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નં.એકે/વિનયન/ ૮૩૫૨૭ /૨૦૨૩ તા. ૧૭ /૦૮/૨૦૨૩

ભૂગોળ

પરિપત્ર:-

સૌરાષ્ટ્ર યુનિવર્સિટીની વિનયન વિદ્યાશાખા હેઠળની સ્નાતક કક્ષાના **B.A.**(ભૂગોળ)ના અભ્યાસક્રમ ચલાવતી સર્વે સંલગ્ન કોલેજોના આચાર્યશ્રીઓને આથી જાણ કરવામાં આવે છે કે, **NEP-2020** અંતર્ગતના રાજય સરકારશ્રીના તા.૧૧/૦૭/૨૦૨૩ના ઠરાવ ત્યારબાદ તા.૨૭/૦૭/૨૦૨૩ના રોજ પ્રકાશિત થયેલ સ્ટાન્ડર્ડ ઓપરેટિંગ પ્રોસિજર(SOP) તેમજ ત્યારબાદ તેને આનુસંગિક તા.૨૮/૦૭/૨૦૨૩ના રોજ આવેલ સુધારા મુજબના અભ્યાસક્રમો ચેરમેનશ્રી, ભૂગોળ વિષયની અભ્યાસ સમિતિ દ્વારા રજુ કરાયેલ **B.A.**(ભૂગોળ) સેમેસ્ટર-૦૧ અને ૦૨ના અભ્યાસક્રમો આગામી શૈક્ષણિક સત્ર જુન-૨૦૨૩થી અમલમાં આવે તે રીતે ભૂગોળ વિષયની અભ્યાસ સમિતિ, વિનયન વિદ્યાશાખા, એકેડેમિક કાઉન્સિલ તથા સિન્ડિકેટની બહાલીની અપેક્ષાએ મંજુર કરવા માન.કુલપતિશ્રીને ભલામણ કરેલ, જે માન.કુલપતિશ્રીએ મંજુર કરેલ છે. જેથી સંબંધિત તમામે તે મુજબ તેની ચુસ્તપણે અમલવારી કરવી.

(મુસદ્દો કુલસચિવશ્રીએ મંજુર કરેલ છે.)

સહી/-
(ડૉ. એચ.પી.રૂપારેલીઆ)
કુલસચિવ

બિડાણ:- ઉક્ત અભ્યાસક્રમ (સોફ્ટ કોપી) રવાના કર્યું

17/8/23

એકેડેમિક ઓફીસર

પ્રતિ,

(૧) વિનયન વિદ્યાશાખા હેઠળની ભૂગોળ વિષય ચલાવતી સ્નાતક કક્ષાની સર્વે સંલગ્ન કોલેજોના આચાર્યશ્રીઓ તરફ

(૨) વિનયન વિદ્યાશાખા હેઠળની ભૂગોળ વિષયની અભ્યાસ સમિતિના સર્વે સભ્યશ્રીઓ

નકલ જાણ અર્થે રવાના:-

૧. માન.કુલપતિશ્રી/કુલસચિવશ્રીના અંગત સચિવ

નકલ રવાના (યોગ્ય કાર્યવાહી અર્થે):-

૧. ડીનશ્રી, વિનયન વિદ્યાશાખા ૨. પરીક્ષા વિભાગ ૩. પી.જી.ટી.આર.વિભાગ ૪. જોડાણ વિભાગ

Learning Outcomes Based Curriculum Framework

(LOCF)

for Geography

B.A. (Hons. & Honor's With Research)

Undergraduate Programme (WEF-2023)

Saurashtra University

Rajkot, Gujarat

PART 1

INTRODUCTION

Learning Outcomes based Curriculum Framework (LOCF) for Geography under CBCS

Introduction

Geography has been broadly accepted as a bridge discipline between human and physical sciences. In the beginning, geography focused on the physical aspects of the earth but the modern geography is an all-encompassing discipline that seeks to understand the earth and all of its human and natural processes as integrating elements. Geography has emerged through time as a trans-disciplinary subject integrating the regional diversity with the concepts of the timing of space and the spacing of time. It provides broad, human and place-centred perspectives on the transformation of rural ecology to globalized urban landscape at different levels, from the local/regional/national to global. Geography is transformed through:

- Journey from Village Ecology to Urban Regional Studies
- Qualitative Techniques to Spatial Information Technology
- Global to Micro-level Community Perception Approach

It is essential to focus on the current socio-spatial problems, issues and challenges to make the students aware of the application of geography to sort out the societal upcoming problems. It is also essential to rejuvenate the ancestral geographical knowledge to address the current local and global problems. In the light of exponential changes in the field of arts, science and technology, it is to be studied from multifaceted angles.

It is important for the policy makers to consider the geo-spatial aspects with references to the location and in context of the best utilization of public utilities. It is further expected that if the above said spatial aspects are considered, it will certainly develop the lagging regions and people living therein.

Learning Outcomes based Approach to Curriculum Planning

Learning Outcomes based Curriculum Framework (LOCF) for geography curriculum revision incorporates dynamic processes including fundamental and modern techniques, contemporary

paradigms such as global initiatives like Sustainable Development Goals (SDGs), Disaster Risk Reduction (DRR), Paris Climate Action and national initiatives like smart cities, Securities of food, water, energy, human health and livelihood, biodiversity, and disaster management. The approaches are to make geography more scientific and societal-need oriented that could be the panacea of India's developmental challenges. Geography uses scientific knowledge with the current focus that includes spatio-temporal analysis, skill development, GIScience, sustainable development andhuman security.

The Programme Learning Outcomes B.A. (Hons.) Programme

The programme learning outcomes relating to B.A. (Hons.) Programme in geography:

- Demonstrating the understanding of basic concepts in geography.
- Demonstrating the coherent and systematic knowledge in the discipline ofgeography to deal with current issues and their solution.
- Display an ability to read and understand maps and topographic sheets to look atthe various aspects on the space.
- Cultivate ability to evaluate critically the wider chain of network of spatial aspectsfrom global to local level on various time scales as well.
- Recognize the skill development in Geographical studies programme as part ofcareer avenues in various fields like teaching, research and administration.

It is also suggested that after the completion of B.A./B.Sc. (Hons.) Programme, students should be able to demonstrate the knowledge obtained in such way so that they can explore the employability options and service to the society.

