Department of Geography
ST. XAVIER'S COLLEGE, Ranchi
(An Autonomous College of Ranchi University)

No. 01 / SXCGEO **Dated: 19/11/2025**

BOARD OF STUDIES
CURRICULUM REVIEW COMMITTEE

It is notified for the general information of all concerned that the **BOARD OF STUDIES, Curriculum Review Committee** dated **19/11/2025** approved the changes / modifications in the **GEOGRAPHY B. A. & M.A. syllabus** which will be effective from the **(ACADEMIC SESSION 2025-2026 & ONWARDS).**

FACULTY

1. Animesh Roy
2. Dr. Rajeev Ranjan Shrivastava
3. Dr. Shiv Kumar
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5. Mrs. Angeline Toppo

Two Experts:

1. Dr. Sarvottam Kumar, Associate Professor, Dept. of Geography, DSPM University, Ranchi.

2. Dr. Smita Linda, Dept. of Geography, Ranchi Women's College, Ranchi- 834001

V. C. Recommendation:
1. Dr. Jitendra Shukla, PG - Dept. of Geography, Ranchi University, Ranchi.

Post Graduate Alumnus:
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One representative from Industry /corporate sector:
1. V. K. Saravghi, Swastik Industries, Ranchi.

Animesh Roy
Head-Department of Geography
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Copy to: -
1. Principal of College along with a copy of B.A Syllabus for record / necessary action.
2. The Controller of Examinations.

Department of Geography

St. Xavier's College, Ranchi

(An Autonomous College of Ranchi University)

COURSES OF STUDIES

NEP FYUGP CURRICULUM

GEOGRAPHY HONOURS/

GEOGRAPHY HONOURS WITH RESEARCH PROGRAMME

FOR UNDERGRADUATE COURSES UNDER RANCHI UNIVERSITY, RANCHI

Implemented w.e.f.
Academic Session 2025-26 & onwards

Table of Contents

Contents

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HIGHLIGHTS OF FYUGP CURRICULUM

PROGRAMME DURATION

- The Full-time, Regular UG programme for a regular student shall be for a period of four years with multiple entry and multiple exit options.
- The session shall commence from the **1st of July**.

ELIGIBILITY

- The selection for admission will be primarily based on the availability of seats in the Major subject and marks imposed by the institution. Merit point for selection will be based on marks obtained in the Major subject at Class 12 (or equivalent level) or the aggregate marks of Class 12 (or equivalent level) if the Marks of the Major subject is not available. Reservation norms of the Government of Jharkhand must be followed as amended in times.
- UG Degree Programmes with Double Major shall be provided only to those students who secure a minimum of 75% overall marks or 7.5 CGPA or higher.
- Other eligibility criteria, including those for multiple entry, will be in light of the UGC Guidelines for Multiple Entry and Exit in Academic Programmes offered in Higher Education Institutions.

ADMISSION PROCEDURE

- The reservation policy of the Government of Jharkhand shall apply in admission and the benefit of the same shall be given to the candidates belonging to the State of Jharkhand only. The candidates of other states in the reserved category shall be treated as General category candidates. Other relaxations or reservations shall be applicable as per the prevailing guidelines of the University for FYUGP.

VALIDITY OF REGISTRATION

- Validity of a registration for FYUGP will be for a maximum of **Seven years** from the date of registration.

ACADEMIC CALENDAR

- An Academic Calendar will be prepared by the University to maintain uniformity in the UG Honours/ Honours with Research Programmes and PG Diploma Programmes, running in the colleges under the university (Constituent/Affiliated).
- **Academic Year:** Two consecutive (one odd + one even) semesters constitute one academic year.
- **Semester:** The Odd Semester is scheduled from **July to December,** and the Even Semester is from **January to June**. Each week has a minimum of 40 working hours spread over 6 days.
- Each semester will include Admission, coursework, conduct of examination and declaration of results, including semester break.
- To undergo an 8-week summer internship/ apprenticeship during the summer camp, the Academic Calendar may be scheduled for academic activities as below:
  a) Odd Semester: **From the first Monday of August to the third Saturday of December**
  b) Even Semester: **From the first Monday of January to the third Saturday of May**
- An academic year comprising 180 working days in the least is divided into two semesters, each semester having at least 90 working days. With six working days in a week, this would mean that each semester will have 90/ 6 = 15 teaching/ working weeks. Each working week will have 40 hours of instructional time.
- Each year, the University shall draw out a calendar of academic and associated activities, which shall be strictly adhered to. The same is non-negotiable. Further, the Department will make all reasonable endeavours to deliver the programmes of study and other educational services as mentioned in its Information Brochure and website. However, circumstances may change, prompting the Department to reserve the right to change the content and delivery of courses, discontinue or combine courses and introduce or withdraw areas of specialization.

