FYUGP

As per the provisions of NEP-2020

Geography Honours/ Research

For Under Graduate Courses Under

Binod Bihari Mahto Koyalanchal University

Upgraded & Implemented From 3rd Semester of

Academic Session 2022-2026 and Onwards

DK Nishad
Please upload the syllabus on university website
27/05/2025

Members of Board of Studies of Four Year Under-Graduate Programme (FYUGP)

Syllabus as per Guidelines of the Binod Bihari Mahto Koyalanchal University, Dhanbad

1. **Chairman**:

Dr. Anil Kumar Singh
HOD, Department of Geography,
B.B.M.K.U., Dhanbad.

2. **Internal Members:**

i) **Dr. Madhumita Debnath**
Department of Geography,
B.M.C., Bokaro.

ii) **Dr. K. P. Singh**
Department of Geography,
R.V.S. College, Chas, Bokaro.

3. **Expert Members**:

i) **Dr. Saroj Kumar Singh**
HOD, University Department of Geography,
VBU, Hazaribagh.

ii) **Dr. P. K. Singh**
HOD, P.G. Department of Geography, MCC,
Hazaribagh.

Members of the Board of Studies of the Four-Year Undergraduate Programme (FYUGP)

Syllabus as per Guidelines of the Binod Bihari Mahto Koyalanchal University, Dhanbad

1. Chairman:

Miss Shital Shally Toppo
Head, University Department of Geography
BBMKU

2. Expert Members:

(i) **Dr. Saroj Kumar Singh**
Head, University Department of Geography
VBU Hazaribagh

3. Internal Members:

(i) **Dr. Pradeep Kumar Singh**
Head, Department of Geography
MCC, Hazaribagh

(ii) **Miss Sanehlata Tirkey**
Head, Department of Geography
R. S. More College Govindpur

(iii) **Mr. Raju Lakra**
Head, Department of Geography
B. S. K. College, Maithan

Contents

Course Structure for FYUGP "Honours/Research"

Credit Framework for Four Year Undergraduate Programme (FYUGP) under State Universities of Jharkhand [Total Credits = 160]

Level of Courses	Semester	MJ; Discipline Specific Courses – Core or Major (80)	MN; Minor from discipline (16)	MN; Minor from vocational (16)	MDC; Multidisciplinary Courses from all the streams (9)	AEC; Ability Enhancement Courses (8)	SEC; Skill Enhancement Courses (9)	VAC; Value Added Courses (6)	IAP; Internship/ Dissertation (4)	RC; Research Courses (12)	AMJ; Advanced Courses in lieu of Research (12)	Credits
1	2	3	4	5	6	7	8	9	10	11	12	13
100-199: Foundation or Introductory courses	**I**	4	4		3	2	3	4				**20**
	II	4+4		4	3	2	3					**20**
	Exit Point: Undergraduate Certificate provided with Summer Internship/ Project (4 credits)											
200-299: Intermediate-level courses	**III**	4+4	4		3	2	3					**20**
	IV	4+4+4		4		2		2				**20**
	Exit Point: Undergraduate Diploma provided with Summer Internship in 1st or 2nd year/ Project (4 credits)											
300-399: Higher-level courses	**V**	4+4+4	4						4			**20**
	VI	4+4+4+4		4								**20**
	Exit Point: Bachelor's Degree											
400-499: Advanced courses	**VII**	4+4+4+4	4									**20**
	VIII	4		4						12	4+4+4	**20**
	Exit Point: Bachelor's Degree with Hons. /Hons. with Research											**160**

Note: Honours students not undertaking research will do 3 courses for 12 credits in lieu of a Research project / Dissertation.

Semester wise Course Code and Credit Points

Semester	Major, Minor subject related, Minor Vocational, Skill Enhancement, Value added, Ability enhancement & Internship Courses		
	Code	Papers	Credits
I	AEC-1	Language and Communication Skills (English or Hindi)	2
	VAC-1	Value Added Course-1	4
	SEC-1	Skill Enhancement Course-1	3
	MDC-1	Multi-disciplinary Course-1	3
	MN-1A	Minor from Discipline-1	4
	MJ-1	Major paper 1 (Disciplinary/Interdisciplinary Major)	4
II	AEC-2	Language and Communication Skills (English)	2
	SEC-2	Skill Enhancement Course-2	3
	MDC-2	Multi-disciplinary Course-2	3
	MN-2A	Minor from Vocational Studies/Discipline-2	4
	MJ-2	Major paper 2 (Disciplinary/Interdisciplinary Major)	4
	MJ-3	Major paper 3 (Disciplinary/Interdisciplinary Major)	4
III	AEC-3	Language and Communication Skills (MIL-2; Modern Indian language including TRL)	2
	SEC-3	Skill Enhancement Course-3	3
	MDC-3	Multi-disciplinary Course-3	3
	MN-1B	Minor from Discipline-1	4
	MJ-4	Major paper 4 (Disciplinary/Interdisciplinary Major)	4
	MJ-5	Major paper 5 (Disciplinary/Interdisciplinary Major)	4
IV	AEC-3	Language and Communication Skills (MIL-2/ English-2)	2
	VAC-2	Value Added Course-2	2

	MN-2B	Minor from Vocational Studies/Discipline-2	4
	MJ-6	Major paper 6 (Disciplinary/Interdisciplinary Major)	4
	MJ-7	Major paper 7 (Disciplinary/Interdisciplinary Major)	4
	MJ-8	Major paper 8 (Disciplinary/Interdisciplinary Major)	4
V	MN-1C	Minor from Discipline-1	4
	MJ-9	Major paper 9 (Disciplinary/Interdisciplinary Major)	4
	MJ-10	Major paper 10 (Disciplinary/Interdisciplinary Major)	4
	MJ-11	Major paper 11 (Disciplinary/Interdisciplinary Major)	4
	IAP	Internship/Apprenticeship/Field Work/Dissertation/Project	4
VI	MN-2C	Minor from Vocational Studies/Discipline-2	4
	MJ-12	Major paper 12 (Disciplinary/Interdisciplinary Major)	4
	MJ-13	Major paper 13 (Disciplinary/Interdisciplinary Major)	4
	MJ-14	Major paper 14 (Disciplinary/Interdisciplinary Major)	4
	MJ-15	Major paper 15 (Disciplinary/Interdisciplinary Major)	4
VII	MN-1D	Minor from Discipline-1	4
	MJ-16	Major paper 16 (Disciplinary/Interdisciplinary Major)	4
	MJ-17	Major paper 17 (Disciplinary/Interdisciplinary Major)	4
	MJ-18	Major paper 18 (Disciplinary/Interdisciplinary Major)	4
	MJ-19	Major paper 19 (Disciplinary/Interdisciplinary Major)	4
VIII	MN-2D	Minor from Vocational Studies/Discipline-2	4
	MJ-20	Major paper 20 (Disciplinary/Interdisciplinary Major)	4
	RC/ AM-1 AMJ-2 AMJ-3	Research Internship/Field Work/Dissertation OR Advanced Major paper-1 (Disciplinary/Interdisciplinary Major) Advanced Major paper-2 (Disciplinary/Interdisciplinary Major) Advanced Major paper-3 (Disciplinary/Interdisciplinary Major)	12/ 4 4 4
		Total Credit	**160**

NUMBER OF CREDITS BY TYPE OF COURSE

The hallmark of the new curriculum framework is the flexibility for the students to learn courses of their choice across various branches of undergraduate programmes. This requires that all departments prescribe a certain specified number of credits for each course and common instruction hours (slot time).

Overall Course Credit Points for Single Major

Courses	Nature of Courses	3 yr UG Credits	4 yr UG Credits
Major	Core courses	60	80
Minor	i. Discipline/ Interdisciplinary courses and ii. Vocational Courses	24	32
Multidisciplinary	3 Courses	9	9
AEC	Language courses	8	8
SEC	**Courses to be developed by the University**	9	9
Value Added Courses	Understanding India, Environmental Studies, Digital Education, Health & wellness, Summer Internship/ Apprenticeship/ Community outreach activities, etc.	6	6
Internship (In any summer vacation for Exit points or in Semester-V)		4	4
Research/ Dissertation/ Advanced Major Courses	Research Institutions/ 3 Courses		12
	Total Credits =	**120**	**160**

Overall Course Code and Additional Credit Points for Double Major

Courses	Nature of Courses	3 yr UG Credits	4 yr UG Credits
Major 1	Core courses	60	80
Major 2	Core courses	48	64
Minor	i. Discipline/ Interdisciplinary courses and ii. Vocational Courses	24	32
Multidisciplinary	3 Courses	9	9
	Language courses	8	8
SEC	**Courses to be developed by the University**	9	9
Value Added Courses	Understanding India, Environmental Studies, Digital Education, Health & wellness, Summer Internship/ Apprenticeship/ Community outreach activities, etc.	6	6
Internship (In any summer vacation for Exit points or in Semester-V)		4	4
Research/ Dissertation/ Advanced Major Courses	Research Institutions/ 3 Courses		12
	Total Credits =	**168**	**224**

Semester wise Course Code and Additional Credit Points for Double Major:

Semester	Common, Introductory, Major, Minor, Vocational & Internship Courses		
	Code	Papers	Credits
I	DMJ-1	Double Major paper-1 (Disciplinary/Interdisciplinary Major)	4
	DMJ-2	Double Major paper-2 (Disciplinary/Interdisciplinary Major)	4
II	DMJ-3	Double Major paper-3 (Disciplinary/Interdisciplinary Major)	4
	DMJ-4	Double Major paper-4 (Disciplinary/Interdisciplinary Major)	4
III	DMJ-5	Double Major paper-5 (Disciplinary/Interdisciplinary Major)	4
	DMJ-6	Double Major paper-6 (Disciplinary/Interdisciplinary Major)	4
IV	DMJ-7	Double Major paper-7 (Disciplinary/Interdisciplinary Major)	4
	DMJ-8	Double Major paper-8 (Disciplinary/Interdisciplinary Major)	4
V	DMJ-9	Double Major paper-9 (Disciplinary/Interdisciplinary Major)	4
	DMJ-10	Double Major paper-10 (Disciplinary/Interdisciplinary Major)	4
VI	DMJ-11	Double Major paper-11 (Disciplinary/Interdisciplinary Major)	4
	DMJ-12	Double Major paper-12 (Disciplinary/Interdisciplinary Major)	4
VII	DMJ-13	Double Major paper-13 (Disciplinary/Interdisciplinary Major)	4
	DMJ-14	Double Major paper-14 (Disciplinary/Interdisciplinary Major)	4
VIII	DMJ-15	Double Major paper-15 (Disciplinary/Interdisciplinary Major)	4
	DMJ-16	Double Major paper-16 (Disciplinary/Interdisciplinary Major)	4
		Total Credit	**64**

Abbreviation:

AEC: Ability Enhancement Courses

SEC: Skill Enhancement Courses

IAP: Internship/Apprenticeship/Project

MDC: Multidisciplinary Courses

MJ: Major Disciplinary/Interdisciplinary Courses

DMJ: Double Major Disciplinary/Interdisciplinary Courses

MN: Minor Disciplinary/Interdisciplinary Courses

AMJ: Advanced Major Disciplinary/Interdisciplinary Courses

RC: Research Course

Semester wise Course Structure and Examination Structure for Geography Major

Semester	Courses		Exam Structure			
	Code	Paper	Credits	Mid-semester Theory F.M.	End-semester Theory F.M.	End-semester Practical / Viva F.M.
I	MJ1	History of Geographical Thought	4	25	75	
II	MJ2	Physical Geography	4	25	75	
	MJ3	Practical	4	-	-	100
III	MJ4	Human Geography	4	25	75	
	MJ5	Practical	4	-	-	100
IV	MJ6	Geography of India	4	25	75	
	MJ7	Geography of Jharkhand	4	25	75	
	MJ8	Practical	4	-	-	100
V	MJ9	Economic Geography	4	25	75	
	MJ10	World Regional Geography	4	25	75	
	MJ11	Practical	4	-	-	100
VI	MJ12	Biogeography and Environmental Geography	4	25	75	
	MJ13	Introduction To Remote Sensing and GIS	4	25	75	
	MJ14	Regional Planning and Development	4	25	75	
	MJ15	Practical	4	-	-	100
VII	MJ16	Population Geography	4	25	75	
	MJ17	Social And Tribal Geography	4	25	75	
	MJ18	Transport And Tourism Geography	4	25	75	
	MJ19	Practical	4	-	-	100

VIII	MJ20	Settlement Geography	4	25	75	
	AMJ 1	Agricultural Geography	4	25	75	
	AMJ2	Geomorphology	4	25	75	
	AMJ3	Practical	4	-	-	100

Semester wise Course Structure and Examination Structure for Geography Minor

Semester	Minor Papers	No. of Credits	
		Theory	Practical
I	MN-1A (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)
III	MN-1B (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)
V	MN-1C (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)
VII	MN-1D (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)

Instruction to the Question Setter

SEMESTER INTERNAL EXAMINATION (SIE):

There will be Only One Semester Internal Examination in Major, Minor and Research Courses, which will be organized at college/institution level. However, Only One End semester evaluation in other courses will be done either at College/ Institution or University level depending upon the nature of course in the curriculum.

