Estd. 1962
"A++" Accredited by NAAC (2021)
With CGPA 3.52

SHIVAJI UNIVERSITY, KOLHAPUR - 416004, MAHARASHTRA
PHONE:EPABX-2609000, www.unishivaji.ac.in, bos@unishivaji.ac.in
शिवाजी विद्यापीठ, कोल्हापूर -४१६००४,महाराष्ट्र
दूरध्वनी-ईपीएबीएक्स -२६०९०००, अभ्याससमंडळे विभाग दुरध्वनी ०२३१—२६०९०९४
०२३१—२६०९४८७

Ref:SU/BOS/Science/472 **Date: 19/08/2024.**

To,

The Principal,
All Concerned Affiliated Colleges/Institutions
Shivaji University, Kolhapur

Subject: Regarding Minor Change syllabi of B.A.,B.A.B.Ed.,B.Sc. Part-I (Sem.I & II) as per NEP-2020 (2.0) degree programme under the Faculty of Science and Technology.

Ref: 1) SU/BOS/Science/876/ Date: 26/12/2023. **2)** SU/BOS/Science/ 350/Date:24/06/2024. **3)** SU/BOS/Science/361 Date: 28/06/2024.Letter.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the Minor Change syllabi, nature of question paper of B.A., B.A.B.Ed., B.Sc. Part-I (Sem.I & II) as per NEP-2020 (2.0) degree programme under the Faculty of Science and Technology.

B.A., B.A.B.Ed, B.Sc.Part-I (Sem. I & II)	**Geography**
	Science, Technology and Development (STD)

This syllabus, nature of question and equivalence shall be implemented from the academic year 2024-2025 onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in NEP-2020@suk(Online Syllabus)

The question papers on the pre-revised syllabi of above-mentioned course will be set for the examinations to be held in October /November 2024 & March/April 2025. These chances are available for repeater students, if any.

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Dy Registrar
Dr. S. M. Kubal

Copy to:

1	The Dean, Faculty of Science & Technology	5	Appointment Section A & B
2	Director, Board of Examinations and Evaluation	6	I.T.Cell /Computer Centre
3	The Chairman, Respective Board of Studies	7	Eligibility Section
4	B.Sc.-M.Sc. Exam Section	8	Affiliation Section (T.1) (T.2)
9	IQAC Cell		

SHIVAJI UNIVERSITY, KOLHAPUR

Established: 1962

A++ Accredited by NAAC (2021) With CGPA 3.52

Bachelor of Science (B. Sc. in Geography)

Under
Faculty of Science and Technology

B. Sc. Part-I (Semester – I and II)

STRUCTURE AND SYLLABUS IN ACCORDANCE WITH

NATIONAL EDUCATION POLICY – 2020

HAVING CHOICE BASED CREDIT SYSTEM

WITH MULTIPLE ENTRY AND MULTIPLE EXIT OPTIONS

TO BE IMPLEMENTED FROM ACADEMIC YEAR 2024-2025 ONWARDS

Shivaji University, Kolhapur

First Year Bachelor of Science (B.Sc.-I) (UG CERTIFICATE) in Geography

Year	B. Sc. I
Semester	I & II
Level	4.5
Total Credits	22 + 22 = 44
Degree Awarded	UG CERTIFICATE (After 44 Credits in Total)

A-I) B. Sc. – I: Semester-I (Total Credits-06):

Course Category		Course Name	Course Code	Credits
DSC	--	Physical Geography – DSC-I		**2**
		Physical Geography – DSC-II		**2**
		Representation of Geo Data – DSC P-I		**2**

A-I) B. Sc.– I: Semester-II (Total Credits-06):

Course Category		Course Name	Course Code	Credits
DSC	--	Human Geography – DSC-III		**2**
		Human Geography – DSC-IV		**2**
		Representation of Geo Data – DSC P-II		**2**

Shivaji University, Kolhapur
B. Sc. Part-I
DSC-I: Physical Geography-I (Geography) as per NEP 2020

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	I
Name of Vertical Group	**:**	DSC-I (V-1)
Course Code	**:**	
Course Title	**:**	**Physical Geography -I**
Total Credit	**:**	02
Workload	**:**	02 credit X 15 Hours= 30 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10
Nature of Question Paper	**:**	As per university guidelines

Preamble:

Welcome to the fascinating realm of Physical Geography at the B. A./ B.Ed./ B. Sc. first year. Delve into the intricacies of Earth's physical processes, transformation of genesis of landforms to the dynamics of climates. This course introduces students to the fundamental principles governing natural phenomena, atmosphere and its elements fostering a comprehensive understanding of our planet's physical attributes. Explore the mysteries of weather patterns, denudational agents and environmental interactions, laying the foundation for a profound journey into the captivating field of geography.

General Objectives of the Course:

1. To gain in-depth knowledge of the movement and fundamental climatological laws for a comprehensive grasp of physical geographical evolution.
2. To explore the earth's movements and weather phenomena.
3. To develop expertise in nature of rocks and the weathering of rock, facilitating the recognition of geographical features developed by denudational agent.
4. To apply knowledge through case studies, analyzing geographical incidents, fostering problem-solving skills with a focus on local and India.

Course Outcomes:

By the end of the course, students would be able to:

1. The students will possess a comprehensive understanding of Physical Geography, branches and fundamental laws.
2. They will demonstrate proficiency in analyzing rocks weathering, interpreting endo/exogenetic Earth movements, and of Wind and Precipitation

3. Applying theoretical knowledge to real-world scenarios, emphasizing disaster management, urban planning and transportation.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Modules

Module No.	Module Name	Sub-module	No. of hours	Credit
1	Introduction to Physical Geography	1.1 Definition, nature and Scope of Physical Geography 1.2 Branches of Physical Geography 1.3 Importance of Physical Geography 1.4 Physical Geography as a base of Disaster Management	15	01
2	Transformation of the Earth surface	2.1 Endogenetic Earth's Movements: slow movements, sudden movements 2.2 Weathering: meaning, types and controlling factors. 2.3 Mass Movement: meaning, controlling factors and types of Mass Movement 2.4 Davis Cycle of Erosion and fluvial landforms	15	01

Suggested Readings

1. Dayal, P; A Text book of Geomorphology. Shukla Book depot, Patna,1996.
2. Dury, G.H. : The Face of the Earth, Penguins, 1980.
3. Critchfield, H : General Climatology, Prentice-Hall, New York,1975.
4. ICSSR: A Survey of Research in Physical Geography. Concept, New Delhi, 1983.
5. D.S. Lal: Climatology, Sharda Pustak Bhavan, Allahabad, 2010.
6. Singh,S. :Geomorphology, Prayag Pustakalaya, Allahabad,1998.
7. सवदी व कोळेकर; प्राकृतिक भूगोल. निराली प्रकाशन पुणे. २०२०
8. दाते व दाते; प्राकृतिक भूविज्ञान. अनिरुद्ध पब्लिशिंग हाऊस, पुणे. २०२०
9. आर. जी. जाधव; प्राकृतिक भूगोल. प्रारुप पब्लिकेशन, कोल्हापूर. २०२०
10. सवदी व कोळेकर; प्राकृतिक भूगोल आणि भूरूपशास्त्र. डायमंड प्रकाशन पुणे. २०१४
11. मोरे व पगार; प्राकृतिक भूगोल. प्राकृतिक भूगोल. निराली प्रकाशन पुणे.२०१९

Shivaji University, Kolhapur

B. Sc. Part-I

DSC-II: Physical Geography-II (Geography) as per NEP 2020

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	I
Name of Vertical Group	**:**	DSC-II (V-1)
Course Code	**:**	
Course Title	**:**	**Physical Geography-II**
Total Credit	**:**	02
Workload	**:**	02 credit X 15 Hours= 30 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10
Nature of Question Paper	**:**	As per university guidelines

Preamble:

Atmosphere is a main component of earth's system. Start from the origin, it comprises various characteristics. The Insolation, temperature, atmospheric pressure, planetary winds are the points to study the atmosphere in detail. The Humidity and Precipitation are the major parts of atmosphere. The precipitation is given in the role of forms and rainfall is elaborated with its types. The concept of climate change has the need to study during the present time. This is also included to get extra knowledge about the repercussions of human development on nature.

General Objectives of the Course:

1. To understand the properties of atmosphere and its components.
2. To study the elements of climate like temperature and air pressure with its distribution.
3. To study the winds and forms of precipitation and detail information of rainfall.
4. To study the monsoon in India and concept of climate change.