PROGRAMME OVERVIEW/ SCHEME OF THE PROGRAMME

- Undergraduate degree programmes of either 3 or 4-year duration, with multiple entries and exit points and re-entry

options within this period, with appropriate certifications such as:

- UG Certificate after completing 1 year (2 semesters) of study in the chosen fields of study, provided they complete one vocational course of 4 credits during the summer vacation of the first year or internship/ Apprenticeship in addition to 6 credits from skill-based courses earned during the first and second semesters.,
- UG Diploma after 2 years (4 semesters) of study diploma provided they complete one vocational course of 4 credits or internship/ Apprenticeship/ skill based vocational courses offered during the first year or second year summer term, in addition to 9 credits from skill-based courses earned during the first, second, and third semester.
- Bachelor's Degree after a 3-year (6 semesters) programme of study,
- Bachelor's Degree (Honours) after a 4-year (8 semesters) programme of study.
- Bachelor's Degree (Honours with Research) after a 4-year (8 semesters) programme of study to the students undertaking a 12-credit Research component in the fourth year of FYUGP.

CREDIT OF COURSES

The term 'credit' refers to the weightage given to a course, usually in terms of the number of instructional hours per week assigned to it. The workload relating to a course is measured in terms of credit hours. It determines the number of hours of instruction required per week over a semester (minimum 15 weeks).

a) One hour of teaching/ lecture or two hours of laboratory /practical work will be assigned per class/interaction.

One credit for Theory = 15 Hours of Teaching
One credit for Practicum = 30 Hours of Practical work
One credit for Internship = 02 Weeks of Practical experience

b) For credit determination, instruction is divided into three major components:
Hours (L) – Classroom Hours of one hour duration.
Tutorials (T) – Special, elaborate instructions on specific topics of one hour duration
Practical (P) – Laboratory or field exercises in which the student has to do experiments or other practical work of a two-hour duration.
Internship – For the Exit option after any academic year of a Four-year U.G. Programme for the award of U.G. Certificate, U.G. Diploma, U.G. Degree (Level 4.5, 5 or 5.5 respectively), Students can either complete two 4-week internships worth 2 credits each or one 8-week internship for all 4 credits. This practical experience connects academic learning with real-world applications, offering valuable exposure to professional environments in their fields of study

CHANGE OF MAJOR OR MINOR COURSES

- The change of Major or Minor courses may be allowed only once after the Second Semester and before the third Semester in the FYUG Programme, depending on the provisions laid by the FYUGP and the conditions laid by the Institution.

CALCULATION OF MARKS FOR THE PURPOSE OF THE RESULT

- Students' final marks and the result will be based on the marks obtained in the Semester Internal Examination and End Semester Examination organized taken together.
- Passing in a subject will depend on the collective marks obtained in the Semester internal and End Semester University Examination. However, students must pass in Theory and Practical Examinations separately.

PROMOTION CRITERIA

First degree programme with a single major (160+4=164 credits):

i. The Requisite Marks obtained by a student in a particular subject will be the criteria for promotion to the next Semester.
ii. No student will be detained in odd Semesters (I, III, V & VII).
iii. To get promotion from Semester-II to Semester-III a student will be required to pass in at least 75% of the Courses in an academic year, a student has to pass in minimum 11 papers out of the total 14 papers. It is further necessary

to procure pass marks in minimum of 50% papers of the current semester i.e. the student has to pass in 4 papers out of 7 papers in Semester-II.

iv. To get promotion from Semester-IV to Semester-V (taken together of Semester I, II, III & IV) a student has to pass in minimum of 20 papers out of the total 26 papers. It is further necessary to procure pass marks in minimum of 50% papers of the current semester i.e. the student has to pass in 3 papers out of 6 papers in Semester-IV.

v. To get promotion from Semester-VI to Semester-VII (taken all together of Semester I, II, III, IV, V & VI) a student has to pass in minimum of 27 papers out of the total 36 papers. It is further necessary to procure pass marks in minimum of 50% papers of the current semester i.e. the student has to pass in 3 papers out of 5 papers in Semester VI.

vi. However, it will be necessary to procure pass marks in each of the papers before completion of the programme.