A. (SIE 10+5=15 marks):

There will be two group of questions. **Question No.1 will be very short answer type in Group A** consisting of five questions of 1 mark each. **Group B will contain descriptive type** two questions of five marks each, out of which any one to answer.

The Semester Internal Examination shall have two components. (a) One Semester Internal Assessment Test (SIA) of 10 Marks, (b) Class Attendance Score (CAS) of 5 marks.

B. (SIE 20+5=25 marks):

There will be two group of questions. **Group A is compulsory** which will contain two questions. **Question No.1 will be very short answer type** consisting of five questions of 1 mark each. **Question No.2 will be short answer type** of 5 marks. **Group B will contain descriptive type** two questions of ten marks each, out of which any one to answer.

The Semester Internal Examination shall have two components. (a) One Semester Internal Assessment Test (SIA) of 20 Marks, (b) Class Attendance Score (CAS) of 5 marks.

Conversion of Attendance into score may be as follows:

Attendance Upto 45%, 1 mark; 45<Attd.<55, 2 marks; 55<Attd.<65, 3 marks; 65<Attd.<75, 4 marks; 75<Attd, 5 marks.

END SEMESTER UNIVERSITY EXAMINATION (ESE):

A. **(ESE 60 marks):**

There will be two group of questions. **Group A is compulsory** which will contain three questions. **Question No.1 will be very short answer type** consisting of five questions of 1 mark each. **Question No.2 & 3 will be short answer type** of 5 marks. Group B will contain descriptive type five questions of fifteen marks each, out of which any three are to answer.

B. **(ESE 75 marks):**

There will be two group of questions. **Group A is compulsory** which will contain three questions. **Question No.1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks. Group B will contain descriptive type six questions of fifteen marks each, out of which any four are to answer.

C. **(ESE 100 marks):**

There will be two group of questions. **Group A is compulsory** which will contain three questions. **Question No.1 will be very short answer type** consisting of ten questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks. Group B will contain descriptive type six questions of twenty marks each, out of which any four are to answer.

SEMESTER- I

MAJOR COURSE- MJ 1: History of Geographical Thought

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B.*** ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) To understand the conceptual framework of geography.
2) To study the historical development and contribution of geography
3) Understanding modern techniques in geography.

Learning Outcomes:

After the completion of this course, the students will be able to understand the various themes of geography and its development through time as well as changing views on man-environment relationship.

Course Content:

Module-I: Nature, scope and purpose of Geography; Place of Geography in the classification of Sciences; Fundamental concepts of Geography; Concept of Earth's Surface; Concept of Location/ Situation; Concept of Landscape.

Module-II: Geography in Ancient (Greek, Rome, and India) and Medieval Period; Development of Geography in Modern Period (German School, French School, British School, and American School); Contribution of Humboldt, Ritter, Ratzel, Blache, and Hartshorne to Geography.

Module-III: Geographical Knowledge and people- Career in Geography; Methods and Techniques in Geography- Quantitative, Behavioural, Radical, Humanistic, and Environmental; Remote Sensing, GIS, GPS, and Computer Cartography.

Module-IV: Dualism in Geography: Physical versus Human, Regional versus Systematic; Man-Environment Relationship Determinism, Possibilism, and Neo-Determinism.

Books Recommended:

- Arentsen, M., Stam R. and Thuijis R., *Post-Modern Approaches to Space*, ebook.
- Bhat, L.S., *Geography in India* (Selected Themes), Pearson.
- Bonnett, A., *What is Geography?* Sage.
- Dikshit, R. D., *Geographical Thought: A Contextual History of Ideas*, Prentice– Hall India.
- Hartshone R., *Perspectives of Nature of Geography*, Rand MacNally and Co.
- Holt-Jensen A., *Geography: History and Its Concepts: A Students Guide*, SAGE. Johnston R. J., (Ed.), *Dictionary of Human Geography*, Routledge.
- Kapur A., *Indian Geography Voice of Concern*, Concept Publications.
- Martin Geoffrey J., *All Possible Worlds: A History of Geographical Ideas*, Oxford.
- Soja, Edward, *Post-modern Geographies*, Verso, London.
- Husain, Majid, *Evolution of Geographical Thought*, Rawat Publication, Delhi.
- Rawat, D. S. & Kaushik, S. D., *Geographical Thoughts and Methodology*, Rastogi Publication, Meerut.
- Maurya, S. D., *Bhaugolik Chintan Ka Itihas*, Pravalika Publications, Allahabad.
- Kaushik, S. D., *Bhaugolik Vichardharaen evam Vidhi Tantra*, Rastogi Publications, Meerut.

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SEMESTER- II

MAJOR COURSE- MJ 2: Physical Geography

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B****.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) To understand the conceptual framework of geomorphology, climatology, and oceanography.
2) To study the various concepts related to the land surface, climate, and ocean.

Learning Outcomes:

After the completion of this course, the students will be able to understand the various themes of geomorphology, climatology, and oceanography including various theories, concepts, and weather phenomenon.

Course Content:

Module-I: Origin of the Earth with particular reference to Big Bang Theory; Interior Structure of the Earth; Plate Tectonics; Earthquake and Vulcanicity; Geological Time Scale.

Module-II: Geomorphic Process: Denudation, Weathering, Erosion, and Deposition; Landforms: Fluvial, Aeolian, Glacial, Karst, and Marine.

Module-III: Composition and Structure of the Atmosphere; Insolation; Heat Budget; General Circulation of Wind; Atmospheric Pressure and Temperature; Air Mass; Fronts; Cyclone and Anti-Cyclone; Climates of the World (Köppen Classification).

Module-IV: Relief features of Ocean; Ocean Current and Tides; Oceanic Salinity; Coral Reef and Ocean Deposits.

Books Recommended:

- Dayal, P., *Bhuaakriti Vigyan*, Rajesh Prakashan, New Delhi.
- Gautam, Alka, *Jalvayu Vigyan evam Samudra Vigyan*, Rastogi Prakashan, Meerut.
- Lal, D. S., *Jalvayu Vigyan*, Sharda Pustak Bhawan, Allahabad.
- Sharma, J. P., *Bhuaakriti Vigyan*, Rastogi Prakashan, Meerut.
- Singh, S., *Jalvayu Vigyan*, Pravalika Publication, Allahabad.
- Singh, S., *Physical Geography,* Pravalika Publication, Allahabad.
- Singh, Savinder, *Bhuaakriti Vigyan,* Vasundhara Prakashan,
- Singh, Savinder, *Geomorphology,* Pravalika Publication, Allahabad.
- Singh, Savinder, *Samudra Vigyan,* Pravalika Publication, Allahabad.
- Strahler, A., *Introducing Physical Geography*, Wiley, India.

MAJOR COURSE- MJ 3: Practical

Marks: Pr (ESE: 3 Hrs) = 100	Pass Marks: Pr (ESE) = 40

(Credits: Practical-04) 120 Hours

Instruction to Question Setter

End Semester Examination (ESE):

There will be one Practical Examination of 3 Hrs duration. Evaluation of practical Examination may be as per the following guidelines:

Experiment = *80 marks*

Practical record notebook & Viva-Voce = *20 marks*

Course Objectives:

1) To explain the concept of scale, cross profiles, and weather maps.
2) To familiarise students about topographical maps, and weather maps.

Learning Outcomes:

After the completion of the course, students will have the ability to:

1) Read and prepare maps.
2) Importance of scale in the preparation of a map.
3) Understand the elements of weather and climate, and its impacts at different scales.
4) Use and importance of maps for regional development and decision making.

Course Content:

Module-I: Types of Maps; Meaning of Representative Fraction (R.F.); Construction of Scale (Simple, Comparative and Diagonal).

20x1=20 Marks

Module-II: Indexing of Topographical Sheet and Interpretation of Topographical Sheets (Under the head of relief, drainage, settlement, transport and communication); Conventional Signs.

20x1=20 Marks

Module-III: Construction of Profile (Serial, Superimposed, Projected, and Composite); River Profile.

20x1=20 Marks

Module-IV: Interpretation of Weather Map (July, October, and January); Weather Symbols; Rainfall and Temperature Graph; Hythergraph; Climograph.

20x1=20 Marks

Module-V: PNB (Practical Notebook) + Viva-Voce

10+10=20 Marks

Books Recommended:

- Singh, L.R., *Fundamentals of Practical Geography*, Sharda Pushtak Bhawan, Allahabad.
- Sharma, J. P., *Prayogik Bhugol,* Rastogi Prakashan, Meerut.
- Singh, L. R., *Prayogik Bhugol Ke Mool Siddhant*, Sharda Pustak Bhawan, Allahabad.
- Singh and Singh, *Elements of Practical Geography*, Kalyani Publishers, New Delhi.
- Chauhan, R. P., *Ramsurat, Prayogatmak Bhugol Ki Rooprekha*, Vasundhara Prakashan, Gorakhpur.
- Sinha evam Bala, *Uchh Cartography*, Sharda Pustak Bhawan, Allahabad.
- Sarkar, Ashish, *A Practical Geography*, Orient Blackswan Private Limited, New Delhi.
- Saha, P., *Advanced Practical Geography*, Orient Blackswan Private Limited, New Delhi.

SEMESTER- III

MAJOR COURSE- MJ 4: Human Geography

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B****.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) To explain the concept, definition and themes of human geography.
2) To familiarise students about human settlement types and patterns.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) The changing human and cultural landscape at different levels.
2) The patterns and processes of population growth and its implications.
3) Appreciate the nature and quality of human landscapes.

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Course Content:

Module-I: Meaning, Nature and Scope of Human Geography; Principles of Human Geography; Schools of thought in Human Geography; Possibilism; Welfare and Gender Approach.

Module-II: Evolution of Man: Classification of Races; Characteristics of Races and their Broad Distribution; Human Adaptation to Environment: Eskimo, Masai, Semang, and Bushman; Primitive People of Jharkhand: Mal Pahadia, Oraon, and Birhor.

Module-III: Growth of Population; Distribution of Population; Major Human Agglomerations; Types of Migration; Trends of Urbanisation.

Module-IV: Rural Settlement: Characteristics, Types and Regional Pattern; urban Settlements: Evolution and Classification; Rural Houses in India: Types, Classification and Regional Pattern.

Books Recommended:

- Johnston R; Gregory D, Pratt G. et al. *The Dictionary of Human Geography*, Blackwell Publication.
- Kaushik, S.D., *Manav Bhugol*, Rastogi Publication, Meerut.
- Maurya, S.D., *Manav Bhugol*, Sharda Pustak Bhawan. Allahabad.
- Hussain, Majid, *Manav Bhugol*, Rawat Publications, Jaipur.
- Garg, H. S., *Manav Bhugol*, Rajesh Publications, New Delhi.
- Chandna, R.C., *Population Geography*, Kalyani Publisher.
- Hassan, M.I., *Population Geography*, Rawat Publications, Jaipur
- Daniel, P.A. and Hopkinson, M.F., *The Geography of Settlement*, Oliver & Boyd, London.