Course Outcomes:

By the end of the course, students will be aware with knowledge:

1. of the properties of the atmosphere and its components in detail.
2. about the concepts of temperature and atmospheric pressure.
3. of the forms of precipitation and rainfall.
4. of monsoon and climate change.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Physical Geography-II

Content of Modules				
Module No.	**Module Name**	**Sub-module**	**No. of hours**	**Credit**
1	Atmosphere and Temperature	1.1 Basic Concepts: Weather and Climate 1.2 Composition of the Atmosphere 1.3 Structure of the Atmosphere 1.4Insolation: Solar Constant, affecting factors on distribution of Insolation and Global Heat Budget 1.5 Temperature: Factors affecting the distribution of temperature 1.6 Distribution of temperature: Vertical, horizontal and seasonal.	15	01
2	Elements of Atmosphere	2.1 Atmospheric Pressure: Factor Affecting on Distribution of Atmospheric Pressure, Pressure Belts 2.2 Winds: Planetary Winds and its types 2.3 Precipitation: Forms of Precipitation 2.4 Rainfall: Types of Rainfall 2.5 Monsoon Climate in India 2.6 Climate Change: Concept, Causes and Impact	15	01

Suggested Readings

1. Dayal, P; A Text book of Geomorphology. Shukla Book depot, Patna,1996.
2. Dury, G.H. : The Face of the Earth, Penguins, 1980.
3. Critchfield, H : General Climatology, Prentice-Hall, New York,1975.
4. ICSSR: A Survey of Research in Physical Geography. Concept, New Delhi, 1983.
5. D.S. Lal: Climatology, Sharda Pustak Bhavan, Allahabad, 2010.
6. Singh,S. :Geomorphology, Prayag Pustakalaya, Allahabad,1998.

7. सवदी व कोळेकर; प्राकृतिक भूगोल. निराली प्रकाशन पुणे. २०२०
8. दाते व दाते; प्राकृतिक भूविज्ञान. अनिरुद्ध पब्लिशिंग हाऊस, पुणे. २०२०
9. आर. जी. जाधव; प्राकृतिक भूगोल. प्रारुप पब्लिकेशन, कोल्हापूर. २०२०
10. सवदी व कोळेकर; प्राकृतिक भूगोल आणि भूरूपशास्त्र. डायमंड प्रकाशन पुणे. २०१४
11. मोरे व पगार; प्राकृतिक भूगोल. प्राकृतिक भूगोल. निराली प्रकाशन पुणे.२०१९

Shivaji University, Kolhapur

B. Sc. Part-I

DSC Practical-I: Representation of Geo Data-I (Geography) as per NEP 2020

Name of theProgramme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	I
Name of Vertical Group	**:**	DSC P-I (V-2)
Course Code	**:**	
Course Title	**:**	**Practical- I: Representation of Geo Data**
Total Credit	**:**	02
Workload	**:**	02 credit X 30 Hours= 60 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	00 : 50
Nature of Question Paper	**:**	As per university guidelines

Preamble:

Practical work is the most important part of Geography. In present syllabus, the theoretical knowledge in Geomorphology and Climatology has been given for the sake of application of information through practical. The practical part includes the representation of relief features and climatic data. The conceptual information with practical will be part of this practical.

General Objectives of the Course:

1. To study the geomorphological information for representation of relief features.
2. To study the geomorphological information for representation of slopes.
3. To get the basic information of climatic instruments with its principles, structure, function and use.
4. To study the different methods of climatic data presentation.

Course Outcomes:

By the end of the course:

1. The students will be able to represent geomorphological data of relief features.
2. The students will be able to represent geomorphological data of slope.
3. The students will be get information of climatic instruments with its principles, structure, function and use.
4. The students will be able with different methods of climatic data presentation.

Practical: Representation of Geo Data- I

Content of Modules				
Module No.	**Module Name**	**Sub-module**	**No. of hours**	**Credit**
1	Representation of Relief features	1.1 Methods of Representation of Relief i) Pictorial Method ii) Mathematical Method 1.2 Contour Features 1.3 Determination of Stream order 1.5 Method of Showing Relief by Satellite Images	30	01
2	Representation of Climatic data	2.1 Line and Bar Graph 2.2 Ergograph 2.3 Isopleth: Isotherm, Isobar, and Isohytes 2.4 Weather Instruments: 2.4.1 Thermograph 2.4.2 Barograph 2.4.3 Rain Gauge 2.4.4 Cup Anemometer	30	01

Suggested Readings

1. Buoygoot, J. (1964): An Introduction to Map work and Practical Geography. University Tutorial, London.
2. Singh, L.R. and Singh, R., (1973): Map work and Practical Geography. Allahabad.
3. http://moef.gov.in/moef/index.html
4. https://www.windy.com/?19.075,72.886,5
5. Khan MD. ZulfequarAhmad : Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998
6. Mishra, R.P. and Ramesh A. : Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000
7. Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.
8. Negi. , Dr. Balbir Singh : Practical Geography, Kedar Nath Ram Nath, Meerut, Delhi.
9. Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.
10. Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc,

New York, 1969.

11. Saha, Pijushkanti and Basu Partha : Advanced Practical Geography – A Laboratory Manual Books and Allied (P) Ltd, Kolkata. 2010.
12. Sarkar, Ashis : Practical Geography: A systematic Approach, Orient Longman limited, Calcutta, 1997.
13. Singh, Gopal : Map work and Practical Geography Vikas Publishing House Pvt. Ltd. New Delhi, 1996.
14. Singh, R and Kanaujia, L.R.S.: Map Work and Practical Geography, Central Book Depot, Allahabad.
15. Aher A. B., Chodhari A. P. &Bharambe S. N. Techniques of Spatial Analysis Prashant Publication Jalgaon 2015
16. Maurice Yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.
17. P. Saha and P. Basu (2006): Advanced Practical Geography, Books and Allied Publication, Kolkata, India.
18. Khullar, Essentials of Practical Geography, New Academic Publishing Co, India.

Shivaji University, Kolhapur

B. Sc.-I

DSC-III: Human Geography-III (Geography) as per NEP 2020

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	II
Name of Vertical Group	**:**	DSC-III (V-1)
Course Code	**:**	
Course Title	**:**	**Human Geography-III**
Total Credit	**:**	02
Workload	**:**	02 credit X 15 Hours= 30 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10
Nature of Question Paper	**:**	As per university guidelines

Preamble:

The study of nature is vital. But without the study of the relationship of man with nature it is impossible to complete the study of Geography. Therefore, in the second semester, the concepts of Human Geography have been discussed. The introduction of Human Geography as a discipline and the components and distribution of population are the main parts of the paper. The distribution of population, theories of population growth and components of population, etc.

General Objectives of the Course:

1. To study the basics of Human Geography as a branch of Geography.
2. To study the concepts of man-environment relationship and the human races with racial groups.
3. To assess factors affecting on distribution of population.
4. To study of the Malthus's theory of population growth and selected components of population.

Course Outcomes:

By the end of the course:

1. The students will be familiar with the basics of Human Geography as a branch of Geography.
2. The students will have the knowledge of man-environment relationship and the human races with racial groups.

3. The students will be simply assessing the factors affecting on distribution of population.
4. The students will be aware with the Malthus's theory of population growth and selected components of population.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Human Geography-III

Content of Modules

Module No.	Module Name	Sub-module	No. of hours	Credit
1	Introduction to Human Geography	1.1 Definition, nature and scope of human geography. 1.2 Branches of human geography 1.3 Concepts of man-environment relationship - determinism, possibilism and probabilism 1.4 Importance of Human Geography	15	01
2	Population	2.1 Population growth and distribution in India and the world. 2.2 Characteristics of Population: Birth rate, Death rate, Density and Literacy 2.3 Problem of over population of India and remedial measures. 2.4 Malthus theory of population	15	01

Suggested Readings

1. Bergwan, Edward E: Human Geography; Culture, Connections and Landscape, Prentice-Hall, New Jersey.1995.

2. Carr, M.: Patterns, Process and change in Human Geography. MacMillan Education, London, 1987.

3. Fellman, J.L.: Human Geography—Landscapes of Human Activities. Brown and Benchman Pub., U.S.A., 1997.

4. D.S. Lal: Climatology, Sharda Pustak Bhavan, Allahabad, 2010.

5. Majid Hussin; Human Geography, Sixth Edition, Book Emporium, Guwahati, 2020.

6. सवदी व कोळेकर; मानवी भूगोल, निराली प्रकाशन पुणे २०२०.

7. सवदी व कोळेकर; प्राकृतिक भूगोल. निराली प्रकाशन पुणे. २०२०.
8. दाते व दाते; प्राकृतिक भूविज्ञान. अनिरुद्ध पब्लिशिंग हाऊस, पुणे. २०२०.
9. आर. जी. जाधव; मानवी भूगोल. प्रारुप पब्लिकेशन, कोल्हापूर. २०१९.
10. मोरे व पगार; प्राकृतिक भूगोल. प्राकृतिक भूगोल. निराली प्रकाशन पुणे.२०१९.
11. शिंदे, चौरे, धुलगुडे व शिंदे ; मानवी भूगोल, फडके प्रकाशन कोल्हापूर २०२३.

Shivaji University, Kolhapur

B. Sc.-I

DSC-IV: Human Geography-IV (Geography) as per NEP 2020

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	II
Name of Vertical Group	**:**	DSC-IV (V-1)
Course Code	**:**	
Course Title	**:**	**Human Geography-IV**
Total Credit	**:**	02
Workload	**:**	02 credit X 15 Hours= 30 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10
Nature of Question Paper	**:**	As per university guidelines

Preamble:

As time passes, there are tremendous changes have been taken place on the earth surface due to modes of transportation. The human development is an important indicator to know the regional development and therefore it is essential to learn about HDI. The economic activities also change and also affect the development of the settlement. The overall growth and development of any settlement is based on the nature of economic activities. Therefore, the types of economic activities have been included. The economic growth reflects in the settlements and their citizens.