First degree programme with dual major (192+4=196 credits):

i. Please refer to the FYUGP Regulations for the detailed provisions of Double Major and Dual Degrees.

ii. No student will be detained in odd Semesters (I, III, V & VII).

iii. To get promotion from Semester-II to Semester-III a student will be required to pass in at least 75% of the Courses in an academic year, a student has to pass in minimum 11 papers out of the total 15 papers. It is further necessary to procure pass marks in minimum of 50% papers of the current semester i.e. the student has to pass in 4 papers out of 8 papers in Semester-II.

iv. To get promotion from Semester-IV to Semester-V (taken together of Semester I, II, III & IV) a student has to pass in minimum 20 papers out of the total 27 papers. It is further necessary to procure pass marks in minimum of 50% papers of the current semester i.e. the student has to pass in 4 papers out of 7 papers in Semester-IV.

v. To get promotion from Semester-VI to Semester-VII (taken all together of Semester I, II, III, IV, V & VI) a student has to pass in minimum 28 papers out of the total 37 papers. It is further necessary to procure pass marks in minimum of 50% papers of the current semester i.e. the student has to pass in 3 papers out of 6 papers in Semester VI.

vi. However, it will be necessary to procure pass marks in each of the papers before completion of the programme.

PUBLICATION OF RESULTS

- The examination result shall be notified by the Controller of Examinations of the University in different newspapers and the same is to be posted also on the University website.
- If a student is found indulging in any malpractice/ unfair means during an examination, the examination taken by the student for the semester will be cancelled. The candidate has to reappear in all the papers of the session with the students of the next session, and his one year will be detained. However, marks secured by the candidate in all previous semesters will remain unaffected.
- There shall be no Supplementary or Re-examination for any subject. Students who have failed in any subject in an even semester may appear in the subsequent even semester examination to clear the backlog. Similarly, the students who have failed in any subject in an odd semester may appear in the subsequent odd semester examination to clear the backlog.

Regulations related to any concern not mentioned above shall be guided by the Regulations of the Ranchi University for FYUGP.

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COURSE STRUCTURE FOR FYUGP **'HONOURS/ RESEARCH/ PG DIPLOMA'**

Table 1: Credit Framework for Four-Year Undergraduate Programme (FYUGP) under State Universities of Jharkhand [Total Credits = 164]

Academic Level	Level of Courses	Semester	**MJ**: Discipline Specific Courses – Core or Major (80)	**AC**: Associated core courses from discipline/ Interdisciplinary/ vocational (8)		**ELC**: Elective courses may be opted from four paths [Follow table 2] (24)	**MDC**: Multidisciplinary Courses (From a pool of Courses) (9)	**AEC**: Ability Enhancement Courses (Modern Indian Language and English) (8)	**SEC**: Skill Enhancement Courses (9)	**VAC**: Value Added Courses (6)	**IKS**: (i) Indian Knowledge System (2) & **SA**: (ii) Social awareness (2)	**RC**: Research Courses (4+8)/ **AMJ**: Advanced Courses instead of Research (4+4+4)/	**PGD**: PG Diploma Level 6 (4+4+4)	**Total Credits**	**IAP**: Internship/Apprenticeship/ Project/ Vocational course/ Dissertation (4) **In between Sem I to Sem-VI**
	1	2	3 (Major- 80)	4 (Minor-32)			5	6	7	8	9	10	11	12	13
Level 4.5	Level 100-199: **Foundation or Introductory courses**	**I**	4	4	---	---	3	2	3	2	2	---	---	**20**	4
		II	4	---	4	---	3	2	3	2	2	---	---	**20**	
		Exit Point: Undergraduate Certificate provided with Summer Internship/ Project/ Vocational course/ Dissertation (4 credits)													
Level 5	Level 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/ Project/ Vocational course/ Dissertation (4 credits)													
Level 5.5	Level 300-399: **Higher-level courses**	**V**	4+4+4+4	---		4	---	---	---	---	---	---	---	**20**	
		VI	4+4+4+4	---		4	---	---	---	---	---	---	---	**20**	
		Exit Point: Bachelor's Degree with Summer Internship/ Project/ Vocational course/ Dissertation (4 credits)												**124**	
Level 6	Level 400-499: **Advanced courses** Hons with Research (>7.5 CGPA)/ Honours/ PG Diploma	**VII**	4+4+4	---		4	---	---	---	---	---	4	4	**20**	---
		VIII	4+4	---		4	---	---	---	---	---	8	4+4	**20**	
		Exit Point: Bachelor's Degree with Honours/ Honours with Research/ PG Diploma Level 6												**164**	

