Shree Warana Vibhag Shikshan Mandal's

WARANA UNIVERSITY,
WARANANAGAR

(A State Public University established under Section 3 (6) of MPUA, 2016)

।। विद्या सर्वस्य भूषणम् ।।

Warana University

Established: 2025

Structure & Syllabus For

Bachelor of Science-B. Sc. in Geography

UNDER

Faculty of Science & Technology

B. Sc. Part - I (Semester - I and II)

(As Per National Education Policy – 2020)

With Effect From Academic Year 2025-26 Onwards

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Abbreviations:

POs	Program Outcomes
PSOs	Program Specific Outcomes
COs	Course Outcomes
DSC	Discipline Specific Core
DSE	Discipline Specific Elective
GE	Generic Elective
OE	Open Elective
VSC	Vocational Skill Course
SEC	Skill Enhancement Course
IKS	Indian Knowledge System
AEC	Ability Enhancement Course
VEC	Value Education Course
OJT	On Job Training (Internship)
FP	Field project
CEP	Community engagement project
CC	Co-curricular Courses
RM	Research Methodology
RP	Research Project
MJ	Major Course
MN	Minor Course

1. Preamble

Welcome to the fascinating realm of Physical Geography at the 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.

2. Geneal Objectives of the Course

i. To gain in-depth knowledge of the movement and fundamental climatological laws for a comprehensive grasp of physical geographical evolution.

ii. To explore the earth's movements and weather phenomena.

iii. To develop expertise in nature of rocks and the weathering of rock, facilitating the recognition of geographical features developed by denudational agent.

iv. To apply knowledge through case studies, analyzing geographical incidents, fostering problem-solving skills with a focus on local and India.

3. Programme Outcomes (Pos)

i. Student able to understand man nature relation and knowledge in the field of sciences.

ii. The acquaintance of the students about climatological laws for a comprehensive knowledge of evolution of the earth.

iii. Explore the earth's movements and weather phenomena.

iv. The ability with multi-tasking skills.

4. Programme Specific outcomes (PSOs)

i. Student understand the evolution of the earth and physical geography.

ii. Student are able to comprehend the internal and external forces act on the crust formation.

iii. The phenomenon of the atmospheric processes is understood at local impacts

iv. The application knowledge through case studies, analyzing geographical incidents, fostering problem-solving skills about human activities.

5. Eligibility

The candidate who has qualified **Senior Secondary School Examination (10 + 2) Or Equivalent** from a recognized board/institute is eligible for admission for this course. The criteria for admission are as per the rules and regulations set from time to time by concerned departments, HEIs, university, government and other relevant statutory authorities.

6. Duration

The Bachelor of Science in **Geography** Programme Shall be a Full Time Course of 3/4 Years – 6/8 Semesters Duration With 22 Credits Per Semester. (Total Credits = 132/176).

7. Medium of Instruction

The medium of instruction shall be **English**. The students will have write Answer-Scripts in English.

8. **MEME Instructions:** In alignment with the National Education Policy (NEP) 2020, the Bachelor of Science (B.Sc.) program adopts the Multiple Entry and Multiple Exit (ME-ME) framework. This flexible structure is designed to provide students with academic mobility, skill development, and lifelong learning opportunities. Through ME-ME framework, the program enables students to enter and exit at different stages with appropriate certifications. Information regarding different entry and exit options available to students and respective mandatory number of credits to be earned by the students are provided in the table below.

Year	Stage of exit	Type of Award	Mandatory Credits to be earned	Minimum credits to be earned
1	After successful completion of One Year	Undergraduate Certificate in Science	44	40
2	After successful completion of Two Year	Undergraduate Diploma in Science	88	80
3	After successful completion of Three Year	Bachelor of Science Degree	132	120

Re-entry provision: Students leaving after a undergraduate certificate or undergraduate diploma may re-enter the program within 5 years by earning required credits through Academic Bank of Credits.

9. **SCHEME OF TEACHING AND EXAMINATION:** [The scheme of teaching and examination should be given as applicable to the course/paper concerned.]