General Objectives of the Course:

1. To study the economic activities and their importance.
2. To explore mode of transport and discover the different types of jobs we have today.
3. To study the basics of Human Development Index (HDI)
4. To study the theories related to the agricultural land use and location of industries.

Course Outcomes:

By the end of the course:

1. The students will be get knowledge of economic activities and their importance.
2. The students will be familiar with mode of transport and discover the different types of jobs we have today.
3. The students will have detail information of the basics of Human Development Index (HDI)
4. The students will be aware with the theories related to the agricultural land use and location of industries.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Human Geography-IV

Content of Modules

Module No.	Module Name	Sub-module	No. of hours	Credit
1	Transportation and Human Development Index (HDI)	1.1 Modes of Transportation 1.2 Accessibility and Connectivity (Google Map) 1.3 Weber Theory of Industrial Location 1.4 Components of HDI and Importance of HDI	15	01
2	Economic Activities	2.1 Early Economic activities of mankind 2.2 Primary Activity: Classification and Importance 2.3 Secondary Activity: Classification and Importance 2.4 Tertiary, Quaternary and Quinary Activities: Classification and Importance 2.5Von Thunen's Theory of Land Use	15	01

Suggested Readings

1. Dayal, P; A Text book of Geomorphology. Shukla Book depot, Patna,1996.
2. Dury, G.H. : The Face of the Earth, Penguins, 1980.
3. Critchfield, H : General Climatology, Prentice-Hall, New York,1975.
4. ICSSR: A Survey of Research in Physical Geography. Concept, New Delhi, 1983.
5. D.S. Lal: Climatology, Sharda Pustak Bhavan, Allahabad, 2010.
6. Singh,S. :Geomorphology, Prayag Pustakalaya, Allahabad,1998.
7. सवदी व कोळेकर; प्राकृतिक भूगोल. निराली प्रकाशन पुणे. २०२०
8. दाते व दाते; प्राकृतिक भूविज्ञान. अनिरुद्ध पब्लिशिंग हाऊस, पुणे. २०२०
9. आर. जी. जाधव; प्राकृतिक भूगोल. प्रारुप पब्लिकेशन, कोल्हापूर. २०२०
10. सवदी व कोळेकर; प्राकृतिक भूगोल आणि भूरूपशास्त्र. डायमंड प्रकाशन पुणे. २०१४
11. मोरे व पगार; प्राकृतिक भूगोल. प्राकृतिक भूगोल. निराली प्रकाशन पुणे.२०१९

Shivaji University, Kolhapur

B. Sc. Part-I

DSC Practical -II: Representation of Geo Data-II (Geography) as per NEP 2020

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	II
Name of Vertical Group	**:**	DSC P-II (V-1)
Course Code	**:**	
Course Title	**:**	**Practical- II: Representation of Geo Data-II**
Total Credit	**:**	02
Workload	**:**	02 credit X 30 Hours= 60 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	00 : 50
Nature of Question Paper	**:**	As per university guidelines

Preamble:

Practical work is the most important part of Geography. In present syllabus, the theoretical knowledge in Economic and settlement Geography has been given for the sake of application of information through practical. The course syllabus includes two and three dimensional as well as quantitative techniques for economic and settlement data to present real world.

General Objectives of the Course:

1. To study the pictorial maps.
2. To provide practical knowledge regarding real presentation of spatial unit of earth surface.
3. To study the quantitative techniques related to settlements.
4. To prepare students with contemporary modern tools and techniques for different basic conditions of settlements.

Course Outcomes:

By the end of the course:

1. The students will know the concept of pictorial maps and its practical applications.
2. The students will be getting practical knowledge regarding real presentation of spatial unit of earth surface.
3. The students will be applying their knowledge of the quantitative techniques related to settlements.

4. The students will be prepared with contemporary modern tool and techniques (Google Earth) for different basic conditions of settlements.

Practical: Representation of Geo Data-II

Content of Modules				
Module No.	**Module Name**	**Sub-module**	**No. of hours**	**Credit**
1	Representation of Statistical data	1.1 Divided Circle 1.2 Proportional Circle 1.3 Proportional Square 1.4 Proportional Sphere 1.5 Choropleth Map and Dot Map	30	01
2	Representation of Settlement data	2.1 Determination of Central places 2.2 Nearest Neighbour Analysis 2.3 Road Density 2.4 Road Connectivity (α, β and γ) 2.5 Determination of site, situation and pattern of settlement using Google Earth	30	01

Suggested Readings

1. Buoygoot, J. (1964): An Introduction to Map work and Practical Geography. University Tutorial, London.
2. Singh, L.R. and Singh, R., (1973): Map work and Practical Geography. Allahabad.
3. http://moef.gov.in/moef/index.html
4. https://www.windy.com/?19.075,72.886,5
5. Khan MD. ZulfequarAhmad : Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998
6. Mishra, R.P. and Ramesh A. : Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000
7. Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.
8. Negi. , Dr. Balbir Singh : Practical Geography, Kedar Nath Ram Nath, Meerut, Delhi.
9. Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.
10. Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc, New York, 1969.
11. Saha, Pijushkanti and Basu Partha : Advanced Practical Geography – A Laboratory

Manual Books and Allied (P) Ltd, Kolkata. 2010.

12. Sarkar, Ashis : Practical Geography: A systematic Approach, Orient Longman limited, Calcutta, 1997.

Singh, Gopal : Map work and Practical Geography Vikas Publishing

SHIVAJI UNIVERSITY, KOLHAPUR

Established: 1962

A++ Accredited by NAAC (2021) With CGPA 3.52

Geography

Under
Faculty of Science and Technology

Semester – I and II
OTHER ELECTIVE COURSE (OE)

STRUCTURE AND SYLLABUS IN ACCORDANCE WITH

NATIONAL EDUCATION POLICY – 2020

HAVING CHOICE BASED CREDIT SYSTEM

WITH MULTIPLE ENTRY AND MULTIPLE EXIT OPTIONS

TO BE IMPLEMENTED FROM ACADEMIC YEAR 2024-2025 ONWARDS

Shivaji University, Kolhapur

Other Elective (OE) Course from Geography

Course Category		Course Name	Course Code	Credits
IDC/MDC / GEC/OE	OE- I	1) Natural Disaster Management	BAU0325OEH222A01	**2**

A-I) B. A. / B. A. B. Ed. – I: Semester-II (Total Credits-02):

Course Category		Course Name	Course Code	Credits
IDC/MDC / GEC/OE	OE-II	1) Manmade Disaster Management	BAU0325OEH222B02	**2**

Shivaji University, Kolhapur

OE (OPEN ELECTIVE COURSE) as per NEP 2020

Name of the Programme	**:**	B. A. / B. A. B. Ed. (Geography)
Class	**:**	B.Com.-I/ B. Sc.-I
Semester	**:**	I
Name of Vertical Group	**:**	OE (OPEN ELECTIVE COURSE) (V-3)
Course Code	**:**	BAU0325OELP222A01
Course Title	**:**	**Natural Disaster Management -I**
Total Credit	**:**	02
Workload	**:**	02 credits theory X 15 Hours= 30 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10
Nature of Question Paper	**:**	As per the guidelines of the Shivaji University, Kolhapur

Preamble:

The paper "Natural Disaster Management and field work" offers students a comprehensive exploration of the fundamental concepts and principles in the field of Disaster Management. This paper aims to provide students an understanding of the definitions and concepts related to natural hazards and disaster risk reduction. Through a series of modules, students will gain insights into the introductory concepts and classification of natural hazards, identification of natural hazards, historical and contemporary examples of natural disasters. By the end of this paper, students will have a well-rounded understanding of the key components of disaster risk reduction and preparedness.

General Objectives of the Course:

1. To inculcate the definitions and concepts related to natural hazards and disaster risk reduction.

2. To develop skills in identifying natural hazards and conducting hazard and risk assessments.

3. To understand vulnerability assessment and mapping techniques to identify areas at risk.

4. To familiarize students with early warning systems and their role in disaster preparedness.

Course Outcomes:

By the end of the course, students would be able to:

1. Students will define and explain key concepts related to natural hazards and disaster risk reduction.
2. Students will understand the frameworks and strategies used in disaster risk reduction to mitigate and prevent the impacts of natural hazards.
3. Students will identify natural hazards and conduct hazard and risk assessments using appropriate methodologies.
4. Students will apply principles of emergency planning and management in the context of disaster risk reduction and develop strategies for capacity building and training to enhance preparedness and response capabilities.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Natural Disaster Management -I

Theory Modules				
Module No.	**Module Name**	**Sub-module**	**No. of hours**	**Credit**
1	Introduction to Natural Hazards and Disasters	1.1 Meaning and concepts of natural hazards and disasters 1.2 Classification of natural hazards and disasters 1.3 Contemporary natural disasters 1.4 The economic, social, and environmental impact of disasters	15	01
2	Understanding Natural Hazards and Risk Assessment	2.1 Identification of natural hazards 2.2 Hazard and risk assessment methodologies 2.3 Vulnerability assessment and mapping 2.4 Hazard mitigation and prevention strategies	15	01

Suggested Readings

1. Alexander, D. (2013). Resilience and disaster risk reduction: anetymological journey. Natural Hazards and Earth System Sciences, 13(11), 2707-2716.

