Kurukshetra University Kurukshetra
Scheme of Examination for Undergraduate programmes
Subject: Geography
According to Curriculum Framework for Undergraduate Programmes as per NEP 2020

(Multiple Entry-Exit, Internships and Choice Based Credit System)

To be Implemented w.e.f. Academic Session 2023-24 in Kurukshetra University and Its Affiliated Colleges

Sem.	Course Type	Course Code	Nomenclature of paper	Credits	Contact hours	Internal marks	End term Marks	Total Marks	Duration of exam (Hrs.) T + P
Sem 1	CC-1 MCC-1	B23-GEO-101	Physical Geography (Theory)	3	3	20	50	70	3
			Physical Geography (Practical)	1	2	10	20	30	3
	MCC-2	B23-GEO-102	Fundamentals of Resource Geography (Theory)	3	3	20	50	70	3
			Fundamentals of Resource Geography (Practical)	1	2	10	20	30	3
	CC-M1	B23-GEO-103	General Geography of Haryana	2	2	15	35	50	3
	MDC-1	B23-GEO-104	Physical Geography of India (Theory)	2	2	15	35	50	3
			Physical Geography of India (Practical)	1	2	5	20	25	3
Sem 2	CC-2 MCC-3	B23-GEO-201	Human Geography (Theory)	3	3	20	50	70	3
			Human Geography (Practical)	1	2	10	20	30	3
	DSEC-1	B23-GEO-202	Cartographic Techniques in Geography (Theory)	3	3	20	50	70	3
			Cartographic Techniques in Geography (Practical)	1	2	10	20	30	3
	CC-M2	B23-GEO-203	General Geography of India	2	2	15	35	50	3
	MDC-2	B23-GEO-204	Human Geography of India (Theory)	2	2	15	35	50	3
			Human Geography of India (Practical)	1	2	5	20	25	3
Sem 3	CC-3 MCC-4 / CC-M3	B23-GEO-301	Geography of India (Theory)	3	3	20	50	70	3
			Geography of India (Practical)	1	2	10	20	30	3
	MCC-5	B23-GEO-302	History and Philosophy of Geography (Theory)	3	3	20	50	70	3
			History and Philosophy of Geography (Practical)	1	2	10	20	30	3
	MDC-3	B23-GEO-303	Resource Geography of India (Theory)	2	2	15	35	50	3
			Resource Geography of India (Practical)	1	2	5	20	25	3
	CC-4 MCC-6	B23-GEO-401	Fundamentals of Economic Geography (Theory)	3	3	20	50	70	3
			Fundamentals of Economic Geography (Practical)	1	2	10	20	30	3
	MCC-7	B23-GEO-402	Introduction to Social Geography (Theory)	3	3	20	50	70	3
			Introduction to Social Geography (Practical)	1	2	10	20	30	3

Sem 4	MCC-8	B23-GEO-403	Geography of Settlements (Theory)	3	3	20	50	70	3
			Geography of Settlements (Practical)	1	2	10	20	30	3
	DSE-1	B23-GEO-404	Fundamentals of Bio-Geography (Theory)	3	3	20	50	70	3
			Fundamentals of Bio-Geography (Practical)	1	2	10	20	30	3
		Or							
		B23-GEO-405	Geography of Tourism (Theory)	3	3	20	50	70	3
			Geography of Tourism (Practical)	1	2	10	20	30	3
Sem 5	CC-5 MCC-9	B23-GEO-501	Statistical Methods in Geography (Theory)	3	3	20	50	70	3
			Statistical Methods in Geography (Practical)	1	2	10	20	30	3
	MCC-10	B23-GEO-502	Regional Development and Planning (Theory)	3	3	20	50	70	3
			Regional Development and Planning (Practical)	1	2	10	20	30	3
	DSE-2	B23-GEO-503	Geography of Trade and Transport (Theory)	3	3	20	50	70	3
			Geography of Trade and Transport (Practical)	1	2	10	20	30	3
		Or							
		B23-GEO-504	Cultural Geography (Theory)	3	3	20	50	70	3
			Cultural Geography (Practical)	1	2	10	20	30	3
	DSE-3	B23-GEO-505	Geography of Disaster Management (Theory)	3	3	20	50	70	3
			Geography of Disaster Management (Practical)	1	2	10	20	30	3
		Or							
		B23-GEO-506	Geography of Water Resources (Theory)	3	3	20	50	70	3
			Geography of Water Resources (Practical)	1	2	10	20	30	3
Sem 6	CC-6 MCC-11 / CC-M6	B23-GEO-601	Fundamentals of Remote Sensing (Theory)	3	3	20	50	70	3
			Fundamentals of Remote Sensing (Practical)	1	2	10	20	30	3
	MCC-12	B23-GEO-602	Urban Geography (Theory)	3	3	20	50	70	3
			Urban Geography (Practical)	1	2	10	20	30	3
	DSE-4	B23-GEO-603	Political Geography Theory)	3	3	20	50	70	3
			Political Geography (Practical)	1	2	10	20	30	3
		Or							
		B23-GEO-604	Agricultural Geography (Theory)	3	3	20	50	70	3
			Agricultural Geography (Practical)	1	2	10	20	30	3
	DSE-5	B23-GEO-605	Elementary Soil Geography (Theory)	3	3	20	50	70	3
			Elementary Soil Geography (Practical)	1	2	10	20	30	3
		Or							
		B23-GEO-606	Introduction to Population Geography (Theory)	3	3	20	50	70	3
			Introduction to Population Geography (Practical)	1	2	10	20	30	3
	CC-H1 / CC-	B23-GEO-	Geography and Climate	4	4	30	70	100	3

Sem 7	**HM1**	701							
	CC-H2	B23-GEO-702	Landforms: Processes, Structure and Origin	4	4	30	70	100	3
	CC-H3	B23-GEO-703	Geography and World Economies	4	4	30	70	100	3
	DSE-6	B23-GEO-704	Quantitative Methods in Geography	4	4	30	70	100	3
		Or							
		B23-GEO-705	Data Distribution and Methods in Geography	4	4	30	70	100	3
	PC-H1	B23-GEO-706	Advanced Cartography	4	8	30	70	100	4
Sem 8	**CC-H4 / CC-HM2**	B23-GEO-801	Geography in Hazard Management	4	4	30	70	100	3
	CC-H5	B23-GEO-802	Research Methodology in Geography	4	4	30	70	100	3
	CC-H6	B23-GEO-803	Geography of Agriculture and Food Security	4	4	30	70	100	3
	DSE-7	B23-GEO-804	Population Dynamics and Policies	4	4	30	70	100	3
		Or							
		B23-GEO-805	Geography and Sustainable Development	4	4	30	70	100	3
	PC-H2	B23-GEO-806	Morphometric Analysis	4	8	30	70	100	4
		Or							
	CC-H4/ CC-HM2	B23-GEO-801	Geography in Hazard Management	4	4	30	70	100	3
	CC-H5	B23-GEO-802	Research Methodology in Geography	4	4	30	70	100	3
	Project/Dissertation	B23-GEO-807	Project/Dissertation	12	-	-	-	-	-