Course Level Learning Outcomes

The course level learning outcomes includes:

1. **Basic Concept:** The fundamental concepts and philosophical foundation of each courseneed to be discussed.
2. **Understanding Landscape:** An understanding of landscape at different levels needs to be discussed and understood for a thorough knowledge of spatial dimensions.
3. **Understanding Ecosystem Structure and Potential:** To comprehend the dynamic dimensions of human and ecosystem relationships.
4. **Human Perception and Behaviour:** Learning human perception and behaviour to acquire the geographical knowledge evolved over time, is essential to improve decision making process.
5. **Identification of Critical Problems and Issues:** Detection and identification of the critical problems and spatial issues are essential for sustainable development.

6. **Field Based Knowledge:** Field based knowledge is essential to understand the ground reality, spatial patterns and processes.
7. **Spatial Tools and Techniques:** The basics and applications of spatial tools and techniques are essential to make the studies more scientific and applicable.
8. **Statistical Techniques:** Use of statistical tools and techniques is essential for precise and objective geographic analysis and interpretation of complex phenomena.
9. **Applied Dimensions:** Identification of the critical problems and spatial issues form the core of the modern geography for various applications and decision making, including Resources, Environment & Disaster Management, Land Use Planning, and Urban and Regional Development together with Climate Change Mitigation and Adaptation, etc
10. **Case Study based Analysis:** There is a need to understand the specificities of the problemsin specific areas for their in depth comprehension and solution. The case studies are essential, especially to find out the solutions to the lagging regions for their solutions basedon first hand information.
11. **Public Policy and Management:** Spatial aspects and dimensions are the integral parts in the policy making for sustainable regional development. Geographical knowledge needs to be inculcated for application and solutions of the various local, regional and national problems.
12. **Communication Skills:** Communication through models, maps, images and other geographical tools form the sound base for the dissemination of geographical information.

Teaching Learning Processes

Learning Outcomes based Curriculum Framework (LOCF) for geography incorporates dynamic processes including fundamental and modern techniques, contemporary paradigms such as global initiatives like Sustainable Development Goals (SDGs), Disaster Risk Reduction (DRR), Paris Climate Action and national initiatives like smart cities, food security, water security, energy security, biodiversity, disaster management, human health and wellbeing and livelihood security. The approaches are to make geography more scientific and societal-need oriented that could be the panacea of India's development. Geography uses scientific knowledge with the present focus that includes spatio-temporal analysis, skill development, GIScience, sustainable development andhuman security.

Learning is a challenging, engaging, and enjoyable activity. Learners should be encouraged to engage in a rigorous process of learning and self-discovery by adopting a highly focused and yet flexible approach to education. Each day learners should be encouraged to focus on key areas of the course and spend time on learning the course fundamentals and their application in life and society. In teaching and learning pedagogy, there should be a shift from

domain or conclusions based approach to the experiential or process based approach.

Geography curriculum inculcates knowledge of essential concepts of physical and human geography together with appropriate techniques using lectures, tutorials, group discussion, presentation, assignment evaluation, lab work and field visits. Thus, pedagogy process includes:

- Identifying and explaining the physical and cultural characteristics globally and processesat varied spatio-temporal contexts.
- Understanding human-environment and nature-society interactions as well as variousglobal environmental challenges.
- Analyzing geographic information by using geo-spatial technologies.
- Responding towards the global and national initiatives.Broad framework for teaching in the class includes:

1. **Theory courses should have 4 hours per week for courses carrying 4 credits.**
2. **Practical courses should have 8 hours per week for a group of 20 students.**
3. **Practical courses have 8 hours per week for courses carrying 4 credits**
4. **There is practical paper in all semester B.A. Programme**

The faculty should promote learning on a proportionate scale of 20:30:50 principle, where lectures(listening/hearing) constitute 20 per cent of the delivery; visuals (seeing) 30 per cent of the learningmethods; and experience (doing/participating) 50 per cent.

In order to achieve its objective of focused process based learning and holistic development, the Institution/University may use a variety of knowledge delivery methods:

1. Lectures

Lectures should be designed to provide the learners with interesting and fresh perspectives on thesubject matter. Lectures should be interactive in a way that students work with their teachers to get new insights in the subject area, on which they can build their own bridges to higher learning.

2. Discussions

Discussions are critical components of learning, and can be used as a platform for students to be creative and critical with old and new ideas. Besides developing critiquing skills, arriving at consensus on various real life issues and discussion groups lead to innovative problem solving and, ultimately to success.

3. Life Skills:

Life skills provide students opportunities to understand real life situations and scenarios (i.e. coping with disaster), and solve challenges in a controlled environment or make use of them in simulating cultural experiences by locating/transposing them in new (local, regional, national andinternational) situations.

4. Case Studies:

Case studies, wherever possible, should be encouraged in order to challenge students to find creative solutions to complex problems of individual, community, society and various aspects of knowledge domain concerned.

5. Role Playing

Assuming various roles, as in real life, is the key to understanding and learning. Students are challenged to make strategic decisions through role-plays, and to analyze the impact of these decisions. For this purpose, incidents from literary texts may also be used.

6. Team Work

Positive collaboration in the form of teamwork is critical in the classroom environment, for whichit is necessary to transcend one's prejudices and predilections so as to achieve the desired outcomes. In the process of teamwork, leaners will acquire the skills of managing knowledge acquisition and other collaborative learners, thereby understanding how to incorporate and balancepersonalities.

7. Study Tours/Field Visits:

Study Tours/ Field trips provide opportunities to the learners to test their in-class learning in real life situations as well as to understand the functional diversity in the learning spaces. These may include visits to sites of knowledge creation, preservation, dissemination and application. Institutions may devise their own methods to substitute/modify this aspect.

8. Academics-Industries Interface:

The course curriculum of B.A/BSc. (Hons.) should encourage students for closer interaction withindustries/corporate/research institutes, etc. for at least one week internship and training.

PART II: STRUCTURE OF B.A GEOGRAPHY

Note: For the structure of BA Hons. Geography, the Committee has followed the number ofcredits per course as suggested in the CBCS document, that is, six credits per course.