2. Blaikie, P., Cannon, T., Davis, I., et al. 1994:At Risk: Natural Hazards, People's Vulnerability and Disasters, Routledge, London.
3. Burton, I., Kates, R. W., & White, G. F. (1993). The environment as hazard. Guilford Press.
4. Edwards, B., (2005). Natural Hazards, Cambridge University Press, Cambridge.
5. Guha-Sapir, D., Hargitt, D., & Hoyois, P. (2004). Thirty years of natural disasters, 1974-2003: The numbers. Centre for Research on the Epidemiology of Disasters (CRED).
6. Gupta, H.K., (2010). Disaster Management, Universities Press India, Hyderabad.
7. Morrisawa, M. (Ed.) (1994):Geomorphology and Natural Hazards,Elsevier, Amsterdam.
8. Paraswamam, S. and Unikrishnan, P. V.(2000): India Disaster Report, Oxford University Press, New Delhi.
9. Singh, J., (2007). Disaster Management, Future Challenges and Opportunities, I.K. International Pvt. Ltd., New Delhi.
10. Singh, R.B., (2005). Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi.
11. Singh, R.B., (2006). Natural Hazards and Disaster Management: Vulnerability and Mitigation,Rawat Publications, Jaipur.
12. Sinha, A., (2001). Disaster Management: Lessons Drawn and Strategies for Future, New UnitedPress, New Delhi
13. Smith, K., (2011). Natural Hazards, Routledge, London.
14. Stoltman, J.P. et al., (2004). International Perspectives on Natural Disasters, Kluwer AcademicPublications, Dordrecht.
15. UNISDR. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030.
16. अलीझाड सु. व इतर (२००५) : पर्यावरण विज्ञान, निराली प्रकाशन, पुणे
17. पवार सी.टी. व इतर (१९९८) : पर्यावरण भूगोल, सप्रेम प्रकाशन, कोल्हापूर
18. पाटील वाय.व्ही.(२००५) : पर्यावरण अभ्यास, अक्षरलेण प्रकाशन, सोलापूर

Shivaji University, Kolhapur

OE (OPEN ELECTIVE COURSE) as per NEP 2020

Name of the Programme	**:**	B. A. / B. A. B. Ed. (Geography)
Class	**:**	B.Com.-I / B. Sc.-I
Semester	**:**	II
Name of Vertical Group	**:**	OE (OPEN ELECTIVE COURSE) - II
Course Code	**:**	BAU0325OELP222B02
Course Title	**:**	**Manmade Disaster Management -II**
Total Credit	**:**	02
Workload	**:**	02 credits Theory X 15 Hours = 30 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10
Nature of Question Paper	**:**	As per the guidelines of the Shivaji University, Kolhapur

Preamble:

The paper "Manmade Disaster Management and Surveying" offers students a comprehensive exploration of the fundamental concepts and principles in the field of Disaster Management. This paper aims to provide students an understanding of the definitions and concepts related to manmade hazards and disaster risk reduction. Through a series of modules, students will gain insights into the introductory concepts and classification of manmade hazards, historical and contemporary examples of manmade disasters. By the end of this paper, students will have a well-rounded understanding of the key components of disaster risk reduction and preparedness.

General Objectives of the Course:

1. To inculcate definitions and concepts related to manmade hazards and disaster risk reduction.
2. To introduce disaster risk reduction strategies and frameworks used to mitigate and prevent the impacts of manmade hazards.
3. To develop knowledge and skills in identifying manmade hazards and conducting hazard and risk assessments.

Course Outcomes:

By the end of the course, students would be able to:

1. Students will define and explain key concepts related to manmade hazards and disaster risk reduction.

2. Students will understand the frameworks and strategies used in disaster risk reduction to mitigate and prevent the impacts of manmade hazards.
3. Students will identify manmade hazards and conduct hazard and risk assessments using appropriate methodologies.
4. Students will apply principles of emergency planning and management in the context of disaster risk reduction and develop strategies for capacity building and training to enhance preparedness and response capabilities.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Manmade Disaster Management -II

Theory Modules				
Module No.	**Module Name**	**Sub-module**	**No. of hours**	**Credit**
1	Human-induced Hazards	1.1 Meaning & concept of Human-induced Hazards 1.2 Physical Hazards - Cause and effects of Landslides, Soil erosion, forest fires, desertification etc. 1.3 Chemical Hazards - Nuclear Hazards, release of toxic elements in the air, soil and water; oil spills. 1.4 Accident, Crowd	15	01
2	Disaster Risk Reduction and Preparedness	2.1 Emergency planning and management 2.2 Early warning systems 2.3 Community participation and resilience 2.4 Risk communication and awareness	15	01

Suggested Readings

1. Alexander, D. (2013). Resilience and disaster risk reduction: an etymological journey. Natural Hazards and Earth System Sciences, 13(11), 2707-2716.
2. Blaikie, P., Cannon, T., Davis, I., et al. 1994:At Risk: Natural Hazards, People's Vulnerability and Disasters, Routledge, London.
3. Burton, I., Kates, R. W., & White, G. F. (1993). The environment as hazard.

Guilford Press.

4. Edwards, B., (2005). Natural Hazards, Cambridge University Press, Cambridge.
5. Guha-Sapir, D., Hargitt, D., & Hoyois, P. (2004). Thirty years of natural disasters, 1974-2003: The numbers. Centre for Research on the Epidemiology of Disasters (CRED).
6. Gupta, H.K., (2010). Disaster Management, Universities Press India, Hyderabad.
7. Morrisawa, M. (Ed.) (1994):Geomorphology and Natural Hazards, Elsevier, Amsterdam.
8. Paraswamam, S. and Unikrishnan, P. V.(2000): India Disaster Report, Oxford University Press, New Delhi.
9. Singh, J., (2007). Disaster Management, Future Challenges and Opportunities, I.K. International Pvt. Ltd., New Delhi.
10. Singh, R.B., (2005). Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi.
11. Singh, R.B., (2006). Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, Jaipur.
12. Sinha, A., (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi
13. Smith, K., (2011). Natural Hazards, Routledge, London.
14. Stoltman, J.P. et al., (2004). International Perspectives on Natural Disasters, Kluwer Academic Publications, Dordrecht.
15. UNISDR. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030.
16. अलीझाड सु. व इतर (२००५) : पर्यावरण विज्ञान, निराली प्रकाशन, पुणे
17. पवार सी.टी. व इतर (१९९८) : पर्यावरण भूगोल, सप्रेम प्रकाशन, कोल्हापूर
18. पाटील वाय.व्ही.(२००५) : पर्यावरण अभ्यास, अक्षरलेण प्रकाशन, सोलापूर

SHIVAJI UNIVERSITY, KOLHAPUR

Established: 1962

A++ Accredited by NAAC (2021) With CGPA 3.52

Bachelor of Arts (B. A. in Geography)

Under
Faculty of Science and Technology

B. A. / B. A. B. Ed. Part-I (Semester – I and II)

STRUCTURE AND SYLLABUS IN ACCORDANCE WITH

NATIONAL EDUCATION POLICY – 2020

HAVING CHOICE BASED CREDIT SYSTEM

WITH MULTIPLE ENTRY AND MULTIPLE EXIT OPTIONS

TO BE IMPLEMENTED FROM ACADEMIC YEAR 2024-2025 ONWARDS

Shivaji University, Kolhapur

First Year Bachelor of Arts (B. A. / B. A. B. Ed. -I) (UG CERTIFICATE)

in Geography

Year	B. A. / B. A. B. Ed. - I
Semester	I & II
Level	4.5
Total Credits	22 + 22 = 44
Degree Awarded	UG CERTIFICATE (After 44 Credits in Total)

A-I) B. A. / B. A. B. Ed. – I: Semester-I (Total Credits-22): I) B. A. / B. A. B. Ed.