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

Table 2: Options for Elective Minor Courses

Path A	Path B	Path C	Path D
ELC-A; Elective courses from Interdisciplinary Subjects 1 & 2 (24)	**ELC-B**; Elective courses from discipline (24)	**ELC-C**; Elective courses from vocational (24)	**ELC-D**; Elective courses from discipline for Double Major (48)
This pathway may be recommended for students who wish to develop core competency in multiple disciplines of study. In this case, the credits for the minor pathway shall be distributed among the constituent disciplines/subjects. If students pursuing FYUGP are awarded a UG Degree in a Major discipline, they are eligible to mention their core competencies in other disciplines of their choice if they have earned 12 credits each from pathway courses of two particular disciplines. In the first three years of FYUGP, this pathway is composed of one Major discipline with 60 credits from 15 courses, and two other disciplines, with 12 credits from 3 courses in each discipline. In this pathway, if the students choose one of the two disciplines for 12 credits in one discipline then they should choose a different discipline for the other 12 credits. If the students continue to the fourth year of FYUGP, the students need to earn an additional 4 credits in both disciplines.	This pathway may be recommended to those students who wish for an in-depth study in more than one discipline with a focus on one discipline (Major) and relatively less focus on the other (Minor). If students exit at the end of the third year of FYUGP, they are awarded a Major Degree in a particular discipline and a Minor in another discipline of their choice, if they earn a minimum of 24 credits from the courses in the Minor discipline. If the students continue to the fourth year of FYUGP, they should earn a minimum of 32 credits in the Minor discipline, to be eligible for a UG Degree (Honours) with a Major and a Minor. For this, in the fourth year, they should earn an additional minimum of 8 credits through 2 courses in the Minor discipline.	This pathway may be recommended to those students who wish for exposure to a vocational discipline in addition to the in-depth study in the Major discipline. The credit requirements for Major and Vocational Minor disciplines in this pathway are the same as those for Major with Minor pathway, except that the Minor courses are in a vocational discipline. If students exit at the end of the third year of FYUGP, they are awarded a Major Degree in a particular discipline and a Minor in vocational discipline of their choice, if they earn a minimum of 24 credits from the Vocational courses. If the students continue to the fourth year of FYUGP, they should earn a minimum of 32 credits in the vocational discipline. For this, in the fourth year, they should earn an additional minimum of 8 credits through 2 courses in the Vocational discipline.	To secure the required minimum credits in each discipline, students who wish to opt for a Double Major should include the credits earned by them from the Multi-Disciplinary Courses, Skill Enhancement Courses, and Value-Added Courses offered by the respective Major disciplines. The Double Major pathway is extended to the fourth year. Shifting to a double major from a minor in the third semester will be allowed subject to clearance of the courses of double major (not studied earlier) in succeeding sessions. In the fourth year, the student can continue to earn the required credits in either Major A or Major B to qualify for a UG Degree (Honours)/ UG Degree (Honours with Research) in A or B. If he/she opts to continue with Major B in the fourth year, he/she should earn an additional 16 credits of 300-399 level in Major B through mandatory online courses. The institution will not provide the courses in physical mode in the fourth year of this segment.

Table 3: Credit Distribution in Elective Minor Courses during the Four Years of FYUGP

Academic Level	Level of Courses	Semester	Path A ELC; Elective courses from Interdisciplinary Subjects 1 & 2 (24)		Path B ELC; Elective courses from the discipline (24)	Path C ELC; Elective courses from vocational (24)	Path D ELC; Elective courses from the discipline for Double Major (64)
	1	2	3A. Subject 1	3B. Subject 2	4	5	6
Level 4.5	Level 100-199: **Foundation or Introductory courses**	I	---	---	---	---	4+4
		II	---	---	---	---	4+4
		Exit Point: Bachelor's Degree with Hons. with Research					
Level 5	Level 200-299: **Intermediate-level courses**	III	4	---	4	4	4+4
		IV	---	4	4	4	4+4
		Exit Point: Bachelor's Degree with Hons.					
Level 5.5	Level 300-399: **Higher-level courses**	V	4	---	4	4	4+4
		VI	---	4	4	4	4+4
		Exit Point: P.G. Diploma Degree					
Level 6	Level 400-499: **Advanced courses** Hons with Research (>7.5 CGPA)/ Honours/ PG Diploma	VII	4	---	4	4	4+4
		VIII	---	4	4	4	4+4
		Exit Point: (A) Bachelor's Degree with Hons. with Research/ (B) Bachelor's Degree with Hons./ (C) P.G. Diploma Degree					