	A. Major Core Courses: 22 papers (88 credits) **B. Minor Courses (Elective) : 8 papers (32 credits)** **C. Multi Disciplinary Courses (MDC) : 3 papers (12 credits)** **D. Skill Enhancement Courses (SEC): 6 papers: (14 credits)** **E. Value added Course (VAC): 2 Papers :(4 Credit)** **F. Indian Knowledge System (IKS) 2 Papers :(4 Credits)**			
	A. MAJOR SUBJECT (CORE)			
SEM	**S. NO**	**TITTLE OF THE PAPER**	**Credit**	**Credit Hours**
1	1.	Geo Tectonic and Geomorphology	4	4
	2.	**General Cartographic (Practical)**	4	4
2	3.	Geomorphology	4	4
	4.	**Cartographic Methods (Practical)**	4	4
3	5.	Fundamentals of Climatology	4	4
	6.	Physical Geography of India	4	4
	7.	**Meteorological Instruments and Analysis of Indian Daily Weather Report (Practical)**	4	4
4	8.	Fundamentals of Oceanography	4	4
	9.	Socio-Economic Geography of India	4	4
	10.	**Relief Features and Topographical Maps (Practical)**	4	4
5	11.	Basic of Human Geography	4	4
	12.	Soil and Biography Geography	4	4
	13.	**Projections, Surveying and Statistical Methods (Practical)**	4	4
6	14.	Agriculture Geography	4	4
	15.	Resource Geography	4	4
	16.	**Thematic Mapping and Projections (Practical)**	4	4
7	17.	Settlement Geography	4	4
	18.	Transportation and Trade Geography	4	4
	19.	**Computer Base and Data Base Management (Practical / Village Survey)**	4	4
8	20.	Geography of Hazards Management	4	4
	21.	Urban Geography	4	4
	22.	**Quantitative Methods (Practical / Educational Tour)**	4	4

	B. MINOR SUBJECT (ELECTIVE COURSE)			
SEM	**S. NO**	**Course title**	**Credit**	**Hours per week**
1	**1**	Fundamentals of Geomorphology -1	**4**	**4**
2	**2**	Fundamentals of Geomorphology -2	**4**	**4**
3		Nil	**-**	**-**
4	**3**	Introduction to Climatology	**4**	**4**
5	**4**	1. Introduction to Oceanography 2. Geography of Gujarat	**8**	**8**
6	**5**	Geography of India	**4**	**4**
7	**6**	Environment & Climatic Change	**4**	**4**
8	**7**	Economic & Resource Geography	**4**	**4**

	C. MULTI DISCIPLIONARY/ (MDC)			
Sem	S no	Course Tittle	Credit	Hours Per Week
1	1	Physical Geography of Gujarat	4	4
2	2	Socio – Economic Geography of Gujarat	4	4
3	3	Introduction to Geography	4	4

	D . SKILL ENHANCEMENT COURSE (SEC)			
Sem	S.no	Course Tittle	Credit	Hours Per Week
1	1	Basic Statistical Techniques	2	2
2	2	Statistical Techniques	2	2
3	3	Quotative Techniques	2	2
4	4	Basic knowledge of computer	2	2
5	5	Practical Work on computer	2	2
6	6	Internship	4	4

	E . INDIAN KNOWLEDGE SYSTEM (IKS) / VALUE ADDED COURSE (VAC)			
Sem	S.no	Course Tittle IKS /VAC	Credit	Hours Per Week
1	1	Urban Management - IKS	2	2
2	2	Environmental Studies Part -1 - VAC	2	2
3	3	Natural Farming and Management -IKS	2	2
4	4	Environmental Studies Part -2 - VAC	2	2

	4 – YEAR BACHELOR'S DEGREE(HONOURS WITH RESEARCH			
SEM	**S. NO**	**Course title**	**Credit**	**Hours per week**
7	1	Research Methods	4	4
	2	Fundamentals of Remote Sensing& GIS	4	4
	3	Geography of Urban System	4	4
8	4	Evolution of Geographic Thought	4	4
	5	Regional ..Planning and Development	4	4
	6	Population Geography		
	B. MINOR SUBJECT (IDC)			
7	1	Natural regions of World	**4**	**4**
8	2	Tourism Geography	**4**	**4**
	C . RESEARCH PROJECT			
7		Study Tour or Industrial Survey (Practical)	**6**	**6**
8		Research Project / Dissertation	**6**	**6**

	B A SEM -1 COURSE (JUNE-2023)			
SEM	**S. NO**	**Course title**	**Credit**	**Hours per week**
1	MAJOR-1	Geo Tectonic and Geomorphology	4	4
	MAJOR-2	**General Cartographic (Practical)**	4	4
	MINOR	Fundamentals of Geomorphology -1	4	4
	MDC	Physical Geography of Gujarat	4	4
	SKILL	Basic Statistical Techniques	4	4
	IKS	Urban Management	4	4

	B A SEM -2 COURSE			
SEM	**S. NO**	**Course title**	**Credit**	**Hours per week**
2	DSC -1	Geomorphology	4	4
	DSC-2	**Cartographic Methods (Practical)**	4	4
	MINOR	Fundamentals of Geomorphology -2	4	4
	IDC	Socio – Economic Geography of Gujarat	4	4
	SKILL	Statistical Techniques	4	4
	VAC	Environmental Studies	4	4

Subject: **: Geography**

Course (Paper) Name & No : Geo Tectonic and Geomorphology

Paper No -1

Course (Paper) Unique Code :

Course Time Duration : 45 Lectures

Name of Cour	Semester	Major / Core	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	1	-1		Geo Tectonic and Geomorphology	4	50	50	Theory	2.30 hrs

Course Objectives:

This course aims to:

1. to define the concepts in Geo Tectonic, Geomorphology.
2. to introduce various concept to understand cycles of the solid Earth surface
3. to understand the dynamic nature of the Earth's surface, various processes, and landforms.
4. to study the impact human on geomorphic system and planning in Gujarat and India.

Course Outcomes:

After the completion of this course, students should be able to:

1. Define the field of Geomorphology and to explain the essential principles of it.
2. to outline the mechanism of dynamic nature of the Earth's surface and interior of the Earth.
3. to illustrate and explain the forces affecting the crust of the earth and its effect on it.
4. to understand the conceptual and dynamic aspects of landform development

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. **Major Y** , MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐ Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
5. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/ના
6. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/ના

7. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/ના

8. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/ના

Course Contents:

Unit I.

Introduction to Geomorphology: meaning, nature and scope , Concepts of Geomorphology ,Place of Geomorphology in Physical Geography, Recent trends in Geomorphology,

Unit -II

Geological History of Earth, Interior Structure of Earth- Zones and Material -Suess, Jaffrey , Seismic Tomography , Mechanical Division of the Earth

Unit III.