Course Category		Course Name	Course Code	Credits
DSC - I	Mandatory	Physical Geography – DSC I	BAU0325MMH222A01	**4**
IDC/MDC/ GEC/OE	OE	1) Natural Disaster Management – OE I 2) Science, Technology and Development (STD) – OE I	BAU0325OEH222A01	**2**
VSC/SEC	SEC	Basics of Remote Sensing – SEC I **Or** Fundamentals of Tourism – SEC I	BAU0325SEL222A01	**2**
AEC/VAC/ IKS	AEC	--	--	
	IKS	--	--	**2**
	VAC	--	--	--
	CC	--	--	--
Credits for B. A./ B. A. B. Ed. – I SEM-I				**10**

A-I) B. A. / B. A. B. Ed. – II: Semester-II (Total Credits-22):

Course Category		Course Name	Course Code	Credits
DSC - II	Mandatory	Human Geography – DSC II	BAU0325MMH222B02	**4**
IDC/MDC/ GEC/OE	OE-II	1) Manmade Disaster Management– OE II 2) Science, Technology and Development (STD) – OE II	BAU0325OEH222B02	**2**
VSC/SEC	SEC-II	Basics of Remote Sensing – SEC II **Or** Components of Tourism – SECII	BAU0325SEL222B02	**2**
AEC/VAC/ IKS	AEC	--	--	--
OJT/FP/ CEP/CC/ RP	CEP (Major)	Acquisition of Social Data	BAU0325CEL222B	**2**
	CC	--	--	--
Credits for B. A./ B. A. B. Ed. – I SEM-II				**10**

Shivaji University, Kolhapur
B. A. / B. A. B. Ed.
DSC I: Physical Geography-I (Geography) as per NEP 2020

Name of the Programme	**:**	B. A. / B. A. B. Ed. (Geography)
Class	**:**	B.A.-I/ B. A. B. Ed.-I
Semester	**:**	I
Name of Vertical Group	**:**	DSC I (V-1)
Course Code	**:**	BAU0325MMH222A01
Course Title	**:**	**Physical Geography -I**
Total Credit	**:**	04
Workload	**:**	04 credit X 15 Hours = 60 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	80:20
Nature of Question Paper	**:**	

Preamble:

Welcome to the fascinating realm of Physical Geography at the B.A./ B.Ed. first year. Delve into the intricacies of Earth's physical processes, transformation of genesis of landforms to the dynamics of climates. This course introduces students to the fundamental principles governing natural phenomena, atmosphere and its elements fostering a comprehensive understanding of our planet's physical attributes. Explore the mysteries of weather patterns, denodational agents and environmental interactions, laying the foundation for a profound journey into the captivating field of geography.

General Objectives of the Course:

1. To gain in-depth knowledge of the movement and fundamental climatological laws for a comprehensive grasp of physical geographical evolution.
2. To explore the earth's movements and weather phenomena.
3. To develop expertise in nature of rocks and the weathering of rock, facilitating the recognition of geographical features developed by denodational agent.
4. To apply knowledge through case studies, analyzing geographical incidents, fostering problem-solving skills with a focus on local and India.

Course Outcomes:

By the end of the course, students would be able to:

1. The students will possess a comprehensive understanding of Physical Geography, branches and fundamental laws.

2. They will demonstrate proficiency in analyzing rocks weathering, interpreting endo/exogenetic Earth movements, and of Wind and Precipitation
3. Applying theoretical knowledge to real-world scenarios, emphasizing disaster management, urban planning and transportation.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Modules

Module No.	Module Name	Sub-module	No. of hours	Credit
1	Introduction to Physical Geography	1.1 Definition, nature and Scope of Physical Geography 1.2 Branches of Physical Geography 1.3 Importance of Physical Geography 1.4 Physical Geography as a base of Disaster Management	15	01
2	Transformation of the Earth surface	2.1 Endogenetic Earth's Movements: slow movements, sudden movements 2.2 Weathering: meaning, types and controlling factors. 2.3 Mass Movement: meaning, controlling factors and types of Mass Movement 2.4 Davis Cycle of Erosion and fluvial landforms	15	01
3	Atmosphere	3.1 Composition and Structure of the Atmosphere 3.2 Insolation and Temperature 3.3 Origin and distribution of pressure belts 3.4 Types of Wind and Precipitation	15	01
4	Practical	4.1 Sources of Atmospheric Data: IMD, AccuWeather, Windy 4.2. Windrose 4.3 Climograph 4.4 Case studies: Landslide/Road Trenches or latest incidents of your location.	15	01

Suggested Readings

1. Dayal, P; A Text book of Geomorphology. Shukla Book depot, Patna,1996.
2. Dury, G.H. : The Face of the Earth, Penguins, 1980.
3. Critchfield, H : General Climatology, Prentice-Hall, New York,1975.
4. ICSSR: A Survey of Research in Physical Geography. Concept, New Delhi, 1983.
5. D.S. Lal: Climatology, Sharda Pustak Bhavan, Allahabad, 2010.
6. Singh,S. :Geomorphology, Prayag Pustakalaya, Allahabad,1998.
7. सवदी व कोळेकर; प्राकृतिक भूगोल. निराली प्रकाशन पुणे. २०२०
8. दाते व दाते; प्राकृतिक भूविज्ञान. अनिरुद्ध पब्लिशिंग हाऊस, पुणे. २०२०
9. आर. जी. जाधव; प्राकृतिक भूगोल. प्रारुप पब्लिकेशन, कोल्हापूर. २०२०
10. सवदी व कोळेकर; प्राकृतिक भूगोल आणि भूरूपशास्त्र. डायमंड प्रकाशन पुणे. २०१४
11. मोरे व पगार; प्राकृतिक भूगोल. प्राकृतिक भूगोल. निराली प्रकाशन पुणे.२०१९

Shivaji University, Kolhapur
B.A. / B. A. B. Ed.
DSC II: Human Geography-II (Geography) as per NEP 2020

Name of the Programme	**:**	B. A. / B. A. B. Ed. (Geography)
Class	**:**	B.A.-I / B. A. B. Ed.-I
Semester	**:**	II
Name of Vertical Group	**:**	DSC II (V-1)
Course Code	**:**	BAU0325MMH222B02
Course Title	**:**	**Human Geography -II**
Total Credit	**:**	04
Workload	**:**	04 credit X 15 Hours = 60 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	80:20
Nature of Question Paper	**:**	

Preamble:

Welcome to Human Geography at the B.A.-I/ B. A. B. Ed.-I level! Explore what it is and its branches. Dive into how people interact with their environment through determinism, possibilism, and probabilism. Understand why Human Geography matters. Learn about population distribution, especially in India, and discover how economic activities and settlement patterns shape our world.

General Objectives of the Course:

1. To learn what it is, its branches, and key ideas about how people relate to their environment.
2. To figure out why people live where they do globally and especially in India. Explore solutions to India's population challenges and discover what Malthus thought.
3. To explore mode of transport and discover the different types of jobs we have today.
4. To study the basics of Human Development Index (HDI)

Course Outcomes:

By the end of the course, students would be able to:

1. The student will understand the basics of Human Geography through its branches, and the man-environment relationships.
2. Population Awareness: Students will gain insights into factors influencing global and Indian population distribution, addressing overpopulation challenges and examining Malthus' population theory.

3. The students will learn the spatial relationship between Transportation and Economic Activity.
4. The students will get knowledge of Human Development Index (HDI) and will played pivot role in human development.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University, Kolhapur.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Modules

Module No.	Module Name	Sub-module	No. of hours	Credit
1	Introduction to Human Geography	1.1 Definition, nature and scope of human geography. 1.2 Branches of human geography 1.3 Concepts of man-environment relationship - determinism, possibilism and probabilism 1.4 Importance of Human Geography	15	01
2	Population	2.1 Population growth and distribution in India and the world. 2.2 Characteristics of Population: Birth rate, Death rate, Density and Literacy 2.3 Problem of over population of India and remedial measures. 2.4 Malthus theory of population	15	01
3	Transportation and Human Development Index (HDI)	3.1 Modes of Transportation 3.2 Accessibility and Connectivity (Google Map) 3.3 Weber Theory of Industrial Location 3.4 Components of HDI and Importance of HDI	15	01
4	Practical	4.1 Birth rate and Death Rate 4.2 Population growth rate 4.3 Population density 4.4 Transport Network Graph Theory	15	01

Suggested Readings

1. Bergwan, Edward E: Human Geography; Culture, Connections and Landscape, Prentice-Hall, New Jersey.1995.

2. Carr, M.: Patterns, Process and change in Human Geography. MacMillan Education, London, 1987.

3. Fellman, J.L.: Human Geography—Landscapes of Human Activities. Brown and Benchman Pub., U.S.A., 1997.

4. D.S. Lal: Climatology, Sharda Pustak Bhavan, Allahabad, 2010.

5. Majid Hussin; Human Geography, Sixth Edition, Book Emporium, Guwahati, 2020.

6. सवदी व कोळेकर; मानवी भूगोल, निराली प्रकाशन पुणे २०२०.

7. सवदी व कोळेकर; प्राकृतिक भूगोल. निराली प्रकाशन पुणे. २०२०.

8. दाते व दाते; प्राकृतिक भूविज्ञान. अनिरुद्ध पब्लिशिंग हाऊस, पुणे. २०२०.

9. आर. जी. जाधव; मानवी भूगोल. प्रारुप पब्लिकेशन, कोल्हापूर. २०१९.

10. मोरे व पगार; प्राकृतिक भूगोल. प्राकृतिक भूगोल. निराली प्रकाशन पुणे.२०१९.

11. शिंदे, चौरे, धुलगुडे व शिंदे ; मानवी भूगोल, फडके प्रकाशन कोल्हापूर २०२३.

Shivaji University, Kolhapur

B. A. / B. A. B. Ed. - I

SEC PO1: Basics of Remote Sensing - I (Geography) as per NEP 2020

Name of the Programme	**:**	B .A. / B. A. B. Ed. (GEOGRAPHY)
Class	**:**	B.A.-I / B. A. B. Ed.-I
Semester	**:**	I
Name of Vertical Group	**:**	SEC (V-4)
Course Code	**:**	BAU0325SEL222A01
Course Title	**:**	**Basics of Remote Sensing- I**
Total Credit	**:**	02 Credits (Theory)
Workload	**:**	02 credit * 15 Hours= 30 hours in a semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10

Preamble:

Welcome to Basics of Remote Sensing - Part I, an immersive course designed to explore the foundational principles, historical context, and practical applications of remote sensing technology. Throughout this course, students will delve into the definition, evolution, advantages, and limitations of remote sensing, gaining insight into its significance in modern scientific research and practical domains. By understanding electromagnetic radiation, spectral bands, and sensor selection, students will develop the critical thinking and practical skills necessary to interpret remote sensing data and apply it to real-world scenarios.