B.Sc. Program Structure for Level 4.5 of B.Sc.-I Semester I

Sr. No.	Teaching Scheme: Theory (TH) & Practical (P)					Examination Scheme: Semester-end Examination (SEE)			Internal Assessment (IA)			Practical		
	Course Type	No. of Lectures	Pract-ical	Hours	Credits	Paper Hours	Max	Min	Internal	Max	Min	Paper Hours	Max	Min
1.	DSC-I	4	1	4+4	6	1	30	12	Assignment	20	8	2	50	20
2.	DSC-I	4	1	4+4	6	1	30	12		20	8	2	50	20
3.	DSC-I	4	1	4+4	6	1	30	12		20	8	2	50	20
4.	OE -I	-	1	4	2	-	-	-		-	-	2	50	20
5.	VEC	-	-	-	-	-	-	-		-	-	-	-	-
6.	IKS (Generic)	2	-	2	2	2	50	20		-	-	-	-	-
Total					22	[DSC (60 X 3) + IKS 50] Total SEE = 230			DSC (40X3) Total IA = 120			Practical. = 50X4 Total Practical. = 200		
						Total Semester –I = 550								

B.Sc. Program Structure for Level 4.5 of B.Sc.-I Semester II

Sr. No.	Teaching Scheme: Theory (TH) & Practical (P)					Examination Scheme: Semester-end Examination (SEE)			Internal Assessment (IA)			Practical		
	Course Type	No. of Lectures	Pract-ical	Hours	Credits	Paper Hours	Max	Min	Internal	Max	Min	Paper Hours	Max	Min
1.	DSC-II	4	1	4+4	6	1	30	12	Assignment	20	8	2	50	20
2.	DSC-II	4	1	4+4	6	1	30	12		20	8	2	50	20
3.	DSC-II	4	1	4+4	6	1	30	12		20	8	2	50	20
4.	OE -II	-	1	4	2	-	-	-		-	-	2	50	20
5.	VEC -I	2	-	2	2	2	50	20		-	-	-	-	-
6.	IKS (Generic)	-	-	-	-	-	-	-		-	-	-	-	-
Total					22	[DSC (60 X 3) + IKS 50] Total SEE = 230			DSC (40X3) Total IA = 120			Practical. = 50X4 Total Practical. = 200		
						Total Semester –I = 550								

General Guidelines for the selection of subjects

1. In first year, student has to choose three DSC subjects from the basket for faculty of Science. (The DSC Basket for faculty of Science includes Mathematics, Physics, Chemistry, Botany, Zoology, Biochemistry, Geography, Industrial Microbiology and Computer Science)

2. At the start of second year, out of these 3 DSC subjects, he/she has to opt one subject as Major subject and one as Minor subject. The remaining DSC subject will be dropped.

3. Student cannot select a subject as major or minor other than the subjects taken in first year.

4. OE is to be chosen compulsorily from faculty other than that of the major. (B.Sc. students needs to select OE from faculty of Arts or Faculty of Commerce and manegement)

5. VSC is to be selected from the basket of Skill courses approved by the university.

6. IKS (Generic) will be provided by the university separately.

10. Course Structure of B. Sc. - I

Credit Distribution Structure for B.Sc. I, with Multiple Entry and Exit Options.

Course Category	Abbreviation (Only 2 Letters)	Description	Sem., I Credit	Sem. II Credit
DSC	DSC (DS)	Discipline Specific Course	6 x 3=18	6x3=18
OE	OE (OE)	Open Elective	2 x 1=02	2x1=02
AEC/IKS/VEC	IKS (IK)	Indian Knowledge System (Generic)	2 x 1=02	
	VEC (VE)	Value Education Course		2x1=02
			22	**22**
			Total 44	

11. Course Structure of Subject Specific

A -I) B.Sc. – I: SEMESTER - I

Course Category		Course Name	Course Code	Credits
DSC	DSC-I	Physical Geography- I	2502USGEMJ101	2
	DSC-II	Physical Geography- II	2502USGEMJ102	2
	DSC P -I	Representation of Geo-Data- I	2502USGEPR103	2
				Total = 6
E	OE-I	Natural Disaster Management (For B. Com I)	2502USGEOE101	2

A-2) B.Sc. – I: SEMESTER - II

Course Category		Course Name	Course Code	Credits
DSC	DSC-III	Human Geography I	2502USGEMJ201	2
	DSC-IV	Human Geography II	2502USGEMJ202	2
	DSC P -II	Representation of Geo-Data- II	2502USGEPR203	2
				Total = 6
OE	OE-II	Manmade Disaster Management (For B. Com I)	2502USGEOE201	2

12. Determination of CGPA, Grading and Declaration of result

University has adopted **7-point** Grading System as follows:

In each semester, marks obtained in each course (Paper) are converted to grade points:

If the total marks of course are 100 and passing criteria is 40%, then use the following Table for the conversion.