CC-HI/ CC-HMI

<table>
<tr><td colspan="4">Session: 2025-26</td></tr>
<tr><td colspan="4">Part A - Introduction</td></tr>
<tr><td>Subject</td><td colspan="3">Geography</td></tr>
<tr><td>Semester</td><td colspan="3">VII</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Geography and Climate</td></tr>
<tr><td>Course Code</td><td colspan="3">B23-GEO-701</td></tr>
<tr><td>Course Type:
(CC/MCC/MDC/CCM/DSEC/VOC/ DSE/PC/AEC/VAC)</td><td colspan="3">CC-H1 / CC-HM1</td></tr>
<tr><td>Level of the course (As per Annexure-I)</td><td colspan="3">400-499</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3">NA</td></tr>
<tr><td>Course Learning Outcomes (CLOs):</td><td colspan="3">After completing this course, the learner will be able to:
1. enhance the knowledge about atmospheric constituents and structure.
2. develop the scientific understanding about climatic elements and their characteristics.
3. sharpen the understanding about atmospheric moisture, stability, instability and weather system.
4. enrich the knowledge about climatic classification, climate change and global warming.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>4</td><td>0</td><td>4</td></tr>
<tr><td>Contact Hours/Week</td><td>4</td><td>0</td><td>4</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 03 Hours</td></tr>
<tr><td colspan="4">Part B- Contents of the Course</td></tr>
<tr><td colspan="4"><u>Instructions for Paper- Setter</u></td></tr>
<tr><td colspan="4">Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.</td></tr>
</table>

Unit	Topics	Contact Hours
I	1. Definition of weather and climate; climatology and meteorology. 2. Origin, composition and structure of atmosphere. 3. Solar radiation, greenhouse effect, heat budget and temperature distribution.	15
II	4. Atmospheric pressure and its distribution pattern. 5. Theories of general circulation and planetary winds. 6. Walker circulation- ENSO and La Nina, origin of monsoons and jet streams.	15
III	7. Atmospheric moisture: humidity, evaporation, condensation; precipitation formation theories and types of precipitation, acid rain. 8. Stability and instability of atmosphere, air masses and fronts. 9. Weather systems: origin and characteristics of extra tropical and tropical cyclones.	15
IV	10. Climatic classification: bases of climatic classification by Koppen, Trewartha and Thornthwaite. 11. Climate change: pattern, evidences and theories. 12. Global warming: theories and impacts on earth systems.	15

Suggested Evaluation Methods

Internal Assessment:30 Marks • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**	**End Term Examination:** **70 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Athrens, C.D. (1994): Meteorology Today: An Introduction to Weather, Climate and Environment, West Publishing Co., Minnesota, USA.
2. Barry, R.G. and Chorley, R.J. (2010): Atmosphere, Weather and Climate, Marthren.
3. Collins, J.M. (2014): Climatology, Oxford.
4. Critchfield, H.J. (1987): General Climatology, Printice Hall of India, New Delhi.
5. Das, P.K. (1984): The Monsoons, National Book Trust, New Delhi.
6. Lal, D.S. (1966): Climatology, Chaitanya Publishing House, Allahabad.
7. Lutgens, F.K. and Tarbuck, E.J. (2010): The Atmosphere: An Introduction to Meteorology, Prentice Hall of India, New Delhi.
8. Miller, A.A. (1979): Climatology, Methuen and Co., London.
9. Oliver, J.E. and Hidore, J.J. (2003): Climatology: An Atmospheric Science, Pearson Education Inc. New Delhi.

10. Rama Sastry, A.A. (1984): Weather and Weather Forecasting, Publication Division, New Delhi.
11. Trewartha, G.T. (1980): An Introduction to Climate, McGraw Hill Company, New York.

CC-H2			
Session: 2025-26			
Part A – Introduction			
Subject	Geography		
Semester	VII		
Name of the Course	Landforms: Processes, Structure and Origin		
Course Code	B23-GEO-702		
Course Type: (CC/MCC/MDC/CCM/DSEC/VOC/ DSE/PC/AEC/VAC)	CC-H2		
Level of the course (As per Annexure-I)	400-499		
Pre-requisite for the course (if any)	N.A.		
Course Learning Outcomes (CLOs):	After completing this course, the learner will be able to: 1. understand the fundamental concepts in geomorphology. 2. examine the processes and factors of weathering and mass wasting and slope processes. 3. understand different processes of landforms, hazards, and their management. 4. comprehend the concepts of applied geomorphology and groundwater studies for development.		
Credits	Theory	Practical	Total
	4	0	4
Contact Hours/ Week	4	0	4
Max. Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**		**Time: 03 Hours**	
Part B- Contents of the Course			
Instructions for Paper- Setter			
Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long			

questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	1. History, development, and fundamental concepts in geomorphology. 2. Convection current theory, sea floor spreading, paleomagnetism, continental drift and plate tectonic.	15
II	3. Weathering and mass wasting: process, factors, types, and its products. 4. Slope processes: hill slopes, pediments and gullies, theories of slope development.	15
III	5. Fluvial, glacial, aeolian, waves and karst: nature, processes and landforms. 6. Geomorphic hazards: earthquakes, volcanoes, floods, tsunami and snow avalanches; processes and management.	15
IV	7. Applied geomorphology: meaning and concept; role of geomorphology in environmental management; accelerated erosion and sedimentation. 8. Applications of geomorphology in groundwater management, construction of large dams, transport infrastructure, and urban development.	15
	Total contact hours	**60**

Suggested Evaluation Methods

Internal Assessment: 30 Marks • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**	**End Term Examination:** **70 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Bloom, A.L. (2002) Geomorphology, Private Limited, New Delhi.
2. Cooke, R.U. and Dounkamp, J.C. (1990) Geomorphology in Environmental Management: A New Introduction, Clarendon Press.
3. Critchfield, H.J., (1997). General Climatology, Prentice Hall of India Pvt. Ltd, New Delhi.