General Objectives of the Course:

- To provide a comprehensive understanding of remote sensing, including its definition, principles, historical evolution, advantages, limitations, emerging trends, and innovations.
- To explain the principles of electromagnetic radiation, its interaction with Earth's surface and atmosphere, spectral bands, and their significance in remote sensing applications, aiding in practical knowledge and sensor selection.

Course Outcomes:

Upon completion of the course, students will:

- Understand the fundamental principles, historical evolution, advantages, limitations, emerging trends, and innovations in remote sensing.
- Demonstrate proficiency in understanding electromagnetic radiation, its interaction with Earth's surface and atmosphere, and spectral bands utilized in remote sensing.
- Apply remote sensing principles to select appropriate sensors and techniques for specific applications.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Modules

Basics of Remote Sensing - I			
Module	**Name of the Module**	**No. of hours**	**Credit**
I	**Fundamentals of Remote Sensing** 1.1 Introduction to Remote Sensing: Definition and Principles 1.2 Historical Evolution of Remote Sensing and Key Milestones 1.3 Advantages and Limitations of Remote Sensing 1.4 Emerging Trends and Innovations in Remote Sensing	15	1
II	**Electromagnetic Spectrum and Remote Sensing** 2.1 Electromagnetic Radiation and the EM Spectrum 2.2 Interaction of EMR with Earth's Surface and Atmosphere 2.3 Spectral Bands Utilized in Remote Sensing 2.4 Remote Sensing Applications and Sensor Selection	15	1

Suggested Readings

1. Anji Reddy, M. (2008). Textbook of Remote Sensing and Geographic Information System. B.S. Publication, Hyderabad.
2. Bhatta, B. (2008). Remote Sensing and GIS. Oxford University Press.

3. Burrough, P. A., & McDonnell, R. A. (2000). Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press.
4. Campbell, J. B. (2007). Introduction to Remote Sensing. Guilford Press.
5. Chauniyal, D. D. (2010). Sudur Samvedan evam Bhogolik Suchana Pranali. Sharda Pustak Bhawan, Allahabad.
6. Hord, R. M. (1989). Digital Image Processing of Remotely Sensed Data. Academic.
7. Heywoods, I., Cornelius, S., & Carver, S. (2006). An Introduction to Geographical Information System. Prentice Hall.
8. Jensen, J. R. (2004). Introductory Digital Image Processing: A Remote Sensing Perspective. Prentice Hall.
9. Joseph, G. (2005). Fundamentals of Remote Sensing. United Press India.
10. Jha, M. M., & Singh, R. B. (2008). Land Use: Reflection on Spatial Informatics Agriculture and Development. Concept.
11. Kumar, D., Singh, R. B., & Kaur, R. (2019). Spatial Information Technology for Sustainable Development Goals. Springer.
12. Li, Z., Chen, J., & Batsavias, E. (2008). Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences. CRC Press, Taylor and Francis.
13. Lillesand, T. M., Kiefer, R. W., & Chipman, J. W. (2004). Remote Sensing and Image Interpretation (Wiley Student Edition). Wiley.
14. Mukherjee, S. (2004). Textbook of Environmental Remote Sensing. Macmillan, Delhi.
15. Rees, W. G. (2001). Physical Principles of Remote Sensing. Cambridge University Press.
16. Richards, J. A., & JiaXiuping. (2005). Remote Sensing Digital Image Analysis: An Introduction. Springer.
17. Sarkar, A. (2015). Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
18. Singh, R. B., & Murai, S. (1998). Space-informatics for Sustainable Development. Oxford and IBH Pub.
19. Wolf, P. R., & Dewitt, B. A. (2000). Elements of Photogrammetry: With Applications in GIS. McGraw-Hill.

Shivaji University, Kolhapur

B. A. / B. A. B. Ed. - I

SEC PO2: Basics of Remote Sensing- II (Geography) as per NEP 2020

Name of the Programme	**:**	B .A. / B. A. B. Ed. (GEOGRAPHY)
Class	**:**	B.A.-I / B. A. B. Ed.-I
Semester	**:**	II
Name of Vertical Group	**:**	SEC (V-4)
Course Code	**:**	BAU0325SEL222B02
Course Title	**:**	**Basics of Remote Sensing- II**
Total Credit	**:**	02 Credits (Theory)
Workload	**:**	02 credit * 15 Hours= 30 hours
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10

Preamble:

Welcome to Basics of Remote Sensing- Part II, where we delve deeper into the world of remote sensing platforms, sensors, and image interpretation techniques. This course offers a comprehensive exploration of satellite and aircraft-based platforms, along with a detailed examination of sensor types and their applications. Through theoretical learning and practical exercises, students will gain proficiency in image interpretation and analysis, equipping them with essential skills for real-world applications in various fields.

General Objectives of the Course:

- To develop an understanding of remote sensing platforms, encompassing satellites and aircraft, and various satellite sensors, including optical, thermal, and microwave sensors.
- To explore different resolutions in remote sensing, such as spatial, spectral, radiometric, and temporal resolutions, and understand their significance in data acquisition and analysis.
- To gain proficiency in image interpretation techniques, digital image processing basics, and the usage of remote sensing software, enabling effective analysis, interpretation, and visualization of remote sensing data for real-world applications.

- To examine the applications of remote sensing sensors in various fields, including agriculture, environmental monitoring, urban planning, and disaster management, to comprehend the practical utility of remote sensing technology.

Course Outcomes:

Upon completion of the course, students will:

- Understand different remote sensing platforms and sensors, including optical, thermal, and microwave sensors, enabling them to utilize this knowledge for various applications.
- Analyze remote sensing data using spatial, spectral, radiometric, and temporal resolutions to extract valuable information relevant to different fields.
- Apply image interpretation techniques and basic digital image processing principles to enhance remote sensing imagery effectively for diverse purposes.
- Utilize remote sensing software proficiently for image analysis, interpretation, and visualization tasks, enabling them to process and manipulate remote sensing data for real-world applications in agriculture, environmental monitoring, urban planning, and disaster management.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Modules

Basics of Remote Sensing - II			
Modules	**Name of the Module**	**Modules**	**Modules**
I	**Remote Sensing Platforms and Sensors** 1.1 Remote Sensing Platforms: Satellites, Aircraft 1.2 Satellite sensors: optical, thermal, microwave 1.3 Resolutions: Spatial, Spectral, Radiometric, Temporal 1.4 Applications of Sensors in Various Fields	15	1
II	**Image Interpretation and Analysis Techniques** 2.1 Image interpretation techniques 2.2 Digital Image Processing Basics 2.3 Introduction to Remote Sensing Software 2.4 Applications of Remote Sensing	15	1

Suggested Readings

1. Anji Reddy, M. (2008). Textbook of Remote Sensing and Geographic Information System. B.S. Publication, Hyderabad.
2. Bhatta, B. (2008). Remote Sensing and GIS. Oxford University Press.
3. Burrough, P. A., & McDonnell, R. A. (2000). Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press.
4. Campbell, J. B. (2007). Introduction to Remote Sensing. Guilford Press.
5. Chauniyal, D. D. (2010). Sudur Samvedan evam Bhogolik Suchana Pranali. Sharda Pustak Bhawan, Allahabad.
6. Hord, R. M. (1989). Digital Image Processing of Remotely Sensed Data. Academic.
7. Heywoods, I., Cornelius, S., & Carver, S. (2006). An Introduction to Geographical Information System. Prentice Hall.
8. Jensen, J. R. (2004). Introductory Digital Image Processing: A Remote Sensing Perspective. Prentice Hall.
9. Joseph, G. (2005). Fundamentals of Remote Sensing. United Press India.
10. Jha, M. M., & Singh, R. B. (2008). Land Use: Reflection on Spatial Informatics Agriculture and Development. Concept.
11. Kumar, D., Singh, R. B., & Kaur, R. (2019). Spatial Information Technology for Sustainable Development Goals. Springer.
12. Li, Z., Chen, J., & Batsavias, E. (2008). Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences. CRC Press, Taylor and Francis.
13. Lillesand, T. M., Kiefer, R. W., & Chipman, J. W. (2004). Remote Sensing and Image Interpretation (Wiley Student Edition). Wiley.
14. Mukherjee, S. (2004). Textbook of Environmental Remote Sensing. Macmillan, Delhi.
15. Rees, W. G. (2001). Physical Principles of Remote Sensing. Cambridge University Press.
16. Richards, J. A., & JiaXiuping. (2005). Remote Sensing Digital Image Analysis: An Introduction. Springer.
17. Sarkar, A. (2015). Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi.
18. Singh, R. B., & Murai, S. (1998). Space-informatics for Sustainable Development. Oxford and IBH Pub.
19. Wolf, P. R., & Dewitt, B. A. (2000). Elements of Photogrammetry: With Applications in GIS. McGraw-Hill.

