

SYLLABUS
DERGAON KAMAL DOWERAH COLLEGE (AUTONOMOUS)
FOUR YEARS UNDER GRADUATE PROGRAMME (FYUGP)
(AS PER NEP-2020)



GEOGRAPHY
(Recommended in Board of Studies in Geography, D.K.D. College (Autonomous)
in its meeting held on 11/05/2026 and approved by the Academic Council meeting
held on 30.06.2026 and effective from the session 2026-2027)

PREAMBLE:

As recommended by Board of Studies and approved by the Academic Council of Dergaon Kamal Dowerah College (Autonomous), the Department of Geography, works to implement the relevant components of New Education Policy (NEP), 2020 for Four Years Under Graduate Programme (FYUGP) under Choice Based Credit System (CBCS). The following facts are taken into consideration when designing the basic structure of the FYUGP:

- a) Flexibility to switch between disciplines of Study
- b) Opportunity for learners to select the courses of their interest across all disciplines
- c) Flexible entry and exit options with UG certificates, UG Diplomas, or Bachelor Degrees depending on the number of credits earned
- d) Flexibility for students to switch between institutions so they can engage in multi-and/or interdisciplinary learning
- e) Flexibility to switch to alternative modes of learning
- f) Knowledge required for self -employment initiatives and entrepreneurship mindset
- g) Ability for complex critical thinking and real life problem solving.
- h) Capability to understand global issues, multicultural competence and digital literacy
- i) Capable on research skills, communication skills, community-based engagement, environment awareness, responsibility and accountability.

INTRODUCTION:

The Four Year under graduate Programme (FYUGP) syllabus of Geography in light of NEP-2020, consists of Major (MJ) discipline, Minor (MN) disciplines, Multi-Disciplinary Generic Elective Courses (GEC), Ability Enhancement Courses (AEC), Value Added Courses (VAC), skill Enhancement Courses (SEC). Research Methodology (RM), Dissertation (D, where Collection of Data, Analysis and preparation of Report) and Major Electives (MJE).

The FYUGP degree Programme offers certificates, diplomas and degrees as follows:

UG Certificate: Certificate Course consists of two Major Disciplines two Minor disciplines, two GEC, two AEC, two VAC and two SEC.

UG Diploma: Diploma course consists of eight Major Discipline, four Minor discipline, three GEC, two AEC, three VAC, three SEC

3-year UG Degree: 3- year UG degree course consists of fifteen Major Disciplines, six Minor Discipline, three GEC, two AEC, three VAC, three SEC, community engagement (NCC/NSS/Adult Education/ Student Mentoring/NGO/Govt. Institutions, etc.) and Internship.

4-Year Honours Degree: 4 - year honours Degree course consists of twenty major disciplines, eight Minor disciplines, three GEC, two AEC, three VAC, three SEC, Community engagement (CE), NCC/NSS/Adult Education/ Student Monitoring/NGO/ Govt. Institutions, etc.), Internship (I). research Methodology (RM) Dissertation /two MJE

AIMS:

The FYUGP Programme in Geography aims to introduce students to the breadth and depth of the field of geography, including its sub-disciplines, theories, methods, and applications. Students will gain a broad-based knowledge of the natural and human systems that shape the earth's landscapes and environments, as well as the social and cultural processes that influence them.

A FYUGP in Geography aims to cultivate an interdisciplinary and holistic approach to understanding and addressing complex issues that affect the environment, society, and economy. Students will learn how to integrate knowledge and methods from different disciplines, such as biology, geology, economics, sociology, and political science, to develop innovative and sustainable solutions to environmental and social problems. The FYUGP in Geography aims to provide students with opportunities for experiential learning and research, through field trips, internships, research projects, and collaborations with faculty and peers. Students will gain hands-on experience in using geospatial technologies, conducting fieldwork, collecting and analyzing data, and communicating their findings to diverse audiences.

The Programme aims to prepare graduates for diverse career paths in the public private, and non-profit sectors, as well as for further education and lifelong learning. Graduates will be equipped with a range of transferrable skills, including communication, teamwork, leadership, and problem-solving, that will enable them to adapt to changing professional and societal contexts.

The programme covers broad range of topics on GIS and Remote Sensing including hands-on sessions in established GIS Lab. using various software like QGis, ArcGIS, etc. which enables students ability to analyze and interpret geospatial data and evaluate spatial patterns, relationships, and trends, and apply critical thinking and problem- solving skills to real-world scenarios.

Programme Educational Objectives:

(PEO): PEO 1:

Disciplinary Knowledge:

Graduates of the FYUGP in Geography will possess a deep and comprehensive understanding of the principles, theories, and methodologies of the field of geography including its sub-disciplines such as physical geography, human geography, and geomatics. They will have a strong foundation in the theoretical and empirical underpinnings of geography, and be able to apply this knowledge to analyze and interpret environmental and social phenomena. They will also be able to

articulate the relevance and significance of geography to contemporary environmental and social issues.