COURSES OF STUDY FOR FOUR-YEAR UNDERGRADUATE PROGRAMME 2025 onwards

Table 4: Semester-wise Course Code and Credit Points for Single Major during the First Three Years of FYUGP

Semester	Common, Introductory, Major, Minor, Vocational & Internship Courses		Credits	
	Code	Papers	Paper	Semester
I	AEC-1	Language and Communication Skills (MIL-1; Modern Indian language Hindi/ English)	2	7 Papers (20 credits)
	VAC-1	Value Added Course-1	2	
	IKS-1	Indian Knowledge System (foundation Course)	2	
	SEC-1	Skill Enhancement Course-1	3	
	MDC-1	Multi-disciplinary Course-1	3	
	AC-1	Associated core courses from discipline/ Interdisciplinary/ vocational	4	
	MJ-1	Major paper 1 (Disciplinary/ Interdisciplinary Major)	4	
II	AEC-2	Language and Communication Skills (MIL-1; Modern Indian language English/ Hindi)	2	7 Papers (20 credits)
	VAC-2	Value Added Course-2	2	
	SA	Social Awareness Activities	2	
	SEC-2	Skill Enhancement Course-2	3	
	MDC-2	Multi-disciplinary Course-2	3	
	AC-2	Associated core courses from discipline/ Interdisciplinary/ vocational	4	
	MJ-2	Major paper 2 (Disciplinary/ Interdisciplinary Major)	4	
III	AEC-3	Language and Communication Skills (MIL-2; MIL including TRL)	2	6 Papers (20 credits)
	SEC-3	Skill Enhancement Course-3	3	
	MDC-3	IKS as a Multi-disciplinary Course-3	3	
	ELC-1	Elective courses from discipline/ Interdisciplinary/ vocational	4	
	MJ-3	Major paper 3 (Disciplinary/ Interdisciplinary Major)	4	
	MJ-4	Major paper 4 (Disciplinary/ Interdisciplinary Major)	4	
IV	AEC-4	Language and Communication Skills (MIL-2; MIL including TRL)	2	6 Papers (20 credits)
	VAC-3	Value Added Course-3	2	
	ELC-2	Elective courses from discipline/ Interdisciplinary/ vocational	4	
	MJ-5	Major paper 5 (Disciplinary/ Interdisciplinary Major having IKS)	4	
	MJ-6	Major paper 6 (Disciplinary/ Interdisciplinary Major)	4	
	MJ-7	Major paper 7 (Disciplinary/ Interdisciplinary Major)	4	
V	ELC-3	Elective courses from discipline/ Interdisciplinary/ vocational	4	5 Papers (20 credits)
	MJ-8	Major paper 8 (Disciplinary/ Interdisciplinary Major)	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	
VI	ELC-4	Elective courses from discipline/ Interdisciplinary/ vocational	4	5 Papers (20 credits)
	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	
		Total Credits, excluding one Internship (IAP) of 4 credits =	**120**	**120**

Note: It is mandatory to take One Internship of 4 credits in any one of the semesters during the first three years in FYUGP or before exit at any of the exit points if a student wishes to opt for the same.

Table 5A: Semester-wise Course Code and Credit Points for Single Major during the Fourth Year of FYUGP for Bachelor's Degree (Honours with Research)

Semester	Common, Introductory, Major, Minor, Vocational & Internship Courses		Credits	
	Code	Papers	Paper	Semester
VII A	ELC-5	Elective courses from discipline/ Interdisciplinary/ vocational	4	5 Papers (20 credits)
	MJ-16	Major paper 16 (Research Methodology)	4	
	MJ-17	Major paper 17 (Disciplinary/Interdisciplinary Major)	4	
	MJ-18	Major paper 18 (Disciplinary/Interdisciplinary Major)	4	
	RC-1	Research proposal – Planning & Techniques (Disciplinary/Interdisciplinary Major)	4	
VIII A	ELC-6	Elective courses from discipline/ Interdisciplinary/ vocational	4	4 Papers (20 credits)
	MJ-19	Major paper 19 (Disciplinary/Interdisciplinary Major)	4	
	MJ-20	Major paper 20 (Disciplinary/Interdisciplinary Major)	4	
	RC-2	Research Internship/Field Work/Project/Dissertation/Thesis	8	
		Total Credits, excluding one Internship of 4 credits =	**160**	**160**

Table 5B: Semester-wise Course Code and Credit Points for Single Major during the Fourth Year of FYUGP for Bachelor's Degree (Honours)

