

**MINUTES OF MEETING OF THE BOARD OF STUDIES IN GEOGRAPHY
HELD ON 13th OCTOBER, 2023 at
Parvatibai Chowgule College of Arts & Science
(Autonomous)
Margao – Goa**

Vide Chowgule College notice BoS/2023-24/F.133(C)/755 dated 13th March, 2023) a meeting of this Board of Studies (BoS) was convened on 13th October 2023 at 10:30 AM in Block A, Parvatibai Chowgule College of Arts & Science (Autonomous), Margao – Goa. Since the number of members present represented the quorum, the BoS began its proceedings.

Minutes are present in the format

Members present in person:

1. Prof. Nandkumar Sawant - Chairperson
2. Dr. F.M. Nadaf- Expert nominated by Vice - Chancellor of Goa University
3. Dr. Sanjay D. Gaikwad – Member Secretary
4. Mr. A. Ashish – Member
5. Dr. Anil Yedage – Member
6. Mr. Deepak Kumbhar – Member
7. Mr. Venkatesh Prabhu Gaonkar – Member
8. Ms. Audrey D’Costa – Member
9. Dr. Adrian Ferro - Member
10. Mr. Sagar Wankhede - Member
11. Mr. Jayesh Gaonkar – Member
12. Mr. Ashutosh Yadav – Member

The following member of the Board of Studies attended the meeting online via Google Meet:

1. Prof. (Dr.) Surendra Thakur Desai

Member absent with intimation:

1. Ms. Merel D’silva – Alumnus
2. Mr. Kishor Ghatage – Industry Representative
3. Dr. Abhay Patil – Academic Council Nominee

Proceedings:

The Chairperson welcomed the members of the Board of Studies (BOS) in Geography. The Chairman welcomed and introduced all the new members of BoS as per the notification. Later the Chairperson introduced and explained the agenda for the meeting and read out the minutes of the previous BoS meet. The following points as per the agenda were taken for discussion:

Agenda:

1. To approve the UG and PG syllabus for Semester III (a) B.A. Programme (b) B.Sc. Programme (c) M.A. Programme for Semester III under NEP 2020.
2. To approve the syllabus of Multidisciplinary and Skill Enhancement under NEP 2020.
3. A.O.B. – Introduction of MDC at semester I for B.A. Programme.

AGENDA 1:

To approve the UG and PG syllabus for Semester III (a) B.A. Programme (b) B.Sc. Programme (c) M.A. Programme under NEP 2020.

- a. The syllabus for Discipline Specific Core Courses (DSC): Basics of Geomorphology and Basics of Regional Geography offered at Semester III for B.A programme was discussed deliberated and after incorporation of the suggestions, the syllabus for the mentioned courses was approved by the members.
 - I. UG-GEG-DSC-201 Basics of Geomorphology
 - II. UG-GEG-DSC-202 Basics of Regional Geography
- b. The syllabus for Discipline Specific Core Courses (DSC): Dynamics of Atmospheric Science offered at Semester III for B.Sc. (Minor) programme was discussed deliberated and after incorporation of the suggestions, the syllabus for the mentioned course was approved by the members.
 - I. UG-GEG-DSC(M)-201 Dynamics of Atmospheric Science
- c. The syllabus of M.A. Programme for Generic Electives (GE), Discipline Specific Electives (DSE) and Discipline Research Specific Electives (DRSE) were discussed deliberated and after incorporation of the suggestions, the syllabus for the mentioned courses was approved by the members. (Annexure B):
 - I. PGMP–GEG-GE- 501 Geographic Perspectives of Geopolitics
 - II. PGMP–GEG-GE- 502 Geography of Wellbeing with Special Reference to India
 - III. PGMP–GEG-GE- 503 Cultural Geography
 - IV. PGMP–GEG-DSE- 501 Tropical Climatology
 - V. PGMP–GEG-DSE- 502 Biogeography
 - VI. PGMP–GEG-DSE- 503 Geography of Disaster Management
 - VII. PGMP–GEG-DRSE- 501 Fundamentals of Research Methodology
 - VIII. PGMP–GEG-DRSE- 502 Quantitative Techniques

AGENDA 2:

To approve the syllabus of Multidisciplinary and Skill Enhancement under NEP 2020.

The syllabus for Multidisciplinary and Skill Enhancement to be offered was discussed. The following courses to be offered at Semester III for B.A. and B.Sc.:

B.A (Multidisciplinary Course):

- I. UG-GEG-MDC-201 Basic Geospatial Techniques in Environment Forestry and Wildlife

B.A. (SEC):

- I. UG-GEG-SEC-201 Basic Techniques in Travel and Tourism

B.Sc. (SEC):

- I. UG-GEG-SEC-201 Application of Remote Sensing in Natural Resource Monitoring

After incorporation of suggestions in the syllabus, it was approved by the members of the BOS.

AGENDA 3:

Introduction of MDC at Semester I for B.A. Programme

The syllabus for the course in Fundamentals in Environmental Impact Assessment was approved as Multidisciplinary course to be offered for B.A. programme at Semester I.

- I. UG-GEG-MDC-101 Fundamentals in Environmental Impact Assessment

PART A: The BoS passed the resolutions as follows:

The BoS in Geography passed the following resolutions as stated below:

1. It was resolved to approve the UG and PG syllabi for Semester III (a) B.A. Programme (b) B.Sc. Programme (c) M.A. Programme under NEP 2020. (Annexure A)
2. It was resolved to approve the syllabus of Multidisciplinary (MDC) and Skill Enhancement (SEC) under NEP 2020 for Semester III.
3. It was resolved to approve syllabus of Multidisciplinary (MDC) at Semester I for B.A. Programme under NEP 2020.

PART B: Important Points/ recommendations of BoS that require consideration / approval of Academic Council:

1. To seek approval the UG and PG syllabus for Semester III (a) B.A. Programme (b) B.Sc. Programme (c) M.A. Programme under NEP 2020.
2. To seek approval for the syllabus for Multidisciplinary and Skill Enhancement under NEP 2020.
3. To seek approval to Introduce MDC at Semester I for B.A. Programme.

The Chairman and Member Secretary of BoS Geography thanked the members of BoS of Geography for active participation, enriching deliberations and constructive suggestions in the meeting.

The foregoing minutes of the meeting were circulated by the Chairman, Board of Studies in Geography after the conclusion of the BoS meeting.

The following members of the Board of Studies in Geography were present for the meeting physically in the Photogrammetry and Research Lab of the department.

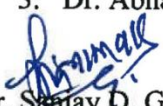
1. Prof. Nandkumar Sawant - Chairperson
2. Dr. F.M. Nadaf- Expert nominated by Vice - Chancellor of Goa University
3. Dr. Sanjay D. Gaikwad – Member Secretary
4. Mr. A. Ashish – Member
5. Dr. Anil Yedage – Member
6. Mr. Deepak Kumbhar – Member
7. Mr. Venkatesh Prabhu Gaonkar – Member
8. Ms. Audrey D’Costa – Member
9. Dr. Adrian Ferro - Member
10. Mr. Sagar Wankhede - Member
11. Mr. Jayesh Gaonkar – Member
12. Mr. Ashutosh Yadav – Member


The following member of the Board of Studies attended the meeting online via Google Meet:

2. Prof. (Dr.) Surendra Thakur Desai

Member Absent with Intimation .

1. Ms. Merel D’silva – Alumnus
2. Mr. Kishor Ghatage – Industry Representative
3. Dr. Abhay Patil – Academic Council Nominee


Dr. Sanjay D. Gaikwad
Member Secretary
Board of Studies


Prof. Nandkumar Sawant
Chairperson
Board of Studies

Dated: 13th October, 2023

PART C: The remarks of the Dean of Academics:-

- a. The minutes are in order.
- b. The minutes may be placed before the Academic Council with remark, if any.
- c. Important points of the minutes which need clear policy decision of the Academic Council to be recorded.

Date: 13th October 2023

Signature of the Dean of Academics:



Dr. Meghana Devli

PART D: The remarks of the Members Secretary of the Academic Council:

- a. The minutes are in order.
- b. The minutes may be placed before the Academic Council with remark, if any.
- c. Important points of the minutes which need clear policy decision of the Academic Council to be recorded.

Date: 21/10/23

Signature of the Member Secretary,
Academic Council



Mr. V. C. Kumaresh



**Parvatibai Chowgule College of Arts and Science
(Autonomous)**

Accredited by NAAC with Grade 'A+'
Best Affiliated College-Goa University Silver Jubilee Year Award

**SYLLABUS FOR SEMESTER III FOR
UNDERGRADUATE DEGREE PROGRAMME
IN GEOGRAPHY
B.A.
(Implemented Academic Year 2024-2025)**

ANNEXURE A
B.A GEOGRAPHY 3 YEARS AND 4 YEARS HONOURS LIST OF COURSES 2022-23
UNDER NEP 2020 COURSE STRUCTURE

SEMESTER	COURSE CODE	TITLE OF THE COURSE	NOMENCLATURE/TYPE OF COURSE	CREDITS
I	UG-GEG-DSC-101	Introductory Physical Geography	DSC	4
	UG-GEG-MDC-101	Fundamentals in Environmental Impact Assessment	MDC	3
	UG-GEG-VAC-101	Exploring Diversity of India	VAC	2
	UG-GEG-SEC-101	Participatory Rapid Appraisal Techniques for Social Sciences	SEC	3
II	UG-GEG-DSC-102	Basics of Human Geography	DSC	4
	UG-GEG-MDC-102	Geography of Sustainable Development	MDC	3
	UG-GEG-VAC-102	Environmental Studies	VAC	2
	UG-GEGSEC-102	Introduction to Digital Mapping	SEC	3
III	UG-GEG-DSC-201	Basics of Geomorphology	DSC	4
	UG-GEG-DSC-202	Basics of Regional Geography	DSC	4
	UG-GEG-MDC-201	Basic Geospatial Techniques in Environment, Forestry and Wildlife	MDC	3
	UG-GEG-SEC-201	Basic Techniques in Travel and Tourism	SEC	3
IV	UG-GEG-DSC 203	Basics Of Climatology	DSC	4
	UG-GEG-DSC-204	Geomorphology Of Landforms	DSC	4
	UG-GEG-DSC-205	Basics Of Cartography	DSC	4
	UG-GEG-DSC-206	Regional Geography Of India	DSC	4
V	UG-GEG-DSC-301	Geography Of Population Growth	DSC	4

	UG-GEG-DSC-302	Geography Of Regional Planning	DSC	4
	UG-GEG-DSC-303	Coastal And Fluvial Geomorphology	DSC	4
VI	UG-GEG-DSC-304	Applied Climatology	DSC	4
	UG-GEG-DSC-305	Economic Geography	DSC	4
	UG-GEG-DSC-306	Oceanography	DSC	4
	Project	Project	DSC	4
VII	UG-GEG-DSC-401	Applied Geomorphology	DSC	4
	UG-GEG-DSC-402	Statistical Application In Geography	DSC	4
	UG-GEG-DSC-403	Applied Human Geography	DSC	4
	UG-GEG-DSC-404	Research Methodology	DSC	4
VIII	UG- GEG DSC- 402	Geography In The 21 st Century	DSC	4
	Dissertation	Dissertation	DSC	4