MAJOR COURSE- MJ 5: Practical

Marks: Pr (ESE: 3 Hrs) = 100	Pass Marks: Pr (ESE) = 40

(Credits: Practical-04) 120 Hours

Instruction to Question Setter

End Semester Examination (ESE):

There will be one Practical Examination of 3 Hrs duration. Evaluation of practical Examination may be as per the following guidelines:

Experiment = *80 marks*

Practical record notebook & Viva-Voce = *20 marks*

Course Objectives:

1) To know the drawing process of geological cross-section in order to understand the structure of earth surface and its interiors.
2) To know the drawing process and importance of different graphs and diagrams.
3) To familiarise students with various instruments, methods, tools, and techniques of ground survey.

Learning Outcomes:

After the completion of the course, students will have the ability to:

1) Read and prepare maps and diagrams.
2) To use geological cross-section for the interpretation of earth.
3) To use graphs, diagrams for quantitative and qualitative analysis.
4) Undertake various methods of ground survey.

Course Content:

Module-I: Construction of Geological Cross-Section on Geological Map and its Interpretation; Geological Symbols.

20x1=20 Marks

Module-II: Bar Diagram (Simple, Multiple, and Compound); Pie Diagram; Line Graph; Ring Diagram.

20x1=20 Marks

Module-III: Instrumental Survey- 1) Chain and Tape Survey, 2) Plain Table Survey- Radiation and Intersection Method.

20x1=20 Marks

Module-IV: Instrumental Survey- 1) Prismatic Compass Survey- Open Traverse and Closed Traverse Method, 2) Dumpy Level- Traverse Survey, Spot Height Determination.

20x1=20 Marks

Module-V: PNB (Practical Notebook) + Viva-Voce

10+10=20 Marks

Books Recommended:

- Singh, L. R., *Fundamentals of Practical Geography*, Sharda Pushtak Bhawan, Allahabad.
- Sharma, J. P., *Prayogik Bhugol,* Rastogi Prakashan, Meerut.
- Singh, L. R., *Prayogik Bhugol Ke Mool Siddhant*, Sharda Pustak Bhawan, Allahabad.
- Singh and Singh, *Elements of Practical Geography*, Kalyani Publishers, New Delhi.
- Chauhan, R. P., *Ramsurat, Prayogatmak Bhugol Ki Rooprekha*, Vasundhara Prakashan, Gorakhpur.
- Sinha evam Bala, *Uchh Cartography*, Sharda Pustak Bhawan, Allahabad.
- Sarkar, Ashish, *A Practical Geography*, Orient Blackswan Private Limited, New Delhi.
- Saha, P., *Advanced Practical Geography*, Orient Blackswan Private Limited, New Delhi.

SEMESTER- IV

MAJOR COURSE- MJ 6: Geography of India

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B.*** ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) To familiarise students about physical geography, demography, social attributes.
2) To explain the concepts of regionalisation on the basis of physiography, socio-cultural and economic characteristics.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Understand the physical profile of the country.
2) Study the resource endowment and its spatial distribution and utilization for sustainable development.
3) Synthesis and develop the idea of regional dimensions.

Shital

Course Content:

Module I: India: Structure and Physiography, Drainage (Peninsular and Extra Peninsular), Climate and Climatic Regions; Edaphic and Biotic Regions of India; Indian Forests and their Economic Importance.

Module II: Agriculture systems in India, Cropping Patterns in India, Divide India into Agricultural Regions (as per ICAR); Green revolution and its Consequences; Industries: Cotton, Sugar, Mineral Based; Iron and steel, Granite Industries in Jharkhand. Transport: Surface, Water & Air-Foreign Trade.

Module III: Minerals: Distribution of Iron ore, Bauxite, Manganese, Atomic Minerals; Power Resources- Coal, Petroleum, Wind Energy in India; Regions of Geography: Middle Ganga Plain, Lower Ganga Plain, and Chhotanagpur Plateau.

Module IV: Studies of Geographical Problems: Problems of Unreliability of Rainfall; Problems of Soil Salinity and its Mitigation; Problems of Development (Land Acquisition), Displacement and Rehabilitation; Problems of Slum and Urban Rehabilitation in India.

Books Recommended:

- Deshpande C. D., *India: A Regional Interpretation*, ICSSR, New Delhi.
- Johnson, B. L. C., ed., *Geographical Dictionary of India,* Vision Books, New Delhi. Mandal R. B. (ed.), *Patterns of Regional Geography – An International Perspective*, Vol. 3, Indian Perspective.
- Sdyasuk Galina and P Sengupta, *Economic Regionalisation of India*, Census of India.
- Sharma, T. C., *India - Economic and Commercial Geography*, Vikas Publ., New Delhi.
- Singh R. L., *India: A Regional Geography*, National Geographical Society of India. Singh, Jagdish, *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
- Chauhan, Birendra Singh, & Gautam, Alka, Bharatvarsha Ka Vistrit Bhugol, Rastogi Publications, Meerut.

MAJOR COURSE- MJ 7: Geography of Jharkhand

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions **A** and **B**. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

Note:** There may be subdivisions in the questions of group **B.

Course Objectives:

1) To understand the physical features, its demography, social attributes, and resources of Jharkhand.
2) To explain the concept of regionalisation on the basis of physiography, socio-cultural and economic characteristics.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) The physical, economic, and demographic attributes of Jharkhand.
2) The mineral and energy wealth of Jharkhand.

Course Content:

Module I: Physiography and Relief, Drainage Pattern, Forest Resource and its Economic Importance.

Module II: Agriculture: Irrigation- Types and Distribution, Major corps- Food Crops; Population Growth and Distribution; Population Composition- Sex, Age, Religion.

Module III: Resources: Natural Resources- Soil, Water, Mineral Resources; Coal and Uranium- Distribution & development; Conventional and Non-conventional Energy Resources; Major Hydel Power Projects-Thermal Power Plants; Industries: Location Factors-Distribution of Iron and Steel, Cement.

Module IV: Educational Development and Structure of Education in Jharkhand; House Types of Munda Villages in South Chhotanagpur; Transport: Roads and Railways and Development of Tourism, Eco-Tourism in Jharkhand; Economy and Habitats of Santhals, Oraons; Social, Economic and Environmental Problems of Jharkhand.

Books Recommended:

- Tiwari Ram Kumar, *Jharkhand ka Bhugol*, Rajesh Publication New Delhi.
- Sdyasuk Galina and P Sengupta, *Economic Regionalisation of India*, Census of India.
- Tiwari Ram Kumar, *Jharkhand ki Rooprekha*, Shivangan Publication Ranchi.
- Singh R. L., *India: A Regional Geography*, National Geographical Society of India. Singh, Jagdish, *India - A Comprehensive & Systematic Geography*, Gyanodaya Prakashan, Gorakhpur.
- Spate O. H. K. and Learmonth A. T. A., *India and Pakistan: A General and Regional Geography*, Methuen.
- Tirtha, Ranjit, *Geography of India*, Rawat Publications, Jaipur & New Delhi.
- Pathak, C. R., *Spatial Structure and Processes of Development in India*. Regional Science Assoc., Kolkata.
- Tiwari, R.C., *Geography of India*. Prayag Pustak Bhawan, Allahabad.
- Singh, Saroj Kumar, *Jharkhand Pradesh ki Bhaugolik Vyakhya*, Rajesh Publication, New Delhi.

Shital

MAJOR COURSE- MJ8: Practical

Marks: Pr (ESE: 3 Hrs) = 100	Pass Marks: Pr (ESE) = 40

(Credits: Practical-04) 120 Hours

Instruction to Question Setter

End Semester Examination (ESE):

There will be one Practical Examination of 3 Hrs duration. Evaluation of practical Examination may be as per the following guidelines:

Experiment = 80 marks

Practical record notebook & Viva-Voce = 20 marks

Course Objectives:

1) To familiarise students with the various types of map projections.
2) To explain the concept of quantitative information in general and geographical data in particular.

Learning Outcomes:

After the completion of the course, students will have the ability to:

1) Read and prepare maps.
2) Usage of statistical methods and techniques in geographical analysis.

Course Content:

Module-I: Map Projection: Simple Conical Projection with One Standard Parallel and Two Standard Parallels, Cylindrical Equidistant and Equal Area Projection, Mercator's Projection.

20x1=20 Marks

Module-II: Map Projection: Polar Zenithal Equidistant and Equal Area Projection, Gnomonic Polar Zenithal Projection.

20x1=20 Marks

Module-III: Population Projection of Jharkhand; Ring Diagram for Urban Population; Cube Diagram.

20x1=20 Marks

Module-IV: Sources of Data; Classification and Tabulation of Data; Measures of Central Tendency: Mean, Median, Mode, and Quartile.

20x1=20 Marks

Module-V: PNB (Practical Notebook) + Viva-Voce

10+10=20 Marks

Books Recommended:

- Singh, L. R., *Fundamentals of Practical Geography*, Sharda Pushtak Bhawan, Allahabad.
- Sharma, J. P., *Prayogik Bhugol,* Rastogi Prakashan, Meerut.
- Singh, L. R., *Prayogik Bhugol Ke Mool Siddhant*, Sharda Pustak Bhawan, Allahabad.
- Singh and Singh, *Elements of Practical Geography*, Kalyani Publishers, New Delhi.
- Chauhan, R. P., *Ramsurat, Prayogatmak Bhugol Ki Rooprekha*, Vasundhara Prakashan, Gorakhpur.
- Sinha evam Bala, *Uchh Cartography*, Sharda Pustak Bhawan, Allahabad.
- Sarkar, Ashish, *A Practical Geography*, Orient Blackswan Private Limited, New Delhi.
- Saha, P., *Advanced Practical Geography*, Orient Blackswan Private Limited, New Delhi.

SEMESTER- V

MAJOR COURSE- MJ 9: ECONOMIC GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions **A** and **B**. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

Note:** There may be subdivisions in the questions of group **B.

Course Objectives:

1)To familiarise students about nature, scope and importance of economic geography.
2)To explain the concepts of industrial location, various types of economic activities.

Learning Outcomes:

After the completion of course, the students will able to understand :

1) Distinguish different types of economic activities and their utilities.
2) Appreciate the factors responsible for the location and distribution of activities.
3) Examine the significance and relevance of theories in relation to the location of different economic activities.

Course Content:

Module-I: Nature, scope and importance of Economic Geography, Spatial Structure of Economy, Factors Affecting location of Economic Activity with special reference to Agriculture (theory of agricultural location (Von Thunen),Industry; Industrial location (Weber's and Losch theory).

Module-II: Primary Activities: Subsistence and Commercial agriculture, forestry, fishing and mining, Subsistence and commercial Economic Activities; Fishing ground and aquaculture. Issues and challenges for the Development of Fishing and forestry.

Module-III: Secondary Activities: Manufacturing, Concept of Manufacturing Regions (Cotton Textile, Iron and Steel), Special Economic Zones and Technology Parks. Knowledge- based Technologies, Electronic age, spatial information Technology, Telecommunication.

Module-IV: Tertiary Activities: Transport (Land, Air, Water and Pipelines), Trade (National and International) and Services; Economic growth and Development; Definition, concept of Development and Sustainable Development, Human Resource development; concept, Measurement, indicators and component.

Books Recommended:

- Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
- Hodder B. W. and Lee Roger, 1974: Economic Geography, Taylor and Francis.
- Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- Wheeler J. O., 1998: Economic Geography, Wiley.

- Durand L., 1961: Economic Geography, Crowell.
- Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylor and Francis.
- Willington D. E., 2008: Economic Geography, Husband Press.
- Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford.

MAJOR COURSE- MJ 10: WORLD REGIONAL GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions A and B. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

Note:** There may be subdivisions in the questions of group **B.

Course Objectives:

1) To explain the physical features, drainage and climatic features of continents
2) To familiarize students about major physiographic regions of continents

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Locate physical features of the world's major continents.
2) Understand climatic conditions and climatic patterns of the continents.
3) Understand the drainage of the continents

Course Content:

Module-I: Asia- Physical features, Drainage & Climatic condition & Climatic Regions; agriculture and major industry; geographical account of Great plains of China, Indus basin.

Module-II: Europe- Physical features, Drainage & Climatic condition & Climatic Regions, agriculture and major industry, geographical account of Steppes grassland, Rhine basin.