Semester	Common, Introductory, Major, Minor, Vocational & Internship Courses		Credits	
	Code	Papers	Paper	Semester
VII B	ELC-5	Elective courses from discipline/ Interdisciplinary/ vocational	4	5 Papers (20 credits)
	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	
	AMJ-1	Advanced Major pape-1 (Disciplinary/Interdisciplinary Major)	4	
VIII B	ELC-6	Elective courses from discipline/ Interdisciplinary/ vocational	4	5 Papers (20 credits)
	MJ-19	Major paper 19 (Disciplinary/Interdisciplinary Major)	4	
	MJ-20	Major paper 20 (Disciplinary/Interdisciplinary Major)	4	
	AMJ-2	Advanced Major paper-2 (Disciplinary/Interdisciplinary Major)	4	
	AMJ-3	Advanced Major paper-3 (Disciplinary/Interdisciplinary Major)	4	
		Total Credits, excluding one Internship of 4 credits =	**160**	**160**

Table 5C: Semester-wise Course Code and Credit Points for Single Major during the Fourth Year of FYUGP for Bachelor's Degree (with Postgraduate Diploma)

Semester	Common, Introductory, Major, Minor, Vocational & Internship Courses		Credits	
	Code	Papers	Paper	Semester
VII C	ELC-5	Elective courses from discipline/ Interdisciplinary/ vocational	4	5 Papers (20 credits)
	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	
	JOC-1	Skill based Job Oriented paper (Disciplinary/Interdisciplinary Major)	4	
VIII C	ELC-6	Elective courses from discipline/ Interdisciplinary/ vocational	4	5 Papers (20 credits)
	MJ-19	Major paper 19 (Disciplinary/Interdisciplinary Major)	4	
	MJ-20	Major paper 20 (Disciplinary/Interdisciplinary Major)	4	
	JOC-2	Skill based Job Oriented paper (Disciplinary/Interdisciplinary Major)	4	
	JOC-3	Skill based Job Oriented paper (Disciplinary/Interdisciplinary Major)	4	
		Total Credits, excluding one Internship of 4 credits =	**160**	**160**

AIMS OF BACHELOR'S DEGREE PROGRAMME IN GEOGRAPHY

Geography has been broadly accepted as a bridge discipline between human and physical sciences. In the beginning, geography focused on the physical aspects of the earth but the modern geography is an all-encompassing discipline that seeks to understand the earth and all of its human and natural processes as integrating elements. Geography has emerged through time as a trans-disciplinary subject integrating the regional diversity with the concepts of the timing of space and the spacing of time. It provides broad, human and place-centered perspectives on the transformation of rural ecology to globalized urban landscape at different levels, from the local/regional/national to global.

The broad aims of the bachelor's degree programme in Geography is intended to provide:

1. **Basic Concept:** The fundamental concepts and philosophical foundation of each course need to be discussed.
2. **Understanding Landscape:** An understanding of landscape at different levels needs to be discussed and understood for a thorough knowledge of spatial dimensions.
3. **Understanding Ecosystem Structure and Potential:** To comprehend the dynamic dimensions of human and ecosystem relationships.
4. **Human Perception and Behaviour:** Learning human perception and behaviour to acquire the geographical knowledge evolved over time, is essential to improve decision making process.
5. **Identification of Critical Problems and Issues:** Detection and identification of the critical problems and spatial issues are essential for sustainable development.
6. **Field Based Knowledge:** Field based knowledge is essential to understand the ground reality, spatial patterns and processes.
7. **Spatial Tools and Techniques:** The basics and applications of spatial tools and techniques are essential to make the studies more scientific and applicable.
8. **Statistical Techniques:** Use of statistical tools and techniques is essential for precise and objective geographic analysis and interpretation of complex phenomena.
9. **Applied Dimensions:** Identification of the critical problems and spatial issues form the core of the modern geography for various applications and decision making, including
10. **Planning:** Resources, Environment & Disaster Management, Land Use Planning, and Urban and Regional Development together with Climate Change Mitigation and Adaptation, etc.

Case Study based Analysis: There is a need to understand the specificities of the problems in specific areas for them in depth comprehension and solution. The case studies are essential, especially to find out the solutions to the lagging regions for their solutions based on first-hand information.

PROGRAM LEARNING OUTCOMES

Geography curriculum revision incorporates dynamic processes including fundamental and modern techniques, contemporary paradigms such as global initiatives like Sustainable Development Goals (SDGs), Disaster Risk Reduction (DRR), Paris Climate Action and national initiatives like smart cities, Securities of food, water, energy, human health and livelihood, biodiversity, and disaster management. The approaches are to make geography more scientific and societal-need oriented that could be the panacea of India's developmental challenges. Geography uses scientific knowledge with the current focus that includes spatio-temporal analysis, skill development, GI Science, sustainable development and human security.