1. **Gradation Chart:**

Marks Obtained	Numerical Grade (Grade Point)		CGPA	Letter Grade
Absent	0 (zero)		-	Ab : Absent
0 – 39	0 to 4		0.0 – 4.99	F : Fail
40 – 49	5		5.00 – 5.49	C : Average
50 – 59	6		5.50 – 6.49	B : Above Average
60– 69	7		6.50 – 7.49	B+ : Good
70 – 79	8		7.50 – 8.49	A : Very Good
80 – 89	9		8.50 – 9.49	A+ : Excellent
90 – 100	10		9.50 – 10.0	O : Outstanding

Note:

1. Marks obtained > = 0.5 shall be rounded off to next higher digit.
2. The SGPA & CGPA shall be rounded off to 2 decimal points.
3. Marks obtained in 50 marks or 200 marks paper shall be converted to 100 marks.

Calculation of SGPA & CGPA

1. Semester Grade Point Average **(SGPA)**

$$\text{SGPA of a semester} = \frac{\sum(\text{Course credits} \times \text{Grade points obtained}) \text{ of a semester}}{\sum(\text{Course credits}) \text{ of respective}}$$

2. Cumulative Grade Point Average **(CGPA)**

$$\text{CGPA of all semesters} = \frac{\sum(\text{Total credits of a semester} \times \text{SGPA of respective semester}) \text{ of all semesters}}{\sum(\text{Total course credits}) \text{ of all semesters}}$$

13. **NATURE OF QUESTION PAPER AND SCHEME OF MARKING:**

For 2 Credits Theory 30:20

FOR TWO CREDITS: Total Marks: 30 (Written Examination) Question No. 1: Multiple choice questions (10 MCQs) (01 marks each)	(10X1)	10 Marks
Question No. 2: Attempt Any one of the following. (out of Two)	(10X1)	10 Marks
Question No. 3: Attempt any Two of the following. (Out of Four)	(5X2)	10 Marks

Note: Question Paper should cover all the units in the syllabus.

For Practical Examination

- End Semester Examination = 30 marks, Nature of Questions will be as skeleton
- Internal evaluation 20 Marks.
  a) Certify of Journal 5 Marks,
  b) Rough handbook 5 Marks.
  c) Seminar 5 marks
  d) Test Based Practical 5 Marks

Internal Evaluation Scheme

As per university rules

Level	Semester	Programme	Marks	
			4 Credit	**2 Credit**
4.5 B.Sc. I	I and II	1) Home Assignment	10	5
		2) Class Assignment (Tutorial Type)	10	5
		3) Quiz	10	5
		4) Mid-Term Test	10	5

14. Duration of Examination

i. Duration of Examination for 60 marks- 2 Hours

ii. Duration of Examination for 30 marks- 1 Hours

iii. Duration of Practical Examination for 30 marks- 2 Hours

15. Syllabus For Semester- I

Warana University, Warananagar
B. Sc. I, Geography, Semester I
DSC- I: Physical Geography- I

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	I
Name of Vertical Group	**:**	DSC-I (V-1)
Course Code	**:**	2502USGEMJ101
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	**:**	30:20
Nature of Question Paper	**:**	As per university guidelines

- **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.

DSC- I: Physical Geography- I

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

References

1. Bapat S. P. (1995), Physical Geography, Shree Sainath Prakashn, Nagpur.
2. Critchfield, H. (1975), General Climatology, Prentice-Hall, New York.
3. Date S. P. and Sou. Date, (1998) Physical Geography, Nagpur
4. Dayal, P. (1996), A Text book of Geomorphology. Shukla Book depot, Patna.
5. Dury, G. H. (1980) The Face of the Earth, Penguins.
6. ICSSR: (1983) A Survey of Research in Physical Geography. Concept, New Delhi.
7. Lal: D. S. (2010) Climatology, Sharda Pustak Bhavan, Allahabad.
8. Singh S. (1982), Physical Geography, Vasundhara Publication, Gorkhapur.