ANNEXURE A
COURSE STRUCTURE
SYLLABUS FOR THREE / FOUR YEAR UNDERGRADUATE DEGREE HONOURS
PROGRAMME IN B.A. GEOGRAPHY
(IMPLEMENTED FROM THE ACADEMIC YEAR 2023-2024 ONWARD)

SEM ESTER	Major Core	Minor/ Vocational	Multidisciplinary Course (MDC)	Value Added Courses (VAC)	Ability Enhancement Course (AEC)	Skill Enhancement Course (SEC)
I	UG-GEG-DSC-101 Introductory Physical Geography	UG-GEG-DSC-101 Introductory Physical Geography	UG-GEG-MDC-101: Fundamentals in Environmental Impact Assessment	UG-GEG-VAC-101: Exploring Diversity of India	--	UG-GEG-SEC-101: Participatory Rapid Appraisal Techniques for Social Sciences
II	UG_GEG-DSC-102: Basics of Human Geography	UG_GEG-DSC-102: Basics of Human Geography	UG-GEG-MDC-102 Geography of Sustainable Development	UG-GEG-VAC-102: Environmental Studies	--	UG-GEG-SEC-102: Introduction to Digital Mapping
III	UG-GEG-DSC-201: Basics of Geomorphology	UG-GEG-DSC-201: Basics of Geomorphology	UG-GEG-MDC-201: Basic Geospatial Techniques in Environment, Forestry and Wildlife	--	--	UG-GEG-SEC-201: Basic Techniques in Travel and Tourism
	UG-GEG-DSC-202 Basics of Regional Geography	--	--	--	--	--
IV	UG-GEG-DSC-203: Basics of Climatology	--	--	--	--	--
	UG-GEG-DSC-204: Geomorphology of Landforms	--	--	--	--	--
	UG-GEG-DSC-205-Basics of Cartography	--	--	--	--	--
	UG-GEG-DSC-206: Regional	--	--	--	--	--

	Geography of India					
V	UG-GEG-DSC-301: Geography of Population Growth	--	--	--	--	--
	UG-GEG-DSC-302: Geography of Regional Planning	--	--	--	--	--
	UG-GEG-DSC-303-Coastal and Fluvial Geomorphology	--	--	--	--	--
VI	UG-GEG-DSC-304: Applied Climatology	--	--	--	--	--
	UG-GEG-DSC-305: Economic Geography	--	--	--	--	--
	UG-GEG-DSC-306: Oceanography	--	--	--	--	--
	UG-GEG-PRJ: Project	--	--	--	--	--
VII	UG-GEG-DSC-401: Applied Geomorphology	--	--	--	--	--
	UG-GEG-DSC-402: Statistical Application in Geography	--	--	--	--	--
	UG-GEG-DSC-403-Applied Human Geography	--	--	--	--	--
	UG-GEG-DSC-404: Research Methodology	--	--	--	--	--
VIII	UG-GEG-DSC-405: Geography in 21 st Century	--	--	--	--	--
	UG-GEG-DIS-Dissertation	--	--	--	--	--

Annexure A
SEMESTER I

Course Title: **Fundamentals in Environmental Impact Assessment**

Course Code: **UG-GEG-MDC-101**

Credits: 03

Marks: 75

Duration: 45 hours

Prerequisite Courses: Nil

Course Objectives:

CO1. To appreciate the importance of EIA as an integral part of planning process

CO2. Understand the concept and basic process of environmental assessment.

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

CO1. The students will improve the knowledge on the ethical and quality aspects of Environmental Impact Assessment

CO2: Apply the different methodologies to predict and assess the impacts of project on various aspects of environment

CO3: The student will evaluate through case studies, they will learn to present and explain the components and decision making processes involved in environmental assessment

Module	Topic	
I	Introduction to EIA <ul style="list-style-type: none">• Definition, Principles and Objectives of EIA• Types of EIA (Screening, Scoping, Baseline study, Impact Assessment, Mitigation, Monitoring and Auditing).• EIA process and its stages.• Key stakeholders and their roles in EIA (NGOs, Experts, Government and Public Agencies).• International frameworks and Conventions on EIA (NEPA, SEA, EIA Directives and Aarhus Convention)	(15 hours)
II	Environment attributes <ul style="list-style-type: none">• Environment attributes: air; water; noise; land and soil ; socioeconomic; cultural & biological• Prediction and Methods of Assessment of Impacts on Various Aspects of Environment• Methods of environment impact assessment; ad-hoc method, maps and overlays, check lists, matrix, cause condition impacts.	(15 hours)
III	Description of the Baseline Environment <ul style="list-style-type: none">• Purposes for defining the Environmental Setting; Selection of parameters, Monitoring of physical environmental parameters, Collection and interpretation of baseline data for various environmental attributes	(15 hours)

- Procedure For EIA Clearance: EIA review and screening; state level screening, clearance from DOE and MOEF.

References:

- Reddy, A and Mereddy (2017) Environmental Impact Assessment, 1st Edition, Elsevier Publication
- Hanna, Kevin S. (Ed.) 2016. Environmental Impact Assessment: Practice and Participation. Oxford University Press, Toronto. pp. 488
- Ahmed M. Hussen, 2012. Principles of Environmental Economics and Sustainability: An Integrated Economic and Ecological Approach, , Routledge publisher ISBN 04(15 hours)676908
- Lindgren, R.D. Burgandy, D. 2010. Environmental Assessment in Ontario: Rhetoric vs. Reality, Journal of Environmental Law and Practice, 21, 279-303
- Noble, B.F. 2010. Introduction to Environmental Impact assessment: A Guide to Principles and Practice. 2nd ed. Oxford University Press Canada

Supplementary:

- Lawrence, DP (2003).Environmental Impact Assessment: Practical Solutions to Recurrent Problems, John Wiley & Sons, Inc.
- Riki Therivel, (1996).Methods of Environmental Impact Assessment, Peter Morris, 4. Asit K. Biswas et.al, (1987) EIA for Developing Countries, United Nations University
- Bram F. Noble (2010). Introduction to environmental impact assessment: a guide to principles and practice. Oxford University Press. 2 nd ed.
- Methods of environmental impact assessment / edited by Peter Morris and Riki Therivel. Routledge, 2009.

Web-based:

<https://www.asser.nl/upload/eel-webroot/www/documents/national/poland/handbook.pdf>

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/296952/geh_o0411btrf-e-e.pdf

<https://www.iisd.org/learning/eia/wp-content/uploads/2016/06/EIA-Manual.pdf>

https://www.preventionweb.net/files/8267_bhrcgen30apr1.pdf

Annexure A
B.A.
SEMESTER III

DISCIPLINE SPECIFIC CORE COURSE

CORE COURSE

Course Title: UG-GEG-DSC-201 Basics of Geomorphology (Theory)

Marks: 75

Credits: 3

Duration: 45 lectures of 1 hour each

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Prerequisite Courses: Nil

Course Objectives

1. To provide the basic concepts, theories & processes and landforms in geomorphology

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

CO1: Understand basic concepts in geomorphology and theories of continental drifts, Isostasy sea floor spreading.

CO2: Analyze different types of slopes using contouring method.

CO3: Identify and distinguish geomorphic processes and landforms formed due to winds, underground water, glacial and river.

CO4: Interpret river basin based on morphometric parameters and relief features and their associations using SOI topographic sheets

Unit No.	Module	No. of hours
I	Introduction to geomorphology <ul style="list-style-type: none"> • Meaning, Nature, Scope and significance of geomorphology • Geological timescale • Weathering and its types Comparative study between tropical and temperate region • Mass movement and its types. • Concepts of Isostasy – Airy’s & Pratt. 	(15 hours)
II	Selected Theories in geomorphology <ul style="list-style-type: none"> • Continental Drift Theory • Plate tectonics and mountain building. • Theories of slope development. • Slope- their stability and failures. • Drainage systems and patterns. 	(15 hours)
III	Geomorphic processes and landforms <p>Agents, processes and landforms: erosional, transportation and depositional.</p> <ul style="list-style-type: none"> • Fluvial landforms • Glacial landforms • Aeolian landforms • Karst landforms 	(15 hours)

45

References:

Mandatory:

1. Gautam Alka, 2023: Geomorphology, (6th Ed), Sharda Pustak Bhavan, Prayagraj
2. Shuttleworth Emma and Hugget Richard, 2022: Fundamentals of Geomorphology, 4th Ed, Taylor and Francis, Oxfordshire, England
3. Wooldridge, S.W. and Morgan, R.S., 2022: The Physical Basis of Geography, (Ed) Legare street press Nevada.
4. Singh Savindra, 2023, Physical Geography, Classic Ed, Pravilika Publication, Prayagraj.
5. Husain Majid, 2021, Fundamentals of Physical Geography, 5th Ed, Rawat publication, Jaipur.

Supplementary:

1. Rangnath, 2020, Physical Geography, 1st Ed. Mysore Book House, Mysore.
2. Ramzan Dar Rafi, 2021, Geomorphology, 1st Ed. Renaissance Publishers, Jammu and Kashmir.
3. Thornbury, W.D., 2019: Principles of Geomorphology, 2nd Ed., CBS publisher and distributors Pvt Limited, New Delhi
4. Hugget Richard John, 2019: Fundamentals of Geomorphology, 4th Ed. Taylor and Francis, Oxfordshire, England
5. PMF IAS, 2023-24: Physical Geography for UPSC, 1st Ed. PMS IAS publisher, Sindhanur, Karnataka

Web-Based:

1. <http://shaileshchaure.com/Notes/GEOMCON.pdf>
2. <https://www.kean.edu/~csmart/Observing/05.%20Plate%20tectonics.pdf>
3. https://www.researchgate.net/publication/272510857_Main_Drainage_Systems
4. https://www.researchgate.net/publication/309630899_FLUVIAL_PROCESSES_AND_LANDFORMS
5. <https://people.wou.edu/~taylors/g322/glacial.pdf>

Course Title: Basics of Geomorphology (Practical)

Course Code: UG-GEG-DSC-201

Marks: 25

Credits: 1

Duration: (15 hours) sessions of 2 hours each

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Module	Topic	
I	Slope analysis& Profile drawing	(6)
	<ul style="list-style-type: none">• Absolute and relative relief,Aspect map and Isotan map using interpolation.• Serial, composite and projected profiles using SOI toposheet• Identification of drainage patterns from SOI toposheet and Satellite Image.	
II	Preparation and interpretation of relief features and drainage map using SOI toposheet (at least one for humid/tropical and arid/dry region).	(9)
III	Journal and Viva	

References:

Mandatory:

1. Sarkar, Ashis, 2000: Practical Geography: A Systematic Approach, Orient Longman Pvt. Ltd., Kolkata.
2. Kale V.S. and Gupta Avijit (2000): Introduction to Geomorphology, Orient Black Swan Publications
3. Monkhouse, F.J. and Wilkinson, H.R., 2009: Maps and Diagrams, B.I. Publications Pvt. Ltd., New Delhi
4. Singh, R.L. and Singh Rana P.B., 2008, Elements of Practical Geography, Kalyani Publishers, New Delhi
5. Singh, Savindra (2006): Geomorphology, PrayagPustakBhavan, Allahabad

Supplementary

1. Chorley, Richard. J. (ed.), 2001: Water, Earth and Man, Methuen & Co., London
2. Goudie, Andrew, et al. (eds),2001: Geomorphological Technique, George Allen & Unwin, London
3. Gregory, K.J. and Walling, D.E., 2003: Drainage Basin – Form and Process, Edward Arnold, London
4. King, C.A.M., 2006: Techniques in Geomorphology, Edward Arnold, London
5. Leopold, L.B, Wolman, M.G. and Miller, J.P., 2004: Fluvial Processes in Geomorphology, Freeman, San Francisco
6. Misra, R.P. and Ramesh, A., 2009: Fundamentals of Cartography, Concept Publishing Co., New Delhi
7. Strahler, A.N., 2000: Physical Geography, 3rd Ed., Wiley.