Concepts of Isostasy -Pratt's Concept , Airy's Concept,
Earth's Movements: Endogenetic and Exogenetic forces, -Process of Folding and Faulting

Unit IV.

Mountain and Orogenic movement - Classification of Mountain, Characteristics of Mountain, Mountain building, Plateaus and Plain
Earthquake – Cause, Classification, Seismic Waves , Distribution.
Volcanoes - Structure, Classification , Causes, Distribution.

Unit V.

Plate Tectonics- Distribution of Plates, Movements of Plates ,
Hypothesis of Continental Drift,- Wegener , Sea – Floor Spreading Rocks – Composition of Earth Crust , Classification of Rocks , Rock Cycle

Reading List:

1. Bloom A. L., 2003: *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall ofIndia, New Delhi.
2. Bridges E. M., 1990: *World Geomorphology*, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: *An Introduction to Physical Geography,* 8 Ed.Macmillan Publishing Company.
4. Kale V. S. and Gupta A., 2001: *Introduction to Geomorphology*, Orient Longman, Hyderabad.
5. Knighton A. D., 1984: *Fluvial Forms and Processes*, Edward Arnold Publishers, London.
6. Richards K. S., 1982: *Rivers: Form and Processes in Alluvial Channels*, Methuen, London.

7. Selby, M.J., (2005), *Earth's Changing Surface,* Indian Edition, OUP.
8. Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to physical Geology,*
   4th Edition, John Wiley and Sons.
9. Thornbury W. D., 1968: *Principles of Geomorphology*, Wiley.
10. Gautam, A (2010): *BhautikBhugol*, Rastogi Punlications, Meerut.
11. Tikkaa, R N (1989): *BhautikBhugol ka Swaroop*, Kedarnath Ram Nath, Meerut.
12. Singh, S (2009):*BhautikBhugol ka Swaroop*, PrayagPustak,Allahabad

Subject: **: Geography**

Course (Paper) Name & No : General Cartographic (Practical)

Paper No -2

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Cour	Semester	Major/ Core	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	1	2		General Cartographic	4	Nil	100	Practical	5 hrs

Course Objectives

1: Students read the history of Cartography and understand the importance of Cartography as independent branch of study.

2: Classify the types of maps and Rocks .

3: How the longitude and latitudes, time zone, date line are drawn on earth surface.

4: Representation of Relief features and relief features by Contours

Course Outcomes:

After the completion of this course, students should be able to:

1. Define the field of Cartography and to explain the essential principles of it.
2. to outline the mechanism of dynamic nature of the Earth's surface and interior of the Earth and Types of Rocks.
3. to illustrate and explain the longitude and latitudes, time zone, date line are drawn on earth surface.
4. to understand the conceptual and dynamic aspects of of Relief features and relief features by Contours development.

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. **Major- Y** MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐ Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
5. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/ના

6. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/ના

7. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/**ના**

8. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/**ના**

Course Contents:

Unit I.

Maps- Nature and Scope of Cartography, classification and significance of maps. The art and science of cartography – Material and Equipment's of map making, types of maps, principal of map design.

Latitudes and longitudes- Longitude and time, local, standard and Greenwich time, Time zones - Calculation of time- International Date Line.

Unit II

Identification of Rocks and Minerals. Major Mineral samples: Igneous, Sedimentary, Metamorphic Rocks. Iron ore, Bauxite ore and Manganese.

Rock Samples: Granite, Basalt, Lime Stones, Sandstone, quartzite, and marble.

Unit III.

Representation of Relief features- Introduction, methods of relief representation .-Hachure's, Contours, Form lines, Contours -characteristics - contour diagrams – Slopes: Uniform, Undulating, Concave, Convex slopes.

Unit IV.

Representation of Relief features by Contours: – Hachure's, hill shading, layer tinting , contours spot, height and bench marks.

Representation of relief by contours. -Uniform slope, Concave slope, Convex slope, Conical hill, V shaped valley, U shaped valley, Saddle, Terraced slope. Ridges, Escarpment, Spur, Knoll, Gorge, Hanging Valley, Rapids and Waterfalls.

(Students are expected to identify these features from the topographical Maps)

Practical Record: A Project File in pencil Compulsory , comprising one exercise *each*..

Reading List:

1. Anson R. and Ormelling F. J., 1994: International Cartographic Association: BasicCartographic Vol. PregmenPress.
2. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
3. Khan Jabir, Hasan, T & Shamshad, Scales, Academic Publications, 2014.
4. Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New

Delhi.

5. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
6. Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier,InternationalCartographic Association.
7. Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York.
8. Sharma J. P., 2010: PrayogicBhugol, Rastogi Publishers, Meerut.
9. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
10. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
11. Singh R L & Rana P B Singh(1991) PrayogtmakBhugolkeMoolTatva, Kalyani Publishers, New Delhi.
12. Sharma, J P (2010) PrayogtmakBhugolkiRooprekha, Rastogi Publications, Meerut.
13. Singh, R L & Dutta, P K (2012) PrayogatmakBhugol, Central Book Depot, Allahabad.

Subject: **: Geography**

Course (Paper) Name & No : Fundamentals of Geomorphology -1

Paper No - 1

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Cour	Semester	Minor Course	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	1	1		Fundamentals of Geomorphology -1	4	50	50	Theory	2.30 hrs

Course Objectives:

This course aims to:

1. to define the concepts in Geomorphology and Physical Geography
2. to introduce various concept to understand origin of Solar system and earth
3. to understand the dynamic nature of the Earth's surface, various processes, and landforms.
4. to study the impact of Endogenetic forces and Exogenesis Forces on earth surface .

Course Outcome-

1. The objectives of this course are to introduce the concepts in Geomorphology in adequate manner,
2. Students aware with many facets of surface relief features and to understand various aspects of their growth and evolution on the Earth.

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? <u>હા</u>/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? <u>હા</u>/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?<u>હા</u>/ના
4. Major ☐ **<u>MinorSkill</u>** ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐ Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
5. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/<u>**ના**</u>

6. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/ના

7. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/ના

8. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/ના

Course Contents:

Unit - I:

The nature and scope of physical geography , Inter - relation of physical geography with other branches of earth sciences, The place of geomorphology in physical geography.