Warana University, Warananagar
B. Sc. I, Geography, Semester I
DSC- II: Physical Geography- II

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	I
Name of Vertical Group	**:**	DSC-II (V-1)
Course Code	**:**	2502USGEMJ102
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	**:**	30.20
Nature of Question Paper	**:**	As per university guidelines

- **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.

DSC- II, Physical Geography- II

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

- **References**

1. Bapat S. P. (1995), Physical Geography, Shree Sainath Prakashn, Nagpur.
2. Critchfield, H. (1975), General Climatology, Prentice-Hall, New York.
3. Date S. P. and Sou. Date, (1998) Physical Geography, Nagpur.
4. Dayal, P. (1996), A Text book of Geomorphology. Shukla Book depot, Patna.
5. Dury, G. H. (1980) The Face of the Earth, Penguins.
6. ICSSR: (1983) A Survey of Research in Physical Geography. Concept, New Delhi.
7. Lal: D. S. (2010) Climatology, Sharda Pustak Bhavan, Allahabad.
8. Singh S. (1982), Physical Geography, Vasundhara Publication, Gorkhapur.

Warana University, Warananagar
B. Sc. I, Geography, Semester I
DSC Practical-I: Representation of Geo Data-I

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	I
Name of Vertical Group	**:**	DSC P-I (V-2)
Course Code	**:**	2502USGEPR103
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	**:**	30: 20
Nature of Question Paper	**:**	As per university guidelines

- **Course Outcome**

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 getting information of climatic instruments with its principles, structure, function and use.
4. The students will be able with different methods of climatic data presentation.

DSC Practical- I: Representation of Geo Data- I

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

References

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 (1998), Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1
6. Mishra, R.P. and Ramesh A. (2000) Fundamentals of Cartography, Concept Publishing Company, New Delhi,
7. Monkhouse F.J. and Wilkison, H.R (1971) Maps and Diagrams, Mathuen. London.
8. Negi. , Dr. Balbir Singh (1985), Practical Geography, Kedar Nath Ram Nath, Meerut, Delhi.
9. Saha, Pijushkanti and Basu Partha (2010), Advanced Practical Geography – A Laboratory Manual Books and Allied (P) Ltd, Kolkata.
10. Sarkar, Ashis (1997) : Practical Geography: A systematic Approach, Orient Longman limited, Calcutta.
11. Singh, Gopal (1996): Map work and Practical Geography Vikas Publishing House Pvt. Ltd. New Delhi,.

Syllabus For Semester- II

Warana University, Warananagar.
B. Sc. I, Geography, Semester II
DSC-III: Human Geography-I

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	II
Name of Vertical Group	**:**	DSC-III (V-1)
Course Code	**:**	2502USGEMJ201
Course Title	**:**	**Human 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	**:**	30:20
Nature of Question Paper	**:**	As per university guidelines

- **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.

DSC-III: Human Geography-I

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

- **References**

1. Bergwan, Edward E. (1995), Human Geography; Culture, Connections and Landscape, Prentice-Hall, New Jersey.
2. Carr, M.: Patterns, (1987), Process and change in Human Geography. MacMillan Education, London.
3. Fellman, J.L. (1997), Human Geography-Landscapes of Human Activities. Brown and Benchman Pub., U.S.A.
4. Majid Hussin (2020), Human Geography, Sixth Edition, Book Emporium, Guwahati, 2020.
5. Borshe and others, Human Geography, Atharv Publication, Jalgaon
6. Musmade A. and others (2001) Population and Settlement Geography, Dimond Publication, Pune.
7. Kulkarni S.(2015), Population Geography, Dimond Publication, Pune.
8. Savadi A. B. and Kolekar P. S. (2020), Human and Population Geography, Nirali Publication, Pune
9. Sawant S. B. (2005), Population Geography, Mehata Publication House, Pune

Warana University, Warananagar.
B. Sc. I, Geography, Semester II
DSC-IV: Human Geography-II

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	II
Name of Vertical Group	**:**	DSC-IV (V-1)
Course Code	**:**	2502USGEMJ202
Course Title	**:**	**Human 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	**:**	30:20
Nature of Question Paper	**:**	As per university guidelines

Course Outcomes

By the end of the course:

1. The students will be getting 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.

DSC-IV: Human Geography-II

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 2.5 Von Thunen's Theory of Land Use	15	01

- **References**

1. Bergwan, Edward E. (1995), Human Geography; Culture, Connections and Landscape, Prentice-Hall, New Jersey.
2. Carr, M.: Patterns, (1987), Process and change in Human Geography. MacMillan Education, London.
3. Fellman, J.L. (1997), Human Geography-Landscapes of Human Activities. Brown and Benchman Pub., U.S.A.
4. Majid Hussin (2020), Human Geography, Sixth Edition, Book Emporium, Guwahati, 2020.
5. Borshe and others, Human Geography, Atharv Publication, Jalgaon
6. Musmade A. and others (2001) Population and Settlement Geography, Dimond Publication, Pune.
7. Kulkarni S.(2015), Population Geography, Dimond Publication, Pune.
8. Savadi A. B. and Kolekar P. S. (2020), Human and Population Geography, Nirali Publication, Pune

Sawant S. B. (2005), Population Geography, Mehata Publication House, Pune

Warana University, Warananagar

B. Sc. Part-I, Semester- II

DSC Practical-II: Representation of Geo Data-II

Name of the Programme	**:**	B. Sc. (GEOGRAPHY)
Class	**:**	B. Sc. I
Semester	**:**	II
Name of Vertical Group	**:**	DSC P-II (V-1)
Course Code	**:**	2502USGEPR203
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	**:**	30: 20
Nature of Question Paper	**:**	As per university guidelines

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.

DSC Practical-II: Representation of Geo Data-II

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

References

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 (1998), Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1
6. Mishra, R.P. and Ramesh A. (2000) Fundamentals of Cartography, Concept Publishing Company, New Delhi,
7. Monkhouse F.J. and Wilkison, H.R (1971) Maps and Diagrams, Mathuen. London.
8. Negi. , Dr. Balbir Singh (1985), Practical Geography, Kedar Nath Ram Nath, Meerut, Delhi.
9. Saha, Pijushkanti and Basu Partha (2010), Advanced Practical Geography – A Laboratory Manual Books and Allied (P) Ltd, Kolkata.
10. Sarkar, Ashis (1997) : Practical Geography: A systematic Approach, Orient Longman limited, Calcutta.
11. Singh, Gopal (1996): Map work and Practical Geography Vikas Publishing House Pvt. Ltd. New Delhi,.

Warana University, Warananagar

B. Sc. Part-I, Semester- I

OE - Geography For- B. Com. I

OE -I: Natural Disaster Management

Name of the Programme	**:**	B. Sc.-I (Geography)
Class	**:**	B.Com.-I
Semester	**:**	I
Name of Vertical Group	**:**	OE (Open Elective Course) (V-3)
Course Code	**:**	2502USGEOE101
Course Title	**:**	**Natural Disaster Management -**
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	**:**	30:20
Nature of Question Paper	**:**	As per University Rules

***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.

OE -I, Natural Disaster Management -

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

References

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. Gupta, H.K., (2010). Disaster Management, Universities Press India, Hyderabad.
6. Morrisawa, M. (Ed.) (1994):Geomorphology and Natural Hazards,Elsevier, Amsterdam.
7. Paraswamam, S. and Unikrishnan, P. V.(2000): India Disaster Report, Oxford University Press, New Delhi.
8. Singh, J., (2007). Disaster Management, Future Challenges and Opportunities, I.K. International Pvt. Ltd., New Delhi.
9. Singh, R.B., (2006). Natural Hazards and Disaster Management: Vulnerability and Mitigation,Rawat Publications, Jaipur.
10. Sinha, A., (2001). Disaster Management: Lessons Drawn and Strategies for Future, New UnitedPress, New Delhi
11. Smith, K., (2011). Natural Hazards, Routledge, London.
12. Stoltman, J.P. et al., (2004). International Perspectives on Natural Disasters, Kluwer AcademicPublications, Dordrecht.

Warana University, Warananagar

B. Sc. Part-I, Semester- II

OE - Geography For- B. Com. I

OE -II: Manmade Disaster Management

Name of the Programme	**:**	B. Sc. I (Geography)
Class	**:**	B.Com.-I
Semester	**:**	II
Name of Vertical Group	**:**	OE (Open Elective Course) - II
Course Code	**:**	2502USGEOE201
Course Title	**:**	**Manmade Disaster Management**
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	**:**	30:20
Nature of Question Paper	**:**	As Per university rules

- **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.