Shivaji University, Kolhapur

B. A. / B. A. B. Ed. -I

SEC P01: Fundamentals of Tourism-I (Geography) as per NEP 2020

Name of the Programme	**:**	B. A. / B. A. B. Ed. (GEOGRAPHY)
Class	**:**	B.A. I/ B. A. B. Ed.-I
Semester	**:**	I
Name of Vertical Group	**:**	SEC (V-4)
Course Code	**:**	BAU0325SEL222A01
Course Title	**:**	**Fundamentals of Tourism-I**
Total Credit	**:**	02 Credits (Theory)
Workload	**:**	02 credit * 15 Hours= 30 hours
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40.10

Preamble:

Welcome to the fundamentals of Tourism, a skill enhancement course tailored for first-year Bachelor of Arts Geography students. This course aims to provide a comprehensive understanding of tourism, encompassing theoretical insights and practical applications. Through theoretical modules focusing on the fundamentals of tourism and practical sessions involving GIS applications and field observations, students will gain valuable insights into the multifaceted aspects of the tourism industry.

General Objectives of the Course:

- To comprehend the foundational concepts, definitions, and historical evolution of tourism, emphasizing its global significance and interrelationships with related aspects like pilgrimage, recreation, and leisure.
- To analyse the impacts of tourism on various dimensions including the economy, environment, and society, fostering a comprehensive understanding of its multifaceted effects.
- To explore the diverse types and recent trends in international and regional tourism, incorporating geographical parameters outlined by Robinson and investigating emerging concepts such as eco-tourism and sustainable tourism.

Course Outcomes:
Upon successful completion of this course, students will be able to:

- Demonstrate a comprehensive understanding of the fundamental concepts and historical evolution of tourism, discussing its global perspectives and interconnections with related domains like pilgrimage, recreation, and leisure.
- Assess and critically analyze the multifaceted impacts of tourism on the economy, environment, and society, fostering a holistic perspective of its implications.
- Evaluate diverse types of tourism, recent trends in international and regional tourism, and emerging concepts such as eco-tourism and sustainable tourism, integrating geographical parameters to comprehend the evolving nature of the industry.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Fundamentals of Tourism - I

Module	Name of the Module / Exercise	No. of hours	Credit
I	**Understanding Tourism:** 1.1 Introduction to Tourism: Concepts, Definitions, and Evolution 1.2 Nature and Scope of Tourism: Global Perspectives 1.3 Inter-Relationships between Tourism, Pilgrimage, Recreation, and Leisure 1.4 Impacts of Tourism: Economy, Society and Environment	15	1
II	**Types and Trends in Tourism:** 2.1 Geographical Parameters of Tourism by Robinson 2.2 Exploring Types of Tourism: Nature, Cultural, Medical, and Pilgrimage 2.3 Recent Trends in International and Regional Tourism 2.4 Emerging Concepts: Eco-Tourism and Sustainable Tourism	15	1

Suggested Readings:

1. Dhar, P. N. (2006). International tourism: Emerging challenges and future prospects. New Delhi, India: Kanishka.

2. Hall, M., & Stephen, P. (2006). Geography of tourism and recreation – Environment, place and space. London, England: Routledge.
3. Kamra, K. K., & Chand, M. (2007). Basics of tourism: Theory, operation and practice. Pune, India: Kanishka Publishers.
4. Page, S. J. (2011). Tourism management: An introduction (Chapter 2). Butterworth-HeinemannUSA.
5. Raj, R., & Nigel, D. (2007). Morpeth religious tourism and pilgrimage festivals management: An international perspective. Cambridge, USA: CABI. Retrieved from www.cabi.org.
6. Tourism Recreation and Research Journal. Lucknow, India: Center for Tourism Research and Development.
7. Singh, J. (2014). Eco-tourism. New Delhi, India: I.K. International Pvt. Ltd. Retrieved from www.ikbooks.com.

Shivaji University, Kolhapur
B. A. / B. A. B. Ed. -I
SEC P02: Components of Tourism-II (Geography) as per NEP 2020

Name of the Programme	**:**	B. A. / B. A. B. Ed. (GEOGRAPHY)
Class	**:**	B. A.-I/ B. A. B. Ed.-I
Semester	**:**	II
Name of Vertical Group	**:**	SEC (V-4)
Course Code	**:**	BAU0325SEL222B02
Course Title	**:**	**Components of Tourism -II**
Total Credit	**:**	02 Credits (Theory)
Workload	**:**	02 credit * 15 Hours = 30 hours
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40.10

Preamble:

Welcome to the Components of Tourism, a skill enhancement course tailored for first-year Bachelor of Arts Geography students. This course aims to delve into the diverse facets of tourism, exploring ecological, cultural, and urban tourism perspectives while delving into the nuances of tourism in India through case studies and practical applications. By integrating theoretical knowledge with practical exercises, students will gain a comprehensive understanding of the components that shape the tourism industry.

General Objectives of the Course:

- To analyze and differentiate between ecological and cultural tourism perspectives, encompassing nature-based, cultural, adventure, leisure, and urban tourism dynamics.
- To explore the landscape of tourism in India, focusing on World Heritage Sites, infrastructure development, challenges, and regional case studies such as Himalayan, Desert, Coastal, and Heritage Tourism.
- To evaluate the National Tourism Policy of India and critically assess its implications on the tourism industry.

Course Outcomes:

Upon successful completion of this course, students will be able to:

- Demonstrate an in-depth understanding of the diverse components that constitute tourism, including ecological, cultural, and urban perspectives.
- Critically analyze and discuss the tourism landscape in India, including World Heritage Sites, infrastructure development, challenges, and regional case studies.
- Evaluate the National Tourism Policy of India, identifying its strengths, weaknesses, and implications for the tourism industry.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Components of Tourism -II

Module	Name of the Module / Exercise	No. of hours	Credit
I	**Ecological and Cultural Tourism Perspectives** 1.1 Nature-based Tourism 1.2 Cultural Tourism and Heritage 1.3 Adventure and Leisure Travel 1.4 Urban Tourism Dynamics	15	1
II	**Tourism in India and Case Studies** 2.1 Exploring Tourism in India: World Heritage Sites 2.2 Infrastructure Development and Challenges in Indian Tourism 2.3 Case Studies of Himalayan, Desert, Coastal, and Heritage Tourism 2.4 Analyzing the National Tourism Policy and Its Implications	15	1

Suggested Readings:

8. Dhar, P. N. (2006). International tourism: Emerging challenges and future prospects. New Delhi, India: Kanishka.
9. Hall, M., & Stephen, P. (2006). Geography of tourism and recreation – Environment, place and space. London, England: Routledge.
10. Kamra, K. K., & Chand, M. (2007). Basics of tourism: Theory, operation and practice. Pune, India: Kanishka Publishers.

11. Page, S. J. (2011). Tourism management: An introduction (Chapter 2). Butterworth-HeinemannUSA.
12. Raj, R., & Nigel, D. (2007). Morpeth religious tourism and pilgrimage festivals management: An international perspective. Cambridge, USA: CABI. Retrieved from www.cabi.org.
13. Tourism Recreation and Research Journal. Lucknow, India: Center for Tourism Research and Development.
14. Singh, J. (2014). Eco-tourism. New Delhi, India: I.K. International Pvt. Ltd. Retrieved from www.ikbooks.com.

Shivaji University, Kolhapur
B. A. / B. A. B. Ed. -I
CEP: Acquisition of Social Data (Geography) as per NEP 2020

Name of the programme	**:**	B. A. / B. A. B. Ed (GEOGRAPHY)
Class	**:**	B. A. / B. A. B. Ed.-I
Semester	**:**	II
Name of Vertical Group	**:**	CEP (V-6)
Course Code	**:**	BAU0325CEL222B
Course Title	**:**	**Acquisition of Social Data**
Total Credit	**:**	02
Workload	**:**	02 Credit X 15 Hours = 30 hours in semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	40:10

Preamble:

The history of the world reveals means of human development are changing according to era and in present day information and knowledge are a prime. 2021 century is well known by information and information based on data. So, this course focuses on concept of data, data types, its sources, issues and challenges in data collection with applying various methods i.e. manual and google form.

Objectives of the Course:

1. To create awareness among the students regarding the elemental concepts of data and social data.
2. To aware students with data.
3. To prepare students for data collection and its applications.
4. To aware students for Common Challenges in Data Collection

Course Outcomes:

By the end of the course, students would be able to:

1. The Students will be aware about data types of data and its sources.
2. The Students will familiar with issues and common challenges of data collection.
3. The Students will know the characteristics of social data.
4. The Students will able to acquire social data through various techniques.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

MODULE CONTENT				
Module No.	**Module Name**	**Sub-module**	**No. of hours**	**Credit**
1	**Module I: Data**	1.1 Meaning of data 1.2 Classification of Data 1.3 Primary Data: Sources and Merits-demerits 1.4 Secondary Data: Sources and Merits-demerits 1.5 Issues to be considered for data collection 1.6 Common Challenges in Data Collection	15	01
2	**Module II: Collection of Social Data**	2.1 Meaning of Social Data 2.2 Types of Social Data: i) Qualitative Data ii) Quantitative Data 2.3 Methods of Primary Social Data Collection 2.4 Methods of Secondary Social Data Collection 2.5 Preparation of questionnaire: Manual & Google Form	15	01

Reference Books:

1) Macormic Thomas Carson (1941): Elementary Social Statistics, New York: McGraw-Hill Book Company**.**
2) Young P. V. Scientific Social Survey and Research, Prentice –Hall of India (Digital Library of India).
3) *Wendy Olsen (2011): Data Collection. Key Debates and Methods in Social Research,* SAGE Publications Ltd.