Unit - II:

Solar system, Theories of origin and origin of Earth -Kant's gaseous hypothesis, Laplace nebular hypothesis, James jeans and Jeffrey's tidal theory,

Age of the Earth, Geological Time Scale ,

Unit - III:

Earth's interior, Isostasy. (Prat and Airy Theory)

Classification Mountain, Plateau Plain

Unit - IV:

Factors Controling Landform development ,Endogenetic forces and Exogenetic Forces , Earth movements (Seismicity ,and Vulcan city, Folding & Faulting,)

Unit - V:

Continental drift theories of Wegner's, Plate tectonics, Rocks - meaning, Types and characteristics,

Soil Meaning types and soil profile

Reading List:-

1.Conserva H. T., 2004: Illustrated Dictionary of Physical Geography, Author House, USA.

2.Gabler R. E., Petersen J. F. and Trapa so, L. M., 2007: E essentials of Physical Geography (8th Edition), Thompson, Brooks/Cole,

3.Garrett N., 2000: Advanced Geography, Oxford University Press.

4.Goudie, A., 1984: The Nature of the Environment: An Advanced Physical Geography, Basil Blackwell Publishers, Oxford.

5. Hamblin, W. K., 1995: Earth s Dynamic System, Prentice Hall, N.J.

6.Husain M., 2002: Fundamentals of Physical Geography, Rawat Publications, Jaipur.

7.Monkhouse, F. J. 2009: Principles of Physical Geography, Platinum Publishers, Kolkata.

8.Strahler A. N. and Strahler A. H., 2008: Modern Physical Geography, John Wiley & Sons, New York.

9.B.N Tikka Physical Geography

10.Savindra Singh Physical Geography.

Subject: Geography

Course (Paper) Name & No : Physical Geography of Gujarat

Paper No -

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Cour	Semester	Multi Disciplinary	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	1	MDC -1		Physical Geography of Gujarat	4	50	50	-	2.30 hrs

Course Objectives:

The course is aimed

1) at presenting a comprehensive, integrated and empirically based profile of Gujarat.
2) Besides the objective is to highlight the physical aspects such as relief, climate, vegetations and minerals of Gujarat with the regional personality of the state.

Course Out comes :

At the end of this course, students will be able to:

1.Have an understanding of the inter linkages and interaction between Physical aspects of Gujarat

2. the processes Climate ,Water, forest Resource that operate through space and time in different regions of Gujrat

3..Understand the recent development and changes in Animal , Mineral, Energy resource and resource regions of Gujrat .

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. Major ☐ MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐
5. Holistic Education ☐ **Multidisciplinary** ☐ Interdisciplinary ☐
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/**ના**

7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? <u>હા</u>/ના

8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/<u>ના</u>

9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/<u>ના</u>

Course Contents:

Unit - I:

Gujarat : Geographical identify among other states of India ,Location, Area and boundaries, Geological structure, Historical Time Periods,.

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Unit - II:

Relief features, Major physiographic divisions- A. The coastal low land and the desert B. The Pains of Gujatat C. The Plateau of Saurashtra D. The Hills and highland regions of Gujatat

Unit - III:

Climate: Characteristic of climate and affecting factors of climate.

Climatic regions, Types and its impotence.,

Drainage pattern: Major Rivers -Narmada, Tapi, Sabarmati ,Mahi, Bhadar etc

Unit - IV:

Forest Resource : Types, distributions and utility in Gujarat

National parks and Wild life Centuries in Gujarat

Soil types and its Importance, distribution, problems and their conservation.

Unit - V:

Mineral resources: Importance and distribution (Fluorspar, Limestone, Bauxite and China clay)

Energy resources: Conventional energy resources; Importance and distribution of Lignite, Mineral oil, Natural gas.

Suggested Readings:

1) દવે મંજુલાબેન બી.: ગુજરાતની આર્થિક અને પ્રાદેશિક ભૂગોળ (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
2) સી. સી. ડોક્ટર: ગુજરાતની વસ્તી (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
3) નકશામાં ગુજરાત: (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)

4) Dikshit K.R. Geography of Gujarat (National Book Trust of India)
5) Spate O.H.K. India and Pakistan.
6) Kapadia – Animal Life in Gujarat.
7) Bhatt – Ports of Gujarat.
8) Statistical Bureau Government of Gujarat – Statistical Atlas of Gujarat.

Subject: Geography

Course (Paper) Name & No : Basic Statistical Techniques (Skill Based)

Paper No -

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Skill Based	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	1	SEC --1		Basic Statistical Techniques	2	15	35		2.30 hrs

Course Objectives

The objectives of this course are

1) to acquaint the students with the Data , its use in day to day life style to the modern living;
2) to identify and understand central tendencies in terms of their quality of data and distribution pattern and to comprehend the sampling Techniques in Business and society .

Course Out comes

After the completion of course, the students will have ability to:

1. Understand the basics of data collection and, processing for the meaningful outcomes
2. Understand the selection of proper sampling techniques for the collection of data
3. Put into practice the results obtained for spatial analysis of results and to apply various statistical software's for the study\

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. Major ☐ MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐
5. Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/ના

7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? **હા**/ના

8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/**ના**

9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/**ના**

Course Content

Unit 1.

Statistics -Definitions , Importance and use ,Characteristics , Limitations of Statistics, Relation of Statistics with other sciences

Unit II.

Nature of Data: Importance of Data in Geographical Studies; Significance and Use of Statistical Techniques , Types and Sources of Data; Data Collection and Formation of Statistical table , Frequencies Distribution Table;

References:

1.Bart, James, E, and Gerald, M. Barber., (1996): Elementary Statistics for Geographers, The Guieford Press, London.

2. Cressie, N.A.C., (1991): Statistics for Spatial Analysis, Wiley, New York.

3. Eldon, D., (1983): Statistics in Geography: A Practical Approach, Blackwell, London.

4. Gregory, S., (1978): Statistical Methods and the Geographer (4th Edition), Longman, London.

5. Haining, R.P., (1990): Spatial Data Analysis in the Social and Environmental Science, Cambridge University Press, Cambridge.

6. Hammond, R. and McCullagh, P.S., (1974):Quantitative Techniques in Geography: An Introduction,Clarendan Press, Oxford.

7. Mathews, J.A., (1987): Quantitative and Statistical Approaches to Geography: A Practical Manual,Pergamon, Oxford.

8. Mc Grew, Jr. and Cahrles, B. M., (1993): An Introduction to Statistical Problem Solving in Geography, W.C. Brocan Publishers, New Jersey.