4. Emlenton, C and Thorne. J. 1(979) Process in Geomorphology. London, Edward Arnold.
5. Goudie, A., (1984), The nature of the environment: an advanced physical geography, Basil Blackwell Publishers, Oxford.
6. Hamblin W.K., (1995), Earth's Dynamic System, Prentice Hall, N J.
7. Kale, V.S. and Gupta A. (2001) Introduction to Geomorphology. Orient Longman, Hyderabad.
8. Michael A. Summerfield (1991) Global Geomorphology, Prentice Hall.
9. Monkhouse F.J. (2009), Principals of Physical Geography, Platinum Publishers, Kolkata.
10. Pickering, K.T and Owen, L.A. (1997) An Introduction to Global Environmental Issues, Routledge.
11. Ritter, D.F., Kochel, RC. and Miller, J.R. 1(995) Process Geomorphology. Dubuque, Win C. Brown Publishers.
12. Sharma, H.S. and Kale, VS (2009) Geomorphology in India, Prayag Pustak Bhawan, Allahabad.
13. Sharma, V.K. (2010) Introduction to Process Geomorphology. Tayler and Francis's, London.
14. Sharma, V.K. (1992) Earth's Surface Processes and Forms. Tata McGraw Hill Publications, New Delhi.
15. Singh, S. (2002) Geomorphology, Prayag Pustak Bhawan, Allahabad.
16. Strahler, A.A. and Strahler, A. N., (2002) Physical Geography: Science and Systems of the Human Environment, John Wiley and Sons, INC.
17. Strahler, A.H. and Strahler, A. N., (1992) Modern Physical Geography, John Wiley and Sons, INC.
18. Strahler, A.H. (2013) Introducing Physical Geography, Wiley and Sons, New York.
19. Strahler, A.N., Strahler A.H. (2008). Modern Physical Geography. John Wiley and Sons, New York.
20. Thornbury, WD. (2004) Principles of Geomorphology, John Wiley Sons, New York.

CC-H3

Session: 2025-26			
Part A - Introduction			
Subject	Geography		
Semester	VII		
Name of the Course	Geography and World Economies		
Course Code	B23-GEO-703		
Course Type: (CC/MCC/MDC/CCM/DSEC/VOC/ DSE/PC/AEC/VAC)	CC-H3		
Level of the course **(As per Annexure-I)**	400-499		
Pre-requisite for the course **(if any)**	NA		
Course Learning Outcomes (CLOs):	After completing this course, the learner will be able to: 1. provide understanding about the location and distribution of economic activities. 2. acquaint with the spatial organization of world economies. 3. familiarize with location theories of economic activities. 4. acquire knowledge about trade blocs, trends in trade and various processes of globalization.		
Credits	Theory	Practical	Total
	4	0	4
Contact Hours/Week	4	0	4
Max. Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**		**Time: 03 Hours**	
Part B- Contents of the Course			
Instructions for Paper- Setter			

Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	1. Geographical approach to economy: space, place and scale. 2. Concepts in economic geography: economic man, goods and services, production, exchange and consumption; consumption process: significance of consumption in economy. 3. Spaces of consumption: store, street, mall and theme parks.	15
II	4. World economies: bases of classification, patterns and characteristics of developed and developing economies of the world. 5. Economic development: meaning, evolution, goals, measures, patterns, problems and stages of economic development (classical and contemporary: Rostow's, Romer's models).	15
III	6. Network structure and economic activities, impact of transport on economic activities, spatial variation in production and transport cost. 7. Location theories of Weber, Losch, Christaller and Ullman.	15
IV	8. Globalization and recent trends in pattern of international trade; major regional trade blocks of the world. 9. GATT, WTO, EU and TRIPS: Functions and relevance; functions and relevance of OPEC regarding energy crisis in developed and developing countries of the world.	15

Suggested Evaluation Methods

Internal Assessment: 30 Marks • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**	**End Term Examination:** **70 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Aoyama, Y., Murphy, J. and Hanson, S. (2010): Key Concepts in Economic Geography, London: Sage.
2. Bagchi-Sen, S. and Smith, H.L. (2006): Economic Geography: Past, Present and Future, London and New York: Taylor and Francis.
3. Barnes, T., Peck, J., Sheppard, E. and Tickell, A. (Eds) (2003): Reading Economic

Geography, London: Wiley-Blackwell.
4. Coe, N., Kelly, P. and Yeung, H. (2007): Economic Geography: A Contemporary Introduction, John Wiley & Sons, London.
5. Combes, P., Mayer, T. and Thisse, J.F. (2008): Economic Geography: The Integration of Regions and Nations, Princeton University.
6. Gautam, A. (2010): Advanced Economic Geography, Sharda Pustak Bhawan, Allahabad.
7. Hartshorne, T.A. and Alexander, J.W. (2001): Economic Geography, Prentice Hall of India. New Delhi.
8. Hudson, R. (2005): Economic Geographies: Circuits, Flows and Spaces, London: Sage.
9. Jones, C.F. and Darkenwarld, G.G. Economic Geography, The Macmillan and Company, New York.
10. Karlsson, C., Andersson, M. and Norman, T. (2015): Handbook of Research Methods and Applications in Economic Geography, Edward Elgar Publishing, Cheltenham, UK.
11. Knox, P. (2003): The Geography of World Economy, Arnold, London.
12. Saxena, H.M. (2013): Economic Geography, Rawat Publications, Jaipur.
13. Wheeler, J.O. and Muller, P.O. (1985): Economic Geography, John Wiley and Sons, New York.
14. Willington, D.E. (2008): Economic Geography, Husband Press.
15. Wood, A. and Roberts, A. (2010): Economic Geography: Places, Networks and Flows, Routledge, London and New York.