Module-III: North America- Physical features, Drainage & Climatic condition & Climatic Regions, agriculture and major industry, geographical account of Appalachian Highland, Central Plains.

Module-IV: South America- Physical features, Drainage & Climatic condition & Climatic Regions, agriculture and major industry, geographical account of Pampasand Amazon Rainforest.

Module-V: Australia & New Zealand (Oceania) Physical features, Drainage & Climatic condition & Climatic Regions, agriculture and major industry, geographical account of Dawns grassland, and Great Sandy desert.

Books Recommended:

- Douglas, L. Johnson,(2009): World Regional Geography, Tenth edition, Pearson Education Inc, New Jersey.
- Baker, A. R. H. and Billinge, M. (forthcoming) Geographies of England: the North–South Divide, Imagined and Real (Cambridge).
- Brigham, A. P. (1903): Geographic Influences on American History (Boston).
- Brooks, C. E. P. (1926): Climate through the Ages (London).
- Hussain, M. (2016): World Geography, Rawat Publications

MAJOR COURSE- MJ 11: PRACTICAL

(INSTRUMENTAL SURVEY, TOPOGRAPHICAL ANALYSIS AND SOCIO-ECONOMIC PROJECT WORK)

Marks: Pr (ESE: 3 Hrs) = 100	Pass Marks: Pr (ESE) = 40

(Credits: Practical-04) 120 Hours

Instruction to Question Setter

End Semester Examination (ESE):

There will be one Practical Examination of 3 Hrs duration. Evaluation of practical Examination may be as per the following guidelines:

Experiment = *75 marks*

Practical record notebook & Viva-Voce =*25 marks*

Course Objectives:

1) To familiarise students about the various Instruments, methods, tools and techniques of ground survey.
2) To make students learn and apply project development, carrying out the primary survey for data collection.

Learning Outcomes:

After the completion of the course, students will have the ability to:

1) Understand the importance of field-work, types of surveys and application of instruments for levelling.
2) Handle and apply the instrument.
3) Synthesis and develop the idea of the project work on the basis of the secondary and primary survey.

Course Content:

Module-I: Importance of field-work, Scope and purpose, Types of survey, Principles and applications of selected survey instruments, Plane Table, Plan preparation, Resection method:

trial and error method, three-point problem, tracing paper method.

25 Marks.

Module-II: Drawing and analysis of profiles and transect chart with interpretation, Relative Relief map by Smith method, Average slope map by Wentworth method, Average Relief map and absolute relief map.

25 Marks.

Module-III: Socio-economic project work based on primary or secondary data sources.

25 Marks.

Module-IV: Practical Notebook + Viva-voce

15+10=25 Marks.

Practical Record:

1) Practical record book- at least one exercise from all the topics.
2) Module IV- a project report- word count of the report should be about 5,000 to 8,000 excluding figures, tables, photographs, maps, references and appendices.

Books Recommended:

- Robinson A.H (1995): Elements of Cartography John Wiley & Sons USA.
- Sarkar A.K.(1997): Practical Geography :A Systematic Approach, Oriental Longman Calcutta.
- Sharma J.P.(2010): Prayogatmak Bhugol,(Hindi) Sahitya Bhawan, Agra.
- Monkhouse F.J and Wilkinson HR (1952): Maps and Diagrams, their Compilations and Concentration, Muthuen & Co. London.
- Harwel JD, Newson MD. (1973): Techniques in Physical Geography, Mc. Millan Edu. Ltd. London.

SEMESTER- VI

MAJOR COURSE- MJ 12: BIOGEOGRAPHY AND ENVIRONMENTAL GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions A and B. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

Note:** There may be subdivisions in the questions of group **B.

Course Objectives:

1) To familiarize student with the nature and scope of biogeography and environmental geography.
2) To make students learn about the Ecosystem, its structure, functions and various policy with regard to environmental conservation.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Understand the dynamic interactive relationship between man and environment.
2) They will have in-depth knowledge of various anthropogenic interventions, their impacts on ecosystems, conservation strategies and environmental

planning practices designed to mitigate adverse effects and foster sustainability.

Course Content:

Module-I: Definition and Scope of Biogeography; importance of Biogeography relation with other sciences; Biomass: Forest, Grassland, Desert and Mountain; concepts and types of Biomes; National Parks and Sanctuaries in India and Jharkhand.

Module-II: Biodiversity: Preservation, degradation and conservation; Soil in India, factors affecting soil erosion and its conservation; Development and management of wasteland in India, Development of Biogeography; Hydrological cycle; Ecology and Ecosystem.

Module-III: Environmental Issues in Tropical, Temperate and Polar Ecosystems.

Module-IV: Environmental Programmes and Policies:Global, National and Local levels; Appraisal and Conservation of Environment.

Books Recommended:

- Chandna, R. C., (2002): Environmental Geography, Kalyani, Ludhiana.
- Cunningham, W. P. and Cunninghum, M. A., (2004): Principles of Environmental Science: Inquiry and Applications, Tata Mcgraw Hill, New Delhi.
- Goudie, A., (2001): The Nature of the Environment, Blackwell, Oxford.
- Miller, G. T., (2004): Environmental Science: Working with the Earth, Thomson Brooks Cole, Singapore.
- Mitchell, B., (1997): Resource and Environmental Management, Longman Harlow, England.
- MoEF, (2006): National Environmental Policy-2006, Ministry of Environment and

- Forests, Government of India.
- Odum, E. P. et al, (2005): Fundamentals of Ecology, Cengage Learning India.
- Saxena, H.M., 2012: Environmental Studies, Rawat Publications, Jaipur.
- Singh, Savindra., (2001): Paryavaran Bhugol (Hindi), Prayag Pustak Bhawan, Allahabad. (in Hindi).
- UNEP, (2007): Global Environment Outlook: GEO4: Environment for Development, United Nations.
- Huggett. R. (1998): Fundamentals of Biogeography, Routledge. London.
  Kormondy. E.J. 1996.
- Concepts of Ecology, 4th edition. Prentice-Hall, India. New Delhi.
  Myers. A.A. AND Giller. P.S. (editors) (1988): Analytical Biogeography: An Integrated Approach to the study of Animal and Plant Distributions. Chapman and Hall London.

MAJOR COURSE- MJ 13: INTRODUCTION TO REMOTE SENSING AND GIS

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B****.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) To explain the meaning, concept, and definition Remote sensing and GIS, as an important tool in the study and explaining geographic phenomenon.
2) A solid foundation in GIS, including the definition and evolution of GIS, components, and the distinction between digital and analogue maps.
3) To aware the students about the use of GPS and GIS, its principle, working mechanism and applications.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Appreciate the strength and application of remote sensing and GIS.
2) Map the resources, their location and availability.
3) Apply this knowledge for sustainable development.

Course Content:

Module I: GIS: Definition, history, scope, development, elements and components; GPS: definition, functions and uses; Spatial Data: Elements & Types of Spatial Data; Raster & Vector Data.

Module-II: Remote Sensing: Meaning, Definition & Scope; Development of Remote Sensing; Components and Process of Remote Sensing; Remote Sensing Platforms & Sensors, Satellite Imagery Interpretation: Visual & Digital Interpretation Techniques.

Module III: Elements and Interpretation Keys for Visual Interpretation. (Shape, Size, Colour, Tone, Texture, Association), Electromagnetic Spectrum, Coordinate Systems, Geo-Referencing of Spatial Data.

Module IV: Digital Elevation Models (DEM), Basic Principles of Computer-Assisted Cartography. Integration of GIS with Remote Sensing & Global Positioning System (GPS).

Books Recommended:

- Anji Reddy, M. (2008): Textbook of Remote Sensing and Geographic Information System, B.S. Publication, Hyderabad.
- Campbell, J. B. (2007): Introduction to Remote Sensing, Guildford Press.
- Chauniyal, D.D. (2010): Sudur Samvedan evam Bhogolik Suchana Pranali (Hindi), Sharda Pustak Bhawan, Allahabad.
- Jensen, J. R. (2004): Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall Inc., New Jersey.
- Jensen, J.R. (2007): Remote Sensing of the Environment: An Earth Resource Perspective, Prentice-Hall Inc., New Jersey.
- Joseph, G. (2005): Fundamentals of Remote Sensing, United Press India.
- Lillisand, T.M., and Kiefer, P.W. (2007): Remote Sensing and Image. Interpretation, 6th Edition, John Wiley & Sons, New York.

MAJOR COURSE- MJ 14: REGIONAL PLANNING AND DEVELOPMENT

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions **A** and **B**. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

***Note:** There may be subdivisions in the questions of group **B**.*

Course Objectives:

1) To familiarize the concept of region and regional planning, Its need and techniques.
2) To make students learn about the theories and models for regional planning, Indicators of development, Multipurpose Projects.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Identify notable lagging regions and solutions for their overall development.
2) Have a comprehensive understanding of the different regions and the application of different models and theories for integrated regional development.
3) Select appropriate indicators for the measurement of socio-economic regional development.

Course Content:

Module-I: Concepts, types and scope of regional planning and development; Approaches to Regional Development; Approaches to Regional Planning; need of regional planning. Regionalization of India for Planning (Agro Ecological Zones).

Module-II: Theories of regional development: Growth pole theory of Perroux,Growth Centre Model of Myrdal, Hirschman, Rostow and Friedmann; evaluation of regional disparities/imbalances.

Module-III: Concept of Development, Indicators of development, problems and issues of development, Macro and micro planning regions of India; Multi- level planning; decentralized planning.

Module-IV: Area development and planning: National Capital Region, metropolitan region, conurbation, city region; Integrated area development Programme, planning in tribal and hilly areas, drought prone area programme, command areas in watershed.

Module-V: Niti Ayog: Policy and framework; backward regions: identification and its development; Multi- Purpose River valley projects: Damodar, Sardar Sarovar Project.

Books Recommended:

- Ray, Jayshree, Introduction to Development and Regional Planning, Orient Blackswan, New Delhi.
- Puri, V. K. and Chand, Mahesh, Regional Planning in India, Allied Publishers Ltd., New Delhi.
- Chandana, R. C., Regional Planning and Development.
- Chandana, R. C., Pradeshik Niyojan evam Vikash, Kalyani Publishers, New Delhi.
- Srivastav, Chauhan, and Sharma, Pradeshik Niyojan evam Santulit Vikash, Vasundhara Prakashan Gorakhpur.

- Aggrawal and Nath, Regional Development and Planning in India, Concept Publishing Company, New Delhi.
- Shukla, J., Regional Development and Planning, Disha Publication, New Delhi.
- Maurya,S.D., Pradeshik Niyojan evam Vikash, pravalika publications, prayagraj.

MAJOR COURSE- MJ 15: PRACTICAL

(PHYSICAL SURVEY AND DISASTER MANAGEMENT PROJECT WORK)

Marks: Pr (ESE: 3 Hrs) = 100	Pass Marks: Pr (ESE) = 40

(Credits: Practical-04) 120 Hours

Instruction to Question Setter

End Semester Examination (ESE):

There will be one Practical Examination of 3 Hrs duration. Evaluation of practical Examination may be as per the following guidelines:

Experiment = *80 marks*

Practical record notebook & Viva-Voce = *20 marks*

Course Objective:

1) To develop and expose students to an extensive field survey of wider region of India.
2) To make students identify various physical landforms, processes, and their impact on human and biological world.

Learning Outcomes:

After the completion of the course, students will have the ability to:

1) To conduct an extensive survey of a contiguous wider region of India.
2) Identify salient landforms, their genesis and their impact on human life, flora and fauna.
3) Carrying out extensive field study outside the class room.

Course Content:

Module-I: Trace the prominent features of the area to be surveyed. Identify the salient landform features of the selected area on a topographical sheet.

Module-II: Identify the landforms on the surface, while in the field. Also note the agents of erosion, transportation and deposition associated with the landforms.

Module-III: Identify and classify the biodiversity in the area (Flora and Fauna).

Module-IV: Observe the relationship of various landforms, flora and fauna with land use, settlement, structure and life style of the people.