PEO 2:

Critical Thinking and Problem-solving:

Graduates of the FYUGP in Geography will be skilled critical thinkers and problem-solvers, able to identify and analyze complex environmental, social, and economic issues, and develop innovative and sustainable solutions. They will have experience in using qualitative and quantitative methods to collect and analyze data, and be able to communicate their findings effectively to diverse audiences.

PEO 3:

Interdisciplinary Perspective:

Graduates of the FYUGP in Geography will have an interdisciplinary perspective on complex issues, drawing on knowledge and methods from diverse fields such as ecology, economics, sociology, and political science. They will be able to integrate this knowledge to develop holistic and nuanced understandings of complex issues, and develop innovative and sustainable solutions.

PEO 4:

Global and Cultural Competence:

Graduates of the FYUGP in Geography will have a global and cultural competence, with an understanding of the diverse cultural, social, and economic contexts in which environmental and social issues occur. They will be able to work effectively with people from different cultural backgrounds, and have a nuanced understanding of the implications of cultural differences for environmental and social problem-solving.

PEO 5:

Ethical and Professional Practice:

Graduates of the FYUGP in Geography will be committed to ethical and professional practice, with an understanding of the ethical and legal issues involved in environmental and social problem-solving. They will be able to work collaboratively and responsibly with colleagues and stakeholders, and have a commitment to lifelong learning and continuous professional development.

PEO 6:

Technical and Analytical Competence:

Graduates of the FYUGP in Geography enables to demonstrate proficiency in geographic technologies and analytical tools for data collection, visualization, and decision-making.

PEO 7:

Higher Education, Research and Lifelong Learning:

Graduates of the FYUGP in Geography will be inspired to engage in advances studies and research activities to address the educational needs of the nation.

PROGRAMME OUTCOMES ARE GRADUATE ATTRIBUTES STATED AS FOLLOWS:

Programme Outcomes (POs)

The following table describes the outcomes that graduates of the B.A/B.Sc. Geography programs are expected to achieve the following upon successful completion of their studies:

PO Number Outcome Description

PO1: Graduates will comprehend fundamental concepts and be able to expand upon the concepts, theories, methods and techniques in Geography.

PO2: Graduates will possess advanced knowledge and deep insights in various Geographical domains.

PO3: Graduates will master divers problem-solving methodologies applicable to Socio-economic and environmental problems.

PO4: Graduates will be adept at communicating geographical ideas with precision and clarity.

PO5: Graduates will enhance their professional skills and gain expertise in specialized areas of geography.

PO6: Graduates will acquire skills necessary for engaging in independent research.

PO7: Graduates will become professionals capable of addressing real-life problems.

PO8: Graduates will be trained to prepare report such as field reports, dissertation, thesis, etc. with clarity.

Programme Specific Outcomes:

The Programme Specific Outcomes of FYUGP programme in Geography are listed in the following. After completing the programme, the students will be able to-

PSO1 : Graduates will adeptly solve a variety of problems and will be able to critically analyze their findings.

PSO2 : Graduates will analyse and interpret results, and foster innovation by developing ideas that reflect broader Geo-environmental contexts.

PSO3 : Graduates will apply their knowledge to design effective methodologies for addressing real-world problems.

PSO4 : Graduates will utilize learned techniques, skills, and modern tools appropriately to address specific challenges.

PSO5 : Graduates will acquire enhanced problem-solving abilities, analytical thinking and creativity,

PSO6 : Graduates will be proficient in writing comprehensive reports, creating impactful presentations, and efficiently communicating findings.

PSO7 : Graduates will build the confidence necessary to excel in competitive examinations such as NET, SET, UPSC/APSC etc.

Teaching Learning Process:

The outcome-based approach demands a considerable transition from teacher centric to learner centric pedagogies, as well as from passive to active/participatory pedagogies, especially in the context of undergraduate study. This course promotes the systematic and sequential acquisition of knowledge and skills. It also focuses on practical abilities, as well as an awareness of the link between theory and practice. Teaching strategies involve discussions, presentations, use of required textbooks, e-learning tools, application of tools, instruments, other self-study materials; project, internship, exploring industrial needs and other research activities and so on.

Assessment Methods:

A variety of assessment procedures appropriate for the Geography discipline will be used to determine how well students are progressing keeping in view of the programme outcomes. Continuous evaluation will decide the final grade which include both in-semester evaluation and the final exam. In-semester evaluation will consist of class exams, mid-term exams, homework assignments, etc. as determined by the concerned teacher of the course of study. The following techniques will be used to evaluate how successfully students are meeting their goals: tutorials, timed exams, problem-based assignments, lab reports for practical assignments, observations of practical skills, individual project reports, team project reports, oral presentations, including seminar presentations, viva voce interviews, group discussions, quiz and so on.

