes
IV	**A) Slope Morphology:** Slope Forms and Processes **B) Application in Geomorphology:** Human activities and Geomorphology

Reference Books:

1. Thornbury, W. D. (I960): Principles of Geomorphology, John Wiley and Sons, New York.
2. Chorley, R. J., Schumm, S. A. and Sugden, D. E.(1984): Geomorphology, Methuen, London.
3. Kale, V. S. and Gupta, A. (2001): Introductionto Geomorphology, Orient Longman, Calcutta.
4. Savindra Singh (2002): Geomorphology, Prayag Pustak Bhawan, Allahabad
5. Spark B. W. (1972): Geomorphology, Longman, NewYork
6. Steers, A. (1958). The Unstable Earth, Methuen,London
7. Ollier, C. D. (1981) Tectonics and Landforms, Longman , London
8. Strahler A. H and Strahler, A. N. (1992) : Modern Physical Geography, John Wiley, New York
9. Wooldridge and Morgan: Geomorphology
10. Holmes: Physical Geology
11. Fairbridge, R. W. (1968): Encyclopedia of Geomorphology, Reinholdts, New York.

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Gg-C102:Geographical Thought

Credits- 4 Theory Paper

Pre-requisite: Basic knowledge about development of geographical thought.

Course Objectives: The objectives of this course are to understand contributions of Greek, Roman, Arab, Chinese and Indian scholars in development of geography and also to know the development of modern geography.

Course Outcomes: After completion of the course, the students get capabilities on understanding the development of geography from ancient to modern age and also come to know the contribution of geographer to development of society.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Seminar
4. Field studies
5. Quizzes
6. Oral presentation
7. Mid-term examination
8. End-term examination
9. Dissertation thesis

Gg-C102:Geographical Thought

Course Contents

Unit	Teaching / Learning Points
I	Contributions of Greek, Roman, Arab, Chinese and Indian Scholars in development of geography. Impact of Darwinian Theory on GeographicalThought
II	Founders of Modern Geography – i) Alexander Von Humboldt, ii) Carl Ritter, iii) Friedrich Ratzel iv) Vidal de la Blache, v) Ellen Churchill Sample, vi) Richard Hartshorne. vii)Scheafer
III	Dualisms in Geographic Studies physical vs. human, regional vs. systematic, qualitative vs. quantitative, ideographic vs. nomothetic,Concept of Determinism and Possibilism,Areal Differentiation, SpatialOrganization, Patterns and Processes, Explanation in Geography,Paradigm Shift, Quantitative Revolution.
IV	Perspectives in Geography (Positivism, Behaviouralism, Humanism, Structuralism, Feminism and Postmodernism).

References:

1. Dixit, R.D. (1999): The Arts and Science of Geography, Integrated Readings; Prentice Hall of India Private Ltd, New Delhi.
2. Dickinson, R.E. (1969): The Makers of Modern Geography, Hall Book Depo, Bhopal Prenrtice-Hall of India,New Delhi. (English and Hindi)
3. Harvey, D. (1969): Explanation in Geography, London, Edward Arnold
4. Adams, Paul, Steven Holescher and Karel Till (eds.) (2001): Texture of Place. Exploring Humanistic Geographies. University of Minnesota Press, Minneapolis.
5. ArildHolf-Hensen (1999): Geography History and Concepts, Sage Publications, London.
6. Suja Edward (1989): Post-modern Geographies verso, London Reprinted 1997: Rawat Publication, Jaipur and New Delhi.
7. KapurAnu (ed.)(2001): Indian Geography – Voice of Concern Concept Publishing Company, New Delhi
8. Peet, Richard (1998): Modern Geographical Thought, Blackwell, Oxford
9. Braithwaite, E.B (1960): Scientific Explaination, Harper Toreh Books, New York.
10. Bunge, W. (1979): Fred K. Shaeffer and the Science of Geography, Annals, Association of American Geographers, 69:128-32.

Gg-C103: Population Geography

Credits- 4 Theory Paper

Pre-requisite: Basic knowledge about elements of population and physical, culture and social geographical factors.

Course Objectives: The objectives of this course is to understand population growth, birth rate, death rate, crude birth rate, crude death rate, infant mortality rate, fertility, mortality, migration, age, sex ratio, age and sex pyramid, population density.