Web-Based:

1. <https://shodhganga.inflibnet.ac.in/bitstream/10603/160201/3/chapter%204.pdf>
2. <http://www.wvca.us/envirothon/pdf/Drainage%20Patterns.pdf>
3. https://www.soilandwater.nyc/uploads/7/7/6/5/7765286/watershed_delineation.pdf
4. <https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/manage/?cid=stelprdb1046651>
5. <http://www.ncert.nic.in/ncerts/l/iess103.pdf>

DISCIPLINE SPECIFIC CORE COURSE

Course Title: Basics of Regional Geography (Theory)

Course Code: UG-GEG- DSC-202

Marks: 75

Credits: 3

Duration: 45 lectures of 1 hour each

Prerequisite Courses: Nil

Course Objectives:

1. The course aims to develop a basic understanding of the regions and recognizing the significance of geography in shaping region.
2. It helps students to appreciate regional unique dimensions of regions.

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

CO1: Understand Fundamental concepts of regional geography

CO2: Apply techniques of regionalization

CO3: Differentiate among different regions spatial organization and areal variation in human activities.

CO4: Develop an understanding of basic quantitative techniques used in regional geography.

Module	Topic	
I	Concept of Region in Geography: Definition and characteristic The Regional Approach - area, region, space, Role of region in Geography Characteristics of region , Factors of regionalization, Methods of Regionalization- methods of delineation of region and types of regions (Natural , Cultural , formal, functional,etc)	(15 hours)
II	Understanding Dimensions of regions i.) Foundations of Region - Ecological, Economic, Social and Cultural Dimensions ii.) Federalism-center – state relationships. Case study of India & Issues iii.) Core – Periphery & Regional Development , Freidman’s theory iv.) Hierarchy of regions :Micro, Meso, Macro v.) The Regional issues. (Two case studies)	(15 hours)
III	Study of Regional Organization: Their evolution, functions and inter-linkages. Globalization and the New Territorial Order. De – Globalization , Regional Organisation : Their development, Issues and challenges , Case of ASEAN, EU, SAARC Regional Consciousness and Identity. (Case study #)	(15 hours)

Recent case study

References:

Mandatory:

1. Adhikari, S. (2016). Fundamentals of Geographical Thought, New Delhi: Orient Black Swan Publications
2. Ghosh M (2022) Liberalisation , Growth and Regional Disparity in India , Rawat Publication , Jaipur
3. Hobbs, Joseph (2017) Fundamentals of world regional geography, Cengage Learning , Boston, MA, USA :
4. Jiwan Janki (2021) Regional Development and Planning, Rawat Publications, Jaipur
5. Pulsipher Y , Pulsipher A & Johansson O (2020) World Regional Geography – Global (Ed 8th), W.H. Freeman, New York

Supplementary:

1. Cole, J. 2000: A Geography of the World's Major Regions, Routledge, London
2. Israel, S. Johnson, D.I. and Wood, D., 2005: World Geography Today
3. Jackson, R.H. and Hudman, L.E, 2007: Regional Geography: Issues for Today.
4. Wheeler, J.H. Jr. and Kostbade, J.T., (1990): World Regional Geography, Holt Rinsort and Winston, Inc
5. Holier, G.P., 2008: Regional Development in Michael Pacione (ed), The Geography of the 3rd World: Progress & Prospects, Rutledge, London, New York.
6. Jackson, R.H. and Hudmar, L.E. 2004: Regional Geography: Issues for Today
7. Paul Claval (2008) An Introduction to Regional Geography, Wiley-Blackwell, ISBN (15 hours)5786733X.

Web-based:

1. https://shodhganga.inflibnet.ac.in/bitstream/10603/39734/12/12_chapter%202.pdf
2. https://issuu.com/rengasamy/docs/regional_planning_part_ii_types_of_regions__regio
3. <https://www.insightsonindia.com/2014/11/13/regionalism-dimensions-meaning-issues/>
4. https://link.springer.com/chapter/10.1007/978-3-319-18971-0_7
5. <https://www.longdom.org/open-access/from-globalization-to-regionalism-and-interregionalism-a-study-ofsaarc-2332-0761-1000279.pdf>
6. https://institutdelors.eu/wp-content/uploads/2018/01/regionalism_globalgovernance_t.behr-j.jokela_ne_july2011_01.pdf

Course Title: Basics of Regional Geography (Practical)

Course Code: UG-GEG- DSC-202

Marks: 25

Credits: 1

Duration: (15 hours) Sessions (2 hour each)

Module	Topic	
I	Delineation of Formal Regions	(07)
	1. Demarcation of Region using single Index Method.	
	2. Delineation of Region using Composite Weighted Index Method	
	3. Delineation of a Region using Interpolation Method. (using rainfall and temperature data)	
	4. Delineation of a Region using Cluster Index Method.	
II	Delineation functional Region	(08)
	1. Delineation functional Region – O/D Method.	
	2. Delineation of Region Flow Analysis.	
	3. Delineation of Functional Region – Break Point Method.	
	4. Population Potential Surfaces.	

References:

Mandatory:

1. Adhikari, S. (2016). Fundamentals of Geographical Thought, New Delhi: Orient Black Swan Publications
2. Ghosh M (2022) Liberalisation , Growth and Regional Disparity in India , Rawat Publication , Jaipur
3. Hobbs, Joseph (2017) Fundamentals of world regional geography, Cengage Learning , Boston, MA, USA :
4. Jiwan Janki (2021) Regional Development and Planning, Rawat Publications, Jaipur
5. Pulsipher Y , Pulsipher A & Johansson O (2020) World Regional Geography – Global (Ed 8th), W.H. Freeman, New York

Supplementary:

1. Hagget Peter, Cliff A.D. et. al. (2000) Locational Models, Locational Analysis in Human Geography. Vol. I Arnold – Heinemann Pub. (India)
2. Chandna R.C. (2003): Regional Planning: A Comprehensive Text, Kalyani Publishers, Ludhiana

Web-based:

1. <https://www.thoughtco.com/reillys-law-of-retail-gravitation-1433438>
2. <https://www.geographyforyou.com/2019/09/maximum-positive-deviation-crop.html>
3. <http://www.fao.org/3/x6906e/x6906e06.htm>

MDC

Course Title: Basic Geospatial Techniques in Environment, Forestry and Wildlife

Course Code: UG-GEG-MDC-201

Marks: 75

Credits: 3

Duration: 45 lectures of 1 hour each

Prerequisite Courses: Nil

Course Objectives:

1. To course aims to introduce basic concepts in Remote sensing GIS, GPS in the field of forestry environment and coastal zone management

Course Outcomes:

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

CO1: Understand the basics of remote sensing, GIS and GPS

CO2: Compute and apply the techniques of sensing forest and wildlife habitat

CO3: Create and synthesis attributes of forest and wildlife through maps

Modules	Topic	
I	Basics of Remote Sensing Introduction to remote sensing, Electromagnetic Radiation and its components: Characteristics of Electromagnetic Spectrum Energy Interactions with Earth's atmosphere and surface features; Spectral response of Earth's natural surface. Introduction to Sensors and platforms.	(15 hours)
II	Basics of GIS & GPS Components of GIS, objectives of GIS, Elements of GIS, Hardware & Software Requirements, Point Line and Polygon, Layers and Coverage Raster and Vector Data, Components of GPS. Global Navigation Satellite Systems and Regional Navigation Satellite System,	(15 hours)
III	Theoretical applications of RS & GIS in Environment - Forest and wildlife Disaster management Coastal zone management	(15 hours)

References:

Mandatory:

1. ThakurJ. K. et al (ed) (2011) Geospatial Techniques for managing environmental resources. Springer, 233 Spring Street, New York 10013, USA.
2. Patrice E. Carbonneau and HervePi'egay (2012) Fluvial Remote Sensing for Science and Management. John Wiley & Sons, Ltd. UK.
3. Mathias Lemmens(2011) Geo-information Technologies, Applications and the Environment. Springer Dordrecht Heidelberg London New York.

4. Nancy Hoalst-Pullen & Mark W. Patterson (Editors) (2010) Geospatial Technologies in Environmental Management. Springer Dordrecht Heidelberg London New York.
1. J. R. Jensen, (2014) Remote Sensing of Environment, An Earth Resource Perspective, (2ed) Pearson Education Pvt. Ltd., New Delhi.
2. JianGuo Liu and philippa J. Mason (2016) Image processing and GIS for remote Sensing Techniques and applications (2nd Ed). John Wiley & Sons, Ltd. UK.
3. Ian j. Bateman Andrew a. Lovett Julii s. Brainard 2003: Applied Environmental economics A GIS approach to cost-benefit analysis . Cambridge University Press. UK
4. James K. Lein (2012)Environmental Sensing Analytical Techniques for Earth Observation. Springer New York Dordrecht Heidelberg London.
5. W. G. Rees (2001) Physical principles of Remote Sensing (2nd Ed). Press Syndicate of the University of Cambridge, UK

Supplementary

1. Andrew C. Millington; et al. eds., 2001: GIS and Remote Sensing Applications in Biogeography and Ecology. Springer Science+Business Media, LLC.
2. Charles W. Finkl Christopher Makowski ., eds. 2014: Remote Sensing and Modeling, Advances in Coastal and Marine Resource. Coastal Research Library, Springer Cham Heidelberg, New York, Dordrecht, London
3. QihaoWeng ., eds. 2017: Remote Sensing for Sustainability. CRC Press Taylor & Francis Group, New York, London
4. Ralph W. TinerMegan W. Lang Victor V. Klemas., eds. 20(15 hours): Remote Sensing of Wetlands, Applications and Advances. CRC Press Taylor & Francis Group, New York, London
5. Samuel Purkis and Victor Klemas (2011) Remote Sensing and Global Environmental Change. John Wiley & Sons Ltd. US

Web Based:

1. <https://www.umweltbundesamt.de/en/data/environmental-indicators>
2. <https://link.springer.com/article/10.1007/s11205-018-1977-1>
3. https://webapps.itc.utwente.nl/librarywww/papers/msc_2002/nrm/sotomayor.pdf
4. <https://www.gyanvihar.org/journals/index.php/2018/12/04/forest-cover-and-land-use-mapping-using-remote-sensing-and-gis-technology/>
5. <https://www.worldbank.org/en/topic/disasterriskmanagement/overview>
6. <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/leaf-area-index>
7. https://www.fs.fed.us/nrs/pubs/jrnl/2017/nrs_2017_bluffstone_001.pdf
8. <https://core.ac.uk/download/pdf/35461377.pdf>
9. <https://www.esri.com/content/dam/esrisites/sitecore-archive/Files/Pdfs/library/bestpractices/wildlife-management.pdf>
10. <https://www.sciencedirect.com/science/article/abs/pii/S1040618220302299>

SEC

Course Title: Basics Techniques in Travel and Tourism

Course Code: UG-GEG-SEC-201

Marks: 75

Credits: 3

Duration: 45 lectures of 1 hour each

Prerequisite Courses: Nil

Course Objectives:

CO1. To provide the students with foundational knowledge and understanding of tourism and its terminologies

CO2. To apply different digital tools and technologies that drive modern-day tourism

CO3. To enhance critical thinking and management skills for future professionals in the tourism sector.