4) Roger Sapsford, Victor Jupp (2006): Data Collection and Analysis, SAGE Publications Ltd.

5) Meredith Zozus (2020):The Data BookCollection and Management of Research Data, Chapman & Hall.

6) ग. वि. कुंभोजकर (१९९०): संशोधन पद्धती व संख्याशास्त्र, फडके प्रकाशन,कोल्हापूर.

7) नीलाम धुरी (२००८): संशोधन पद्धती, फडके प्रकाशन, कोल्हापूर.

SHIVAJI UNIVERSITY, KOLHAPUR

Established: 1962

A++ Accredited by NAAC (2021) With CGPA 3.52

Science, Technology and Development (STD)

Semester – I and II
OTHER ELECTIVE COURSE (OE)

STRUCTURE AND SYLLABUS IN ACCORDANCE WITH

NATIONAL EDUCATION POLICY – 2020

HAVING CHOICE BASED CREDIT SYSTEM

WITH MULTIPLE ENTRY AND MULTIPLE EXIT OPTIONS

TO BE IMPLEMENTED FROM ACADEMIC YEAR 2024-2025 ONWARDS

Shivaji University, Kolhapur

Other Elective (OE) Course from

Science, Technology and Development (STD)

Course Category		Course Name	Course Code	Credits
IDC/MDC / GEC/OE	OE- I	1) Science, Technology and Development (STD)		**2**

A-I) B. A. / B. A. B. Ed. – I: Semester-II (Total Credits-02):

Course Category		Course Name	Course Code	Credits
IDC/MDC / GEC/OE	OE-II	1) Science, Technology and Development (STD)		**2**

Shivaji University, Kolhapur

Open Elective - Science, Technology and Development (STD) – I & II

as per NEP 2020

Semester	**:**	I
Name of Vertical Group	**:**	Open Elective
Course Code	**:**	
Course Title	**:**	**Science, Technology and Development (STD) - I**
Total Credit	**:**	02 each semester
Workload	**:**	Theory: 02 credit X 15 Hours = 30 hours in each semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	80:20
Nature of Question Paper	**:**	As per the guidelines of the Shivaji University, Kolhapur

Preamble:

This paper is specially designed to cater to foundation building of the students by imparting knowledge about the science, technology and development. Students of B. Sc. Part-I can betterly understand all latest concepts in Science, Technology and Development in brief but in adequate manner. The objective of this course is to introduce the latest concepts in Science, Technology and Development, specifically fundamental concepts in scientific thinking, human health, disaster management, communication and space research.

General Objectives of the Course:

1) To study the fundamental concepts of science, technology and development.

2) To study impact of science and technology on human health.

3) To study various types of disasters and its management.

4) To study means of communication and space research.

Course Outcomes:

By the end of the course, students will be able to:

1) Understand in-depth about the concepts of science, technology and development.

2) Understand impact of science and technology on human health.

3) Understand types of disasters and its management.

4) Understand means of communication and space research.

Nature of Question Paper:

The student's examination and evaluation methods are as per the guidelines of the Shivaji University.

- Internal evaluation should be based on Home Assignment/Unit Test/Case Study

Semester - I

Open Elective - Science, Technology and Development (STD) -I as per NEP 2020

Course I

Module No.	Module Name	Sub-module	No. of hours	Credit
1	**Introduction to Science and Technology**	1.1 Science and Technology: Definitions, Nature and Scope 1.2 Fundamental Concepts in Scientific Thinking 1.3 Stages in the Study of Science: Observation, Experiment, Analysis, Result and Hypothesis. 1.4 Science and Superstitions 1.5 Development of Science and Technology in India 1.6 Impact of Science and Technology on Society	15	01
2	**Science, Technology and Human Health**	2.1 Human Blood: Blood Groups, Importance of Matching Blood Groups in Human Health 2.2 Addiction a Social Problem: Types, Causes, Effects and Solutions 2.3 AIDS: A Challenge before World, Facts, Figures, Causes, Effects, Treatment, Social Outlook. 2.4 Cancer: concept, causes, symptoms, types and treatment. 2.5 Need of Cleanliness: Swachh Bharat Abhiyan	15	01

Suggested Readings

1. Annual Review of Information Science and Technology (ARIST) 39. By Blaise Cronin, Information Today, 2004.

2. Bagila A.V. (Ed) Science and Society, Lavani Publication House, 1972. Encyclopaedia of Computer Science and Technology (Facts on File Science Library) – Import, 15 Jan 2009
3. Bose D.M (Ed), A Concise History Science in India, Indian National Science Academy, 1971.
4.Butle J.A.V, Science and Human Life, Pergamon Press, London. (Year)
5. Encyclopaedia of Space Science and Technology, Wiley Online Library.
6. Encyclopaedia Britannica.
7. Flower W.S, The Development of Scientific Method, Pergamon Press, London, 1962.

मराठी पुस्तके

1. विज्ञानाचा समाज धारणेवरील परिणाम – दीक्षित कमलाकर, समाज प्रबोधन संस्था
2. शास्त्रीय विचार पद्धती - अ.भि. शहा, समाज प्रबोधन संस्था
3. जीवनाभिमुख विज्ञान – शिवाजी विद्यापीठ प्रकाशन
4. वैज्ञानिक अ□भ्यासाची गाथा - शिवाजी विद्यापीठ प्रकाशन
5. विज्ञान, तंत्रज्ञान आणि प्रगती - डॉ. पवार जयसिंगराव, प्रा. सूय□वंशी निशांत फडके प्रकाशन को□हापूर
6. विज्ञान, तंत्रज्ञान आणि प्रगती – प्रा. पाटील हरिश्चंद्र, प्रा. घस्ते अनिल, प्रा. पाटील अरुण, प्रा. माने देशमुख रामराजे, निराली प्रकाशन, पुणे
7. मराठी विश्वकोश

Websites

e-PG Pathshala: https://epgp.inflibnet.ac.in/
MOOCS - NPTEL: https://nptel.ac.in/
MOOCS - SWAYAM: https://swayam.gov.in/
National Digital Library of India: https://ndl.iitkgp.ac.in/
Shivaji University Library (E-Resources): http://www.unishivaji.ac.in/library/E-Resources

Shivaji University, Kolhapur

Open Elective - Science, Technology and Development (STD) –II

as per NEP 2020

Semester	**:**	II
Name of Vertical Group	**:**	Open Elective
Course Code	**:**	
Course Title	**:**	**Science, Technology and Development (STD) - II**
Total Credit	**:**	02 each semester
Workload	**:**	Theory: 02 credit X 15 Hours = 30 hours in each semester
Duration	**:**	Semester
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination of Pattern	**:**	80:20
Nature of Question Paper	**:**	As per the guidelines of the Shivaji University, Kolhapur

Semester - II

Open Elective - Science, Technology and Development (STD) - II as per NEP 2020

Course II

Module No.	Module Name	Sub-module	No. of hours	Credit
1	**Disaster Management**	1.1 Disaster: Concept and Types 1.2 Earthquake 1.3 Flood 1.4 Drought 1.5 Fire 1.6 Accident 1.7 Crowd	15	01
2	**Means of Communication**	2.1 A Brief History of Communication	15	01

	and Space Research	2.2 Origin, Development and Importance of Computer 2.3 Computer Network 2.4 Internet 2.5 Indian Space Research Organization (ISRO) 2.6 Introduction of: a) Remote Sensing b) Geographical Information System (GIS)		

Suggested Readings

1. Annual Review of Information Science and Technology (ARIST) 39. By Blaise Cronin, Information Today, 2004.

2. Bagila A.V. (Ed) Science and Society, Lavani Publication House, 1972.

3. Bose D.M (Ed), A Concise History Science in India, Indian National Science Academy, 1971.

4. Butle J.A.V, Science and Human Life, Pergamon Press, London. (Year)

5. Disaster Management in India, Kadambari Sharma and Chiranjeev Avinash, Jnanda Prakashan, 2010.

6. Encyclopaedia Britannica.

7. Encyclopaedia of Computer Science and Technology (Facts on File Science Library) – Import, 15 Jan 2009

8. Encyclopaedia of Space Science and Technology, Wiley Online Library.

9. Maguire, D.J.: Computers in Geography, Longman Scientific and Technical Publication, London, 1989.

10. Mathur, P.M.: Computer Application in Geography, John wiley and Sons, New York, 1993.

मराठी पुस्तके

1. विज्ञानाचा समाज धारणेवरील परिणाम – दीक्षित कमलाकर, समाज प्रबोधन संस्था

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