Course Outcomes: Aftercompletion of the course, the students get capabilities and skills on population geographical techniques, concepts, model and theories related to population geography.Also understand the various factor are affected of the population growth and population problems.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Seminar
4. Field studies
5. Quizzes
6. Oral presentation
7. Mid-term examination
8. End-term examination
9. Dissertation thesis

Gg-C103: Population Geography

Course Contents

Unit	Teaching / Learning Points
I	**A. Population Geography:** Nature Scope, subject matter and recent trends **B. Basic Concepts:** Population Growth, Birth rate, Death rate, Crude Birth rate, Crude Death rate, Infant mortality rate, Fertility, Mortality, Migration, Age, Sex ratio, Age and sex pyramid, Density
II	**Population Growth and Distribution:** **A) Influencing Factors:** 1) Physical 2) Economic 3) Social 4) Political **B) World and India**
III	**Theory and Model:** Basic concept, Scope, Applications and relevance 1) Malthus theory of population growth 2) Demographic transition model
IV	**A. Population as a Resource:** 1) **Concepts**: Over, Optimum and Under population 2) **Various aspects**: Size, Growth, Age, Education and Health 3) Population resource regions **B. Population problems and policies in India**

References:

1. Barrett H.R.(1992): Population Geography, Oliver and Boyd Longman House,Harlow.
2. Bhende Asha &Kanitkar Tara(1975): principles of population Studies,HimalayaPublishing House, Bombay.
3. Chandna,R.C. &Manjit s. Sidhu(1980): Introduction to Population Geography,Kalyani Publishers, New Delhi.
4. Chandana, R.C. (1984): Geography of Population, Kalyani publisher, Ludhiana.
5. Garnier, J.B. (1976): Geography of Population, Longman Group Ltd., London.
6. Hausier, Philip M & Duncan (Eds.)(1959): The Study of Population, University Press, hicago.
7. Hussein, Majid (1999): Human Geography (2Ed.), Rawat Publications, Jaipur.

8. Ravenstein,E(1889):The Laws of Migration,journal,Royal StatisticalSociety,49,pp241-305.
9. Sinha V.C(1979):Dynamics of India's Population Growth,National PublishingHouse,New Delhi.
10. Smith,T.L)1960): Fundamental of Population Studies, Lipineott, London.
11. Zelinsky, W (1966): A Prologue of Population Geography, Prentice Hall Inc, M.J.
12. Sawant&Athawale A. S: Population Geography, Mehta Kolhapur.

Gg-C104: Morphometric Analysis

Credits- 2 Practical Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C101: Geomorphology
Course Contents

Unit	Teaching and Learning points
I	**Drainage Patterns** 1. To understand the basics of Drainage and its Pattern 2. To understand and draw Dendritic drainage pattern 3. To understand and draw Parallel drainage pattern 4. To understand and draw Trellis drainage pattern 5. To understand and draw Rectangular drainage pattern 6. To understand and draw Radial drainage pattern 7. To understand and draw Centripetal drainage pattern 8. To understand and draw Annular drainage pattern 9. To understand and draw Barbed drainage pattern
II	**Stream Ordering** 1. To understand Basics of Stream Ordering 2. To apply Horton's Method of Stream Ordering to given basin 3. To apply Strahler's Method of Stream Ordering to given basin 4. To apply Streve's Method of Stream Ordering to given basin
III	**Morphometric Analysis** 1. To measure basin length and width 2. To measure Stream Length 3. To calculate Stream Length Ratio 4. To calculate Drainage Density 5. To calculate Bifurcation Ratio 6. To measure basin area 7. To calculate stream frequency 8. To calculate total slope of the basin 9. To calculate total slope of the given stream 10. To analyze sediments by using sieve analysis method 11. To represent sieve analysis data

Reference Books:

1. King, C. A.M (1966): Techniques in Geomorphology, Edward Arnold, London
2. Monkhouse, F. J. and Wilkinson, H. R., (1976). Maps and Diagrams, Methuen & Co.
3. Savindra Singh (2002): Geomorphology, Prayag Pustak Bhawan, Allahabad
4. Miller, Austin (1953): The skin of the Earth, Methuen & Co. Ltd. London
5. Strahler: Physical Geography

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Gg-C105: Representation of Demographic Data

Credits- 2 Practical Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objective of this course is to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C105: Representation of Demographic Data