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

CO1. Understand and be able to differentiate between various types of tourism and their associated terminologies

CO2. Students will acquire knowledge about travel agency operations, including planning itineraries, ticketing, and reservations.

CO3. Apply and Design a promotional campaign for a tourism destination using digital tools.

Module	Topic	No. of hours
I	Introduction to the travel and tourism industry <ul style="list-style-type: none">• Scope, Characteristics. Types and Forms of Tourism: Inter-regional and intra-regional tourism, inbound and outbound tourism, domestic, international tourism. Types of tourists. Components of Tourism.• Tourism Impacts: Economic, Social, Cultural, and Environmental Impacts - Strategies to overcome or reduce the negative impacts of tourism.	(15 hours)
II	Tourism Business <ul style="list-style-type: none">• Relationship between Market and Consumer, P's of Tourism Marketing, Marketing of Tourism Products and Marketing Skills for Tourism Business• Hospitality- Functions of Front Office Management, Housekeeping, Food and Beverage Services and Administration.• Travel Agency Operations - Basics of travel itinerary planning, Understanding ticketing and reservation systems.	(15 hours)
III	Tourism Practices <ul style="list-style-type: none">• Itinerary Planning and Development: Resources	(15 hours)

and Digital Skills

and Steps for Itinerary Planning -Types of Itinerary, Do's and Don'ts of Itinerary

- Event Management in Tourism - Planning and executing a mock tourism event
- Field visit

References:

- Chaudhary, M. (2010) Tourism Marketing, Oxford press, New Delhi.
- Foster, D.(2010) The Business of Travel Agency, Pitman,
- Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune. 4. Page, S. J. (2011)
- Cooper P. Christopher, Geography of Travel and Tourism, London: ButterworthHeinemann, 2012
- Strauss, J., & Frost, R. (2014). E-Marketing (7th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Dhiman. M.C. and Chauhan, V. (2019) . International Travel Agency and Tour Operation Management, IGI Global USA.
- *Kumar, S., & Sardana, A. (20(15 hours)). Advertising and Brand Management.*

Supplementary:

- Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects. Kanishka, New Delhi. 2. Hall, M. and Stephen, P. (2006)
- Geography of Tourism and Recreation – Environment, Place and Space, Routledge, London. 3. Kamra, K. K. and Chand, M. (2007)
- Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune. 4. Page, S. J. (2011)
- Tourism Management: An Introduction, Butterworth-HeinemannUSA. Chapter 2. 5. Raj, R. and Nigel, D. (2007)

Web-based:

<https://www.revfine.com/tourism-trends/>

<https://colorwhistle.com/types-of-tourism/>

<https://tourismnotes.com/characteristics-of-the-tourism-industry/>



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Best Affiliated College-Goa University Silver Jubilee Year Award

SYLLABUS FOR SEMESTER III FOR
UNDERGRADUATE DEGREE PROGRAMME
IN GEOGRAPHY

B.Sc.
(Implemented Academic Year 2024-2025)

ANNEXURE A
COURSE STRUCTURE
SYLLABUS FOR THREE / FOUR YEAR UNDERGRADUATE DEGREE HONOURS PROGRAMME IN
B.SC. (MINOR) GEOGRAPHY
(IMPLEMENTED FROM THE ACADEMIC YEAR 2023-2024 ONWARD)

SEMESTER	Major Core	Minor /Vocational	Multidisciplinary Course (MDC)	Value Added Courses (VAC)	Ability Enhancement Course (AEC)	Skill Enhancement Course (SEC)
I	--	UG-GEG-DSC (M) 101: Fundamentals of Physical Geography	--	--	--	UG-GEG-SEC-101: Basics of Geographical Information System
II	--	UG-GEG-DSC(M)-102: Concepts in Geomorphology	--	--	--	UG-GEG-SEC-102: Remote Sensing and Environment
III	--	UG-GEG- DSC(M)-201: Dynamics of Atmospheric Science	--	--	--	UG-GEG-SEC-201: Application of Remote Sensing in Natural Resource Monitoring
IV	--	--	--	UG-GEG-VAC 202: Ocean and Coastal studies	--	--
V	--	--	--		--	--
VI	--	--	--		--	--
VII	--	--	--		--	--
VIII	--	--	--		--	--

Annexure A
B.Sc. GEOGRAPHY(Minor)
3 YEARS AND 4 YEARS HONOURS LIST OF COURSES 2022-23
UNDER NEP 2020 COURSE STRUCTURE

SEMESTER	COURSE CODE	TITLE OF THE COURSE	NOMENCLATURE/TYPE OF COURSE	CREDITS
I	UG-GEG-DSC(M)-101	Fundamentals of Physical Geography	DSC	4
	UG-GEG-SEC-101	Basic of Geographical Information System (GIS)	SEC	3
II	UG-GEG-DSC(M)-102	Concepts in Geomorphology	DSC	4
	UG-GEG-SEC-102	Remote Sensing and Environment	SEC	3
III	UG-GEG-DSC(M)-201	Dynamics of Atmospheric science	DSC	4
	UG-GEG-SEC-201	Application of Remote Sensing in Natural Resource Monitoring	SEC	3
IV	UG-GEG-VAC -202	Ocean and Coastal Studies	VAC	2
V	--	--	--	--
VI	--	--	--	--
VII	--	--	--	--
VIII	--	--	--	--

B.Sc.

SEMESTER III (MINOR)

Course Title: Dynamics of Atmospheric science

Course Code: UG-GEG-DSC(M)-201 (Elective)

Marks: 75

Credits: 3

Duration: 45 HOUR

Prerequisite Courses: Nil

Course Objective:

To introduce key concepts of climate change.

Course outcomes:

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

CO1: Understand fundamental aspects of Atmosphere

CO2: Review global and regional variation and patterns of climate.

CO3: Apply the knowledge of instruments and scientific methods in collection and analysis of climate data.

Modules	Topic	
I	Introduction to Atmospheric Science: Meaning and Definitions of Atmospheric Science and Climatology. Atmosphere- Composition and structure. Relevance of Atmospheric Science and Climatology in the Age of Climate Change and Global Warming. (Global Boiling) Weather and Climate- Meaning and Elements/Factors.	(15 hours)
II	Insolation, factors affecting, and distribution (Horizontal and Vertical). Heat Budget, heat energy transfer, global distribution, Air pressure and wind: Global pressure belts, Shifting of pressure belts and general circulation of wind- Laws of horizontal motion.	(15 hours)
III	Global, Seasonal and Local Winds. Humidity and types. Clouds and their types, precipitation: meaning, types and influencing factors. Hydrological cycle.	(15 hours)

References:

Mandatory:

1. Anup Chatterjee, 2010, Global Warming and Climate Change- Global Publications
2. Barry R.G. and Chorley, R. J., 2009: Atmosphere, Weather and Climate, Routledge
3. EnwereDike, Ngozi Dike, 2018, Global Warming and Climate Change: Causes, Symptoms, Coping Strategies.- iUniverse

4. Gopal Bhargava, 2004, Global Warming and Climate Changes Transparency And Accountability,
5. Lal D. S., (2021) Climatology, Sharda Pustak Bhawan, Allahabad, India
6. Mittal V, 2012, Global Warming and Climate Change Paperback –Oxford book company, New Delhi
7. Monkhouse, F.J., 2009 – Principles of Physical Geography (1Ed.), Platinum Publishers; Publishers, India
8. Savindra Singh (2020) Climatology. Pravalika Publications, Allahabad, India

Supplementary:

1. Bunnett R.B., 1993: Physical geography in Diagrams, Longman
2. Critchfield, H.J, 1998: General Climatology, Prentice-Hall
3. P. Birot, 1966: General Physical Geography, Longman, Green & Co Strahler, A.H., 1983: Modern Physical Geography, John Wiley and Sons
4. Strahler A. M. and Strahler A.H., 1983: Elements of Physical Geography, John Wiley and Sons.
5. Stringer, E.T., 1972: Foundation of Climatology: An Introduction to Physical, Dynamic, Synoptic, and Geographical Climatology, W.H. Freeman & Co. Ltd.

Web-Based:

1. <http://uccrn.org/files/2014/02/ARC3-Chapter-3.pdf>
2. <https://www.epa.gov/sites/production/files/2014-6/documents/basicscompndium.pdf>
3. http://www.cengage.com/resource_uploads/downloads/0495555061_137181.pdf
4. <https://unfccc.int/resource/docs/publications/impacts.pdf>
<http://dels.nas.edu/resources/static-assets/exec-office-other/climate-change-full.pdf>

Course Title: **Dynamics of Atmospheric science** (Practical)

Course Code: UG-GEG-DSC(M)-201

Marks: 25

Credits: 01

Duration: 30 hours

Modules	Topic	
I	Processing of temperature data: mean and range of temperature Calculation of Lapse rate and Relative humidity Griffith Taylor's Climograph	(5)
II	Weather instruments and their types: Thermometer, Barometer, Rain gauge, Wind vane. Weather signs and symbols Weather Station Model Weather Forecasting and its techniques. Interpretation of weather chart:(at least two seasons). June-September, March-May.	(10)

References:

Mandatory:

1. Anup Chatterjee, 2010, Global Warming and Climate Change- Global Publications
2. Barry R.G. and Chorley, R. J., 2009: Atmosphere, Weather and Climate, Routledge
3. EnwereDike, Ngozi Dike,2018, Global Warming and Climate Change: Causes, Symptoms, Coping Strategies.- iUniverse
4. Gopal Bhargava, 2004, Global Warming and Climate Changes Transparency And Accountability,
5. Lal D. S., (2021) Climatology, Sharda Pustak Bhawan, Allahabad, India
6. Mittal V, 2012, Global Warming and Climate Change Paperback –Oxford book company, New Delhi
7. Monkhouse, F.J., 2009 – Principles of Physical Geography (1Ed.), Platinum Publishers; Publishers, India
8. Savindra Singh (2020) Climatology. Pravalika Publications, Allahabad, India

Supplementary:

1. BunnettR.B. , 1993: Physical geography in Diagrams, Longman
2. Critchfield, H.J, 1998 : General Climatology, Prentice-Hall
3. P. Birot, 1966: General Physical Geography, Longman, Green & Co Strahler, A.H., 1983: Modern Physical Geography, John Wiley and Sons
4. Strahler A. M. and Strahler A.H., 1983: Elements of Physical Geography, John Wiley and Sons
5. Stringer, E.T., 1972: Foundation of Climatology: An Introduction to Physical, Dynamic, Synoptic, and Geographical Climatology, W.H. Freeman & Co. Ltd.