Note:

1) Geographical Excursion of any part of India.
2) University/College will provide the requisite fund for conducting the survey.
3) Based on observations of the above characteristics, prepare a field survey report. The report need to be supplemented with maps, sketches, diagrams and photographs etc.
4) The practical exercises should aim at identification of micro-geomorphic features on the ground and their relationship to land use/settlement pattern. This is also a training in Report Writing.
5) Two written questions in the practical examination based on the physical survey report-
    a) writing method.
    b) physical survey.

Books Recommended:

- Creswell, J., (1994): Research Design: Qualitative and Quantitative Approaches, Sage Publications, California.
- Dikshit, R. D. (2003). The Art and Science of Geography: Integrated Readings, Prentice-Hall of India, New Delhi.
- Dash and Roy, (2022) Field Work In Social Work Education, Atlantic publisher.

SEMESTER- VII

MAJOR COURSE- MJ 16: POPULATION GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions **A** and **B**. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

***Note:** There may be subdivisions in the questions of group **B**.*

Course Objective:

1) To familiarize student with the nature and scope of Population geography.
2) To make students learn about the population change, and its dynamics

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Know the pattern of population change and its dynamics.
2) Understand processes of population growth and its implications.
3) Appreciate the growth, distribution and composition of population in different parts of the world.

Course Content:

Module-I: Nature and scope of population geography, Sources of Population Data with special reference to India (Census and NSS).

Module-II: Distribution and Density of world population, Factors affecting population distribution; Population dynamics: Birth rate, Death rate, Sex-ratio, age and sex structure, Population Projection, Malthusian Population Theory.

Module-III: World population: growth, causes and consequences; Concept of Overpopulation, under- population and optimum population; Population Dividend.

Module-IV: Migration: Meaning and Types, Causes and Consequences; Theories of Migration: Ravenstein & Lee.

Module-V: India: Growth, distribution, density of population; Density types:Arithmetic density, physiological density, nutritional density, agricultural density; Population problems; Population Policy, Population and Environment Interface.

Books Recommended:

- Chandna R.C. (2009): Geography of Population, Kalyani Publishers, Ansari Road, Daryaganj, N. Delhi-2.
- Majid Hussain (1999): Human Geography, Rawat Publications, Jaipur.
- Trewartha G.T. (1959): A Geography of Population, World Patterns, John Wiley and Sons Inc. New York.
- Ghosh B.N. (1987): Fundamentals of Population Geography, Sterling Publishing Company, New Delhi.

- R.K. Tripati ((2000): Population Geography, Commonwealth Publishers, New Delhi.
- Kayastha, S.L. (1998) Geography of Population, Rawat Publications, Jaipur.
- Clerk, I. (1984): Geography of Population, Approaches and Applications, Pergamon Press, Oxford, UK.
- Tiwari, Ram Kumar (2015): Jansankhya Bhugol, Prwalika Publication, Allahabad.
- Hiralal (2007): Jansankhya Bugol Ke Mul Tatwa, Radha Publication, New Delhi.
- Mourya, S.D. (2011): Jansankhya Bhugol, Sharda Pustak Bhawan, Allahabad.
- Dubey, K.K. & Singh, M.B. (2001): Jansankhya Bhugol, Rawat Publication, Jaipur.
- Roy, Debjani (2022): Population Geography, Books and Allied publisher, Kolkata.

MAJOR COURSE- MJ 17: SOCIAL AND TRIBAL GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions **A** and **B**. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

Note:** There may be subdivisions in the questions of group **B.

Course Objective:

1) To familiarize the about social geography, its concept, nature and scope; migration social categories.
2) To make students learn about Tribal geography and its concepts; Tribes and their economic activities, marriage, faith and practices.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Understand the nature, scope and relationships of geography and human wellbeing.
2) Acquire knowledge on the spatial dimensions of social diversity components.
3) Understand the aspects of Tribal geography and tribal socio-economic activities.

Course Content:

Module I: Social Geography: Concept, Origin, Nature and Scope.

Module-II: Peopling Process of India: Technology and Occupational Change; Migration.

Module-III: Social Categories: Caste, Class, Religion, Race and Gender and their Spatial distribution.

Module-IV: Tribal Geography- meaning, concept, and scope of tribal geography; Tribes and their habitat; Geographical distribution of Indian tribes, groups and sub-groups; Economic activities; Socio-Political Organization: Family, Marriage and kinship, faith, beliefs and practices.

Module-V: Tribal rights- Land, forests, water; Emerging social problems- Health, illiteracy, Alcoholism; Industrialization and tribe, mining and tribes displacement.

Books Recommended:

- Ahmed A., 1999: Social Geography, Rawat Publications.
- Casino V. J. D., Jr., 2009) Social Geography: A Critical Introduction, Wiley Blackwell.
- Cater J. and Jones T., 2000: Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.
- Panelli R., 2004: Social Geographies: From Difference to Action, Sage.
- Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: Introducing Social Geographies, Oxford University Press.
- Smith D. M., 1977: Human geography: A Welfare Approach, Edward Arnold, London.
- Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: The SAGE Handbook of Social Geographies, Sage Publications.
- Sopher, David (1980): An Exploration of India, Cornell University Press, Ithasa
- Valentine G., 2001: Social Geographies: Space and Society, Prentice Hall.

MAJOR COURSE- MJ 18: TRANSPORT AND TOURISM GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions A and* ***B****.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objective:

1) To be aware of the various dimensions of Tourism Geography and make the students aware about various types of tourism.
2) To assess sustainable ecotourism and other contemporary forms of tourism.
3) To critically evaluate the infrastructure in tourism in India along with reviewing the tourism policy.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Learn the concept of transport, its types and factors.
2) Equip with a basic understanding of nature and scope, trends and patterns of various types of tourisms.
3) Apply the principles of Geo-tourism and analyse the prospects and problems associated with pilgrimage tourism.

Course Content:

Module-I: Nature, scope, significance of and Development of Transport Geography, factor Of Development: Physical, Economic, Social, Economic and transport and regional Mode of development, relative significance of transport: railways, roadways, waterways, airways.

Module-II: Accessibility and flow models; network structure, measurement of accessibility, Models of network change, Function, pattern of movement and transport Development.

Module-III: Nature, scope and extent, concept of tourism, Relationship between geography and Tourism, Ecotourism, Geo tourism, Agro-tourism, Heritage Religions tourism and Adventure tourism.

Module-IV: Types of tourism- Domestic and the international, Adventure, wildlife, Pilgrimage, Business, Leisure, Pleasure, and cultural tourism, Local, National and international, Socio-Economic impact of tourism.

Module-V: Infrastructural approach for the development of tourism, Govt. policies for Planning and Promotion of tourism in India, prospect and manning of tourism in India. Case studies: Hill Station – Mount Abu, Shimla; Beach points: Kwalum, Mariano Beach, Historical Centre – Mysore, Delhi, Religious: Deoghar, Kedarnath; Dams- Hirakud, Maithon, Masanjor; National Parks-Palamu Tiger reserve.

Books Recommended:

- Hagget, F and Chorley; R.J.Network analysis, Edward Arnold, London.1973
- Raza, M and Agrawal, Y.P., Transport Geography in India. Concept Publication New Delhi, 1985.
- White, H.P. and Senior, M.L; Transport- Longmon London, 1983.
- Ulman, E.L. American Commodity flow, University of Washington press, 1957.
- Bhatia, A.K. (1996) Tourism Development sterling Publisher, New Delhi.
- Singh, R.L. and Kashi Nath Singh; Reding in Rural Settlement, Geographers.
- Sharma, J.K. (2000) Tourism, Plannings, and Development – A New perspective Kanishks.

MAJOR COURSE- MJ 19: PRACTICAL

Marks: Pr (ESE: 3 Hrs) = 100	Pass Marks: Pr (ESE) = 40

(Credits: Practical-04) 120 Hours

Instruction to Question Setter

End Semester Examination (ESE):

There will be one Practical Examination of 3 Hrs duration. Evaluation of practical Examination may be as per the following guidelines:

Experiment = *80 marks*

Practical record notebook & Viva-Voce = *20 marks*

Learning Outcomes:

After the completion of this course, the students will be able to understand:

Part-A

Module-I: Polygraph, Bandgraph, Ergograph, Pyramid diagram, Proportionate pie diagram,

Module-II: Correlation, Standard Deviation, Mean Deviation, Linear Regression, Chi Square

Part-B (THEMATIC ATLAS- CASE STUDY BASED MAPPING)

Module-III: Principles of Map Design; Cartographic Overlays – Point, Line and Areal Data; Diagrammatic Data Presentation – Line, Bar and Circle.

Module-IV: Thematic Mapping Techniques – Properties, Uses and Limitations- Isopleths, Dot, Chorochromatic, Proportional Circles

Module-V: Thematic Maps – Preparation and Interpretation of atlas

Note: -

- Part- B- Case study based Atlas should be prepared (computer aided or Manual) on a specific theme with at least ten plates for any City/Block/District/state of India.
- Prior approval of Department/ College/ BOS should be taken

Books Recommended:

1. Monkhouse, F. J. and Wilkinson, H. R., (1973): Maps and Diagrams, Methuen, London.

2. Cuff, J. D. and Mattson, M. T., (1982): Thematic Maps: Their Design and Production, Methuen Young Books

3. Dent, B. D., Torguson, J. S., and Holder, T. W., (2008): Cartography: Thematic Map Design (6th Edition),
McGraw Hill Higher Education

4. Kraak, M.J. and Ormeling, F., (2003): Cartography: Visualization of Geo-Spatial Data, Prentice-Hall

SEMESTER- VIII

MAJOR COURSE- MJ 20: SETTLEMENT GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B****.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) Concept of site and situation, origin and growth of rural and urban settlements, as well as the types, patterns and distribution of rural settlements.
2) Physical layout, structure, and form of rural and urban settlements.
3) Theories of the origin of towns and urban land use and morphology.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Analyzing the suitability of different locations for settlements and understand the factors that contribute to their success or decline.

2) Understanding the morphological patterns will enable students to identify and analyse the characteristics of different settlement.
3) Students will develop competency in constructing diagonal and vernier scales and equip with practical skills in map reading, interpretation, and cartographic analysis.

Course Content:

Module-I: Introduction: Nature and scope of settlement geography, Evolution and growth of human settlement, Theories of evolution of Settlements (Gordon Childe, Henri Pirenne, Lewis Mumford); Components of settlement sites, Spatial distribution.

Module-II: Rural settlement: Pattern and types of Rural settlements; Rural houses in India: types, classification and regional pattern; Theories of origin of towns after Childe and Mumford.

Module-III: Urban Settlement: Evolution and classification, Factors contributing to settlement hierarchy; Urban landuse and morphology: Concentric Zone Theory, Sector Theory and Multiple Nuclei Theory.

Module-IV: Settlement Hierarchy: Central Place Theory (Christaller and Losch); rank size rule and primate city concept (Zipf).

Books Recommended:

- Chandna, R.C. (2017): Population Geography, Kalyani Publishers, New Delhi.
- Roy D. (2022): Population Geography, 2nd Edition, Books & Allied, Kolkata
- Daniel, P.A. and Hopkinson, M.F. (1989): The Geography of Settlement, Oliver & Boyd, London.
- Hassan, M.I. (2005): Population Geography, Rawat Publications, Jaipur.

- Hussain, Majid (2012): Manav Bhugol, Rawat Publications, Jaipur.
- Johnston, R. Gregory, D.,& Pratt, G., et al. (2008): The Dictionary of Human Geography, Blackwell Publication.
- Jordan-Bychkov., et al., (2006): The Human Mosaic: A Thematic Introduction to Cultural Geography, W. H. Freeman and Company, New York.
- Kaushik, S.D. (2010): Manav Bhugol, Rastogi Publication, Meerut.
- Maurya, S.D. (2012): Manav Bhugol, Sharda Pustak Bhawan, Allahabad.
- Rozenblat., Celine., Pumain., Denise and Velasquez., Elkin Eds. (2018): International and Transnational Perspectives on Urban Systems, Springer, Japan, pages 393.
- Singh, R.B., Ed. (2015): Urban Development Challenges, Risk and Resilience in Asian Mega Cities- Sustainable Urban Future of Emerging Asian Mega Region, Springer, Tokyo, Pages 488, 2015.12.
- Childe, V.G. (1950): The Urban Revolution. University of Chicago Press.