Course Contents

Unit	Teaching and Learning points
I	**Formulae and Calculations in Population Geography:** 1) Density of Population 2) Sex Ratio 3) Crude Birth and Death Rate 4) Literacy Rate 5) Life Expectance Rate 6) Dependency Ratio 7) Population growth rate 8) Population projection
II	**Population Graphs and Diagrams:** 1) Bar Graphs 2) Line Graphs 3) Population (Age-Sex) Pyramid - i) Compound pyramid ii) Superimposed Pyramid
III	**Preparation of Maps regarding** 1) Decadal Change of Population 2) Population Density 3) Population Growth 4) Population Distribution 5) Sex Ratio 6) Population Literacy 7) Dependency Ratio

Reference Books:

1. Lawrence, G.R.P. (1973): Cartographic methods, Methuen & Co. London.
2. Mishra, R.P. (1982): Fundamentals of cartography, Prasaranga, University of Mysore.
3. Monkhouse,F.J.R & Wilkinson, H.R: Maps & diagrams, Methuen & company, London.
4. Raisz, Erwin: Principles of cartography, McGraw – hill Book Co., New York.
5. Robinson A.H.& Sale R.D. Element of Cartography, John House & Sons Ltd., London.
6. Singh R. L.: Elements of Practical Geography.

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Gg-C106-Representation of Landforms and Slope

Credits- 2 Practical Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C106-Representation of Landforms and Slope

Course Contents

Unit	Teaching and Learning points
I	**Method of Relief Representation** To understand and Identify Spot height, Bench Mark & Triangulation Station marks on SOI Toposheet To understand and Indentify different forms of Contour lines on SOI Toposheet To draw contours on given map
II	**Relief Representation with Contour lines (any 5 features)** To use counters for relief representation of Hill To use counters for relief representation of Ridge To use counters for relief representation of Saddle To use counters for relief representation of Col To use counters for relief representation of Pass To use counters for relief representation of Spur To use counters for relief representation of Plateau To use counters for relief representation of Escarpment To use counters for relief representation of Cliff To use counters for relief representation of V-Shaped Valley To use counters for relief representation of River Terraces
III	**Drainage Patterns** To understand and draw Dendritic drainage pattern To understand and draw Parallel drainage pattern To understand and draw Trellis drainage pattern To understand and draw Rectangular drainage pattern To understand and draw Radial drainage pattern To understand and draw Centripetal drainage pattern To understand and draw Annular drainage pattern To understand and draw Barbed drainage pattern
IV	**Types of Slope** To understand and draw a type of slope: Steep and Gentle To understand and draw a type of slope: Concave and Convex To understand and draw a type of slope: Uniform and Uneven To understand and draw a type of slope: Terraced
V	**Profile** To draw a cross profile To draw a longitudinal profile

Reference Books:

1. King, C. A.M (1966): Techniques in Geomorphology, Edward Arnold, London
2. Monkhouse, F. J. and Wilkinson, H. R., (1976). Maps and Diagrams, Methuen & Co.
3. Savindra Singh (2002): Geomorphology, Prayag Pustak Bhawan, Allahabad
4. Miller, Austin (1953): The skin of the Earth, Methuen & Co. Ltd. London
5. Strahler: Physical Geography

Gg-C107: Interpretations of Topographical Maps

Credits- 2 Practical Paper

Pre-requisite: Basic knowledge about elements of maps and construction of maps. The knowledge about physicals and cultural features is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation, construction and interpretation of topographical maps.

Course Outcomes: After completion of the course the student, get capabilities and skills on construction and interpretation of topographical maps and identified the physical and cultural features of on the map.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C107: Interpretations of Topographical Maps

Course Contents

Unit	Teaching and Learning points
I	**Study of S.O.I. Topographical Maps (1: 50,000 Series):** 1. Indexing and conventional signs and symbols (OS) 2. Grid references. 3. Locational and Relief aspects of the area **a**. Latitudinal & Longitudinal extension **b.** Contour interval **c.** Maximum and Minimum heights
II	**Interpretation of S.O.I Toposheets:** **1.Marginal Information,** **2.Patterns of Relief** **a**. Distribution of Spot heights, benchmarks, Trigonometrically Points etc. **b**. Types of Slopes (convex, concave, uniform etc.) **c**. Major landforms from contour patterns 3. **Patterns of Drainage network** **a.** Types-trellis, dendritic, radial, etc. **b**. Streams with water, without water. **c.** Influence of relief on drainage 4**. Patterns of Vegetation.** **a**. Types of vegetation **b**. Association of relief and drainage **c**. Reserved Forest and Protected Forest 5. **Patterns of Settlements.** **a**. Types, amenities, facilities and communication, etc. **b**. Distribution, relative size, relative distance (dispersed, nucleated etc.) 6. **Patterns in Land Use** **a.** Occupation, Agriculture, mining etc. areal distribution, **b.** Transportation and Communication,**c.** Irrigation, **d**. impact of physical landscape.