Web-Based:

1. <http://uccrn.org/files/2014/02/ARC3-Chapter-3.pdf>
 2. <https://www.epa.gov/sites/production/files/2014-6/documents/basicscompndium.pdf>
 3. http://www.cengage.com/resource_uploads/downloads/0495555061_137181.pdf
 4. <https://unfccc.int/resource/docs/publications/impacts.pdf>
- <http://dels.nas.edu/resources/static-assets/exec-office-other/climate-change-full.pdf>

Course Title: Application of Remote Sensing in Natural Resource Monitoring

Course Code: UG-GEG-SEC-201

Marks: 75

Credits: 3

Duration: 45 HOUR

Prerequisite Courses: Nil

Course Objectives:

1. To course aims to introduce basic concepts of environmental indicators and algorithms for change detection.
2. The course focuses on Geospatial Techniques to Study Forest Cover, Marine Environment, Wetlands and Watersheds, Riverine Landscapes.

Course Outcomes:

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

CO1: Understand the basic science behind environmental indicators

CO2: Compute and apply the techniques of algorithms and techniques to monitor forest, marine environment, wetland and watershed

CO3: Apply GPS in GCP collection and land survey.

Modules	Topic	
I	Environmental Indicators: Vegetation indices Customized Band Ratios, forest monitoring. Hands-on Training- 1. Leaf Area Index (LAI) and Seasonal Vegetation Dynamics, 2. Forest fire detection	(15 hours)
II	Geospatial Technique in Marine Environment, Wetlands, Watersheds and Riverine Landscapes, Hands-on Training - 1. Monitoring Salt Marsh Habitats, 2. Sea surface temperature	(15 hours)
III	Global Navigation Satellite Systems and Inertial Navigation Satellite System, the Environment Social Vulnerability Assessment through GIS Techniques Hands-on training- 1. GPS for Ground control point collect 2. Land Surveying (Area measurement).	(15 hours)

References:

Mandatory:

1. ThakurJ. K. et al (ed) (2011) Geospatial Techniques for managing environmental resources. Springer, 233 Spring Street, New York 10013, USA.
2. Patrice E. Carbonneau and HervePi'egay (2012) Fluvial Remote Sensing for Science and Management. John Wiley & Sons, Ltd. UK.
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4. Nancy Hoalst-Pullen & Mark W. Patterson (Editors) 2010 Geospatial Technologies in Environmental Management. Springer Dordrecht Heidelberg London New York.
5. J. R. Jensen, (2014) Remote Sensing of Environment, An Earth Resource Perspective, (2ed) Pearson Education Pvt. Ltd., New Delhi.
6. JianGuo Liu and philippa J. Mason (2016) Image processing and GIS for remote Sensing Techniques and applications (2nd Ed). John Wiley & Sons, Ltd. UK.
7. Ian j. Bateman Andrew a. Lovett Julii s. Brainard 2003: Applied Environmental economics A GIS approach to cost-benefit analysis . Cambridge University Press. UK
8. James K. Lein (2012) Environmental Sensing Analytical Techniques for Earth Observation. Springer New York Dordrecht Heidelberg London.
9. W. G. Rees (2001) Physical principles of Remote Sensing (2nd Ed). Press Syndicate of the University of Cambridge, UK

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1. Andrew C. Millington; et al. eds., 2001: GIS and Remote Sensing Applications in Biogeography and Ecology. Springer Science+Business Media, LLC.
2. Charles W. Finkl Christopher Makowski ., eds. 2014: Remote Sensing and Modeling, Advances in Coastal and Marine Resource. Coastal Research Library, Springer Cham Heidelberg, New York, Dordrecht, London
3. QihaoWeng ., eds. 2017: Remote Sensing for Sustainability. CRC Press Taylor & Francis Group, New York, London
4. Ralph W. TinerMegan W. Lang Victor V. Klemas., eds. 20(15 hours): Remote Sensing of Wetlands, Applications and Advances. CRC Press Taylor & Francis Group, New York, London
5. Samuel Purkis and Victor Klemas (2011) Remote Sensing and Global Environmental Change. John Wiley & Sons Ltd. US

Web Based:

1. <https://www.umweltbundesamt.de/en/data/environmental-indicators>
2. <https://link.springer.com/article/10.1007/s11205-018-1977-1>
3. https://webapps.itc.utwente.nl/librarywww/papers/msc_2002/nrm/sotomayor.pdf
4. <https://www.gyanvihar.org/journals/index.php/2018/12/04/forest-cover-and-land-use-mapping-using-remote-sensing-and-gis-technology/>
5. <https://www.worldbank.org/en/topic/disasterriskmanagement/overview>
6. <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/leaf-area-index>
7. https://www.fs.fed.us/nrs/pubs/jrnl/2017/nrs_2017_bluffstone_001.pdf
8. <https://core.ac.uk/download/pdf/35461377.pdf>



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**SYLLABUS FOR SEMESTER III FOR
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IN GEOGRAPHY
M.A.
(Implemented Academic Year 2024-2025)**

Annexure B

Course Structure: M.A. Geography Level 500
Academic Year 2024-2025

Semester III Level 500 Courses

Semester	Course Code	Course Title (T/P)	Credits (T)
Semester III Level 500 Generic Electives (GE)			
III	PGMP-GEG-GE- 501	Geographic Perspectives of Geopolitics	04
III	PGMP-GEG-GE- 502	Geography of Wellbeing with Special Reference to India	04
III	PGMP-GEG-GE- 503	Cultural Geography	04
Semester III Level 500 Discipline Specific Elective (DSE)			
III	PGMP-GEG-DSE- 501	Tropical Climatology	04
III	PGMP-GEG-DSE- 502	Biogeography	04
III	PGMP-GEG-DSE- 503	Geography of Disaster Management	04
Semester III Level 500 Discipline Research Specific Elective (DRSE)			
III	PGMP-GEG-DRSE- 501	Fundamentals of Research Methodology	04
III	PGMP-GEG-DRSE- 502	Quantitative Techniques	04

Annexure B

Course Structure: M.A. Geography Level 500
Academic Year 2024-2025

Sem/ Level	Core	Course 1	Course 2	Course 3	Course 4	Course 5
I/400	Core 4 Credits	Advanced Geomorphology	Advanced Climatology	Introduction to Remote Sensing	Advanced Cartographic Skills in Geography	
I/400	Elective 2 Credits	Advanced Regional Planning and Development	Techniques of Regional Analysis	Environment Impact Assessment	Natural Resources Management in India	Climate Change and Adaptations
II/400	Core 4 Credits	Advanced Population Studies in Geography	Advanced Economic Geography	Introduction to Geographic Information System	Field Techniques and Village Survey	
II/400	Elective 2 Credits	Techniques of Disaster Management, Mitigation and Resilience	Geographical Thought	Advanced Urban Geography	Soil and Water Resource Management	Geography of India
III/500	Generic Elective 4 Credits	Geographic Perspectives of Geopolitics	Geography of Wellbeing with Special Reference to India	Cultural Geography		
III/500	Discipline Specific Elective 8 Credits	Tropical Climatology	Biogeography	Geography of Disaster Management		
III/500	Research Specific Elective 8 Credits	Fundamentals of Research Methodology	Quantitative Techniques			
IV/500	Research Specific Elective 4 Credits	Analytical and Digital Cartography in Geographical Research				
IV/500	Dissertation/I nternship 16 Credits	Dissertation/ Internship				

Annexure B

SEMESTER III Level 500 Discipline Specific Elective (DSE)

Course Title: Tropical Climatology

Course Code: PGMP –GEG-DSE-501

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

Pre-requisite Courses:

- Basic knowledge about tropical areas and climate.

Course Objectives:

1. To be cognizant of the nature and scope of tropical climatology.
2. To assess the factors that affects the energy balance, temperature distribution, and atmospheric circulation in tropical areas.
3. To analyze tropical cyclones, tropical rainfall, and heavy precipitation events in tropical areas.
4. To analyze the different types of tropical climates and their suitability for agriculture, as well as the challenges of human adaptation to tropical climates and the impact of global warming on tropical climates and biomass.

Course Outcomes (COs):

After successful completion of the course the students will be able to:

CO1: Cognizance of tropical heat balance and its global consequences.

CO2: Enrichment of knowledge about circulation pattern and dynamics of Monsoon climates.

CO3: Acquaintance with dynamics and distribution of rainfall in tropics.

CO4: Awareness about the impact of global warming on tropical climates and their relationship with agriculture.

Module	Course Content	
I	<ol style="list-style-type: none">1. Nature and scope and significance of Tropical Climatology.2. Temperature distribution in tropical areas.3. Energy balance in tropical areas	(15 hours)
II	<ol style="list-style-type: none">1. Atmospheric Pressure and circulation in tropical areas - Hadley Cell2. Walker Circulation, ENSO.3. Monsoons-Theories (Classical and Modern) of origin and characteristics and areas of influence. (Jet Streams, Tibetan High, Indian Ocean Dipole, El-Nino and La-Nina and their impact on monsoon).	(15 hours)
III	<ol style="list-style-type: none">1. Tropical Cyclones-Origin and characteristics.2. Tropical Rainfall-Dynamics and distribution.3. Heavy Precipitation events in tropical areas.	(15 hours)
IV	<ol style="list-style-type: none">1. Tropical Climates-Classification and characteristics.2. Tropical Climates and agriculture: Human Adaptation to Tropical Climates.3. Impact of Global Warming and Climate Change on Tropical Climates and Biomass.4. Current Trends in Tropical Cyclones in context to Indian Sub-continent, A comparative analysis of cyclones between Arabian Sea and Bay of Bengal.	(15 hours)

References:

Mandatory:

1. Ahrens, C. D. (2016). *Essentials of meteorology: An introduction to atmospheric science* (3rd ed.). Pearson.
2. Barry, R. G., & Chorley, R. J. (2013). *Atmosphere, weather, and climate* (8th ed.). Routledge.
3. Ritchie, H., & McVicar, T. R. (2017). *Climate science: The science of climate change* (2nd ed.). Wiley.
4. Eagleson, P. S. (20(15 hours)). *Meteorology: The dynamic science of the atmosphere*. Pearson.
5. Stull, R. B. (2017). *Meteorology today: An introduction to weather, climate, and the environment* (12th ed.). Cengage Learning.
6. Chang, C. P., & Krishnamurti, T. N. (2000). *Monsoon meteorology: Processes, models, and impacts*. Oxford University Press.
7. Pachauri, R. K., & Dadi, S. K. (2001). *Tropical climatology*. Narosa Publishing House.
8. Ramanathan, V. (2010). *The climate system: Physical processes, climate variability and climate change*. Cambridge University Press India.
9. Gupta, S. K. (2009). *Atmospheric circulation and climate*. Narosa Publishing House.
10. Hodges, K. E. (2000). *Tropical cyclones: Nature's most powerful storms*. Oxford University Press India.
11. Emanuel, K. A. (2005). *Atmospheric convection*. Oxford University Press India.