9. Rogerson ,P. A. (2001) Statistical Methods for Geography, Sage Publications, New Delhi.

10. Wei, W.S.,(1990): Time Series Analysis: Variate and Multivariate Methods , Addison Wesley Publishing.
11. Yeates, Mauris, (1974): An Introduction to Quantitative Analysis in Human Geography, McGrawhill, New York

Subject: Geography
Course (Paper) Name & No : Urban Management (Indian Knowledge Society)
Paper No -
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	IKS/ VOC	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	2	IKS		Urban Management (IKS)	2	15	35		2.30 hrs

Course Objectives -

1.To critically understand the complexities of urban cities.

2.To critically understand a broad range of issues that cities face today.

Course Outcomes

1. Critically analyses urban problems from geographical perspectives.
2. Understand urban issues in order to engage with possible and effective planning and policy interventions

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. Major ☐ MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ **Value Added Courses** Exit/ ☐ Vocational Courses ☐
5. Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/**ના**
7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/ના

8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/**ના**

9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? **હા**/ના

Course Contain

Unit – I

Introduction – Meaning, Nature and scope , Pattern of Urbanization in Developed and Developing Countries,

Unit – II

Origen and Growth of Urban Settlement, Functional Classification of Cites in India and Gujarat , Process of Urbanization, Urban Morphology -Definition, Types

Unit -III

Urban Planning and Development – Meaning ,Definition, Aims and types of Urban Planning,

Urban Problems , Urban policy in India

Suggested Reading:

1. Introduction to Development and Regional Planning: With Special Reference to India, 2001, Jayasri Ray Chaudhuri
2. Planning and regional development in India, Jagannath Mishra, Chakradhar Sinha – 1985
3. India's development agenda: issues, challenges and policies, B. K. Prasad – 2005
4. Regional Development And Planning In India selected Essays (2009) V. Nath, S.K. Aggarwal (Edited), Concept Publishing Company
5. Regional Development and planning (1976) Paul A. Compton, Marton Pecsi, Akademiai Kiado Publisher
6. Regional planning in India 1983) Mahesh Chand and Vinay Kumar Puri
7. Regional development: problems and policy measures, Abdul Aziz, Sudhir Krishna
8. Decentralised planning and Panchayati Raj institutions, Sweta Mishra, Chaitali Pal – 2000

II SEMESTER

Subject: **Geography**
Course (Paper) Name & No : Geomorphology
Paper No -
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Major Core	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	2	3		Geomorphology	4	50	50	Theory	2.30 hrs

Course Objectives

1. The objectives of this course are to introduce basic concepts of lithospheric Earth.
2. this course synthesizes meaning, identification, evaluation and interpretation of landforms and geomorphic processes.

Course Outcomes

after end of the lesson students

1. able to hone their scientific understanding, illustration, skill
2. developed themselves as self-confidant coveted learner in the field of landforms study

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. **Major Y** MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐
5. Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/ના
7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/ના

8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/**ના**

9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/**ના**

Course Contents:

Unit - I:

General Degradational Processes: Processes of Rock weathering , its types and their effects on landform; Development of Drainage System and its pattern

Unit - II:

Fluvial processes and landforms;

Glacial processes and landforms. Fluvio-glacial landforms;

Unit - III:

Aeolian processes and landforms ,

Underground water (Karst) and landforms

Unit - IV:

Sea-waves (Coastal) and associated landforms

Normal cycle of erosion by W. M. Davis; Views of W. Penck on normal cycle of erosion;

Unit -V:

Cycle of Pediplanation by L. C. King; Dynamic Equilibrium theory by J.T. Hack.

Application of geomorphology to human activities: environmental hazards and assessment

Books Recommended:

1. Bloom A. L., *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi.
2. Bridges E. M., *World Geomorphology*, Cambridge University Press, Cambridge. Christopherson, Robert W., *Geosystems: An Introduction to Physical Geography*, Ed.,Macmillan Publishing Company.
3. Kale V. S. and Gupta A., *Introduction to Geomorphology*, Orient Longman,Hyderabad.
4. Knighton A. D., *Fluvial Forms and Processes*, Edward Arnold Publishers, London. Richards K. S., *Rivers: Form and Processes in Alluvial Channels*, Methuen, London.
5. Selby, M.J., *Earth's Changing Surface*, Indian Edition, OUP.
6. Skinner, Brian J. and Stephen C. Porter, *The Dynamic Earth: An Introduction to Physical Geology*, 4th Edition, John Wiley and Sons.

7. Thornbury W. D., *Principles of Geomorphology*, Wiley.
8. Gautam, A., *Bhautik Bhugol*, Rastogi Punlications, Meerut.
9. Tikkaa, R N., *Bhautik Bhugol ka Swaroop*, Kedarnath Ram Nath, Meerut.
10. Singh, S., *Bhautik Bhugol ka Swaroop*, Prayag Pustak, Allahabad.
11. Tiwary Ram Kumar, *Bhautik Bhugol*, Rajasthan Hindi Granth Academy, Jaipur.

Subject: Geography
Course (Paper) Name & No : Cartographic Methods (Practical)
Paper No -
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Major Core	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	2	4		Cartographic Methods	4	-	100		5 Hours

Course Objectives

1: Students read the Scale and understand the importance in Cartography .
2: Classify the types of Relief Features .
3: How the longitude and latitudes, time zone, date line are drawn on earth surface.
4: Representation of Relief features and relief features by Contours, Profile .

Course Outcomes:

After the completion of this course, students should be able to:

1. Define the field of Cartography and to explain the essential principles of it.
2. to outline the mechanism of dynamic nature of the Earth's surface and interior of the Earth and Types of Rocks.
3. to illustrate and represent the relief, Counters are drawn.
4. to understand the conceptual and dynamic aspects of Profiles .