Reference Books:

1. Monkhouse F.X.J. and Wilkinson H. R. (1971), Maps and Diagrams, London
2. Ramamurthy, K. (1982): Map interpretation, Madras
3. Petrie N. (1992), Analysis and Interpretation of Topographical Maps. Orient Longman Limited Calcutta.
4. Singh R. L. (1997), Elements of Practical Geography, Kalyan Publishing, New Delhi
5. Meux A. H. (1960), Reading Topographical Maps.University of London Press Limited
6. Jones P. A. (1968), Fieldwork in Geography. Longmans, Green and Company Limited
7. Archer J. E and Dalton T. H. (1968), Fieldwork in Geography B.T. Batsford Limited London
8. Wheeler K.S. Ed (1970), Geography in the field. Blond Educational, London.
9. Gupta, K. K. and Tyagi, V. C. (1992): Working with maps, Survey of India Publication, Dehradun.

Gg-C201-Agriculture Geography

Credits- 4 Theory Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C201-Agriculture Geography

Course Contents

Unit	Teaching and Learning points
I	**a) Introduction to Agricultural Geography:** • Nature scope and significance. • Different Approaches to study the subject **b) Land use:** • General and Agricultural Land use • Land use surveys • Land Classification in India
II	**Determinants of Agricultural Patterns:** • Relief, climate, soil • Land holding, marketing, transport • Irrigation • Mechanization. • Biochemical inputs
III	**Agricultural Types:** • Shifting cultivation • Intensive subsistent farming. • Mixed farming • Plantation agriculture • Commercial grain farming
IV	**Problems & Prospects of Agriculture:** • Definition and characteristics of arid and semi-arid regions. • Droughts and famines • Role of irrigation and dry farming.
V	**Agricultural Regionalization (Methods):** • Views of Baker Whittlesey Hann. • Crop combination techniques, Weaver and Thomas method. • Agricultural efficiency, Kendall's ranking coefficient, Bhatia's method • Agricultural regions of India.

Reference Books:

- Aiyer, A.K.Y.N.(1949) – Agricultural and Allied Arts in Vedic India.
- Grigg. D.G. (1974) – The Agricultural Systems of the world An Evolutionary Approach.
- Grigg. D.G.(1964) – An Introduction to Agricultural Geography Hutchinson & Co.Ltd.,
- Illbery, B.W. (1985) – Agricultural Geography, Social & Economic Analysis, Oxford University Press.
- Morgan. W.B. & S.C. Monton (1971) – Agricultural Geography Methuen, London.
- Randhawa, M.S. (1980) – An History of Agriculture in India Vols. I, II, III,IV ICAR, New Delhi.
- Singh. J. and Dhillon S.S. (1994) – Agricultural Geography. Tata McGraw Hill, Publishing Co. Ltd.
- Symons, Leslie (1970) – Agricultural Geography, G. Belt and Sons Ltd., London.
- Tarrent, J.R. (1970) – Agricultural Geography, David and Charles, Newton Abbot.

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Gg-C202: Economic Geography

Credits- 4 Theory Paper

Pre-requisite: Basic knowledge about economic activities, geographical factors and their relationship with economical activities and economical development leads to social developments.

Course Objects: After completion of the course the student gets knowledge about the economical activities are related to geographical factors and various theories and models of economic developments. On successful completion of the module, students should be capable of explaining the principles of economic geography and their relation with development of the nation.

Couse Outcome- This course is useful in understanding about basics of economic geography. This will be useful for application of the principles of economics in geography. Knowledge of this course will used for sustainable development

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Seminar
4. Field studies
5. Quizzes
6. Oral presentation
7. Mid-term examination
8. End-term examination
9. Dissertation thesis

Gg-C202: Economic Geography
Course Contents

Unit	Teaching / Learning Points
I	**A) Economic Geography:** Definition, nature and scope Recent trends in Economic Geography **B) Basic Economic processes:** Production, exchange & consumption Classification of economic Activities and their characteristics Location of Economic activities
II	**A) Resources:** Classification of Resources Resources and Environment - Scarcity and Sustainability Conversation of resources **B) Industries:** Classification of Industries, Principles of Industrial Location Profit maximization - Least cost location Location theories – Weber & Losch.
III	**Trade and Transport:** Major Transport Routes -Land, Rail, Water and Air Routes Models of transportation and transport cost Accessibility and connectivity Trade - National and International
IV	**A) Economic Development:** Measures of economic development, Sustainable Development **B) Economic Development in India:** Regional disparity in economic Development Impact of Green Revolution Privatization, Globalization