**STRUCTURE OF FOUR YEAR UNDER GRADUATE PROGRAMME
(FYUGP) AS PER NEP-2020 IN GEOGRAPHY FOR
DERGAON KAMAL DOWERAH COLLEGE (AUTONOMOUS)**

Semester	Course with paper code	Title of the Paper	Credit
1 (FIRST)	GEOG1MJ01	Fundamentals of Geomorphology	4
	GEOG1MN01	Fundamentals of Geomorphology	4
	GEC1GEOG01	Physical Geography	3
	AEC1	Any One: AEC1A: Assamese/ AEC1B: Alternative English	4
	SEC1GEOG01	Disaster Management	3
	VAC1	Any one: VAC1A: Understanding India/ VAC1B: Health and Wellness	2
Total Credit			20
2 (SECOND)	GEOG2MJ02	Climatology	4
	GEOG2MN02	Climatology	4
	GEC2GEOG02	Introduction to Geomorphology	3
	AEC2	AEC2 : Language and Communication Skills (English)	4
	SEC2GEOG02	Methods and Techniques of Field Study	3
	VAC2	VAC2: Environmental Education	2
	Total Credit		20

**FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY
DETAILED SYLLABUS OF FIRST SEMESTER**

**TITLE OF THE COURSE : FUNDAMENTALS OF
GEOMORPHOLOGY**

COURSE CODE : GEOG1MJ01

NATURE OF THE COURSE : MAJOR

TOTAL CREDITS : 4 CREDITS (3+1)

DISTRIBUTION OF MARKS : 60 (End Sem) (45Th+15P) + 40 (In-Sem)

Course Objectives:

This course provides an in-depth understanding of the earth's physical form and structure. It explores the fundamental concepts and processes of geomorphology, focusing on both internal (Endogenetic) and external (Exogenetic) processes that shape the earth's surface. Students will learn to analyse various land forms and their evolution through lectures, tutorials, and practical exercises, equipping them with skills essential for careers in environmental and land-use management. So, it will cover the following objectives:

- Enhance understanding of geomorphology and its fundamental concepts.
- Acquire knowledge about the earth's interior and its movements.
- Understand diverse geomorphic processes and their impact on landform development under various geo-climatic conditions.
- Comprehend the processes responsible for the development of diverse landforms on the earth's surface.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Introduction to Geomorphology	a. Geomorphology: Meaning, Definition, Nature and Scope. b. Fundamental Geomorphic Concepts in brief. c. Introduction to Geomorphic Processes d. Trend of Geomorphological studies in India	12	3	-	15
2 (10)	Geomorphic Processes	a. Earth: Interior Structure b. Earth Movements: Types of Folds and	8	3	-	11

marks)	(Endogenetic)	Faults c. Continental Drift Theory				
3 (20) marks)	Geomorphic Processes (Exogenetic) and Evolution of Landforms	a. Exogenetic Processes-Weathering and its types b. Cycle of Erosion (Davis and Penck). c. Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial, and Coastal.	15	2		17
4 (15 marks)	Practical	a. Profile drawing (serial, superimposed, projected and composite). b. Morphometric Analysis: Drainage ordering, basin area demarcation, drainage density, Stream Frequency, Bifurcation ratio. c. Slope Analysis – Wentworth’s method and Smith’s Method.		2	15	17
		TOTAL	35	10	15	60

L: Lectures

T: Tutorials

P: Practicals

MODES OF IN-SEMESTER ASSESSMENT:

40Marks

- **Two Internal Examination-**

20Marks

- **Others (Anyone)-**

10Marks

- Group Discussion
 - Seminar presentation on any of the relevant topics
 - Debate

- **Practical**

10Marks

TEXT BOOKS:

1. Bloom A.L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall 1. Bloom A.L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E.M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., 2011: Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
4. Kale V.S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton A.D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Richards K.S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
7. Selby, M.J., 2005: Earth's Changing Surface, Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter, 2000: The Dynamic Earth: An Introduction to

- physical Geology, 4th Edition, John Wiley and Sons
9. Thornbury W.D., 1968: Principles of Geomorphology, Wiley.
 10. Gautam, A 2010 : Bhautik Bhugol, Rastogi Publications, Meerut
 11. Tikkaa, RN (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
 11. Singh, S (2009): Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad
 12. Maurya, D. M., & Singh, B. P. (2014). Impact of tectonic activities on fluvial
 13. geomorphology: A case study of the Yamuna River. Geomorphology, 211, 9-19.
 14. Tandon, S. K. (2013). Geomorphology of India: An overview. Journal of the Geological
 15. Society of India, 81(2), 121-132.
 16. 14.R.L Singh & P.B Singh,1995 : Elements of Practical Geography Kalyani Publishers

IKS Books/Reference Articles:

1. K.R. Dikshit, Vishwas S. Kale, M.N. Kaul, 2025: India: Geomorphological diversity, Rawat Publication
2. V.K.Verma, 2023: Geomorphology with Indian Examples, Rawat Publicatio
3. .JoIG-v6-2018)-p001-006_Kanchan_Scenario-of-Research-in-Indian-Geomorphology.pdf <https://share.google/NEoMLvxSGA2I2H32f>
4. Kanchan, R. 2018. Current scenario of research in Indian geomorphology and its future. J Indian Geomorphol, 6, 1-10.

FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY
DETAILED SYLLABUS OF FIRST SEMESTER

TITLE OF THE COURSE : FUNDAMENTALS OF GEOMORPHOLOGY

COURSE CODE : GEOG1MN01

NATURE OF THE COURSE : MINOR

TOTAL CREDITS :4 CREDITS (3+1)

DISTRIBUTION OF MARKS :60 (End Sem) (45Th+15P) + 40 (In-Sem)

Course Objectives:

This course provides an in-depth understanding of the earth's physical form and structure. It explores the fundamental concepts and processes of geomorphology, focusing on both internal (Endogenetic) and external (Exogenetic) processes that shape the earth's surface. Students will learn to analyse various land forms and their evolution through lectures, tutorials, and practical exercises, equipping them with skills essential for careers in environmental and land-use management. So, it will cover the following objectives:

- Enhance understanding of geomorphology and its fundamental concepts.
- Acquire knowledge about the earth's interior and its movements.
- Understand diverse geomorphic processes and their impact on landform development under various geo-climatic conditions.
- Comprehend the processes responsible for the development of diverse landforms on the earth's surface.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Introduction to Geomorphology	e. Geomorphology: Meaning, Definition, Nature and Scope. f. Fundamental Geomorphic Concepts in brief. g. Introduction to Geomorphic Processes	12	3		15

		h. Trend of Geomorphological studies in India				
2 (10 marks)	Geomorphic Processes (Endogenetic)	d. Earth: Interior Structure e. Earth Movements: Types of Folds and Faults f. Continental drift Theory	8	3		11
3 (20 marks)	Geomorphic Processes (Exogenetic) and Evolution of Landforms	d. Exogenetic Processes-Weathering and its types e. Cycle of Erosion (Davis and Penck). f. Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial, and Coastal.	15	2		17
4 (15 marks)	Practical	d. Profile drawing (serial, superimposed, projected and composite). e. Morphometric Analysis: Drainage ordering, basin area demarcation, drainage density, Stream Frequency, Bifurcation ratio. f. Slope Analysis – Wentworth’s method and Smith’s Method.		2	15	17
		TOTAL	35	10	15	60

Where,

L:Lectures

T:Tutorials

P:Practicals

MODES OF IN-SEMESTER ASSESSMENT:

40Marks

- **Two Internal Examination-**

20Marks

- **Others(Anyone) -**

10Marks

- Group Discussion
- Seminar presentation on any of the relevant topics
- Debate
- Home assignment

- **Practical**

10Marks

TEXT BOOKS:

1. Bloom A.L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E.M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., 2011: Geosystems: An Introduction to

Physical Geography, 8 Ed., Macmillan Publishing Company

4. Kale V.S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton A.D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Richards K.S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
7. Selby, M.J., 2005: Earth's Changing Surface, Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
9. Thornbury W.D., 1968: Principles of Geomorphology, Wiley.
10. Gautam, A., 2010: Bhautik Bhugol, Rastogi Publications, Meerut
11. Tikka, R.N. (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
11. Singh, S., 2009: Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad
12. Maurya, D. M., & Singh, B. P., 2014. Impact of tectonic activities on fluvial geomorphology: A case study of the Yamuna River. Geomorphology, 211, 9-19.
13. Tandon, S. K. 2013. Geomorphology of India: An overview. Journal of the Geological Society of India, 81(2), 121-132.
14. R.L Singh & P.B Singh, 1995 : Elements of Practical Geography Kalyani Publisher

IKS Books/Reference Articles:

1. K.R. Dikshit, Vishwas S. Kale, M.N. Kaul (2025): India: Geomorphological diversity, Rawat Publication
2. V.K. Verma (2023): Geomorphology with Indian Examples, Rawat Publication
3. JoIG-v6-(2018)-p001-006_Kanchan_Scenario-of-Research-in-Indian-Geomorphology.pdf <https://share.google/NEoMLvxSGA2I2H32f>
4. Kanchan, R. (2018). Current scenario of research in Indian geomorphology and its future. J Indian Geomorphol, 6, 1-10.

FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY

DETAILED SYLLABUS OF FIRST SEMESTER

TITLE OF THE COURSE : PHYSICAL GEOGRAPHY

COURSE CODE : GEC1GEOG1

NATURE OF THE COURSE : GENERIC ELECTIVE COURSE (GEC)

TOTAL CREDITS : 3 CREDITS

DISTRIBUTION OF MARKS : 60(End Sem)+40(In-Sem)

Course Objectives:

The Physical Geography course introduces students to the fundamental concepts and processes governing the Earth's physical environment. It covers topics such as the Earth's structure, atmosphere, lithosphere, biosphere, and hydrosphere. Through theoretical study and practical applications, students gain an understanding of Earth systems and their interconnectedness. The main objectives are:

- To explain the concept, definition, and scope of earth systems.
- To understand the atmospheric composition and structure.
- To acquire knowledge about the interior of the earth and its interior movements.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (10 marks)	Introduction to Physical Geography	a. Physical Geography: Definition, Nature and Scope. b. Earth and its Components c. Major landforms: 1 st order, 2 nd order, 3 rd order	5	1		6
2 (18marks)	Atmosphere	a. Atmosphere- Definition, composition, structure b. Temperature; Factors and Distribution Insolation, c. Atmospheric Pressure belts and Planetary winds d. Air masses: source regions, classification and modifications	12	1		13
3 (17 marks)	Lithosphere and Biosphere	a. Earth's Interior and Structure. b. Earthquakes and Volcanoes (Distribution, causes, effects). c. Soil and soil forming processes	12	1		13

4 (15 marks)	Hydrosphere	a. Concept of Hydrological Cycle b. Ocean Currents c. Sea level changes: causes and consequences. d. Water management practices of North East India	12	1		13
		TOTAL	41	4		45

Where,

L:Lectures

T:Tutorial

P:Practical

MODES OF IN-SEMESTER ASSESSMENT:

40Marks

- **Two Internal Examination-**

30Marks

- **Others(Anyone) -**

10Marks

- Group Discussion
- Seminar presentation on any of the relevant topics
- Debate
- Home Assignment

TEXT BOOK:

1. Barry, R.G. and Chorley, R.J. (1998). Atmosphere, Weather and Climate. Routledge, London.
2. Bryant, H. Richard (2001). Physical Geography Made Simple Rupa and Co., New Delhi.
3. Bunnett, R.B. (2003). Physical Geography in Diagrams, Fourth GCSE edition, Pearson Education (Singapore) Pvt Ltd.
4. Garrison T (1998). Oceanography. Words worth Cp, Bedmont.
5. Lake, P. (1979). Physical Geography (English & Hindi Edition) Cambridge Univ. Press, Cambridge.
6. Monkhouse, FI (1979). Physical Geography, Methuen, London.
7. Singh, S. (2003). Physical Geography (English and Hindi Editions) Prayag Pustak Bhawan, Allahabad.
8. Singh, M.B. (2001). Bhoutik Bhoogol, Tara Book Agency, Varanasi.
9. Strahler, A.N. and Strahler A.M. (1992). Modern Physical Geography, John Wiley and Sons, New York
10. Wooldridge, S.W. and Morgan, R.S. (1959). The Physical Basis of Geography: An Outline of Geomorphology. Longman, London.

IKS BOOKS:

1. Bharat Evam Vishwa ka Bhugol (2025): Majid Hussain & Pallavi Saxena, McGraw Hill Publishers

2. Alpana Kateja (2019): Water resource management: Problems and Prospects, Rawat Publications.
3. ISDR(2008): Indigenous Knowledge for Disaster Risk Reduction

FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY

DETAILED SYLLABUS OF FIRST SEMESTER

TITLE OF THE COURSE	: DISASTER MANAGEMENT
COURSE CODE	: SEC1GEOG01
NATURE OF THE COURSE	: SKILL ENHANCEMENT COURSE
(SEC) TOTAL CREDITS	: 3 CREDITS (2+1=3)
DISTRIBUTION OF MARKS	: 60(End Sem)(45Th+15P)+40(In Sem)

Course Objectives:

The Disaster Management course under the B.A./B.Sc. in Geography program introduces students to the fundamental concepts of hazards, disasters, risk, and vulnerability. It delves into the causes, impacts, and distribution of both natural and manmade disasters, with a focus on those prevalent in India. The course emphasizes response strategies, mitigation techniques, and community-based disaster management approaches. Through theoretical learning and practical fieldwork, students gain insights into disaster preparedness, response protocols, and the role of indigenous knowledge in mitigating disasters. The main objectives are:

- To familiarize students with the concepts of hazards, disasters, risk, and vulnerability.
- To explore the causes, impacts, and distribution of natural and man-made disasters, with a focus on those affecting India.
- To introduce students to response and mitigation strategies employed in disaster management.
- To emphasize the importance of preparedness, both at individual and community levels, before and after disasters.
- To plant an understanding of the do's and don'ts during and post-disaster situations.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Disasters	a) Disasters: Definition and Concepts: Hazards, Disasters; Risk, Exposure and Vulnerability; Classification b) Manmade disasters: Causes, Impact and Distribution	8	4		12
2 (15 marks)	Disasters in India	a) Disasters in India: Flood, Landslide, Drought, Earthquake and Tsunami, Cyclone: Causes, Impact and Distribution	8	4		12
3 (15 marks)	Response and Mitigation to Disasters	a) Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community b) Disaster Management; Do's and Don'ts During and Post Disasters	6	3		9
4 (15 marks)	Practical	a) Report Writing (Flood, Landslide, Drought, Earthquake, Cyclone and Manmade Disaster)		2	10	12
		TOTAL	22	13	10	45

Where,

L: Lectures

T: Tutorials

P: Practicals

MODES OF IN-SEMESTER ASSESSMENT:

40 Marks

- **Two Internal Examination-**

20 Marks

- **Others (Anyone) -**

10 Marks

- Group Discussion
- Seminar presentation on any of the relevant topics
- Debate
- Home assignment

- **Practical**

10 Marks

TEXT BOOKS :

1. Government of India. (1997): Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) : Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005): Risk Assessment and Vulnerability Analysis, IGNOU, New

Delhi. Chapter 1, 2 and 3

5. Singh, R. B. (ed.), (2006): Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001): Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
7. Stoltman, J.P. et al. (2004): International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
8. Singh Jagbir (2007): Disaster Management Future Challenges and Opportunities”, 2007. Publisher I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

IKS BOOKS:

1. G.K.Panda et. al.(2023): Indigenous Knowledge and Disaster Risk Reduction- Insight Towards Perception, Response, Adaptation and Sustainability.” (Disaster Risk Reduction Book Series, Springer Nature).
- ISDR(2008): Indigenous Knowledge for Disaster Risk Reduction

SEMESTER II

FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY

DETAILED SYLLABUS OF SECOND SEMESTER

COURSE TITLE : CLIMATOLOGY

COURSE CODE : GEOG2MJ02

NATURE OF THE COURSE: MAJOR

TOTAL CREDITS :4 CREDITS (3+1=4)

DISTRIBUTION OF MARKS:60(End-Sem.)(45Th+15P)+40(In Sem)

Course Objectives:

This course focusing on the scientific study of Earth's climate system and the factors influencing climate change. Through a comprehensive examination of atmospheric phenomena and climatic patterns, students delve into topics such as atmospheric temperature, insolation, pressure systems, wind patterns, moisture, weather, and climate classification. Practical components include interpreting weather symbols, analysing weather maps, and representing climatic data graphically. The main objectives are :

- To develop a scientific understanding of the physical aspects of Earth's climate system and the factors influencing climate change.
- To explore the global balance of energy and transfer of radiation in the atmosphere through in-depth quantitative analysis and the study of general circulation of winds.
- To highlight important atmospheric phenomena and their direct impact on human activities, emphasizing the understanding of weather phenomena and its implications on day-to-day life.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Atmospheric Temperature and Insolation	a. Atmosphere; Definition, Composition and Structure b. Weather and Climate: Concept, Elements and factors c. Temperature: factors and Distribution d. Insolation, Heat budget, temperature inversion	14	3		17
2 (15 marks)	Atmospheric pressure and winds	a. Pressure belts, Planetary Winds, Jet Streams, Indian Monsoon: Its Origin and Characteristics (synthesis of modern and tradition) b. Concept of Air mass and Fronts, Cyclones and Anticyclones, Local winds.	10	3		13

3 (15 marks)	Atmospheric Moisture,	a. Evaporation, Humidity, Condensation, Fog and Clouds, b. Precipitation and its types c. Climatic classification: Koeppen and Thornthwaite.	10	2		12
4 (15 marks)	Practical	a. Study of weather symbols and Interpretation of weather map. b. Representation of climatic data: Preparation of Climograph, Hythergraph and Ergograph and their interpretation c. Rainfall distribution map of Assam		2	16	18
TOTAL			34	10	16	60

Where,

L: Lectures

T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT:

40Marks

- **Two Internal Examination-**

20Marks

- **Others(Anyone) -**

10Marks

- Group Discussion
- Seminar presentation on any of the relevant topics
- Debate

- **Practical**

10Marks

TEXT BOOK:

1. Anthes R.A., Panofsky H.A., Cahir J.J. and Rango A., 1978: The Atmosphere, Columbus.
2. Barry R.G. and Carleton A.M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.
3. Barry R.G. and Corley R.J., 1998: Atmosphere, Weather and Climate, Routledge, New York.
4. Batten L.J., 1979: Fundamentals of Meteorology, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
5. Boucher K., 1975: Global Climates, Halstead Press, New York.
5. Critchfield H.J., 1987: General Climatology, Prentice-Hall of India, New Delhi
6. Das, P.K., 1968: The Monsoon, National Book Trust, New Delhi.
7. Hobbs, J.E., 1980: Applied Climatology, Butterworth.
8. Lal, D.S., 1998: Climatology, Sharda Pustak Bhawan, Allahabad.
9. Lockwood, J.G., 1976: World Climatology-Environmental Approach, Ed. Arnold Ltd.
10. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey

- 11.Menon,P.A.: Our Weather, National Book Trust
- 12.Miller,A.A.,1953: Climatology, Dutton.
- 13.OliverJ.E.andHidoreJ.J.,2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi.
- 14.Stringer,E.N.,1982: An Introduction to Climate, International Studies.
- 15.Thompson D.R. and Perry A. (eds.),1997: Applied Climatology: Principles and Practice, Routledge, USA and Canada.
- 16.TrewarthaG.T.andHorneL.H.,1980: An Introduction to Climate, McGraw-Hill

IKS BOOKS/REFERENCE ARTICLES:

1. P.K. Das(2023).The Monsoons. National Book Trust
2. Mausam Journal, India Meteorological Department
3. Bhattacharyya, S., Chakraborty, A. & Nanjundiah, R.S. Indian Summer Monsoon: Predictions and Applications. J Indian Inst Sci (2025). <https://doi.org/10.1007/s41745-025-00491-7>

FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY
DETAILED SYLLABUS OF SECOND SEMESTER

COURSE TITLE : CLIMATOLOGY
COURSE CODE : GEOG2MN02
NATURE OF THE COURSE : MINOR
TOTAL CREDITS : 4 CREDITS (3+1)
DISTRIBUTION OF MARKS : 60 (End-Sem.) (45 Th+15 P)+40 (In Sem)

Course Objectives:

This course provides a comprehensive understanding of the physical aspect of Earth's climate system and the intricate relationship between climate and geography. It delves into the mechanisms governing atmospheric phenomena, global energy balance, and climatic patterns across the globe. Additionally, it explores the distribution of organisms and ecosystems on Earth's surface and addresses the significance of biodiversity conservation. The main objectives are:

- To foster a scientific understanding of the Earth's climate system and the factors influencing climate change.
- To analyze the global energy balance and the transfer of radiation in the atmosphere through quantitative methods, elucidating the general circulation of winds.
- To emphasize the relevance of atmospheric phenomena to human activities, focusing on the impact of weather on daily life.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Atmospheric Temperature and Insolation	e. Atmosphere; Definition, Composition and Structure f. Weather and Climate: Concept, Elements and factors g. Temperature: factors and Distribution h. Insolation, Heat budget, temperature inversion	14	3		17
2 (15 marks)	Atmospheric pressure and winds	c. Pressure belts, Planetary Winds, Jet Streams, Indian Monsoon: Its Origin and Characteristics (synthesis of modern and tradition) d. Concept of Airmass and Fronts,	10	3		13

		Cyclones and Anticyclones, Local winds.				
3 (15 marks)	Atmospheric Moisture,	d. Evaporation, Humidity, Condensation, Fog and Clouds, e. Precipitation and its types f. Climatic classification: Koeppen and Thornthwaite.	10	2		12
4 (15 marks)	Practical	d. Study of weather symbols and Interpretation of weather map. e. Representation of climatic data: Preparation of Climograph, Hythergraph and Ergograph and their interpretation f. Rainfall distribution map of Assam		2	16	18
TOTAL			34	10	16	60

Where,

L:Lectures

T:Tutorials

P:Practicals

Modes of In-Semester assessment:

40marks

- **Two internal assessment**

30marks

- **Any one of the following activities listed below**

10marks

- Group Discussion
- Seminar presentation on any of the relevant topics
- Home Assignment

- **Practical**

10Marks

TEXT BOOK:

1. Anthes R.A., Panofsky H.A., Cahir J.J. and Rango A., 1978: The Atmosphere, Columbus.
2. Barry R.G. and Carleton A.M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.
3. Barry R.G. and Corley R.J., 1998: Atmosphere, Weather and Climate, Routledge, New York.
4. Batten L.J., 1979: Fundamentals of Meteorology, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
5. Boucher K., 1975: Global Climates, Halstead Press, New York.
5. Critchfield H.J., 1987: General Climatology, Prentice-Hall of India, New Delhi
6. Das, P.K., 1968: The Monsoon, National Book Trust, New Delhi.
7. Hobbs, J.E., 1980: Applied Climatology, Butterworth.
8. Lal, D.S., 1998: Climatology, Sharda Pustak Bhawan, Allahabad.

9. Lockwood, J.G., 1976: World Climatology-Environmental Approach, Ed. Arnold Ltd.
10. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey
11. Menon, P.A.: Our Weather, National Book Trust
12. Miller, A.A., 1953: Climatology, Dutton.
13. Oliver J.E. and Hidore J.J., 2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi.
14. Stringer, E.N., 1982: An Introduction to Climate, International Studies.
15. Thompson D.R. and Perry A. (eds.), 1997: Applied Climatology: Principles and Practice, Routledge, USA and Canada.
16. Trewartha G.T. and Horn L.H., 1980: An Introduction to Climate, McGraw-Hill

IKS BOOKS/REFERENCE ARTICLES:

1. P.K. Das (2023). The Monsoons. National Book Trust
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3. Bhattacharyya, S., Chakraborty, A. & Nanjundiah, R.S. Indian Summer Monsoon: Predictions and Applications. J Indian Inst Sci (2025). <https://doi.org/10.1007/s41745-025-00491->

**FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY
DETAILED SYLLABUS OF SECOND SEMESTER**

TITLE OF THE COURSE : INTRODUCTION TO GEOMORPHOLOGY
COURSE CODE : GEC2GEOG2
NATURE OF THE COURSE: GENERIC ELECTIVE COURSE (GEC)
TOTAL CREDITS :3 CREDITS
DISTRIBUTION OF MARKS :60(End Sem)+40(In-Sem)

Course Description:

This course, "Fundamentals of Geomorphology," delves into the foundational principles governing the formation and evolution of Earth's surface features. It encompasses an exploration of the dynamic processes shaping landscapes, including the influence of both endogenetic and exogenetic forces. Through a combination of theoretical insights and practical applications, students will gain a comprehensive understanding of geomorphological phenomena and their significance in shaping the Earth's surface. The main objectives are:

- Introduce the meaning, nature, scope, and fundamental concepts of Geomorphology.
- Understand the growth and evolution of surface relief features on Earth.
- Explore the impact of various geological processes, including the work of running water, underground water, moving ice, wind, and seawaves, as well as weathering and mass wasting.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Principles of Geomorphology	a. Geomorphology : Meaning, Nature and Scope. b. Fundamental Concepts in Geomorphology.	8	4		12
2 (15 Marks)	Theories of Landform Development	a. Davis, Penck and King	6	3		9
3 (15 Marks)	Evolution of Landforms Due to Endogenetic Forces	a. Earth movements: Folds and Faults b. Plate Tectonics: Types of plates and plate boundaries. c. Seismic Zones of India: Indian traditional wisdom in disaster risk reduction	8	4		12

4 (15 Marks)	Evolution of Landforms Due to Exogenetic Forces	a. Weathering: Its Concept and types. b. Work of Running Water and Wind: its resultant landforms	8	4		12
		TOTAL	30	15		45
<i>Where,</i>			<i>L:Lectures</i>		<i>T:Tutorials</i>	
			<i>P:Practicals</i>			

MODES OF IN-SEMESTER ASSESSMENT:

• **Two Internal Examination-**

40Marks

• **Others(Anyone)**

30Marks

10Marks

- Group Discussion
- Seminar presentation on any of the relevant topics
- Debate
- Homeassignment

TEXT BOOK:

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
4. Gautam,A (2010): Bhautik Bhugol, Rastogi Publications, Meerut
5. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
6. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
7. ThornburyW.D.,1968: Principles of Geomorphology, Wiley.

IKS BOOKS/REFERED ARTICLES:

1. Ramkrishna Maiti.(2023): Geotectonics and Geomorphology, an insight into process- form relationship. Nabodaya Publications
2. Jitendra Bothara (2006): Understanding Traditional Wisdom of Earthquake-resistant Construction in the Himalayas

**FOUR YEARS UNDER GRADUATE PROGRAMME IN GEOGRAPHY
DETAILED SYLLABUS OF SECOND SEMESTER**

**TITLE OF THE COURSE : METHODS AND TECHNIQUES OF FIELD
STUDY COURSE CODE : SEC2GEOG02
NATURE OF THE COURSE: SKILL ENHANCEMENT COURSE (SEC)
TOTAL CREDITS : 3 CREDITS (2+1)
DISTRIBUTION OF MARKS: 60(End Sem)(45Th+15P)+40(In Sem)**

Course Objectives:

This course, Methods and Techniques of Field Study, equips students with essential skills for conducting geographical field studies. It covers various methods of data collection, including primary and secondary techniques, and emphasizes the preparation and presentation of comprehensive field reports using digital media.

- Enhance understanding of field study concepts, data types, and their significance in geographical research.
- Develop proficiency in techniques for collecting primary data, preparing questionnaires, and processing and analysing data systematically.
- Foster the ability to construct field reports, incorporating quantitative techniques, diagrams, maps, and photographs for effective communication.
- Cultivate practical skills in conducting field studies, collecting data, and preparing comprehensive reports.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (10 Marks)	Introduction	a. Field study and its importance in Geography	8	4		12
2 (17 Marks)	Techniques of Data collection	a. Techniques of data collection: Primary and Secondary b. Preparation of questionnaire and schedule c. Data tabulation, processing and analysis	8	4		12
3 (18 Marks)	Designing the field report	a. Designing the field study report: Aims and objectives, methodology and interpretation. b. Use of Tables, Charts, Diagrams, Maps And Photographs in the report	6	3		9

4 (15 Marks)	Practical	a. Preparation and presentation of report. (Based on Disasters of India : Flood, Earthquake, Landslide, Cyclone etc)		2	10	12
		TOTAL	22	13	10	45

Where,

L:Lectures

T:Tutorials

P:Practicals

MODES OF IN-SEMESTER ASSESSMENT:

40 Marks

- **Two Internal Examination-**

20 Marks

- **Others (Anyone)**

10 Marks

- Group Discussion
- Seminar presentation on any of the relevant topics
- Debate
- Home assignment

- **Practical**

10 Marks

TEXT BOOK:

1. Archer, J.E. and Dalton, T.H. (1968): Field work in Geography, London.
2. Jones, P.A. (1968): Field work in Geography, London.
3. Goodard, R.H. (1982): Field Techniques and Research Methods in Geography, Dubuque.
4. Wheeler, K.S. and Harding, M. (1965). Geographical Field work, London

IKS BOOKS:

1. Kothari C.R. (1985): Research Methodology, New Age International Publisher