DSE-6			
Session: 2025-26			
Part A - Introduction			
Subject	Geography		
Semester	VII		
Name of the Course	Quantitative Methods in Geography		
Course Code	B23-GEO-704		
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE-6		
Level of the course (As per Annexure-I	400-499		
Pre-requisite for the course (if any)	N.A.		
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. understand tools of quantitative information and data. 2. gain knowledge about statistical analysis of spatial pattern from geographical data. 3. enrich knowledge about inferential data analysis and errors associated with it. 4. acquaint with bivariate and multivariate analytical techniques.		
Credits	Theory	Practical	Total
	04	00	04
Contact Hours	04	00	04
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks:**70		**Time: 3 hours**	
Part B- Contents of the Course			
Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least			

one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	1. Descriptive statistics: histogram and frequency curve, measures of central tendency: mean, median, mode, partitioned values: quartiles and percentiles, comparison of mean, median and mode. 2. Measures of dispersion: absolute measures: range, quartile deviation, mean deviation, standard deviation, relative measure of dispersion: coefficient of variation.	15
II	3. Normal curve as a probability distribution: characteristics and area under curve. Sampling theory and chance error. 4. Measures of inequality: location quotient, Lorenz curve and Gini ratio.	15
III	5. Bivariate analysis in geographical studies: scatter diagram, correlation analysis, Spearman's rank correlation and Karl Pearson's correlation coefficient, test of significance (t test), coefficient of determination. 6. Simple linear regression model: estimation of regression equation (least square method), interpretation and significance in geographical studies.	15
IV	7. Hypothesis testing and chi square: utility in geographical studies, significance test and interpretation. 8. Residuals and their mapping, basics of multivariate and correlation matrix.	15

Suggested Evaluation Methods

Internal Assessment:	**End Term Examination:**
➢ **Theory** • Class Participation: **5** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks** • **Total Marks:30**	70 Marks

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Gregory, S. Statistical Methods and the Geographers, Longman, London, 1964.
2. Gupta, C. B. An Introduction to Statistical Methods, Vikas Publishing House, Delhi, 1974.
3. Johnston, R.J. Multivariate Statistical Analysis in Geography, Longman Scientific and Technical, John Wiley & Sons, 1989.
4. Mahmood, A. Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi, 1993.

5. Pal, S.K. Statistics for Geoscientists: Techniques and Applications, Concept Publishing Company, New Delhi, 1998.
6. Houshmand, A.R. Statistical Methods for Environmental and Agricultural Sciences, CRC Press, New York, 1998.
7. Levin, J and Fox, J.A. Elementary Statistics in Social Research, Pearson Education, New Delhi, 2006.
8. Rogerson. P.A. Statistical Methods for Geography, Sage Publication, New Delhi, 2010.
9. Sarkar, A. Quantitative Geography: Techniques and Presentations. 2013.

DSE-6

Session: 2025-26			
Part A - Introduction			
Subject	Geography		
Semester	VII		
Name of the Course	Data Distribution and Methods in Geography		
Course Code	B23-GEO-705		
Course Type: (CC/MCC/MDC/CCM/DSEC/VOC/DSE/PC/AEC/VAC)	DSE-6		
Level of the course **(As per Annexure-I)**	400-499		
Pre-requisite for the course **(if any)**	NA		
Course Learning Outcomes (CLOs):	After completing this course, the learner will be able to: 1. understand the geographic data and its distribution. 2. acquire skills of processing geographic data. 3. get asquint with processing of bi-variate data. 4. enhanced understanding of which method to use for varying geographical research.		
Credits	Theory	Practical	Total
	4	0	4
Contact Hours	4	0	4
Max. Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**		**Time: 03 Hours**	
Part B- Contents of the Course			
Instructions for Paper- Setter			

Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	1. Data: type. Organisation, tabulation- methods; significance of data in geographical studies. 2. Distribution theory: Normal, Binomial and Poisson distribution and their geographical applications.	15
II	3. Sampling Plan for spatial data. Sampling Error, F distribution. ANOVA and geographical applications. 4. Measures of Inequality: Location Quotient, Lorenz curve and Gini Ratio. Geographical significance of each method.	15
III	5. Non-Parametric Test: Chi square, significance test, Mann-Whitney and Krustal-Wallis. 6. Correlation: Graphical (scatter); Karl Pearson, Spearman's Rank correlation, t-test; coefficient of determination.	15
IV	7. Regression Analysis: Simple regression and its geographical application. Residual and its significance in geographical studies. 8. Basics of multi-variate analysis: Multiple correlation; partial correlation; basics of multiple regression.	15

Suggested Evaluation Methods

Internal Assessment:	**End Term Examination:**
• Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**	**70 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Gregory, S. Statistical Methods and the Geographers, Longman, London, 1964.
2. Gupta, C. B. An Introduction to Statistical Methods, Vikas Publishing House, Delhi, 1974.
3. Houshmand, A.R. Statistical Methods for Environmental and Agricultural Sciences, CRC Press, New York, 1998.
4. Johnston, R.J. Multivariate Statistical Analysis in Geography, Longman Scientific and Technical, John Wiley & Sons, 1989.
5. Levin, J and Fox, J.A. Elementary Statistics in Social Research, Pearson Education, New Delhi, 2006.
6. Mahmood, A. Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi, 1993.

7. Pal, S.K. Statistics for Geoscientists: Techniques and Applications, Concept Publishing Company, New Delhi, 1998.
8. Rogerson. P.A. Statistical Methods for Geography, Sage Publication, New Delhi, 2010.
9. Sarkar, A. Quantitative Geography: Techniques and Presentations. 2013.

PC-H1			
Session: 2025-26			
Part A – Introduction			
Subject	Geography		
Semester	VII		
Name of the Course	Advanced Cartography		
Course Code	B23-GEO-706		
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	PC-H1		
Level of the course (As per Annexure-I	400-499		
Pre-requisite for the course (if any)	N.A.		
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. understand the basic concepts of cartographic techniques 2. represent the diagram/graphs through excel programme. 3. representation of climatic and socio-economic data 4. prepare choropleth, dot and other diagrams through cartographic techniques.		
Credits	Theory	Practical	Total
	00	08	08
Contact Hours	00	08	08
Max. Marks:100 **Internal Assessment Marks:30** **End-Term Exam Marks:70**		**Time:04 hours**	
Part B- Contents of the Course			
Instructions for Paper-Setter **Note for Paper Setters: The examiner shall set four questions, two from each unit. The candidate shall attempt three questions in all, selecting at least one question from each unit.** **Distribution of Marks for Evaluation** **Exercise = 10x4 = 40** **File Record = 10** **Viva-voce = 20**			
Unit	**Topics**		**Contact Hours:120**