Supplementary:

1. Trenberth, K. E. (2011). *Physical climate: Atmospheric and oceanic*. Elsevier.
2. Parenti, C (2011) *Tropic of Chaos: Climate Change and New Geography of Violence*, Nation Books, New York
3. York
4. Wallace, J. M., & Hobbs, P. V. (2006). *Atmospheric science: An introductory survey* (2nd ed.). Elsevier.
5. Sellers, P. J. (1998). *The Earth's atmosphere: An introduction* (6th ed.). Addison-Wesley.
6. Nitta, Y. (2000). *Monsoons: Processes, predictability, and climate change*. Springer.
7. Gupta, S. K. (2004). *Tropical meteorology*. Narosa Publishing House.

Web References:

1. <https://ral.ucar.edu/hot/introduction-tropical-meteorology>
2. <https://earthobservatory.nasa.gov/features/EnergyBalance>
3. <https://climatedata.org/tropical-climate/>
4. <https://www.noaa.gov/resource-collections/climate-hadley-cell>
5. <https://www.cpc.ncep.noaa.gov/climate/ensoindex.shtml>
6. <https://mausam.imd.gov.in/imdlatest/contents/monsoon.php>
7. <https://www.nhc.noaa.gov/climo/>
8. <https://www.nationalgeographic.com/environment/article/climate-change-tropical-rainforests>

SEMESTER III Level 500 Discipline Specific Elective (DSE)

Course Title: Biogeography

Course Code: PGMP –GEG-DSE-502

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

Pre-requisite Courses:

- Basic knowledge about Biogeographic and environmental concepts.

Course Objectives:

1. To comprehend the factors that influences the distribution of plants and animals.
2. To identify and explain patterns of biodiversity.
3. To predict the effects of environmental change on biodiversity.
4. To acquire knowledge about the methods of conserving biodiversity.

Course Outcomes (COs):

After successful completion of the course the students will be able to:

CO1: Understand the basic ecological principles.

CO2: Discover about distribution of plants and animals' life on the earth.

CO3: Recognize conservation of biotic resources and effects of industrial effluents on ecosystems.

CO4: Acquaintance with environmental hazards and enactment of forest and wildlife policy in India.

Module	Course Content	
I	1. Nature, scope, and significance of Biogeography. 2. Basic ecological principles: Bio-energy cycle in territorial ecosystem; energy budget of the earth; trophic levels, Food chain and Food web. 3. Biodiversity, levels of biodiversity and Conservation.	(15 hours)
II	1. Distribution of plant life in different natural regions and its relation to soil, climate, and human activities. 2. Geographical distribution and domestication of animal in different regions and its relation to vegetation types, climate, and human activities.	(15 hours)
III	1. Biogeography of India: Biosphere Reserves, National Parks, Ramsar Wetlands, Bird, and Wildlife Sanctuaries in India. 2. National forest and wildlife policy of India.	(15 hours)
IV	1. Field Report- Study of Ecosystem-River, Lake, Creek, Forest, or Hill.	(15 hours)

References:

Mandatory:

1. Murray, T. H. (2007). Biogeography: An Introduction to the Study of Plants and Animals. Oxford University Press.
2. Odum, E. P. (2005). Fundamentals of Ecology (5th ed.). W. H. Freeman.
3. Chase, M. W., & Soltis, D. E. (2003). The Origin and Evolution of Plants. Academic Press.
4. Dawkins, R. (2004). The Origin and Evolution of Animals. Oxford University Press.
5. Crawley, M. J. (2007). The Ecology of Plant Communities (2nd ed.). Wiley-Blackwell.
6. Begon, M., & Townsend, C. R. (2005). Animal Biogeography (3rd ed.). Wiley-Blackwell.
7. Pearson, R. G., & Raven, P. D. (2000). Ecosystem Ecology (2nd ed.). Elsevier.
8. Soulé, M. E., & Wilson, D. A. (2005). Conservation Biology: A Global Perspective (2nd ed.). Island Press.
9. Wood, J. M. (2006). Environmental Pollution (3rd ed.). Routledge.

10. Maskrey, A. (2006). *Disaster Risk Reduction*. Routledge.
11. Ministry of Environment and Forests, Government of India. (2008). *National Bio-Diversity Action Plan: India*. Ministry of Environment and Forests, Government of India.

Supplementary:

1. Currie, D. J. (2011). *Biogeography: Past, Present, and Future*. Wiley-Blackwell.
2. Begon, M., Townsend, C. R., & Harper, J. L. (2006). *Essentials of Ecology* (4th ed.). Wiley-Blackwell.
3. Diamond, J. (2005). *Island Biogeography*. Princeton University Press.
4. Smith, D. M., & Wootton, M. J. H. (2007). *Plant Biogeography* (2nd ed.). Wiley-Blackwell.
5. Wilson, E. O. (2006). *The Diversity of Life* (2nd ed.). W. W. Norton & Company.
6. Jones, D. J. T. (2007). *Global Change and Animal Migration*. Cambridge University Press.
7. Begon, M., & Townsend, C. R. (2006). *Community Ecology* (4th ed.). Wiley-Blackwell.
8. Burton, I., Kates, R. W., & White, G. F. (2007). *Environmental Hazards: Assessing Risk and Reducing Disaster* (2nd ed.). Routledge.
9. Alexander, D. (2002). *Natural Hazards*. Routledge.

Web References:

1. <https://www.nationalgeographic.org/encyclopedia/biogeography/>
2. <https://www.epa.gov/ecology/ecological-principles>
3. <https://oceanservice.noaa.gov/education/tutorialcorals/coral09ecosystem.html>
4. <https://www.worldwildlife.org/threats/human-activities>
5. <https://www.ecologyglobalnetwork.com/community-ecology/>
6. <https://www.britannica.com/technology/pollution-environment>
7. <https://india.gov.in/topics/environment/national-forest-and-wildlife-policy>

SEMESTER III Level 500 Discipline Specific Elective (DSE)

Course Title: Geography of Disaster Management

Course Code: PGMP –GEG-DSE-503

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

Pre-requisite Courses:

- Basic knowledge about environmental and anthropogenic hazards and disasters.

Course Objectives:

1. To familiarize different types of natural disasters and their causes.
2. Identify the social and economic impacts of disasters.
3. Develop skills in disaster risk reduction and management.
4. To comprehend different policies and strategies for disaster management.

Course Outcomes (COs):

After successful completion of the course the students will be able to:

CO1: Understand about the spatial dimensions and distribution of disasters.

CO2: Enrich their knowledge about natural and human induced disasters.

CO3: Acquaintance with the concepts of disaster management, vulnerability, and mitigation.

CO4: Recognize the role of geospatial technology in disaster management.

Module	Course Content	
I	1. Disasters and hazards: definition, nature, and classification. 2. Geography and disasters: major disasters of world.	(15 hours)
II	1. Tectonic disasters: volcanoes, earthquakes, tsunamis, landslides. 2. Hydrological disasters: floods and droughts. 3. Climatic disasters: cyclones and heavy precipitation events. 4. Human induced disasters: epidemics, industrial and transport disasters; wars and terrorism induced disasters.	(15 hours)
III	1. Disaster profile of India. 2. Disaster management in India: policy and organizational structure setup. 3. Disaster vulnerability and affecting factors. 4. Planning for disaster mitigation measures and preparedness.	(15 hours)
IV	1. Post disaster recovery and rehabilitation. 2. Impacts of disaster on society and economy. 3. Geospatial technology applications in disaster prevention and monitoring.	(15 hours)

References:

Mandatory:

1. Alexander, D. (2012). Natural disasters. 2nd ed. Abingdon, Oxon: Routledge.
2. Gaillard, J.-C., & Debris, M. (2012). Disaster geography: A reader. London: Routledge.
3. Pelling, M. (2003). The vulnerability of cities: Natural disasters and social resilience. London: Earthscan.
4. Cannon, S., & Fujita, K. (2010). Volcanoes and society: The human dimension of volcanic hazards. Cambridge: Cambridge University Press.
5. Sieh, K., & Schwartz, S. Y. (2010). Tectonics of earthquakes. 2nd ed. Malden, MA: Wiley-Blackwell.

6. Krishna, R., & Singh, V. P. (2008). *Water resources planning and management: Theory and practice*. 2nd ed. Berlin: Springer.
7. Pender, G., & Blöschl, G. (2011). *Floods: Processes, impacts and management*. Chichester, UK: Wiley.
8. Sivapalan, M., & Demeritt, D. (2007). *Droughts: A global assessment*. Berlin: Springer.
9. Kronenberg, B., & Wetmore, J. M. (2011). *The Routledge handbook of terrorism and counter-terrorism*. London: Routledge.
10. Government of India. (2019). *National disaster management framework*. New Delhi: Ministry of Home Affairs.

Supplementary:

1. Emanuel, K. A. (2005). *Disasters of the sea*. New York: Oxford University Press.
2. Foster, G., & Rahmstorf, S. (2012). *Global warming and extreme weather events*. New York: Cambridge University Press.
3. Alexander, D. (2013). *Man-made disasters*. 3rd ed. Abingdon, Oxon: Routledge.
4. Finkel, M. J. (2005). *The biological weapons threat: An assessment*. Westport, CT: Praeger Security International.
5. Government of India. (2016). *National disaster management guidelines*. New Delhi: Ministry of Home Affairs.
6. Birkmann, J. (2006). *Measuring vulnerability to natural hazards: Towards disaster resilient societies*. Tokyo: United Nations University Press.

Web References:

1. <https://www.undrr.org/terminology>
2. <https://www.worldatlas.com/articles/the-10-most-destructive-earthquakes-tsunamis-and-volcanic-eruptions.html>
3. <https://ndma.gov.in/en/disaster-profile-of-india.html>
4. <https://www.who.int/environmentalhealthemergencies/diseaseoutbreaks/epidemics/en/>
5. <https://ndma.gov.in/en/policy-dm-acts.html>
6. <https://www.undp.org/content/undp/en/home/what-we-do/post-crisis-and-post-disaster-recovery.html>
7. <https://earthdata.nasa.gov/esds/patterns/remote-sensing>

SEMESTER III Level 500 Generic Elective (GE)

Course Title: Geographic Perspectives of Geopolitics

Course Code: PGMP –GEG-GE-501

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

Pre-requisite Courses:

- Basic knowledge about concepts of politics, nation, geopolitics, etc.