ADVANCED MAJOR COURSE- AMJ 1: AGRICULTURAL GEOGRAPHY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions A and* ***B. Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) To familiarize student about the nature, scope, significance and approaches of agriculture geography.
2) To make students learn about the determinants of agricultural land use, new trends in Indian Agriculture, food security

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Conceptualize the agriculture and its determinants.
2) Get the overview of Indian agriculture regions and systems.
3) Have sound knowledge of agriculture revolutions and food security.

Course Content:

Module-I: Nature and scope, Significance and development of agricultural geography, Approaches to the study of agricultural geography, Sources of agricultural data.

Module-II: Determinants of agricultural land use – Physical, economic, social and technological, Land holding and land tenure systems, Land reforms.

Module-III: Cropping Pattern: Methods of delineating crop combination regions (Weaver); Crop concentration and crop diversification; Von Thunen's model and its recent modifications, Whittlesey's classification of agricultural regions, Agro-climatic regions of India.

Module-IV: Agricultural land-use and carrying capacity; Green Revolution, White Revolution, Blue Revolution, Problems of Indian agriculture, Agricultural Policy of India, Food security.

Books Recommended:

- Mohammad Shafi (2006): Agricultural Geography, Dorling Kindessley (India) Pv. Ltd. New Delhi.
- Negi. B.S. (2003): Indian Agriculture: problems, Progress & Prospects, Vikas publishing house Pvt. Ltd.
- S. Ansari Road, Daryagani, New Delhi-2.
- Majid Hussain (2000): Agricultural Geography, Ed Anmol Publishing Pvt. Ltd. Ansari Road, Daryagani, New Delhi-2.
- Shafi M. (1999): Agricultural Geography, Kedarnath Ram Nath, 132, College road, Meetat UP1.
- Singh & Dhillion (2000): Agricultureal Geography, Prayag Pustak Bhavan, 20 A, University road, Allahabad211002, UP.
- Jasbir singh (2001): Agricultureal geography, Prayog Pustak Bhavan, 20 A, University road, Allahabad- 211002, UP.
- Memonia CB (1998): Aricultural Problems in India: Prayog Pustak Bhavan, 20 A, University road, Allahabad211002, UP.

- Majid Husain (2007): Systematic Agricultural Geography, Rawat publications, Jawahar Nagar, Jaipur, N. Delhi-92.

ADVANCED MAJOR COURSE- AMJ 2: GEOMORPHOLOGY

Marks: 25 (5 Attd. + 20 SIE: 1 Hr) + 75 (ESE: 3 Hr.) = 100	Pass Marks: Th (SIE + ESE) = 40

(Credits: Theory- 04) 60 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 20+5=25 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 20 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 75 marks):

*There will be **two groups** of questions **A** and **B**. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** seven questions of fifteen marks each, out of which any four are to be answered.*

Note:** There may be subdivisions in the questions of group **B.

Course Objectives:

1) To familiarise students about geomorphic environment, landform development.
2) To make student learn and apply geomorphic ideas for water management and environmental degradation.

Learning Outcomes:

After the completion of this course, the students will be able to understand:

1) Learn the geomorphic/physical environment of the area. It will help in the understanding of geomorphic analysis of landform development.
2) Have sound knowledge of geomorphic features which will enable the students in application of geomorphic ideas for water management and environmental degradation.

3) It will help the understanding of natural hazard management and various geomorphic applicability.

Course Content:

Module-I: Geomorphology: Meaning, Definition, Nature and Scope, Fundamental Geomorphic Concepts, landform evolution, Slope Development theory.

Module-II: Earth movements: Types of Folds and Faults, Isostacy (Airy, Pratt, Daly), Plate Tectonics, Concept of Geosyncline and Theories of Mountain Building (Geo Synclinal Orogen Theory of Kober & Convection Current Theory of Holme).

Module-III: Process of landform evolution: concept of gradation, drainage system analysis, morphometric analysis, drainage basin, and channel morphology.

Module-IV: Regional geomorphology of Chotanagpur plateau: Palamu upland, Rajmahal Highlands, Kolhan Region.

Module-V: Applied Geomorphology: application of geomorphology to urbanization, agriculture, water resource management, watershed planning and development forestry, regional planning and development, Geomorphic hazard.

Books Recommended:

- Ahmad, E. (1985): Geomorphology, Kalyani Publishers , New Delhi.
- Bloom, A. L., (2003): Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice- Hall of India, New Delhi.
- Christopherson, R. W. and Birkeland, G. H., (2012): Geosystems: An Introduction to Physical Geography (8th edition), Pearson Education,

- New Jersey.
- Das Gupta, A and Kapoor, A.N., (2001): Principles of Physical Geography, S.C. Chand & Company Ltd. New Delhi.
- Dayal, P., (1996): A Text book of Geomorphology. Shukla Book Depot, Patna.
- Huggett, R.J. (2007): Fundamentals of Geomorphology, Routledge, New York.
- Kale, V. S. and Gupta A., (2001): Introduction to Geomorphology, Orient Longman, Hyderabad.
- Khullar, D.R., (2012): Physical Geography, Kalyani Publishers, New Delhi.
- Singh, Savindra (2015): Bhuakriti vigyan ka Swarup, Prayag Pustak Bhawan, Allahabad
- Strahler, A. H. and Strahler, A N., (2001): Modern Physical Geography (4/E), John Wiley and Sons, Inc., New York.
- Summerfield M. A. (2013): Global Geomorphology, Routledge, New York.
- Thornbury, W. D., (2004): Principles of Geomorphology, Wiley, New York.

ADVANCED MAJOR COURSE- AMJ 3: PRACTICAL

Marks: Pr (ESE: 3 Hrs) = 100	Pass Marks: Pr (ESE) = 40

(Credits: Practical-04) 120 Hours

Instruction to Question Setter

End Semester Examination (ESE):

There will be one Practical Examination of 3 Hrs duration. Evaluation of practical Examination may be as per the following guidelines:

Experiment = *80 marks*

Practical record notebook & Viva-Voce = *20 marks*

Course Objectives:

1) To familiarise students about drainage density, drainage texture and stream ordering

Learning Outcomes:

After the completion of the course, students will have the ability to:

1) Gain theoretical knowledge of morphometric and cartographic techniques.
2) Acquire practical skills in quantitative analysis of landforms and spatial data.
3) Develope ability to interpret geographical patterns of drainage, relief, urbanization, and transport.
4) Enhance cartographic representation skills through diagrams and profiles.
5) Apply knowledge in applied geomorphology and urban planning studies.

Course Content:

Module-I: Stream Ordering (strahler's, Shrew, Horton, Shiedeger's,) Bifurcation ratio, Drainage Texture (Drainage density and drainage frequency), Channel Profiles, Area-height Diagram.

Module-II: Spherical Diagram, Isopleth, Volumetric or Sten de Geer's method, Traffic Flow Diagram. Regional Pattern of Urbanisation, Planning of Satellite and Garden Town.

Module-III: Dissection index, ruggedness index, long profile and cross profile.

Module IV: Practical + Viva voce

Books Recommended:

1. Andrew. D. ward, and Stanley, Trimble., (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.
2. Fetter, C.W. (2005): Applied Hydrogeology, CBS Publishers & Distributors, New Delhi.
3. Reddy, K. Ramamohan, Venkateswara Rao,B, Sarala, C., (2014): Hydrology and Watershed Management, Allied Publishers.
4. Karanth, K.R., (1988): Ground Water: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.
5. Lyon, J.G., (2003): GIS for Water Resource and Watershed Management, Taylor and Francis, New York.

Geography Minor

Geography may be opted as Minor-1 by the students having any Major subject.

It is intended to support the Major subject. There will be four papers of Geography minor of 4 credits each with following description:

I. Theory: 3 credits of 75 marks.
II. Practical: 1 credit of 25 marks.

The Geography Minor that can be opted in odd semesters are as follows:

Semester	Minor Papers	No. of Credits	
		Theory	Practical
I	MN-1A (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)
III	MN-1B (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)
V	MN-1C (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)
VII	MN-1D (Geo)	3 Credits (75 Marks) (SIE=10+5, ESE=60)	1 Credit (25 marks) (SIE=0, ESE=25)

SEMESTER- I

MINOR COURSE- MN-1A: Physical Geography (Theory)

Marks: 15 (5 Attd. + 10 SIE: 1 Hr) + 60(ESE: 3 Hr.) = 75	Pass Marks: Th (SIE + ESE) = 30

(Credits: Theory- 03) 45 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 10+5=15 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 10 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 60 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B****.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *five questions of fifteen marks each, out of which any three are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objectives:

1) To understand the physical aspects of earth.
2) To study the all the environmental aspects of the earth like atmosphere, lithosphere, hydrosphere and biosphere.

Learning outcomes:

After the completion of the course, students will have the ability to:

1) Students will understand the components of the earth system – atmosphere, lithosphere, hydrosphere and biosphere.
2) Students will study the interactions among bio-physical processes in earth space.

Course Content:

Module-I: Earth and Solar System; Types and Formation of Rocks, Distribution of Earthquake and Volcano; Denudation of Land Surface, Mountain, Plateau, Plain, Lake and Rift valley; Landforms: Fluvial, Aeolian.

Shital

Module-II: Atmosphere: Structure and Composition, Atmospheric pressure and Temperature, Planetary and Local Winds, Greenhouse Gases, Cyclone: Tropical and Temperate.

Module-III: Configuration of Oceans, Salinity and Temperature of the Ocean Water, Ocean Current, Sea Deposits and Resources.

Module-IV: Concept of Ecology and Ecosystem; Energy flow; Biomes: Grassland, Forest; Biodiversity-Loss and their Conservation.

Books Recommended:

- Dayal, P., *Bhuaakriti Vigyan*, Rajesh Prakashan, New Delhi.
- Gautam, Alka, *Jalvayu Vigyan evam Samudra Vigyan*, Rastogi Prakashan, Meerut.
- Lal, D. S., *Jalvayu Vigyan*, Sharda Pustak Bhawan, Allahabad.
- Sharma, J. P., *Bhuaakriti Vigyan*, Rastogi Prakashan, Meerut.
- Singh, S., *Jalvayu Vigyan*, Pravalika Publication, Allahabad.
- Singh, S., *Physical Geography,* Pravalika Publication, Allahabad.
- Singh, Savinder, *Bhuaakriti Vigyan,* Vasundhara Prakashan,
- Singh, Savinder, *Geomorphology,* Pravalika Publication, Allahabad.
- Singh, Savinder, *Samudra Vigyan,* Pravalika Publication, Allahabad.
- Strahler, A., *Introducing Physical Geography*, Wiley, India.

MINOR COURSE- MN-1A: Physical Geography (Practical)

Marks: Pr (ESE: 3 Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practical-01) 30 Hours

1) Meaning of Representative Fraction (R.F.), Construction of Scale (Simple and Comparative), Interpretation of Topographical Sheets.

10 Marks

2) Interpretation of Weather Map, Rainfall and Temperature Graph, Hythergraph, Climograph, Weather Symbols, Relief Features, Representation-Choropleth and Isopleth.

10 Marks

3) Viva-Voce.

05 Marks

Books Recommended:

- Singh, L. R., *Fundamentals of Practical Geography*, Sharda Pushtak Bhawan, Allahabad.
- Sharma, J. P., *Prayogik Bhugol,* Rastogi Prakashan, Meerut.
- Singh, L. R., *Prayogik Bhugol Ke Mool Siddhant*, Sharda Pustak Bhawan, Allahabad.
- Singh and Singh, *Elements of Practical Geography*, Kalyani Publishers, New Delhi.
- Chauhan, R. P., *Ramsurat, Prayogatmak Bhugol Ki Rooprekha*, Vasundhara Prakashan, Gorakhpur.
- Sinha evam Bala, *Uchh Cartography*, Sharda Pustak Bhawan, Allahabad.
- Sarkar, Ashish, *A Practical Geography*, Orient Blackswan Private Limited, New Delhi.
- Saha, P., *Advanced Practical Geography*, Orient Blackswan Private Limited, New Delhi.