Unit-I	1. Nature, scope, and recent advancement in cartography. 2. Types and characteristics of distribution maps: Chorochromatic, Choroschematic, Isopleths, Choropleth, Dot and Diagrammatic. 3. Types and characteristics of statistical diagrams: One dimensional (bar, line), Two dimensional (circular, rectangular, square), Three dimensional (sphere, cube) and other diagrams (Snail, pyramid, flow diagram/cartogram). 4. Characteristics of graph/diagrams/maps representing climatic data: Rainfall deviation, Climograph (Taylor and Foster), Hythergraph, Star/Wind rose diagram, Isopleths, Line and bar and polygraph.	30
Unit-II	Representation of data using Excel program: 5. Time series analysis: moving average of rainfall and temperature data. 6. Poly and trend graphs; line and bar, rainfall deviation diagram, bar graphs (simple, comparative and compound); wheel diagram.	30
Unit-III	Representation of climatic and socio-economic data: 7. Climograph (Foster and Taylor) 8. Hythergraph 9. Ergograph 10. Wind rose diagram 11. Isopleth	30
Unit-IV	12. Dot method 13. choropleth (mono-variate, bi-variate) 14. Age and sex pyramid 15. Snail diagram 16. Triangle diagram 17. Cartogram (Traffic flow, rectangular)	30
Suggested Evaluation Methods		
Internal Assessment:30 Marks ➢ **Practicum** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**		**End-Term Examination:** **70 Marks**
Part C-Learning Resources		

Recommended Books/e-resources/LMS:

1. Dent, B.D. (1999) Cartography: Thematic Map Design, (Vol. 1), McGraw Hill.
2. Gupta, K.K. and Tyagi, V.C (1992) Working with Maps, Survey of India, DST, New Delhi.
3. Monkhouse, F.J and Wilkinson, H.R (1971) Maps and Diagrams. Methuen and Co. Ltd., London
4. Ramamurthy, K (1982) Map Interpretation, Rex Printers, Madras.
5. Robinson A (1953) Elements of Cartography, John Wiley.
6. Siddhartha, K (2006) Geography through maps, Kisalaya Publications Pvt. Ltd, Delhi
7. Singh, G (2005) Map work and practical geography. Vikas Publishing House Pvt. Ltd., New Delhi
8. Singh, L.R and Singh, R (1973) Map work and practical geography, Central Book Allahabad
9. Singh, R.L (2005) Elements of Practical Geography. Kalyani Publishers, New Delhi. India.

CC-H4/CC-HM2

<table>
<tr><td colspan="4">Session: 2025-26</td></tr>
<tr><td colspan="4">Part A - Introduction</td></tr>
<tr><td>Subject</td><td colspan="3">Geography</td></tr>
<tr><td>Semester</td><td colspan="3">VIII</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Geography in Hazard Management</td></tr>
<tr><td>Course Code</td><td colspan="3">B23-GEO-801</td></tr>
<tr><td>Course Type:
(CC/MCC/MDC/CCM/DSEC/VOC/ DSE/PC/AEC/VAC)</td><td colspan="3">CC-H4 / CC-HM2</td></tr>
<tr><td>Level of the course (As per Annexure-I)</td><td colspan="3">400-499</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3">N.A.</td></tr>
<tr><td>Course Learning Outcomes (CLOs):</td><td colspan="3">After completing this course, the learner will be able to:
1. understand the concept of hazard and disaster.
2. make a distinction between vulnerability and risk.
3. make an acquaintance with quasi-natural and man-made hazards.
4. aware about the role of geospatial technology in disaster management.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>4</td><td>0</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>4</td><td>0</td><td>4</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 03 Hours</td></tr>
<tr><td colspan="4">Part B- Contents of the Course</td></tr>
<tr><td colspan="4"><u>Instructions for Paper- Setter</u></td></tr>
<tr><td colspan="4">Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.</td></tr>
</table>

Unit	Topics	Contact Hours
I	1. Risk, hazards and Disasters: definitions, distinctions. 2. Hazards: classification and dimensions. 3. Disaster effects and impacts (physical and social).	15
II	4. Disaster vulnerability: definition, types, measures and affecting factors. 5. Disaster risk assessment and management. 6. Disaster cycles: mitigation measures and preparedness.	15
III	7. Desertification: causes, assessment, effects and control measures. 8. Sea level change: causes, consequences, projections and control measures. 9. Technological hazards: nature, theories and practice, perception, mitigation, protection and adaptation.	15
IV	10. Disaster risk reduction framework: Hyogo and Sendai. 11. Disaster management in India: strategies, policies and organizational structure setup. 12. Geospatial technology applications in disaster prevention and monitoring.	15

Suggested Evaluation Methods

Internal Assessment:30 Marks • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**	**End Term Examination:** **70 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Alexander, D. (1993): Natural Disasters, Springer, Berlin.
2. Carter, N.W. (1991): Disaster Management: A Disaster Manager's Handbook, ADB, Manila.
3. Coch, N.K. (1994): Geohazards: Natural and Human, Pearson, New Delhi.
4. Cooke, R.U. and Doorn Kamp, J.C. (1974) Geomorphology in Environmental Management: An Introduction, Clarendon Press, Oxford.
5. Cuny, F.C. (1983): Disasters and Development, Oxford University Press.
6. Cutter, S.L. (2006): Hazards Vulnerability and Environmental Justice, Routledge, London.
7. Gupta, H.K. (2013): Disaster Management, University Press, New Delhi.
8. Hewitt, K. (1977): Regions of Risk: A Geographical Introduction to Disasters, Longman, Harlow.
9. Husky, T. (2012): Encyclopedia of the Hazardous Earth, Viva Books, New Delhi.

10. Kapur, A. (2010): Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
11. Modh, S. (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, New Delhi.
12. National Policy on Disaster Management, (2009): Ministry of Home Affairs, Govt. of India, New Delhi.
13. Nlaikie, P. (1994): At Risk: Natural Hazards, People's Vulnerability and Disasters, Routledge, London.
14. Paul, B.K. (2011): Environmental Hazards and Disasters-Context, Perspectives and Management, Wiley-Blackwell, Chichester, West Sussex, UK.
15. Pine, J.C. (2014): Hazards Analysis: Reducing the Impact of Disasters, CRC Press, New Delhi.
16. Singh, R.B. (2006): Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
17. Singh, S. and Singh, J. (2013): Disaster Management, Pravalika Publications, Allahabad.
18. Sinha, A. (2001): Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
19. Smith, K. (1996): Environmental Hazards: Assessing Risks and Reducing Disasters, Routledge, London.
20. Stoltman, J.P. (2004): International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
21. Turk, J. (1985): Introduction to Environmental Studies, Saunders Publications, Tokyo, Japan.
22. Varley, A. (1994): Disaster, Development and Environment, John Wiley and Sons, Chichester.