Reference Books:

1. Alexander J.W. (1976): Economic Geography. Prentice Hall of India. New Delhi.
2. Hartshorne, T.A. and J.W. Alexander (1988) –Economic Geography, Prentice Hall.
3. Berry, Conkling & Ray (1988): Economic Geography Prentice Hall of India New Jersey.
4. Hurst Elliott (1986): Geography of Economic Behaviour. Unwin, London.
5. Johnson R.J. & Taylor D.J. (1989): A world in crisis. Basil-Blackwell, Oxford.
6. Losch (1954): Economics of Location. Yale University Press New York.
7. Redcliff M. (1987): Development & the environmental crisis. Methuen. London.
8. Sinha B.N.(1971): Industrial geography of India
9. Watts H.D. (1987): Industrial Geography, Longman scientific and Technical New York.
10. Haggett, Peter: Modern Synthesis in Geography.
11. Robinson H & Bamford C. G. (1978): Geography of Transport, Macdonald & Evans USA.
12. Jones & Darkenwald : Economic geography.
13. Fairbridge, R. W. (1968): Encyclopedia of Geomorphology, Reinholdts, New York.

Gg-C204-Practical in Agriculture Geography

Credits- 2 Practical Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C204-Practical in Agriculture Geography

Course Contents

Unit	Teaching and Learning points
I	Ranking of Crops
II	Weaver's Crop Combination Techniques
III	**Types of Cropping System** 1. Mixed Farming 2. Mixed Cropping 3. Monoculture 4. Multi-storeyed/ Multitired/ Multilevel Cropping 5. Parallel Cropping 6. Companion Cropping 7. Synergetic Cropping 8. Cropping Index
IV	**To calculate** 1. Crop Intensity 2. Agricultural Density 3. Caloric Density 4. Nutritional Density 5. Economic Density 6. Marginal Resource Density 7. Index of Agricultural Efficiency 8. Agricultural Productivity 9. Index of Area under Crop 10. Index of Net Area Sown 11. Index of Cropping Pattern 12. Index of Yield 13. Index of Productivity per Hectare of Net Area 14. Relative Yield index

Reference Books:

- Aiyer, A.K.Y.N.(1949) – Agricultural and Allied Arts in Vedic India.
- Grigg. D.G. (1974) – The Agricultural Systems of the world An Evolutionary Approach.
- Grigg. D.G.(1964) – An Introduction to Agricultural Geography Hutchinson & Co.Ltd.,
- Illbery, B.W. (1985) – Agricultural Geography, Social & Economic Analysis, Oxford University Press.
- Morgan. W.B. & S.C. Monton (1971) – Agricultural Geography Methuen, London.
- Randhawa, M.S. (1980) – An History of Agriculture in India Vols. I, II, III,IV ICAR, New Delhi.
- Singh. J. and Dhillon S.S. (1994) – Agricultural Geography. Tata McGraw Hill, Publishing Co. Ltd.
- Symons, Leslie (1970) – Agricultural Geography, G. Belt and Sons Ltd., London.
- Tarrent, J.R. (1970) – Agricultural Geography, David and Charles, Newton Abbot.

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Gg-C 205: Practical in Economic Geography

Credits- 2 Practical Paper

Pre-requisite: practical knowledge about economic activities, geographical factors and their relationship with economical activities and economical development leads to social developments.

Course Objectives: The objectives of the course are to understand and develop the skill about economic activities of human and how geographical factors are responsible for different economic activities on the earth surface.

Course Outcomes: After completion of the course the student gets practical knowledge about the economical activities are related to geographical factors and various theories and models of economic developments. On successful completion of the module, students should be capable of representation economical geographical data with cartographic techniques and how to represent the data of economic activities.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination
6. Report of visit to Industrial Unit

Gg-C 205: Practical in Economic Geography

Course Contents

Unit	Teaching and Learning points
I	**Distributional Maps:** 1. Choropleth maps: Socio-Economic Phenomena 2. Dot method & its relevance to distribution maps 3. Flow line charts & maps of transport flows
II	**Maps with Two and Three Dimensional Figures:** 1. Maps with proportional circles 2. Maps with divided circles 3. Maps with proportional spheres 4. Maps with Cube Diagram 5. Map with Proportional Square
III	**Techniques in Industrial Location Analysis:** 1.Location quotient 2.Lorenz curves 3.Gini's coefficient (Visit to 2 Industrial units, out of which one has to be Agro based Industrial Unit)