The broad aim of the bachelor's degree programme in Geography is to acquire Knowledge and Understanding as follows:

1. Demonstrating the understanding of basic concepts in geography.
2. Demonstrating the coherent and systematic knowledge in the discipline of geography to deal with current issues and their solution.
3. Display an ability to read and understand maps and topographic sheets to look at the various aspects on the space.
4. Cultivate ability to evaluate critically the wider chain of network of spatial aspects from global to local level on various time scales as well.
5. Recognize the skill development in Geographical studies programme as part of career avenues in various fields like teaching, research and administration.

It is also suggested that after the completion of FYUGP Hons./Research, students should be able to demonstrate the knowledge obtained in such way so that they can explore the employability options and service to the society.

Table 6: Semester-wise Course Code and Credit Points

Semester	Courses		Examination Structure			
	Code	Courses in NEP FYUGP Syllabus of Geography Session 2025-26 & onwards	Credits	Mid Semester Theory (F.M.)	End Semester Theory (F.M.)	End Semester Practical/ Viva (F.M.)
I	MJ-1	Physical Geography	4	25	75	---
	SEC-1	Basics of Cartography	3	---	---	75
II	MJ-2	Human Geography	4	25	75	---
	SEC-2	Environmental Impact Assessment	3	---	---	75
III	MJ-3	Evolution of Geographical Thought	4	25	75	---
	MJ-4	Practical-I (Cartographic Techniques)	4	---	---	100
	SEC-3	Elementary Computer Application Software's	3	---	75	---
IV	MJ-5	IKS in Geography	4	25	75	---
	MJ-6	Fundamentals of Remote Sensing & GIS	4	25	75	---
	MJ-7	Practical-II (Remote Sensing & GIS)	4	---	---	100
V	MJ-8	World Regional Geography	4	25	75	---
	MJ-9	Geography of India & Jharkhand	4	25	75	---
	MJ-10	Economic Geography	4	25	75	---
	MJ-11	Practical-III (Instrumental Survey)	4	---	---	100
VI	MJ-12	Population Geography	4	25	75	---
	MJ-13	Environmental and Biogeography	4	25	75	---
	MJ-14	Settlement Geography	4	25	75	---
	MJ-15	Practical-IV (Statistical Methods in Geography)	4	---	---	100
VII	MJ-16	Research Methodology	4	25	75	---
	MJ-17	Social Geography	4	25	75	---
	MJ-18	Practical-V (Advanced Cartography)	4	---	---	100
	AMJ-1/	Advanced Geomorphology	4	25	75	---
	RC-1	Research Planning & Techniques	4	25	75	---
VIII	MJ-19	Hydrology & Watershed Management	4	25	75	---
	MJ-20	Practical-VI (Physical Survey Practical)	4	---	---	100
	AMJ-2	Regional Planning and Development	4	25	75	---
	AMJ-3/	Practical-VII (Advance Major Practical)	4	---	---	100
	RC-2	Project Dissertation/ Research Internship/ Field Work	8	50	---	150

* It is mandatory to take Either One Internship of 4 credits or Two Internships of 2 credits each in any one of the semesters during the first three years in FYUGP or before exit at any of the exit points if a student wishes to opt for the same.

Table 7: Semester-wise Course Code and Credit Points of Minor Courses in History

Courses		Examination Structure			
Code	Minor Courses in NEP FYUGP Syllabus of History Session 2025-26 & onwards	Credits	Mid Semester Theory (F.M.)	End Semester Theory (F.M.)	End Semester Practical/ Viva (F.M.)
MN-A	Introductory Geography	4	25	75	---
MN-B	Geography of India and Jharkhand	4	15	60	25
MN-C	Rural Development	4	15	60	25
MN-D	Environmental Geography & Sustainable Development	4	15	60	25
MN-E	Climate Change Vulnerability and Adaptation	4	15	60	25
MN-F	Disaster Management	4	15	60	25
MN-G	Human Geography	4	15	60	25

INSTRUCTION TO 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+ CAS 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+CAS 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%, 1mark; 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 50 marks):

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

B. (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.

C. (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.

D. (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.

FORMAT OF QUESTION PAPER FOR MID/ END SEMESTER EXAMINATIONS

Question format for **15 Marks**:

Subject/ Code

F.M. =15 **Time** = 1 Hr. Exam Year

General Instructions:

i. **Group A** carries very short answer-type compulsory questions.
ii. **Answer 1 out of 2** subjective/ descriptive questions given in **Group B**.
iii. Answer in your own words as far as practicable.
iv. Answer all subparts of a question in one place.
v. Numbers in the right indicate full marks for the question.