CC-H5

Session: 2025-26			
Part A - Introduction			
Name of Programme	Under Graduate Programme		
Semester	**VIII**		
Name of the Course	Research Methodology in Geography		
Course Code	B23-GEO-802		
Course Type	CC-H5		
Level of the course	400-499		
Pre-requisite for the course (if any)			
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. realize the importance of fieldwork in learning geography. 2. enhance ability to identify research problem and formulation of research design. 3. acquaint with satellite data. 4. develop capability to extract information from resource satellite imageries.		
Credits	Theory	Practical	Total
	4	0	4
Contact Hours	4	0	4
Max. Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 03 Hours**		

Part B- Contents of the Course

Instructions for Paper- Setter: Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	1. Introduction to research methodology: meaning and objectives of research, characteristics of research, types of research. 2. Introduction of research design: purpose and characteristics of design; problems and formulation of research design in geography.	15
II	3. Sources of data: characteristics of primary and secondary data, significance of field work in geography. 4. Sampling design for collection of primary data, quantitative and qualitative data, hypothesis formulation and testing.	15
III	5. Remote sensing data: processes of obtaining data, air and space based, types of satellites, sensors characteristics, resolution and types. 6. Panchromatic, multispectral, thermal and hyperspectral remote	15

	sensing data, characteristics and significance.	
IV	**7.** Indian remote sensing resource satellites data, changing characteristics, significance and uses; applications of remote sensing data in geographical research: data requirement for urban, agriculture and resource mapping and monitoring. 8. Format of report/dissertation/thesis writing.	15
	Total Contact Hours	60

Suggested Evaluation Methods			
Internal Assessment: 30		**End Term Examination: 70**	
➢ **Theory**	**30**	➢ **Theory:**	**70**
• Class Participation:	5	Written Examination: 70	
• Seminar/presentation/assignment/quiz/class test etc.:	10		
• Mid-Term Exam:	15		

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Black James A and D.J. Champion (1976): Methods and Issues in Social Research, New York, John Wiley and Sons, Inc.
2. Campbell, J.B. (2002) Introduction to Remote Sensing, Taylor & Francis, New York, USA.
3. Goode and Hatt, Research Methodology in Social Sciences, Oxford University Press, New Delhi.
4. Gomez B and John Paul Jones. 2010. Research Methods in Geography-A Critical Introduction. Wiley Blackwell Publications, Singapore.
5. Har Prasad (1992) Research Methods and Techniques in Geography, Rawat Publishers, Jaipur.
6. Jensen, J.R. (2000), Remote Sensing of the Environment: An Earth Resource Perspectives, Pearson Education.
7. Kothari, C.R. Research Methodology, New Age International Publishers
8. Kundu A. Measurement of Urban Processes: A Study of Regionalization, Popular Prakashan, Mumbai.
9. Lillesand, TM. and Keffer R. (1994) Remote Sensing and Image Interpretation, John Willy & Sons, New York.
10. Meenakshi Kumar (2000), Text book on Remote Sensing; NCERT, New Delhi.
11. Mishra, H.N. and Singh V.P. (1998) Research Methodology: Social, Spatial and Policy Dimensions, Rawat Publishers, Jaipur.
12. Nag and Kudrat (2002), Remote Sensing and Image Interpretation, Concept Publishers, Delhi.
13. Xuemeng Cao and Emily F. Henderson 2021. Exploring Diary Methods in Higher Education Research: Opportunities, Choices and Challenges, Routledge.

<table>
<tr><td colspan="4">CC-H6</td></tr>
<tr><td colspan="4">Session: 2025-26</td></tr>
<tr><td colspan="4">Part A - Introduction</td></tr>
<tr><td>Subject</td><td colspan="3">Geography</td></tr>
<tr><td>Semester</td><td colspan="3">VIII</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Geography of Agriculture and Food Security</td></tr>
<tr><td>Course Code</td><td colspan="3">B23-GEO-803</td></tr>
<tr><td>Course Type:
(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="3">CC-H6</td></tr>
<tr><td>Level of the course (As per Annexure-I</td><td colspan="3">400-499</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3">N.A.</td></tr>
<tr><td>Course Learning Outcomes (CLO):</td><td colspan="3">After completing this course, the learner will be able to:
1. gain knowledge about the concepts of agriculture geography and its origin, determinants and approaches.
2. enhance the knowledge of agriculture concepts and land capability classification.
3. understand the agricultural regionalisation, agro-climatic regions and its major revolutions in India.
4. familiarize with the problems, prospects and its policies of Indian agriculture.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>4</td><td>0</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>4</td><td>0</td><td>4</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks:30
End Term Exam Marks:70</td><td colspan="2">Time: 03 Hours</td></tr>
<tr><td colspan="4">Part B- Contents of the Course</td></tr>
<tr><td colspan="4"><u>Instructions for Paper- Setter</u>
Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long</td></tr>
</table>

questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.		
Unit	**Topics**	**Contact Hours**
I	1. Nature, scope and significance of agricultural geography; origin and dispersal of agriculture; determinants of agricultural patterns: physical, technological and cultural factors. 2. Approaches to the study of agricultural geography - regional and systematic approach, ecological and commodity approach.	15
II	3. Concepts of land capability classification; land use survey and classification. 4. Concepts of intensity of cropping, degree of crop commercialization, crop diversification and concentration, crop combination; Von Thunen model of agricultural land use.	15
III	5. Agricultural regionalisation: concept and criteria; Whittlesey's agricultural systems; measurement of agricultural efficiency and productivity. 6. Agro-climatic zonation: concept and Indian experiences.	15
IV	7. Neo-liberalization and Indian agriculture; problems of Indian agriculture; food security in India. 8. Perspectives in agriculture: urban agriculture, contract farming, agri-business, sustainable agricultural development; agriculture and climate change: impacts and adaptation; Indian agricultural policies and challenges.	15
Suggested Evaluation Methods		
Internal Assessment: 30 Marks ➢ **Theory** • Class Participation: **5 Marks** • Seminar/presentation/assignment/quiz/class test etc**.: 10 Marks** • Mid-Term Exam: **15 Marks**		**End Term Examination:70**
Part C-Learning Resources		

Recommended Books/e-resources/LMS:

1. Bowler TR (1992) The Geography of Agriculture in Developed Market Economics. Longman.
2. Ferroni, Marco, (2013). Transforming Indian agriculture- India 2040: Productivity, Markets and Institutions, Sage Publications, New Delhi.
3. Geoffrey, H.F. (1970) Geography of Agriculture: Themes in Research. Practice Hall, N.J.
4. Grigg D (1995) Introduction to Agricultural Geography. Routledge, London.
5. Husain, Majid (1996) Systematic Agricultural Geography. Rawat Publications, Jaipur.
6. Mohammad, N. (1992). New Dimension in Agriculture Geography, Vol. I to VIII, Concept Publishing Company, New Delhi.
7. Mohammad, N. and Rai, S.C. (2014). Agricultural Diversification and Food Security in the Mountain Ecosystem, Concept Publishing Company, New Delhi.
8. Morgon, W.B. and Munton, R.J.C. (1971) Agricultural Geography. Methuen, London.
9. Roling, N.G., and Wageruters, M.A.E. (eds.) (1998). Facilitating Sustainable Agriculture, Cambridge University Press, Cambridge.
10. Shafi, M. (2006). Agricultural Geography. Pearson Education, Delhi.
11. Shafi, Mohammad (2007) Agricultural Geography. Prentice-Hall of India.
12. Singh Jasbir and Dhillon S.S. (1994) Agricultural Geography. Tata Mc Graw Hill, New Delhi.
13. Symons, Leslic (1967): Agricultural Geography, G. Bell and Sons, London.
14. Tarrant, J.R. (1974) Agricultural Geography, Willey, New York.
15. White P. (2007). Emergence of agriculture: A global view, Routledge, London.
16. Wright J. (2009). Sustainable agriculture and food security in an era of oil scarcity, Earthscan, London.
17. Young, A. (1998). Landuse Resources: Now and for the Future, Cambridge University Press, Cambridge.

DSE-7

<table>
<tr><td colspan="4">Session: 2025-26</td></tr>
<tr><td colspan="4">Part A - Introduction</td></tr>
<tr><td>Subject</td><td colspan="3">Geography</td></tr>
<tr><td>Semester</td><td colspan="3">VIII</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Population Dynamics and Policies</td></tr>
<tr><td>Course Code</td><td colspan="3">B23-GEO-804</td></tr>
<tr><td>Course Type:
(CC/MCC/MDC/CCM/DSEC/VOC/ DSE/PC/AEC/VAC)</td><td colspan="3">DSE-7</td></tr>
<tr><td>Level of the course (As per Annexure-I)</td><td colspan="3">400-499</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3">NA</td></tr>
<tr><td>Course Learning Outcomes (CLOs):</td><td colspan="3">After completing this course, the learner will be able to:
1. gain knowledge about population data base, methodological issues and mapping population data.
2. familiarize with the dynamics of population and demographic dividends.
3. acquire knowledge about population theories and models.
4. aware about population policies of different countries and relation between population and environment.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>4</td><td>0</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>4</td><td>0</td><td>4</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 03 Hours</td></tr>
<tr><td colspan="4">Part B- Contents of the Course</td></tr>
<tr><td colspan="4"><u>Instructions for Paper- Setter</u></td></tr>
</table>

Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	1. Sources, quality, reliability and applications of population data. 2. Methodological problems in population geography. 3. Problems of mapping population data.	15
II	4. Concepts, measurements, determinants, and world patterns of fertility, mortality, migration (including policies) and growth. 5. Composition of population: concepts, measurements, determinants, and world patterns of age and sex, occupational structure and workforce. 6. Demographic dividend: linkages between population and economic development.	15
III	7. Theory of population: Malthus, views of Marx and Ricardo, demographic transition model. 8. Population resource relations: concepts of over population, under population and optimum population; population resource regions. 9. Limits to growth: concept and application.	15
IV	10. Comparative study of population problems and policies of developed and less developed countries. a. Developed world: U.S.A., Australia, and Canada. b. Less developed world: India, China and Brazil. 11. Population problems and environmental implications.	15
Internal Assessment: 30 Marks • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**		**End Term Examination:** **70 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Bhende, A. A. and Kanitkar, T. (2011): Principles of Population Studies, Himalaya Publishing House, Mumbai.
2. Cassen, Robert & Bates, Lisa M. (1994): Population Policy: A New Consensus Overseas Development Council, Washington, D.C.
3. Chandna, R. C. (2016): Population Geography: Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
4. Demko, G. J. and others (Eds.) (1971): Population Geography, Reader, McGraw- Hill Books Co., New York

5. Graff, M., and Bremner, J. (2014): A Practical Guide to Population and Development, Washington DC: Population Reference Bureau.
6. Hassan, M.I. (2020) Population Geography: A Systematic Exposition, Routledge, London.
7. May, J.F. (2012) World population policies: their origin, evolution, and impact, Washington DC: Springer.
8. Mahajan, N (2014) Population Geography, R.K. publishers, Delhi.
9. Murray C. J. L., J. A. Salomon, C. D. Mathers and A. D. Lopez (2002), Summary Measures of Population Health: Concepts, Ethics, Measurement and Applications. WHO, Geneva.
10. Newbold, K Bruce (2016) Population geography: Tools and Issues.
11. Qazi, S.A(2010). Population Geography, APH publishers.
12. Trewartha, G. T. (1972): The Less Developed Realm-A Geography of its Population, John Wiley & Sons, Inc., New York.
13. Trewartha, G. T. (1978): The More Developed Realm-A Geography of its Population Pergamon Press, New York.
14. United Nations (1997): Health and Mortality Issues of Global Concern, Proceeding of the Symposium on Health and Mortality, Brussels, 19-22 November 1997.
15. Woods, R. (1979): Population Analysis in Geography, Longman, London.

DSE-7

Session: 2025-26			
Part A – Introduction			
Subject	Geography		
Semester	VIII		
Name of the Course	Geography and Sustainable Development		
Course Code	B23-GEO-805		
Course Type: (CC/MCC/MDC/CCM/DSEC/VOC/DSE/PC/ AEC/VAC)	DSE-7		
Level of the course **(As per Annexure-I)**	400-499		
Pre-requisite for the course **(if any)**	NA		
Course Learning Outcomes (CLOs):	After completing this course, the learner will be able to: 1. familiarize with the concepts, and goals of sustainable development. 2. enrich knowledge about the utilization of resources, agriculture and food security. 3. aware about the increasing imperviousness in cities and thermal environment and urban disaster risk management. 4. acquaint about inclusive development and feasibility of sustainable development.		
Credits	Theory	Practical	Total
	4	0	4
Contact Hours	4	0	4
Max. Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**		**Time: 03 Hours**	
Part B- Contents of the Course			
Instructions for Paper- Setter			
Question 1 is compulsory comprising of seven sub parts spread over entire syllabus (two			

marks for each sub part), to be answered in 15-20 words. There will be eight long questions, two from each unit. The candidate has to answer four long questions, at least one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	1. Sustainable development: introduction, history, concepts. 2. Strategies, measurement and sustainable development goals.	15
II	3. Sustainable utilisation of resources: land, water and energy. 4. Sustainable agriculture and food security.	15
III	5. Increasing imperviousness in cities, thermal environment (Urban Heat Island). 6. Urban disaster risk management, sustainable smart cities and good governance, sustainable approaches to urban water Management.	15
IV	7. Inclusive development: gender and economic equality climate change and sustainability, coping with climate change. 8. Feasibility of sustainable development.	15