OE-II, Manmade Disaster Management -

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

References

1. Blaikie, P., Cannon, T., Davis, I., et al. 1994:At Risk: Natural Hazards, People's Vulnerability and Disasters, Routledge, London.
2. Burton, I., Kates, R. W., & White, G. F. (1993). The environment as hazard. Guilford Press.
3. Edwards, B., (2005). Natural Hazards, Cambridge University Press, Cambridge.
4. 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).
5. Gupta, H.K., (2010). Disaster Management, Universities Press India, Hyderabad.
6. Morrisawa, M. (Ed.) (1994):Geomorphology and Natural Hazards, Elsevier, Amsterdam.
7. Paraswamam, S. and Unikrishnan, P. V.(2000): India Disaster Report, Oxford University Press, New Delhi.
8. Singh, J., (2007). Disaster Management, Future Challenges and Opportunities, I.K. International Pvt. Ltd., New Delhi.
9. Singh, R.B., (2006). Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, Jaipur.
10. Sinha, A., (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi

Annexure I

WARANA UNIVERSITY, WARANANAGAR

NEP-2020: Credit Framework for UG (B.Sc.) Programmes under Faculty of HUMANITIES

SEM (Level)	COURSES			OE	VSC/SEC	AEC/VEC/IKS	OJT/FP/CEP /CC/RP	Total Credits	Degree/Cum. Cr. MEME
	Course-1	Course-2	Course-3						
SEMI (4.5)	DSC-I(2) DSC-II (2) DSC P-I(2)	DSC-I(2) DSC-II (2) DSC P-I(2)	DSC-I(2) DSC-II (2) DSC P-I(2)	OE-1(2) (T/P)		IKS-I(2)		22	UG Certificate 44
SEMII (4.5)	DSC-III(2) DSC-IV (2) DSC P-II(2)	DSC-III(2) DSC-IV (2) DSC P-II(2)	DSC-III(2) DSC-IV (2) DSC P-II(2)	OE-2(2) (T/P)		VEC-I(2) (Democracy, Election and Constitution)		22	
Credits	8(T)+4(P)=12	8(T)+4(P)=12	8(T)+4(P)=12	2+2=4 (T/P)	--	2+2=4	--	44	Exit Option:4 credits NSQF/Internship/Skill courses
	MAJOR		MINOR						
SEMIII (5.0)	Major V(2) Major VI (2) Major P III (2)	--	Minor V(2) Minor VI (2) Minor P III(2)	OE-3(2) (T/P)	VSC I (2) (P) (Major specific) SEC I(2) (T/P)	AEC I(2) (English)	CC-I (2)	22	UG Diploma 88
SEMIV (5.0)	Major VII(2) Major VIII (2) Major P IV (2)	--	Minor VII(2) Minor VIII (2) Minor P IV (2)	OE-4(2) (T/P)	SEC-II(2) (T/P)	AEC-II(2) (English) VEC-II(2) (Environmental studies)	CEP-I(2)	22	
Credits	8(T)+4(P)=12		8(T)+4(P)=12	2+2=4(T/P)	4(T/P)+2(P)=6	2+4=6	2+2=4	44	Exit Option:4 credits NSQF/Internship/Skill courses
SEMV (5.5)	Major IX(2) Major X (2) Major P V (4)	Major I (ELEC)(2) Major P-I (ELEC) (2)	-	OE-5(2) (T/P)	VSC II (2) (Major specific)(P)	AEC III(2) (English)	OJT (04)	22	UG Degree 132
SEMVI (5.5)	Major XI(2) Major XII (2) Major P VI (4)	Major II (ELEC)(2) Major P-II(2) (ELEC)	-		VSC III (2) (Major specific) (P) SEC III(2) (T/P)	AEC IV(2) (English) IKS 2 (Major specific) (2)	FP-(02)	22	
Credits	8(T)+8(P)=16	4(T)+4(P)=8	-	2(T/P)	2(T/P)+4(P)=6	4+2=6	4+2=6	44	
Total Credits	40+20=60		24	10	12	16	10	132	Exit Option