SEMESTER- III

MINOR COURSE- Human Geography (Theory)

Marks: 15 (5 Attd. + 10 SIE: 1 Hr) + 60(ESE: 3 Hr.) = 75	Pass Marks: Th (SIE + ESE) = 30

(Credits: Theory- 03) 45 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 10+5=15 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 10 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 60 marks):

*There will be **two groups** of questions A and B. **Group A is compulsory** which will contain three questions. **Question No. 1 will be very short answer type** consisting of five questions of 1 mark each. **Question No. 2 & 3 will be short answer type** of 5 marks each. **Group B will contain descriptive type** five questions of fifteen marks each, out of which any three are to be answered.*

Note:** There may be subdivisions in the questions of group **B

Course Objectives:

1) To understand the man-environment relationship on the earth.

2) To study the cultural aspects of human i.e., settlement, functions etc.

Learning outcome:

After the completion of the course, students will have the ability to:

1) Know the changing human and cultural landscape at different levels.

2) Understand patterns and processes of population growth and its implications.

3) Appreciate the nature and quality of human landscapes.

Course Content:

Module-I: Meaning, Nature and Scope of Human Geography; Schools of Thought in Human Geography: Determinism, Possibilism, Neo- determinism, Probabilism.

Module-II: Classification and Characteristics of Races in World and India; Human Adaptation to Environment: Eskimo, Masai, Semang, Bushman.

Module-III: Growth and Distribution of World Population; Malthusian and Demographic Transition Theory; Human and Environment Interface.

Module-IV: Rural Houses in India: Types, Classification and Regional Pattern; Evolution of Urban Settlements and Their Functional Classification

Books Recommended:

• Johnston R; Gregory D, Pratt G. et al. The Dictionary of Human Geography, Blackwell Publication.

• Kaushik, S.D., Manav Bhugol, Rastogi Publication, Meerut.

• Maurya, S.D., Manav Bhugol, Sharda Pustak Bhawan. Allahabad.

• Hussain, Majid, Manav Bhugol, Rawat Publications, Jaipur.

• Garg, H. S., Manav Bhugol, Rajesh Publications, New Delhi.

• Chandna, R.C., Population Geography, Kalyani Publisher.

• Hassan, M.I., Population Geography, Rawat Publications, Jaipur

• Daniel, P.A. and Hopkinson, M.F., The Geography of Settlement, Oliver & Boyd, London.

MINOR COURSE- MN-1B: Human Geography (Practical)

Marks: Pr (ESE: 3 Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practical-01) 30 Hours

1) Bar Diagram (Simple, Multiple and compound), Pie diagram, Line Graph.

10 Marks

2) Map projection: Simple Conical Projection with One Standard Parallel and Two Standard Parallels, Mercator's Projection.

10 Marks

3) Viva-Voce.

05 Marks

Books Recommended:

- Singh, L. R., Fundamentals of Practical Geography, Sharda Pushtak Bhawan, Allahabad.
- Sharma, J. P., Prayogik Bhugol, Rastogi Prakashan, Meerut.
- Singh, L. R., Prayogik Bhugol Ke Mool Siddhant, Sharda Pustak Bhawan, Allahabad.
- Singh and Singh, Elements of Practical Geography, Kalyani Publishers, New Delhi.
- Chauhan, R. P., Ramsurat, Prayogatmak Bhugol Ki Rooprekha, Vasundhara Prakashan, Gorakhpur.
- Sinha evam Bala, Uchh Cartography, Sharda Pustak Bhawan, Allahabad.
- Sarkar, Ashish, A Practical Geography, Orient Blackswan Private Limited, New Delhi.
- Saha, P., Advanced Practical Geography, Orient Blackswan Private Limited, New Delhi.

MINOR COURSE- MN-1B: GEOGRAPHY OF INDIA AND JHARKHAND (Theory)

Marks: 15 (5 Attd. + 10 SIE: 1 Hr) + 60(ESE: 3 Hr.) = 75	Pass Marks: Th (SIE + ESE) = 30

(Credits: Theory- 03) 45 Hours

Instruction to Question Setter

Semester Internal Examination (SIE 10+5=15 marks):

The Semester Internal Examination shall have two components. (a) One Semester Internal Examination Written Test (SIE) of 10 Marks, (b) Class Attendance Score (CAS) including the behaviour of the students towards teachers and other students of college of 5 marks.

End Semester Examination (ESE 60 marks):

There will be ***two groups*** *of questions A and B.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *five questions of fifteen marks each, out of which any three are to be answered.*

Note: *There may be subdivisions in the questions of group* ***B.***

Course Objective:

Hours The Learning objective of this course are as follows-

1. To familiarise students about the physical features, climate and vegetation of India and Jharkhand

2. To make student learn about economic, and agricultural features of India and Jharkhand

Learning Outcomes:

After the completion of course, the students will have ability to:

1. Understand the physical profile of the India and Jharkhand

2. Study the resource endowment and its spatial distribution and utilization

3. Synthesize and develop the idea of regional dimensions.

Course Content:

Module I: India: Physiographic Divisions, seasons, drainage, Soil and Natural vegetation Distribution of Population by Race, and Language of India.

Shital

Module II: Economic features of India: Mineral and Power Resources: Distribution and Utilization of Iron Ore, Coal, Petroleum, Gas.

Module III: Agricultural Production of Rice, Wheat; Industrial Corridors and Industrial Regions of India

Module IV: Regional Account of Jharkhand: Physiography, Drainage, Climate, natural vegetation, Population and tribes (Santhal, Oraon, Munda)

Module V: Economic features of Jharkhand: Agriculture, minerals and industry -iron and steel industry, silk; Tourism.

Books Recommended:

1. Deshpande, C. D., (1992): India: A Regional Interpretation, ICSSR, New Delhi.
2. Johnson, B. L. C., ed. (2001): Geographical Dictionary of India. Vision Books, New Delhi.
3. Khullar, D.R. (2014): India: A Comprehensive Geography, Kalyani Publishers, New Delhi.
4. Majid Husain (2009): Geography of India, Tata McGraw hill Education Private Ltd, New Delhi.
5. Mandal, R. B. (ed.), (1990): Patterns of Regional Geography An International Per.. Vol. 3 Indian Perspective.
6. Pathak, C. R. (2003): Spatial Structure and Processes of Development in India. Regional Science Ass., Kolkata.
7. Sharma, T.C. (2013): Economic Geography of India. Rawat Publication, Jaipur.
8. Singh R. L., (1971): India: A Regional Geography, National Geographical Society of India.
9. Singh, Jagdish., (2003): India - A Comprehensive & Systematic Geography, Gyanodaya Praka, Gorakhpur.

Shital

MINOR COURSE- MN-1C: (Practical)

Marks: Pr (ESE: 3 Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practical-01) 30 Hours

Course Objective:

The Learning objective of this course are as follows:

1. To explain the concept of quantitative information in Geographical study.
2. To explain the importance and sources of data
3. To familiarise students about methods of graphic data representations

Course Learning Outcomes:

After the completion of course, the students will have ability to:

1. Use statistical methods and techniques in geographical analysis
2. Understand quantitative data, graphical data representation.
3. Understand ways and sources of primary and secondary data

Module I: Nature of data- primary and secondary, methods of data collection- Questionnaire and schedule. Statistical Techniques- Mean, Median and Mode **10 marks**

Module II: Instrumental Survey- Plane table (radiation and intersection method), Prismatic compass survey (Open and Closed traverse) **10 marks**

Module III: Viva-Voce. **5 marks**

Books Recommended:

1. Singh, L. R (2013): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad
2. Singh and Singh (1999): Elements of Practical Geography, Kalyani Publishers, New Delhi.

SEMESTER- VII

MINOR COURSE- MN-1D: Environmental Geography & Sustainable Development

(Theory)

(Credits: Theory- 03) 45 Hours

Marks: 15 (5 Attd. + 10 SIE: 1 Hr) + 60(ESE: 3 Hr.) = 75	Pass Marks: Th (SIE + ESE) = 30

Course Objective:

The Learning objectives of this course are as follows-

1. To familiarise students about structures, functions of ecosystems, environmental problems
2. To make students learn about sustainable development

Course Learning Outcomes:

After the completion of course, the students will have ability to:

1. Appreciate the structure and functions of ecosystems with examples
2. Understand the environmental problems and relevant management strategies
3. Understand the sustainable development, good governance, national environmental policy

Course Content:

Module I: Environmental Geography: Concepts and Approaches; Ecosystem – Concept and Structure; Ecosystem Functions.

Module II: Environmental Problems and Management: Air Pollution; Solid and Liquid Waste; Biodiversity Loss

Module III: Sustainable Resource Development: Definition, Components and Limitations

Module IV: The Millennium Development Goals: National Strategies and International Experiences

Module V: Sustainable Development Policies and Programmes: The proposal for SDGs at Rio+20; SDGs.

Principles of Good Governance; National Environmental Policy

Books Recommended:

1. Anand, Subhash (2010) Solid Waste Management, Mittal Publication, New Delhi.
2. Casper, J.K. (2010) Changing Ecosystems: Effects of Global Warming. Info base Pub. New York.
3. Kumaraswamy K., Alagappa Moses A., and M. Vasanthy (2018) Glimpses of Environmental Sciences, Notion
4. Press, Chennai.
5. Miller, G.T. (2007) Living in the Environment: Principles, Connections, and Solutions, Brooks/ Cole Cengage
6. Learning, Belmont.
7. Agyeman, Julian, Robert D. Bullard and Bob, Evans., (Eds.) (2003): Just Sustainabilities: Development in an
8. Unequal World. London: Earthscan. (Introduction and conclusion.).
9. Ayers, Jessica and David, Dodman, (2010): "Climate change adaptation and development I: the state of the debate". Progress in Development Studies 10(2): 161-168.
11. Baker, Susan., (2006): Sustainable Development. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge.
12. Lohman, Larry., (2003): Re-imagining the population debate, Corner House Briefin.

MINOR COURSE- MN-1D: (Practical)

(Credits: Theory- 03) 45 Hours

Marks: 15 (5 Attd. + 10 SIE: 1 Hr) + 60(ESE: 3 Hr.) = 75	Pass Marks: Th (SIE + ESE) = 30

Course Objective:

The Learning objective of this course are as follows-

1. To explain the concept of quantitative information in Geographical study.
2. To explain the importance and sources of data
3. To familiarise students about methods of graphic data representations

Course Learning Outcomes:

After the completion of course, the students will have ability to:

1. Use statistical methods and techniques in geographical analysis
2. Understand quantitative data, graphical data representation.
3. Understand ways and sources of primary and secondary data

Course Content:

Module I: Sources of Data- primary, secondary; Measures of central tendency- Mean, median and mode **10 marks**

Module II: Graphic representation- histogram, Ogive, polygons **10 marks**

Module III: Viva-Voce. **5 marks**

Books Recommended:

1. Mahmood A., 1977: Statistical Methods in Geographical Studies, Concept. Pal S. K., 1998: Statistics for Geoscientists, Tata McGraw Hill, New Delhi.

2. Sarkar, A. (2013) Quantitative geography: techniques and presentations. Orient Black Swan Private Ltd., New Delhi

3. Silk J., 1979: Statistical Concepts in Geography, Allen and Unwin, London. Spiegel M. R.: Statistics, Schaum's Outline Series.

4. Yeates M., 1974: An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York. 5. Sinha, Indira (2007) Sankhyiki bhugol. Discovery Publishing House, New Delhi

MULTI-DISCIPLINARY COURSE- MDC: Geography

Marks: Th (ESE: 3 Hrs) = 75	Pass Marks: Th (ESE) = 30

(Credits: Theory- 03) 45 Hours

Instruction to Question Setter

End Semester Examination (ESE 75 marks):

There will be ***two groups*** *of questions* ***A*** *and* ***B****.* ***Group A is compulsory*** *which will contain three questions.* ***Question No. 1 will be very short answer type*** *consisting of five questions of 1 mark each.* ***Question No. 2 & 3 will be short answer type*** *of 5 marks each.* ***Group B will contain descriptive type*** *seven questions of fifteen marks each, out of which any four are to be answered.*

Note: *There may be subdivisions in each question of group* ***B.***

Course Objectives:

1) To familiarise students with the meaning, nature, and scope of Geography.
2) To understand the origin of earth and the man-environment relationship.
3) To familiarise students about physical geography, demography, social, and economic attributes.