Reference Books:

1. Lawrence, G.R.P. (1973): Cartographic methods, Methuen & Co. London.
2. Mishra, R.P. (1982): Fundamentals of cartography, Prasaranga, University of Mysore.
3. Monkhouse, F.J.R & Wilkinson, H.R: Maps & diagrams, Methuen & company, London.
4. Raisz, Erwin: Principles of cartography, McGraw – hill Book Co., New York.
5. Robinson A.H. & Sale R.D. Element of Cartography, John House & Sons Ltd., London.
6. Singh R. L. Elements of Practical Geography.

Gg-C 206: Practical in Remote Sensing

Credits- 2 Practical Paper

Pre-requisite: Basic knowledge about 10 level physics and having the knowledge of geographical factors.

Course Objectives: The objectives of this course is to develop the skill of the remote sensing and use of remote sensing in the geography

Course Outcomes: After completion of the course, the students get capabilities and skills on remote sensing and application of the remote sensing in geography and map making.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C 206: Practical in Remote Sensing
Course Contents

Unit	Teaching / Learning Points
I	**Practical's in Aerial Photographs** 1). Indexing of aerial photographs. 2) Introduction to vertical aerial photographs and its geometry. 3) Introduction to stereoscopes i) Stereoscopic Vision test ii) Orientation & construction of 3-D model under Pocket stereoscope and Mirror stereoscope. 4) Determination of scale - By establishing relationship between Photo distance and Ground distance ,By establishing relationship between Photo distance and Map distance ,By establishing relationship between Focal length and Flying height,Determination of Average Scale of Vertical Aerial Photograph 5) Relief Displacement - Calculation of Relief Displacement, Object height determination from relief Displacement 6) Parallax - Introduction to Parallax bar ,Object height determination from Parallax 7) Calculation of Photo coverage Area 8) Visual Interpretation and Mapping of Aerial photographs ,Land use/ Land cover mapping
II	**Interpretation of Satellite Image** **1)** Annotations of Satellite image 2) Visual interpretation of satellite image- Satellite image interpretation in terrain and resource evaluation, environmental monitoring; **3)** Land use/land cover mapping; water and forest Digital interpretation of satellite image- Digital image processing (DIP) techniques, Image enhancement, Image classification: Supervised and unsupervised.

References:

1. Agarwal, C.S. and Garg, P.K. 2000. Textbook of Remote Sensing in Natural Resources Monitoring and Management. New Delhi: Wheeler Publishing.
2. Jensen, John R. 2000. Remote Sensing of the Environment – An Earth Resource Perspective. Pearson Education (First Indian Edition, 2003).
3. Rampal, K.K. 1999. Handbook of Aerial Photography and Interpretation. New Delhi: Concept Publishing Company.
4. Rampal, K.K. 1999. Handbook of Aerial Photography and Interpretation. New Delhi: Concept Publishing Company.
5. Floyd, F. Sabins, Jr. (1986): Remote Sensing: Principles and Interpretation, W.H. Freeman, N.Y.

Gg-C207: Interpretation of Climatic Data

Credits- 2 Practical Paper

Pre-requisite: Basic knowledge about element of weather and climate, such as temperature, precipitation, humidity, wind speed and direction, knowledge of graph paper also required for this course.

Course Objectives: To understand knowledge of weather and climate element, their nature and data collection method. Drawing of different graphs with helps of climatic data and understands of weather instruments objectives of this course.

Course Outcomes: After completion of the paper, student will get knowledge about the nature of climatic data, collection of climatic data and their interpretation. Reading of weather instruments also a out came of this course.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-C207: Interpretation of Climatic Data

Course Contents

Unit	Teaching and Learning points
I	**Climatic Data:** Nature and sources of climatic data. Application of climatic data in Geography
II	**Construction and Interpretations of Climatic Graphs:** Line graph, Bar graph, Trend graphs- moving averages and semi-Average, Climograph, Hythergraph, Water Budget graph and Soil-Moisture graph
III	**Weather Instruments:** Study of Thermograph, Barograph, Hair Hygrograph, Wind Vane, Rain Gauge, Anemometer

Reference Books:

1. Ashish Sarakar: Practical Geography A systematic approach. Orient Longman Limited, Kolkatta.
2. Critchifield: Principles of Climatology.
3. Lawrence, G.R.P.: Cartographic Methods. Mathur co., London
4. Mather JR (1974) Climatology, Fundamentals and applications. Mc Grew Hill Book Co, New York
5. R.L. Singh &Rana P.B. Singh: Element of Practical Geography. Kalyani Pub. New Delhi (1999).
6. Trewartha G.T.: An Introduction to climate McGraw – Hill Book Co. New York.
7. Monkhouse, F. J. and Wilkinson, H. R., (1976). Maps and Diagrams, Methuen & Co. London

Gg-E102-Physical Geography of Maharashtra

Credits- 3 Theory Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-E102-Physical Geography of Maharashtra

Course Contents

Unit	Teaching and Learning points
I	**Physical Settings:** Geographical Location, Hill ranges, Main Rivers, Major Soil types & distribution, Major Vegetation types
II	**Climate:** Major Climatic types & Characteristics, Distribution of Temperature and Rainfall,
III	**Resources:** **A) Mineral and Power Resources** Distribution and production of Bouxite, Manganese, Iron-Ore, Coal, Mineral Oil **B) Forest Resources** Distribution, Forest Products, Minor Forest Products, Need of Forest Conservation

Reference Books:

1. Gazetteer of Maharashtra, Govt of India.
2. B. Arunchalm, Regional Geography of Maharashtra
3. B.D. Nag Choudhary, "Inhoduction to Enviroment Management" Inter Print Mehata House, New Delhi.
4. Brucu Mitchell "Geography and resources analysis" John willey and sons, New York.
5. C.D. Deshpande, "Geography of Maharashtra" National book Trust of India, New Delhi.
6. Cutler L, Renwick H.L. Exploitation conservation and preservation : A
7. Geographical perspective and natural resource use, Rowmon and Allanhed, Towata.
8. Govt. of Maharashtra "Economic development of Maharashtra." (Maharashtra Economic Development Council)
9. Dixit K.R., "Maharashtra in Maps"
10. Deshpande, S.H. "Economy of Maharashtra"
11. Annual Socio-Economic Abstracts, (1951 to 2011, all concern districts), Govt of Maharashtra.

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Gg-E103: Physical Geography of India

Credits- 3.Theory Paper

Pre-requisite: Basic knowledge about physical factors and map of India.

Course Objectives: The objectives of this course is to understand physiography, climate, vegetation and soils of India.

Course Outcomes: Aftercompletion of the course, the students get capabilities to understand the physiography, climate, vegetation and soils of India.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Seminar
4. Field studies
5. Quizzes
6. Oral presentation
7. Mid-term examination
8. End-term examination
9. Dissertation thesis

Gg-E103: Physical Geography of India

Course Contents

Unit	Teaching / Learning Points
I	Physiography – Structure, relief, physiographic divisions & natural drainage system of India.
II	Climate – climatic types & regional variations, Climate and agriculture
III	Natural vegetation – Vegetation types & regions, forests & their utilization and conservation
IV	Soil types and conservation in India.

Reference Books:

1. 1. Sharma, T.C. &Coutinho: "Economic, &CommercialGeography of India". Vikas Pub. HouseDelhi.
2. Negi, B.S: "Economic & Commercial Geography India."KedarNath Ram Nath, N.Delhi.
3. Mamoria, C.B. "Economic & Commercial Geography of India".
4. Singh, Gopal: "Geography of India".
5. Kuriyan. George: "India- A General Survey". National Bk. Trust.
6. Stamp, L.D: "Geography of Asia".
7. Spate, O.H.K.& Learmonth, A.T.A: "Geography of India & Pakistan".
8. Robinson: "India- resources & their Development.
9. Dobby, E.G.H:" Monsoon Asia.
10. TirthaRanjit (1996): Geography of India, RawatJaipur.
11. Tata McGraw Atlas: Socio Economic Atlas of India.
12. Singh R. L.: Regional Geography of India.