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. **Major Y** MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐
5. Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐

6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/ના

7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/ના

8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/ના

9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/ના

Course Content

Unit –

Scale –Definition , Methods of representing Scales , Problems of Scale or conversion , Types of Scale – R F, Plain Scale , Diagonal Scale , Comparative Scale

Unit –II Representation of Relief -

Methods of relief Representation -1 Qualitative or Pictorial- , 2. Quantitative methods, 3. Mix methods

Unit –III Representation of Reliefs by Counters –

Conical Hill , Ridge , Saddle , Plateau , Spur , Knoll , Uniform Slope , Terraced Slope , Convex Slope , Concave Slope , Cliff , V Shaped Valley , U Shaped Valley , Hanging Valley , Water Fall , Gorge , Fiord Coast , Ox bow lake

Unit -IV Profiles –

Definition , Methods for Drawing a Profile , Kinds of Profiles ,

Reading List

1. Dent B. D., Torguson J. S., and Holder T. W., 2008: Cartography: Thematic Map Design (6th Edition), McGraw-Hill Higher Education
2. Gupta K. K. and Tyagi V. C., 1992: Working with Maps, Survey of India, DST, New Delhi.
3. Kraak M.-J. & Ormeling F., 2003: Cartography: Visualization of Geo-Spatial Data, Prentice-Hall.
4. Mishra R. P. and Ramesh A., 1989: Fundamentals of Cartography, Concept, New Delhi.
5. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
6. Slocum T. A., Mcmaster R. B. and Kessler F. C., 2008: Thematic Cartography

andGeovisualization (3rd Edition), Prentice Hall.

7. Tyner J. A., 2010: Principles of Map Design, The Guilford Press.
8. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan PrivateLtd., New Delhi
9. Zamir Alvi, 1994: A Textbook of Surveying, Vikas Publishing House Pvt. Ltd. New Delhi

Geography

Course (Paper) Name & No : Fundamentals of Geomorphology -2

Paper No -

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Mainor disciplinary	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	2	2		Fundamentals of Geomorphology-2	4	50	50	Theory	2.30 hrs

Course Objectives

1. The objectives of this course are to introduce basic concepts of lithospheric Earth.
2. this course synthesizes meaning, identification, evaluation and interpretation of landforms and geomorphic processes.

Course Outcomes

after end of the lesson students

1. able to hone their scientific understanding, illustration, skill
2. developed themselves as self-confidant coveted learner in the field of landforms study

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. Major ☐ **MinorSkill** ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐

Value Added Courses Exit/ ☐ Vocational Courses ☐

5. Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/**ના**
7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? **હા**/ના
8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/**ના**
9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/**ના**

Course Contents:

Unit - I:

Denudation and Deposition : Weathering and its types Exogenic forces, Geomorphic agent and processes: Erosion, Transportation, Deposition;

Unit - II:

Mass wasting and Evolution of landscapes -Concept of cycle of Erosion

W. M Davis and W. Penck

Works of Fluvial (river) processes and landforms;

Unit - III:

Glacial processes and land forms. Fluvio-Glacial landforms;

Works of Wind (Aeolian) processes and landforms ,

Unit -IV:

Underground water (Karst) and landforms

Sea-waves (Coastal) and associated landforms

Unit - V:

Applied Geomorphology(Regional planning, Urban planning and transportation, Mining, Hazard management, Agriculture and Environmental management.)

Suggested Readings:

1) Rice R.J. : Fundamentals of Geomorphology, Longmans 1977
2) Thornbury : Principles of Geomorphology : John Wiley & Sons
3) Ollier, C. D. : Weathering, Longman, London, 1979.
4) Pitty, A. F. Introduction to Geomorphology, Methuen, London, 1971.
5) Majid Husain – Geomorphology.
6) Sharma, H. S. : Perspectives in Geomorphology, Concept, New Delhi, 1980.
7) Wooldridge S. W. : An outline of Geomorphology : Longmans
8) Fairbridge, R. W. Encyclopedia of Geomorphology, Reinhold's, New York, 1968.
9.) Singh, S: Geomorphology, Prayag Publication, Allahabad, 1998.

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Subject: Geography

Course (Paper) Name & No : Socio -Economic Geography of Gujarat

Paper No -

Course (Paper) Unique Code :

Course Exam Time Duration : 45 Lectures

Name of Cour	Semester	Multi Disciplinary	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	2	2		Socio-Economic Geography of Gujarat	4	50	50		2.30 hrs

Course Objectives:

1) The course is aimed at presenting a comprehensive, integrated empirically based profile of Gujarat.
2) Besides the objective the course contain - socio - economic aspects of Gujarat with the regional development of Gujarat

Course Outcomes :

At the end of this course, students will be able to:

1.Have an understanding of the inter linkages and interaction between Socio economic aspects and resource base of Gujarat

2.Infer the processes that operate through space and time in different regions of Gujrat

3.Understand the recent development and changes in resource and resource regions of Gujrat .

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના

2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના

3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના

4. Major ☐ MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐

5. Holistic Education ☐ **Multidisciplinary** ☐ Interdisciplinary ☐

6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/**ના**

7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/**ના**

8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/**ના**

9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/**ના**

Course Contents:

Unit - I:

Gujrat Economy – an overview, Animal wealth of Gujarat, Dairy Farming White revolution and Marine Resources, Agriculture: Characteristic, problem its solutions, Major crops: (Wheat, Cotton, Rice, Groundnut and Tobacco).

Unit - II:

Means of irrigation, Major multipurpose irrigation projects and its importance (Narmada, Ukai, kadana and Dharoi) ,

Unit - III:

Industries : Location and Distribution of major -Cotton ,Textile, Sugar , Cement , Ceramic, Petro Chemical Industries . Industrial Regions,

Non Convectional Energy Resources -

Unit - IV

Transportation- Means , Types ,and Importance Sea Routes ,Ports of Gujarat (Kandle, Veraval ,Mundra and Alang etc)

Trades – National and International trade .

Unit - V:

Population structure, Density and distribution,

Urbanization. And Its Problems .

Tourism: Geographical, religious, historical and cultural center.

Suggested Readings:

1) દવે મંજુલાબેન બી.: ગુજરાતની આર્થિક અને પ્રાદેશિક ભૂગોળ (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
2) સી. સી. ડોક્ટર: ગુજરાતની વસ્તી (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
3) નકશામાં ગુજરાત: (યુનિ. ગ્રંથ નિર્માણ બોર્ડ, અમદાવાદ)
4) Dikshit K.R. Geography of Gujarat (National Book Trust of India)
5) Spate O.H.K. India and Pakistan.
6) Kapadia – Animal Life in Gujarat.
7) Bhatt – Ports of Gujarat.
8) Statistical Bureau Government of Gujarat – Statistical Atlas of Gujarat.