Course Objectives:

1. To comprehend the relationship between geography and politics.
2. To understand the spatial dynamics of political power.
3. To analyze the relationship between states and their territory.
4. To examine the role of geography in international relations.
5. To explore the impact of globalization on political geography.

Course Outcomes (COs):

After successful completion of the course the students will be able to:

CO1: Familiarize with the conceptual framework of geo-political issues.

CO2: Augment the knowledge about state and nation in geographic perspective.

CO3: Enhance their knowledge about global strategic views and geo-politics in the post-cold war era.

CO4: Recognize the contemporary geo-political situation and issues in India.

Module	Course Content	
I	1. Nature and scope of political geography, its approaches, and recent trends. 2. School of thoughts: Political economy, World system, Globalization.	(15 hours)
II	1. Concept of Place, Space, Territory, State/Nation, State and Nation-State, nationalism and nation building, emergence and growth of territorial state, and the crisis of the territorial state forms of governance: unitary and federal. 2. Distinction between frontiers and boundaries, demarcation of boundaries, classification, and functions of boundaries. Landlocked state: advantages and disadvantages.	(15 hours)
III	1. Geopolitics: The Geography of Power: Global strategic views- The Revisionist Powers, The Hybrid Warfare, The Geo-economics, Neoclassical realism, Constructivism, The Rise of Non-State Actors. 2. Geo-politics in the post-cold war world- S.B. Cohen's model of geo-politics. 3. The rise of China and its implications for the global order, The war on terror and the reconfiguration of US foreign policy, The conflict in Ukraine and the resurgence of great power competition, The role of international organizations in the post-Cold War world.	(15 hours)
IV	1. Emergence of India as regional power: geo-political significance of Indian and Pacific Ocean. 2. Geo-political issues in India with special reference to water disputes and riparian claims.	(15 hours)

3. Gerrymandering and electoral abuse in India.

References:

Mandatory:

1. Agnew, J. (2003). *Geopolitics: Re-visioning world politics*. Routledge.
2. Sassen, S. (2006). *Globalization: A critical introduction* (2nd ed.). Wiley-Blackwell.
3. Paasi, A. (2009). *Borderland: The changing nature of borders and boundaries*. Routledge.
4. Mearsheimer, J. J. (2014). *The tragedy of great power politics* (2nd ed.). W. W. Norton & Company.
5. Agnew, J. (2003). *Geopolitics: Re-visioning world politics*. New Delhi: Oxford University Press India.
6. Taylor, P. J. (2001). *Political geography: World-economy, nation-state and locality* (4th ed.). New Delhi: Oxford University Press India.
7. Sassen, S. (2006). *Globalization: A critical introduction* (2nd ed.). New Delhi: Prentice Hall of India.
8. Paasi, A. (2009). *Borderland: The changing nature of borders and boundaries*. New Delhi: Routledge India.
9. Wolf, A. T., Nathwani, J., & Kramer, A. (2003). *Water conflicts and international law*. New Delhi: Macmillan India.

Supplementary:

1. Johnston, R. J. (2016). *The dictionary of human geography* (7th ed.). Wiley-Blackwell.
2. Agnew, J., & Corbridge, S. (1995). *Geopolitics: A critical introduction*. Routledge.
3. Newman, D. (1999). *Boundaries: The making of boundaries and the breaking of boundaries*. Frank Cass.
4. Johnston, R. J. (2016). *The dictionary of human geography* (7th ed.). New Delhi: Oxford University Press India.
5. Held, D., McGrew, A., Goldblatt, D., & Perraton, J. (1999). *Global transformations: Politics, economics and culture*. New Delhi: Prentice Hall of India.
6. Klabbers, J. (2010). *The law of international watercourses: Non-navigational uses*. New Delhi: Macmillan India.
7. Sadoff, C. W., & Grey, D. (2005). *Water wars: Ensuring water security in the 21st century*. New Delhi: Macmillan India.
8. Freedman, L. (2017). *The future of war: A new history*. Public Affairs.

Web References:

1. <https://www.britannica.com/science/political-geography>
2. <https://www.globalpolicy.org/nation-state.html>
3. <https://www.thoughtco.com/international-boundaries-and-borders-1435336>
4. <https://www.geographical.co.uk/places/item/2175-the-ups-and-downs-of-being-landlocked>
5. <https://www.belfercenter.org/neoclassical-realism>
6. <https://www.fletcherforum.org/home/2019/9/26/a-brief-overview-of-post-cold-war-geopolitics>
7. <https://www.rand.org/content/dam/rand/pubs/researchreports/RR300/RR392/RANDRR392.pdf>
8. <https://thediplomat.com/2020/09/indias-role-in-the-indian-and-pacific-oceans/>

SEMESTER III Level 500 Generic Elective (GE)

Course Title: Geography of Wellbeing with Special Reference to India

Course Code: PGMP –GEG-GE-502

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

Pre-requisite Courses:

- Basic knowledge about the different ecosystems of our planet earth.

Course Objectives:

1. To introduce students to the concepts of social well-being, development, and human welfare.
2. To examine different approaches to studying human welfare and the use of social indicators.
3. To analyze the state of well-being in India, with a focus on poverty, inequality, and gender issues.
4. To explore the relationship between education, health, and development in India.

Course Outcomes (COs):

After successful completion of the course the students will be able to:

CO1: Understand the concept of social wellbeing in spatial context.

CO2: Enhance their knowledge about human welfare issues and their identification.

CO3: Acquaintance with educational infrastructure and policies in India.

CO4: Enrich their knowledge about spatial pattern of hunger, health, and nutritional security.

Module

Course Content

I	1. Welfare geography: concept of social well-being, development, and approaches to study human welfare. 2. Human beings: needs and wants, quality of life, level of living and state of well-being in India, identification of social indicators, their data sources and problem.	(15 hours)
II	1. Indexes of Well Being: Human Development Index, poverty and its measures, poverty, and inequality in India. 2. Gender issues in the process of development and gender development index.	(15 hours)
III	1. Structure of education in independent India, regional patterns of educational development; enrolment and dropouts with reference to school education, Gross Enrollment Ratio (GER). 2. Financing education and Education policies in India.	(15 hours)
IV	1. Geography of health: concept of disease, ecology, and epidemiology. 2. Health programmes and National Health Policy in independent India. 3. Nutritional security in India.	(15 hours)

References:

Mandatory:

1. Desai, S. (2013). Social well-being: Concepts and measurement. Springer.
2. Bhatia, B. M. (2003). Quality of life in India: Concepts and measurement. Sage Publications India.
3. Kundu, A. (2006). Human development and quality of life in India: A state level analysis. Oxford University Press.
4. UNDP. (2022). Human development report 2022: The inequality challenge. United Nations Development Programme.

5. Dreze, J., & Sen, A. (2013). *India: Development and participation*. Oxford University Press.
6. Tilak, J. B. G. (2005). *Education for all in India: Achieving the MDGs*. Sage Publications India.
7. Panda, P. K. (2012). *Financing education in India: Issues and challenges*. Sage Publications India.
8. Govinda, R. (2012). *Education and development in India: Achieving social justice through quality education*. Oxford University Press.
9. Cliff, A. D., Haggett, P., & Smallman-Raynor, M. (2012). *The geography of disease: An introduction*. Blackwell.
10. Government of India. (2017). *National health policy 2017*. Ministry of Health and Family Welfare.
11. Ramachandran, V. K. (2017). *Nutrition and health in India: From policy to practice*. Springer.

Supplementary:

1. Sen, A. (1999). *Development as freedom*. Oxford University Press.
2. Haq, M. U. (1995). *Reflections on human development*. Oxford University Press.
3. Bhalla, S. (2002). *Imagined destinies: India's economic policies from Nehru to Modi*. Penguin Books India.
4. Srivastava, P. (2010). *Education in India: Issues and challenges*. Pearson.
5. McMichael, A. J. (2013). Planetary health: A once and future discipline. *Nature*, 494(7439), 169-172.
6. Ramachandran, V. K. (2018). *Health and development in India: From policy to practice*. Springer.
7. Ghosh, A. (2018). *Malnutrition in India: Issues, challenges, and solutions*. Springer.

Web References:

1. <http://hdr.undp.org/en/indicators/137506>
2. <http://hdr.undp.org/en/indicators/137506>
3. <https://www.education.gov.in/>
4. <https://www.mohfw.gov.in/>
5. <https://www.icmr.gov.in/>

SEMESTER III Level 500 Generic Elective (GE)

Course Title: Cultural Geography

Course Code: PGMP –GEG-GE-503

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

Pre-requisite Courses:

- Basic knowledge about different cultures, races, etc.

Course Objectives:

1. To enhance the understanding of culture using key concepts of geography.
2. To develop analytical skills to decode culture.
3. To provide a critical understanding of contemporary issues and the politics underlying it.

Course Outcomes (COs):

After successful completion of the course the students will be able to:

CO1: Enrich their knowledge about the main civilizations of world.

CO2: Comprehend the knowledge about factors and processes of cultural diversity.

CO3: Acquaintance with racial classification and distribution in the world.

CO4: Develop analytical capability to read contemporary issues of culture

Module	Course Content	
I	<ol style="list-style-type: none">1. Definition, nature, and scope of Cultural Geography; cultural elements and components of culture.2. The evolution of Human Civilizations with special reference to: Mesopotamia, the Nile Valley, the Indus Valley, and the Hwang Ho Valley.	(15 hours)
II	<ol style="list-style-type: none">1. Cultural diversity and cultural transformation-race, religion, and language.2. Cultural landscape and cultural ecology.	(15 hours)
III	<ol style="list-style-type: none">1. Evolution of race, criteria of racial classification, Strata or Migration Zone Theory of race evolution.2. Classification of Races: Major races of the world: Nordics, Mongoloids, Negroids and Caucasoids.3. Racial Classification in India-Sri Risley, A.C. Haddon, B.S. Guha.	(15 hours)
IV	<ol style="list-style-type: none">1. Tribal India: A Case Study: Tribes of India with main emphasis on Naga, Khasis, Todas, Bhils, Santhals, Kukis, Meiteis, etc. Tribes of Goa.2. Patterns of livelihood: Various economic activities, cultural adaptations; agriculture, industrialization and modernization, technological changes, and their geographical implications.	(15 hours)

References:

Mandatory:

1. Anderson, K., Domosh, M., Pile, S., & Thrift, N. (eds.). 2002. Handbook of cultural geography, Sage.
2. Blunt, A. 2005. Cultural geography: cultural geographies of home. Progress in human geography, 29(4), 505-5(15 hours).
3. Cavallaro, D. 2001. Critical and Cultural Theory: Thematic Variations, Athlone Press, London and New Brunswick, NJ.

4. Duncan, J. S. 2005. *The city as Text: The Politics of Landscape Interpretation in the Kandyan Kingdom*, Cambridge University Press.
5. Lorimer, H. 2005. Cultural geography: the busyness of being more-than representational'. *Progress in human geography*, 29(1), 83-94.
6. Mitchell, D. 2000. *Cultural Geography: A Critical Introduction*, Blackwell
7. Valentine, G. 2014. *Social geographies: space and society*, Routledge.