Suggested Evaluation Methods

Internal Assessment:30 Marks • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10 Marks** • Mid-Term Exam: **15 Marks**	**End Term Examination:** **70 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Agyeman, Julian, Robert D. Bullard, & Bob, Evans (Eds.) (2003), Just Sustainabilities: Development in an Unequal World. London: Earthscan. (Introduction and conclusion.).
2. Ayers, Jessica & David Dodman (2010). Climate change adaptation and development I: the state of the debate. Progress in Development Studies 10 (2): 161-168.
3. Baker, Susan (2006). Sustainable Development. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, "The concept of sustainable development").
4. Roling, N.G., & Wageruters, M.A.E., (ed.) (1998). Facilitating Sustainable Agriculture, Cambridge: Cambridge University Press.
5. Singh, R. B. (Ed.). (2001). Urban Sustainability in the Context of Global Change: towards promoting healthy and green cities. Science Pub Incorporated.

PC-H2			
Session: 2025-26			
Part A – Introduction			
Subject	Geography		
Semester	VIII		
Name of the Course	Morphometric Analysis		
Course Code	B23-GEO-806		
Course Type: (CC/MCC/MDC/CCM/DSEC/VOC/DSE/PC/AEC/VAC)	PC-H2		
Level of the course (As per Annexure-I)	400-499		
Pre-requisite for the course (if any)	N.A.		
Course Learning Outcomes (CLOs):	After completing this course, the learner will be able to: 1. understand the history, basic concepts and significance of morphometric analysis. 2. draw watershed and profiles and interpret them. 3. represent the ordering, linear and areal aspects of drainage basin. 4. prepare the slope and relief maps of drainage basin.		
Credits	Theory	Practical	Total
	00	08	08
Contact Hours	00	08	08
Max. Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**		**Time: 04 Hours**	
Part B- Contents of the Course			
Instructions for Paper- Setter			

Note for Paper Setters: The examiner shall set four questions, two from each unit. The candidate shall attempt three questions in all, selecting at least one question from each unit.

Distribution of Marks for Evaluation

Exercise = 40 **File Record = 10** **Viva-voce = 20**

Unit	Topics	Contact Hours =120
I	1. History of morphometric analysis and significance. Natural unit for morphometric analysis- watershed, Arrangement, identification and interpretation of topographical sheets of India. 2. Profile: Transverse and longitudinal, Drainage network analysis: Linear and areal properties, Relationship between stream order, number, length and bifurcation ratio. 3. Relief aspect of drainage basin: Area-height curve, Altimetric frequency curve, Hypsographic curve, Hypsometric integral curve and Clinographic curve. 4. Development of slope and various methods of its analysis (Wentworth and Smith's method).	30
II	5. Representation and Interpretation of Physical features from topographical maps. 6. Representation and Interpretation of Cultural features from topographical maps. 7. Delineation of watershed (all exercises shall be based on it) 8. Profile analysis: Transverse (Serial, superimposed, composite and projected) and longitudinal or valley Thalweg profile.	30
III	9. Ordering methods of Stream: Horton and Strahler. 10. Linear aspect: relationship between stream order and number, average stream length and bifurcation ratio. 11. Areal aspects: drainage frequency and density.	30
IV	12. Relief aspect: area height curve, altimetric frequency curve, hypsographic curve, hypsographic integral curve and clinographic curve. 13. Slope analysis: average slope (Wentworth's) and relative relief (G.H Smith's method).	30

<table>
<tr><td colspan="2">Total contact hours</td><td>120</td></tr>
<tr><td colspan="3">Suggested Evaluation Methods</td></tr>
<tr><td colspan="2">Internal Assessment: 30 Marks
➢ Practicum
• Class Participation: 05 Marks
• Seminar/presentation/assignment/quiz/class test etc.: 10 Marks
• Mid-Term Exam: 15 Marks</td><td>End Term Examination:

70 Marks</td></tr>
<tr><td colspan="3">Part C-Learning Resources</td></tr>
<tr><td colspan="3">Recommended Books/e-resources/LMS:
1. Dury, G.H. 1966. Essays in Geomorphology. Heinmann, London.
2. Miller, A. 1964. The Skin of the Earth. Methuen, London.
3. Misra, R.P. and Ramesh, A. 1999. Fundamentals of Cartography, Concept Publishing Company, New Delhi.
4. Monkhouse, F. J. and Wilkinson, H.R. 1980. Maps and Diagrams. B.I. Publications, New Delhi.
5. Singh, R. L. 1986. Elements of Practical Geography, Kalyani Publications, New Delhi.
6. Singh. S. Geomorphology (2022), Prayag Pustak.
7. Strahler and Strahler (2000), Physical Geography, Wiley.</td></tr>
</table>

PC-H2			
Session: 2025-26			
Part A – Introduction			
Subject	Geography		
Semester	VIII		
Name of the Course	Project/Dissertation		
Course Code	B23-GEO-807		
Course Type: (CC/MCC/MDC/CCM/DSEC/VOC/DSE/ PC/AEC/VAC)	Project/Dissertation		
Level of the course (As per Annexure-I)			
Pre-requisite for the course (if any)	N.A.		
Course Learning Outcomes (CLOs):	After completing this course, the learner will be able to: 1. identify the research problem and formulation of research design 2. work in real time field and laboratory situations. 3. learn the techniques of data generation and analysis of the generated data. 4. Interpret and discuss the results of a research problem in hand. 5. Learn the nitty-gritty of project/dissertation writing.		
Credits	Theory	Practical	Total
			12
Contact Hours			
Max. Marks: 100 **Internal Assessment Marks:** **End Term Exam Marks:**		**Time:**	
Part B- Contents of the Course			
Instructions for Paper- Setter			
Note for Paper Setters: **Distribution of Marks for Evaluation**			

Unit	Topics	Contact Hours =120
I		

II		
III		
IV		
Total contact hours		
Suggested Evaluation Methods		
Internal Assessment: ➢ **Practicum** • Class Participation: • Seminar/presentation/assignment/quiz/class test etc.: • Mid-Term Exam:		**End Term Examination:**
Part C-Learning Resources		
Recommended Books/e-resources/LMS:		

Note: UG Board of Studies in Geography authorise staff council of the department to carry minor corrections in scheme and syllabi of UG programme, if any.