Subject: Geography
Course (Paper) Name & No : Statistical Methods (Skill Based)
Paper No -
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Skill Based	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	1	SEC --2		Statistical Methods	2	15	35		2.30 hrs

Course Objectives

The objectives of this course are

1) to acquaint the students with the Data , its use in day to day life style to the modern living;
2) to identify and understand central tendencies in terms of their quality of data and distribution pattern and to comprehend the sampling Techniques in Business and society .

Course Out comes

After the completion of course, the students will have ability to:

1. Understand the basics of data collection and, processing for the meaningful outcomes
2. Understand the selection of proper sampling techniques for the collection of data
3. Put into practice the results obtained for spatial analysis of results and to apply various statistical software's for the study

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. Major ☐ MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ Value Added Courses Exit/ ☐ Vocational Courses ☐
5. **Holistic Education** ☐ Multidisciplinary ☐ Interdisciplinary ☐
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/**ના**
7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? **હા/ના**
8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/ના
9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/ના

Course Content

Unit 1.

Sampling Techniques , Presentation of data – Classification, types, diagrams (Line Graph, Bar Graph ,Pie and Ring diagrams) , Graphs of frequency Distribution (Histogram) , Distribution Maps -Qualitative Maps and Quantitative Maps

Unit II.

Mean – Meaning, Classification ,merits and demerits (Classified and unclassified)
Median – Meaning, merits and demerits (Classified and unclassified)
Mode – Meaning, merits and demerits (Classified and unclassified)

References:

1.Bart, James, E, and Gerald, M. Barber., (1996): Elementary Statistics for Geographers, The Guieford Press, London.
2. Cressie, N.A.C., (1991): Statistics for Spatial Analysis, Wiley, New York.
3. Eldon, D., (1983): Statistics in Geography: A Practical Approach, Blackwell, London.
4. Gregory, S., (1978): Statistical Methods and the Geographer (4th Edition), Longman, London.
5. Haining, R.P., (1990): Spatial Data Analysis in the Social and Environmental

Science, Cambridge University Press, Cambridge.

6. Hammond, R. and McCullagh, P.S., (1974):Quantitative Techniques in Geography: An Introduction,Clarendan Press, Oxford.
7. Mathews, J.A., (1987): Quantitative and Statistical Approaches to Geography: A Practical Manual,Pergamon, Oxford.
8. Mc Grew, Jr. and Cahrles, B. M., (1993): An Introduction to Statistical Problem Solving in Geography, W.C. Brocan Publishers, New Jersey.
9. Rogerson ,P. A. (2001) Statistical Methods for Geography, Sage Publications, New Delhi.
10. Wei, W.S.,(1990): Time Series Analysis: Variate and Multivariate Methods , Addison Wesley Publishing.
11. Yeates, Mauris, (1974): An Introduction to Quantitative Analysis in Human Geography, McGrawhill, New York

Subject: Geography
Course (Paper) Name & No : Environmental Studies - Part -1 (Value Added Course)
Paper No -
Course (Paper) Unique Code :
Course Exam Time Duration : 45 Lectures

Name of Course	Semester	Vale Added Course	Paper Code	Paper Title	Credit	Internal Marks	External Marks	Practical/ Viva/ Exam. Marks	External Exam. Time Duration
B. A.	1	VAC --2		Environmental Studies Part -1	2	15	35		2.30 hrs

Course Objectives

1. The objectives of this paper is to provide an overview of multidisciplinary nature of environment .
2. The course aims to provide an understanding of the existing reality of renewable and non renewable resources and their role of conservation . Further aims to sensitize the students to the concept of Ecosystem

Course Out comes

After the completion of course, the students will have ability to:

1. Understand the basics of multidisciplinary nature of environment with

meaningful outcomes.

2. Understand the renewable and non renewable resources and role of individuals in conservation.

3.Students aware about types of ecosystem , functions , characteristics of ecosystem.

1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે ? હા/ના
2. Employability/Entrepreneurship/Skill Developmentપર કેન્દ્રિત થયેલ છે કે નહિ ? હા/ના
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે ?હા/ના
4. Major ☐ MinorSkill ☐ Enhancement Courses ☐ Ability Enhancement Courses ☐ **Value Added Courses Exit**/ ☐ Vocational Courses ☐
5. Holistic Education ☐ Multidisciplinary ☐ Interdisciplinary ☐
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? હા/ના
7. New India Literacy Programme (NILP) મુજબનો વિષય છે ? હા/ના
8. Swayamપ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે? હા/ના
9. ઇન્ડીયન નોલેજ સીસ્ટમ) IKS (પર આધારિત વિષય છે ? હા/ના

Course Content

Unit – 1 The Multi Disciplinary nature of environment Studies

Definitions , Scope , and importance

Need for Public Awareness

Unit – 2 Natural Resources and Associated Problems

a) Forest Resources -Use and Over exploitation , Deforestation
b) Water Resources – Use and Over Exploitation of surface and ground water ,Floods , Draught , Benefits and Problems
c) Mineral Resources – Use and exploitation , Environmental effects of extracting and using mineral resource
d) Food Resources – World food problems , change , caused by agriculture and overgrazing, effects of modern agriculture ,
e) Energy Resource – Growing energy needs , Renewable and non Renewable energy resource , use of alternative energy sources.
f) Land Resources – Land as a resource , land degradation , Soil erosion and desertification

Unit – 3 Ecosystem –

-Concept of Ecosystem , Structure and function of an ecosystem Producers consumers and decomposers , energy flow in ecosystem ,food chain , food web and ecological Pyramid

Introduction , Types, Characteristic ,features ,structure and function of ecosystem .

References:

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380 013, India, Email:mapin@icenet.net (R)
3. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
4. Clark R.S., Marine Pollution, Clanderson Press Oxford (TB)
5. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Publ. House, Mumabai, 1196p
6. De A.K., Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment (R)
8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute Oxford Univ. Press. 473p
9. *Hawkins* R.E., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
10. Heywood, V.H & Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.
11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p
12. Mckinney, M.L. & School, R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition. 639p. m) Mhaskar A.K., Matter Hazardous, Techno-Science Publication (TB)
13. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
14. Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA, 574p
15. Rao M N. & Datta, A.K. 1987. Waste Water treatment. Oxford & IBH Publ. Co. Pvt. Ltd. 345p
16. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut
17. Survey of the Environment, The Hindu (M)
18. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (TB) XI
19. t) Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Stadards, Vol I and II, Enviro Media (R)

20. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (TB)
21. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p

(M) Magazine

(R) Reference

(TB) Textbook