Supplementary:

1. Hirsch, E and Hanlon, M. 2003. *The Anthropology of Landscape: perspectives on space and Place*, Oxford: Clarendon press.
2. Rose, G. 2008. Looking at Landscape: The Uneasy Pleasures of Power. In *The Cultural Geography Reader* (pp. 183-187), Routledge.
3. Whatmore, S. 2006. Materialist returns: practicing cultural geography in and for a more-than human world, *Cultural geographies*, 13(4), 600-609.
4. Mitchell, D. 1996. 'California: The Beautiful and the Damned' from the 'Lie of the Land: Migrant Workers and the California Landscape, 13-35, Minneapolis: University of Minnesota Press

Web References:

1. <https://www.geographyrealm.com/cultural-geography/>
2. <https://www.ancient.eu/Mesopotamia/>
3. <https://www.bbc.co.uk/bitesize/guides/zbj6sg/revision/1>
4. <https://www.ancient.eu/IndusValleyCivilization/>
5. <https://www.nationalgeographic.org/encyclopedia/cultural-diversity/>
6. <https://www.worldatlas.com/articles/what-are-the-main-human-races.html>
7. <https://www.thoughtco.com/cultural-ecology-4771727>
8. <https://www.culturalindia.net/indian-tribes/index.html>
9. <http://www.icssr.org/changing-patterns-of-livelihood-in-rural-india>

SEMESTER III Level 500 Discipline Research Specific Elective (DRSE)

Course Title: Fundamentals of Research Methodology

Course Code: PGMP–GEG-DRSE- 501

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

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Pre-requisite Courses:

1. A bridge course is compulsory for those who have not completed Research Methodology at the Under Graduate level.

Course Objectives:

1. To familiarize students with the fundamentals of research.
2. To comprehend the methods used to identify research gaps by examining existing literature and formulating research questions.
3. To integrate knowledge of theoretical research with practical abilities that will aid students in undertaking research.

Course Outcomes:

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

CO1: Acquire knowledge of research processes such as reading, evaluating and developing.

CO2: Define and devise specialized research design.

CO3: Compare and contrast the significant differences between different research types.

CO4: Develop and draft a comprehensive research paper (containing citations, references, an abstract, etc.).

Module	Course Content	
I	<ol style="list-style-type: none">1. Fundamentals of Research: Definition, Characteristics, Objectives, and relevance of research. Types and Methods of research.2. Research Problem selection and formulation: Types, Components and Sources, Formulating and stating the problem, Research Gap, Formulation of Research Questions and Objectives.3. Sources of Information: Gathering information for research, using library and electronic database.	(15 hours)
II	<ol style="list-style-type: none">1. Formulation of Research Design: Meaning, Definition, Advantages, Essentials, Importance of research plan, and kinds of research designs.2. Preparation of research design, steps, Characteristics of good research design, Evaluation of research design. Cross sectional, longitudinal, experimental, and non-experimental study design.3. Formulation of Hypothesis: Definition, need, types, functions, sources. Testing of hypothesis and types of errors.	(15 hours)
III	<ol style="list-style-type: none">1. Methods of Data Collection and analysis: Concept and types of data collection and sources, methods, and types.2. Sampling Design: Methods of Sampling- Census Sampling method, Random Sampling Methods (Simple, Stratified, Systematic, Multi-Stage, Area, and Sequential sampling). Non-Random Sampling Methods (Accidental, Quota, Purposive, Convenience sampling) and Sample Size.3. Processing and analyzing of data (Qualitative and	(15 hours)

Quantitative).

- IV
1. Review of Literature: Need, Strategies, methods, and organization of literature of review. (15 hours)
 2. References and Citations: Referencing, in-text citations, styles, Paraphrasing and Summarising.
 3. Reference Management Software and Tools: EndNote, Mendeley, Zotero etc. Ethical issues in collecting data.
 4. Editing a research paper, developing objectives and research statements, Editing the research paper and Proofreading techniques.
 5. Format of writing a research Proposal/Paper/Dissertation.

References:

Mandatory:

1. Kothari, C. R. & Garg G. (2019) Research Methodology: methods and Techniques (4) New Age International Publishers, New Delhi.
2. Kabir S. M. S (2016) Methods of Data Collection, Basic Guidelines for Research: An Introductory Approach for All Disciplines, (1), Chapter: 9, Book Zone Publication, Chittagong-4203, Bangladesh, pp.201-275.
3. Saravanel, P. (2014). Research Methodology, Kitab Mahal Publishers, Ansari Road, Daryaganj, New Delhi- 110002.
4. Adams J., Khan H. and Raeside R. (2014), Research Methods for Graduate Business & Social Sciences, Sage Publications, Prentice Hall.
5. Kumar, R. (2005). Research Methodology-A Step-by-Step Guide for Singapore: Pearson Education.
6. Somekh B. and Lewin C (2005), Research Methods in the Social Sciences, Sage Publications, Prentice Hall.
7. Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Delhi: New Age International.

Supplementary:

1. Succheti D.C. and Kapoor V.K. (2010) Statistics: Theory, Methods and Application, Sultan Chand and Sons, New Delhi.
2. Sharma A.K. (2005) Textbook of Elementary Statistics, Discovery Publishing Pvt. Ltd, New Delhi- 110055.
3. Creswell J.W. (2005) Research Design: Qualitative, Quantitative and Mixed Methods Approaches, (2), Thousand Oaks, CA: Sage Publications.
4. P.K. Majumdar (2002) Statistics: A Tool for Social Sciences, Rawat Publications, Jaipur & New Delhi.
5. Tripathi P C (2002) A textbook of Research Methodology, (4), Sultan Chand and Sons, New Delhi.

Web references:

1. <https://epgp.inflibnet.ac.in/epgpdata/uploads/epgpcontent/law/09.researchmethodology/01.basicsofresearch/et/8148etet.pdf>
2. <https://www.accountingnest.com/articles/research/basic-research>
3. <https://ccsuniversity.ac.in/bridge-library/pdf/MPhil%20Stats%20Research%20Methodology-Part1.pdf>
4. <https://www.kharagpurcollege.ac.in/studyMaterial/53718FORMULATION-OF-RESEARCH-DESIGN-CC11-Unit-1-02-09-2020.pdf>
5. <https://www.scribbr.com/methodology/research-design/>
6. <https://www.questionpro.com/blog/data-collection-methods/#:~:text=Some%20common%20data%20collection%20methods,about%20the%20study's%20subject%20matter.>
7. <https://www.simplilearn.com/what-is-data-collection-article>
8. <https://www.uvm.edu/~ngotelli/Bio%20264/Gotelli&EllisonChapter4disputed.pdf>
9. <https://www.g2.com/categories/reference-management>

SEMESTER III Level 500 Discipline Research Specific Elective (DRSE)

Course Title: Quantitative Techniques

Course Code: PGMP–GEG-DRSE- 502

Credits: 04

Marks: 100

Duration: 60 Hours of 1 hour each

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Pre-requisite Courses:

1. Basic knowledge of statistics.
2. Bridge course is compulsory for those who have not completed statistics at Under Graduate level.

Course Objectives:

1. To introduce statistical techniques, relevant to research studies.
2. To acquaint students about the potentials and applications of statistical techniques.

Course Outcomes:

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

CO1: Acquire knowledge on formulation of multiple statistical representations.

CO2: Develop an understanding and appreciation of the mutual dependence of different techniques and their relevance.

CO3: Formulate and test the hypothesis.

CO4: Use of open source software for Statistical analysis.

Module	Course Content	
I	1. Introduction to Statistics, Graphical and Diagrammatic representation of statistical data. 2. Measures of Central Tendency & Dispersion: Mean, Median, Mode, Quartiles, Deciles, Percentiles, Range, Mean deviation, Quartile deviation, Standard deviation, and Lorenz curve.	(15 hours)
II	1. Scatter diagram, Karl Pearson's correlation coefficient. Bi-variate regression. 2. Rank correlation: Spearman's and Kendal's rank correlation coefficient. 3. Moments, Concept, measures of skewness and kurtosis.	(15 hours)
III	1. Testing of hypothesis in Geographic context: Moving averages, Matrices, Chi square test and T-Test, Analysis of variance (ANOVA). 2. Bi-variate and multi-variate correlation and Regression, Principal Component Analysis (PCA).	(15 hours)
IV	1. Introduction to R-Statistical Analysis Tool Software, Generate Linear Regression Models and Correlation coefficients and its application.	(15 hours)

References:

Mandatory:

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4. Rastogi R.S. (2005) Elementary Statistics, Rohit Publications – Delhi-110006.
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Supplementary:

1. Succheti D.C. and Kapoor V.K. (2010) Statistics: Theory, Methods and Application, Sultan Chand and Sons, New Delhi.
2. Sharma A.K. (2005) Textbook of Elementary Statistics, Discovery Publishing Pvt. Ltd, New Delhi- 110055.
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1. Olsen A (n.d.) Introduction to R Statistical Software, Retrieved from: <https://archive.epa.gov/nheerl/arm/web/pdf/irss2.6.pdf>
2. Lane M. D. et al. (n.d.) Introduction to Statistics, Retrieved from: <https://onlinestatbook.com/OnlineStatisticsEducation.pdf>
3. (n.d.) Fundamentals of Statistics, Retrieved from: <https://www.pearsonhighered.com/assets/samplechapter/0/1/3/1/0131467573.pdf>
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5. Alredaisy, S. M. (2014, January) Research Gate (University of Khartoum Faculty of Distant Education) doi:10.13140/2.1.4332.1923
6. Dartmouth Library. (2020, April 4). Retrieved from Geography: Statistics/Data for Geography: <https://researchguides.dartmouth.edu/geography/statistics>
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Annexure I:
(Summary of changes incorporated in the existing approved syllabus if any)

Semester	Course Title	Existing (Indicate only the unit where the change is proposed)	Changes Proposed	Specify the reason for the change
B.A.				
I	UG-GEG-MDC-101: Fundamentals in Environmental Impact Assessment	UG-GEG-MDC-101: Geography and Development Models	Course title and course content	Replaced with new course
III	UG-GEG-MDC-201: Geography of Development	UG-GEG-MDC-201: Basic Geospatial Techniques in Environment, Forestry and Wildlife	Course title and course content	Replaced with new course
	UG-GEG-SEC-201: Basic Techniques in Travel and Tourism	UG-GEG-SEC-201: New Perspectives of Tourism	Title Change	Title should indicate skill approach
B.Sc.				
III	UG-GEG-SEC-201: Application of Remote Sensing in Natural Resource Monitoring	UG-GEG-SEC-201: Application of Remote in Natural Resource Monitoring	Title correction	Addition of word sensing
M.A.				
III	PGMP-GEG-GE-501 Geographic Perspectives of Geopolitics	PGMP-GEG-GE-501 Regional Perspectives of Geopolitics	Title correction	Alteration of title from regional to geographic
	PGMP-GEG-DSE-503: Geography of Disaster management	PGMP-GEG-DSE-503: Geography and disaster management	Title correction	Alteration of title from and to of