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Gg-E202-Human Geography of Maharashtra

Credits- 3 Theory Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-E202-Human Geography of Maharashtra

Course Contents

Unit	Teaching and Learning points
I	**A) Industries:** Major Industrial Belts / Pockets and Distribution Problems and Prospects of Industrialization **B) Trade and Transportation:** Agro-based Goods & Their Trading Industrial Produces & Their Trading Transport Network
II	**Agriculture:** **A) Major Crops and Cropping Pattern** Wheat, Rice, Jawar, Bajra, Pulses, Oil seeds, etc **B) Cash Crops and Horticulture** Cotton, Sugarcane, Banana, Grapes, etc. **C) Problems and Prospects** Influencing Factors, Irrigation, Regional Disparities
II	**A) Population:** Decadal Growth, District-wise Distribution Sex Ratio, Literacy Rate, Occupational structure, Seasonal Migration **B) Settlement:** District-wise Rural Settlement District-wise Urban Settlement Growth & Comparative Proportion Trend of Urbanization

Reference Books:

1. Gazetteer of Maharashtra, Govt of India.
2. B. Arunchalm, Regional Geography of Maharashtra
3. B.D. Nag Choudhary, "Inhoduction to Enviroment Management" Inter Print Mehata House, New Delhi.
4. Brucu Mitchell "Geography and resources analysis" John willey and sons, New York.
5. C.D. Deshpande, "Geography of Maharashtra" National book Trust of India, New Delhi.
6. Cutler L, Renwick H.L. Exploitation conservation and preservation : A
7. Geographical perspective and natural resource use, Rowmon and Allanhed, Towata.
8. Govt. of Maharashtra "Economic development of Maharashtra." (Maharashtra Economic Development Council)
9. Dixit K.R., "Maharashtra in Maps"
10. Deshpande, S.H. "Economy of Maharashtra"
11. Annual Socio-Economic Abstracts, (1951 to 2011, all concern districts), Govt of Maharashtra.

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Gg-OE101-Physical Geography of Marathwada

Credits- 2 Theory Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-OE101-Physical Geography of Marathwada

Course Contents

Unit	Teaching and Learning points
I	**Physical Settings:** Location and administrative set-up, Hill ranges Main Rivers, Major Soil types & distribution, Major Vegetation types & distribution,
II	**Climate:** Major Climatic types & Characteristics, Distribution of Temperature and Rainfall,
III	**A) Water Resources:** Main Sources & Distribution, Major and Minor Projects

Reference Books:

1. District Gazetteer of Aurangabad District, Govt of India.
2. District Gazetteer of Janla District, Govt of India.
3. District Gazetteer of Beed District, Govt of India.
4. District Gazetteer of Osmanabad District, Govt of India.
5. District Gazetteer of Nanded District, Govt of India.
6. District Gazetteer of Latur District, Govt of India.
7. District Gazetteer of Parbhani District, Govt of India.
8. District Gazetteer of Hingoli District, Govt of India.
9. District Census Handbooks (1951 to 2011, all concern districts), Govt of India.
10. Annual Socio-Economic Abstracts, (1951 to 2011, all concern districts), Govt of Maharashtra.

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Gg-OE201-Human Geography of Marathwada

Credits- 2 Theory Paper

Pre-requisite: Basic knowledge of population distribution, density and population growth. The knowledge about graph and map preparation is required for this paper.

Course Objectives: The objectives of this course are to understand, calculation and construction of graphs and maps about population elements.

Course Outcomes: After completion of the course the student, get capabilities and skills on population geographical techniques, calculations in population geography, construction of population graphs and diagrams and preparation of maps regarding population geography.

Mode of Assessment

1. Tutorial examination
2. Home assignments
3. Field studies
4. Mid-term practical examination
5. End-term practical examination

Gg-OE201-Human Geography of Marathwada

Course Contents

Unit	Teaching and Learning points
I	**Industries:** A) Major Industrial Belts / Pockets, MIDC Zones B) Growth and Distribution, Connectivity Problems and Prospects of Industrialization
II	**B) Agriculture:** Major Crops, Cropping pattern Irrigated & Rainfed crops Problems & Prospects of agriculture
III	**A) Population:** Decadal Growth, District-wise Distribution Sex Ratio, Literacy Rate, Occupational structure, Seasonal Migration **B) Settlement:** District-wise Rural Settlement District-wise Urban Settlement Growth & Comparative Proportion Trend of Urbanization

Reference Books:

1. District Gazetteer of Aurangabad District, Govt of India.
2. District Gazetteer of Janla District, Govt of India.
3. District Gazetteer of Beed District, Govt of India.
4. District Gazetteer of Osmanabad District, Govt of India.
5. District Gazetteer of Nanded District, Govt of India.
6. District Gazetteer of Latur District, Govt of India.
7. District Gazetteer of Parbhani District, Govt of India.
8. District Gazetteer of Hingoli District, Govt of India.
9. District Census Handbooks (1951 to 2011, all concern districts), Govt of India.
10. Annual Socio-Economic Abstracts, (1951 to 2011, all concern districts), Govt of Maharashtra.

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