Learning Outcomes:

On the successful completion of this course, the students will be able to understand Geography as a:

1) Study of man-environment relationship.
2) Study of physical aspects of the earth surface.
3) The human and economic aspects of geography.

Course Content:

Module-I: Meaning, Nature, and Scope of Geography; Relationship of Geography with other Sciences; Man- Environment Relationship; Importance and Types of Maps, Scale and Diagrams; Remote Sensing, GIS, GPS, Careers in Geography.

Module-II: Origin of the Earth- Big Bang Theory, Earth's Materials- Rocks; Landforms- Continent, Ocean, Mountain, Plateau, Plain, Lake; Composition and Structure of Atmosphere; Cyclone's Impact and Mitigation- Tropical and Temperate; Monsoon Winds; Ocean Currents- Indian Ocean and Atlantic Ocean.

Module-III: Earth and its Life; Evolution of Man; Population distribution of the World and India; Migration; Resource- Types, Utilisation and Conservation; Agriculture Types- Intensive

Subsistence Agriculture, Commercial Farming, Plantation Agriculture; Industries- Iron and Steel, Cotton Textile, Food Processing; Problems of Rural and Urban settlements; Tourist Places of India and Jharkhand.

Books Recommended:

- Getis, Arthar, Mark D. Blelland, Victoria Getis, *Introduction to Geography*, McGraw hills.
- Hussain, Majid, *Human Geography*, Rawat Publication, Jawahar Nagar, Jaipur.
- Kaushik, S. D., *Geographical Thought and Methodology*, Rastogi Publication, Meerut.
- Lal, D. S., *Climatology*, Sarda Pustak Bhawan, Allahabad.
- Singh, Savinder, *Physical Geography*, Pravalika Publications, Allahabad

Minor from Vocational Course				
MN-2A	SEMESTER-II	DISASTER MANAGEMENT	Theory	4 Credits
MN-2B	SEMESTER-IV	SUSTAINABLE DEVELOPMENT	Theory	4 Credits
MN-2C	SEMESTER-VI	REMOTE SENSING, GIS, AND GPS	Theory	4 Credits
MN-2D	SEMESTER-VIII	AMANAT	Theory	4 Credits

Minor from Vocational Course

I.MINOR COURSE-MN-2A: (Credits:Theory-04)

Marks: 25 (Viva Voce) + 75 (ESE: 3Hrs) = 100 Pass Marks: Th (Viva Voce + ESE) = 40

Instruction to Question Setter for

End Semester Examination (ESE 75 marks):

There will be two group of questions. Group A is compulsory which will contain three questions. Question No.1 will be very short answer type consisting of five questions of 1 mark each. Question No. 2&3 Will be short answer type of 5 marks. Group B will contain descriptive type six questions of fifteen marks each, out of which any four are to answer.

Note: There may be subdivisions in each question asked in Theory Examinations.

SEMESTER II

Disaster Management

Total credit -04 **Teaching Hours = 45 Hrs**

Course Objectives:

1. The student will get to know about meaning, concept, types and difference between disaster and hazard.

2. Students will understand about the causes, distribution, mapping, preparedness, and mitigation of different disasters in India including man-made disasters also.

3. They will study different major events related to man-made and natural hazards as a case study.

Learning Outcome:

After the completion of this course the student will get acquainted to the meaning, concept and types of disaster and hazard. They will also get aware about the mitigation measures in different natural and man-made disaster and hazards and recent major events also.

Module-I

Disasters: Meaning, Definition and Concepts: Hazards and Disasters: Risk and Vulnerability; Classification; Disaster in India: Flood, Glacial Lake Outburst Flood (GLOF): Causes, Impact, Distribution, Mapping and Mitigation; Landslide: Causes, Impact, Distribution, Mapping and Mitigation; Drought: Causes, Impact, Distribution, Mapping and Mitigation.

Module- II

Earthquake & Tsunami: Causes, Impact, Distribution, Mapping and Mitigation; Cyclone: Causes, Impact, Distribution, Mapping and Mitigation

Manmade disasters (Terrorism-Human Bomb, War, Industrial Disaster, Rail and Road Accident): Causes, Impact, Distribution, Mapping and Mitigation

Module-III

Case studies related to major events: Uttarakhand (Kedarnath) Tragedy 2013, Bhuj Earthquake 2002, Bhopal Gas Tragedy 1984, Tsunami in Indian Ocean 2004, Chas-nala (Coal Mine) Disaster

Mitigation and Role of NDMA and NIDM Response, Preparedness and Mitigation to Disasters and Hazards

Suggested Books:

1. Sharma, S.C. (2022): Disaster Management, Khanna Publication, New Delhi

2. Subramanian S. (2018): Disaster Management, Vikas Publishing House, Noida

3. Singh, S. (2018): Disaster Management, Pravalika Publications, Prayagraj

4. Pandey, M. (2014): Disaster Management, Wiley Publication, New Delhi.

5. Singh,N. (2008): Aapda Prabandhan, Radha Publication, New Delhi

6. Joshi, M. (2019): Aapda Prabandhan Jaagrukta Evam Aadhunikikaran, Akhand Publishing House, New Delhi

SEMESTER IV

Sustainable Development

Total credit -04 **Teaching Hours = 45 Hrs**

I.MINOR COURSE-MN-2B: (Credits:Theory-04)

Marks: 25 (Viva Voce) + 75 (ESE: 3Hrs) = 100 Pass Marks: Th (Viva Voce + ESE) = 40

Course Objectives:

1. Students will understand about the meaning, concept and approaches of Sustainable Development.

2. They will become aware of conservation of environment.

3. They will know about the exigencies of environmental degradation and amelioration measures through different awareness programs.

Learning Outcome:

After the completion of this course, they will get to know about the importance and need of Sustainable approaches in today's consumerist era. They will also know about the efforts attempted on international as well as on national level for optimum utilization of resources through viable technique.

Module –I

Sustainable Development: Meaning, Concept, Definition, History, Components and Scope; Ecology and Environmental conservation, Biodiversity loss and ecological imbalance; the role of higher education in sustainable development; Agenda 21 (1992); The Millennium Development Goals; Sustainable Development Goals. UNFCCC, COP, IPCC.

Module –II

Challenges to Sustainable Development; Sustainable Agriculture and forestry; Sustainable resource utilization: Water, mineral, soil and forest; Human Development; The human right to health and education; Poverty and disease; The Challenges of Health Coverage in Low-Income Countries; Sustainable Regional Development: Need and examples from Cities, Coastal, Rural and Mountainous area

Module –III

Inclusive Development: Education, Health; Climate Change: Carrying Capacity; Sustainable Development Policies and Programmes; Summits related to environment: Stockholm conference, Montreal Protocol, Brundtland Commission, Earth Summit, Paris Agreement (COP 21); NITI Aayog and Sustainable Development; National Environmental Policy.

Suggested Books: -

1. G. Arjun, Sarkar A. & others (2019): Environmental Issues & Sustainable Development, Notion India Press, Chennai

2. Ahlawat, A. (2019): Sustainable development Goals, Notion India Press, Chennai

3. Ossewarde, M.J. (2018): Introduction to Sustainable Development, Sage Publication, New Delhi

4. Mishra, J. (2018): Growth with Sustainability, Notion India Press

5. Sedana, N. & Indapurkar, K.: Susainable Development Goals, Bloomsberry Publication House, London

SEMESTER VI

Remote Sensing, GIS & GPS

I.MINOR COURSE-MN-2C: (Credits:Theory-04)

Marks: 25 (Viva Voce) + 75 (ESE: 3Hrs) = 100 Pass Marks: Th (Viva Voce + ESE) = 40

Total credit -04 **Teaching Hours (Module I & II -30 Hrs. + Module III- 30 Hrs.) =60 Hrs**

Course Objectives

To understand the meaning, concept, and definition of Remote sensing and GIS, as an important tool in the study and explaining Geographic phenomenon straddle over Earth surface. To make aware the students about satellite, remote sensing, data processing, manual and digital image interpretation, and navigation.

Learning outcome

After the completion of course, the students will have ability to appreciate and apply the new technology in mapping of resources, their locations and availability.

Module 1:

Remote Sensing: Meaning and Types; Significance and its Application in Modern Era; Electromagnetic-waves and their Spectrum; Scanner (Along track & Across-track); Spectral Signature and Resolution; Remote Sensing Platforms; Image Interpretation key; Relief Displacement; Space Programme of India for Remote Sensing and Communication satellites.

Module 2:

Evolution, Definition and Application of GIS; Components of GIS; Coordinate system; Raster and Vector Data; Meaning and concept of GPS; Various Navigation Satellites: IRNSS, Google Earth and Google Map; Geo-Coordinates; Geographic Indication (GI);

Module 3: (Practical)

A Project file consisting of two exercises will be done from Aerial Photo and Satellite Images; thematic map-making process; raster and vector data (point, line, polygon); Geo-referencing; image classification (supervised and unsupervised) and image enhancement process using any GIS Software on above-mentioned themes.

Suggested Books:

1. Jensen, J.R. (1996): Remote sensing of the environment. An Earth Resource Perspective, Pearson Education, New Delhi

2. Campbell, J.B., 1996, Introduction to remote sensing, Taylor and Francis, London

3. LIliesand, Keifer, and Chipman (2004): Remote sensing and image interpretation, John Wiley and Sons, Singapore

4. Reddy, M. Anji (2008): Remote sensing and Geographical Information system, B.S. publication,

5. Rashid,S.M., (1993): Remote Sensing in Geography, Manak Publication, New Delhi

6. Bhatta, B.,(2021): Remote Sensing and GIS, Oxford University Press, New Delhi

SEMESTER VIII

Amanat

I.MINOR COURSE-MN-2D: (Credits:Theory-04)

Marks: 25 (Viva Voce) + 75 (ESE: 3Hrs) = 100 Pass Marks: Th (Viva Voce + ESE) = 40

Total credit -03 Teaching Hours (Module I & II -30 Hrs. + Module III- 30 Hrs.) =60 Hrs

Aminee is an old occupation that is related to the measurement of land. It is very relevant and significant to cadastral land surveys in the present era. This course has the potential to learners' employability in various cadastral land surveys of private as well as Govt. institutions.

Course Objectives

1. To provide basic and practical knowledge of surveying that are used in various land survey in general and cadastral in particular.

2. Learners will be able to comprehend the basic and practical knowledge of land survey in class as well as field surveys.

Learning outcome

This course is concerned to provide basic and applied knowledge of Amanat survey which leads learners towards getting employment opportunity as surveyor in cadastral land and map survey.

Module – I

Introduction, the objective of study Amanat/Aminee, Scope of Survey, Historical Background of the cadastral survey, the stages in the preparation of the record of right and preparation of village maps, Principles of surveying,

Module – II

Principle and evolution of Toposheet, GIS and, Remote sensing, Aerial survey and GPS, Present day importance of a Surveyor/Amin, Methodology of chain surveying (both chain and tape and gunters chain survey), Theodolite traversing, Plane Table Survey, Prismatic compass survey, Dumpy level survey.

Module-III (Practical)

Construction of scale: Simple, Diagonal and Comparative; Conventional Sign; Details of the unit of measurement, Area Calculation (Local system, British units and Metric unit), enlargement and reduction of plots, Measurement of land area with the help of Gunter's chain, Plane Table Survey intersection method, resection, Three point problem (tracing paper, trial and error and Bessel's Method), A dumpy level survey (at least for recording the height of land surface/road for a length of 1000 feet and meter).

Suggested Books:

1. Walia, R.M. (2018): Amanat (vekur), Notion Press, Chennai.
2. Shrivastav, C.K. (2020): Bhoo Mapan Vidhi evam Uske Tatva (Hkw&ekiu fof/k ,oa mlds RkRo), Universal Law Publishing Co., New Delhi.
3. Sharma, J.P. (2018): Prayogik Bhoogol, Rastogi Prakashan, Meerut.
4. Singh, R. L. & Singh, Rana P.B. (Elements of Practical Geography, Kalyani Publishers, New Delhi.
5. Gopi, S., Sathikumar, R. & Madhu, N. (2007): Advanced surveying total station, GIS and Remote Sensing, Pearson, New Delhi.