Group A

1. [5x1=5]
   i. .....
   ii. .....
   iii. .....
   iv. .....
   v. .....

Group B

2. ..... [10]
3. ..... [10]

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

Question format for **20 Marks**:

Subject/ Code

F.M. =20 **Time** = 1 Hr. Exam Year

General Instructions:

i. **Group A** carries very short answer-type compulsory questions.
ii. **Answer 1 out of 2** subjective/ descriptive questions given in **Group B**.
iii. Answer in your own words as far as practicable.
iv. Answer all subparts of a question in one place.
v. Numbers in the right indicate full marks for the question.

Group A

1. [5x1=5]
   i. .....
   ii. .....
   iii. .....
   iv. .....
   v. .....
2. ..... [5]

Group B

3. ..... [10]
4. ..... [10]

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

Subject/ Code

F.M. =50 **Time** = 1.5 Hrs. Exam Year

General Instructions:

i. **Group A** carries very short answer-type compulsory questions.
ii. **Answer 3 out of 5** subjective/ descriptive questions given in **Group B**.
iii. Answer in your own words as far as practicable.
iv. Answer all subparts of a question in one place.
v. Numbers in the right indicate full marks for the question.

Group A

1. [5x1=5]
   i. .....
   ii. .....
   iii. .....
   iv. .....
   v. .....

Group B

2. ..... [15]
3. ..... [15]
4. ..... [15]
5. ..... [15]
6. ..... [15]

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

Question format for **60 Marks**:

Subject/ Code

F.M. =60 **Time** = 3 Hrs. Exam Year

General Instructions:

i. **Group A** carries very short answer-type compulsory questions.
ii. **Answer 3 out of 5** subjective/ descriptive questions given in **Group B**.
iii. Answer in your own words as far as practicable.
iv. Answer all subparts of a question in one place.
v. Numbers in the right indicate full marks for the question.

Group A

1. [5x1=5]
   i. .....
   ii. .....
   iii. .....
   iv. .....
   v. .....
2. ..... [5]
3. ..... [5]

Group B

4. ..... [15]
5. ..... [15]
6. ..... [15]
7. ..... [15]
8. ..... [15]

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

Question format for **75 Marks**:

Subject/ Code

F.M. =75 **Time** = 3 Hrs. Exam Year

General Instructions:

i. **Group A** carries very short answer-type compulsory questions.
ii. **Answer 4 out of 6** subjective/ descriptive questions given in **Group B**.
iii. Answer in your own words as far as practicable.
iv. Answer all subparts of a question in one place.
v. Numbers in the right indicate full marks for the question.

Group A

1. [5x1=5]
   i. .....
   ii. .....
   iii. .....
   iv. .....
   v. .....
2. ..... [5]
3. ..... [5]

Group B

4. ..... [15]
5. ..... [15]
6. ..... [15]
7. ..... [15]
8. ..... [15]
9. ..... [15]

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

Question format for **100 Marks**:

Subject/ Code

F.M. =100 **Time** = 3 Hrs. Exam Year

General Instructions:

i. **Group A** carries very short answer-type compulsory questions.
ii. **Answer 4 out of 6** subjective/ descriptive questions given in **Group B**.
iii. Answer in your own words as far as practicable.
iv. Answer all subparts of a question in one place.
v. Numbers in the right indicate full marks for the question.

Group A

1. [10x1=10]
   i. .....
   ii. .....
   iii. .....
   iv. .....
   v. .....
   vi. .....
   vii. .....
   viii. .....
   ix. .....
   x. .....
2. ..... [5]
3. ..... [5]

Group B

4. ..... [20]
5. ..... [20]
6. ..... [20]
7. ..... [20]
8. ..... [20]
9. ..... [20]

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

SEMESTER I

I. MAJOR COURSE –MJ 1:
PHYSICAL GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To explain the concept, definition and scope of earth systems
2. To understand the structure of the earth, its atmosphere and its characteristic features

Course Learning Outcomes:

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

1. To classify earth into various domains according to its physical features
2. Understand the elements of weather and climate and its impacts at different scales
3. Understand the oceanic process and availability of resources.

Course Content:

Unit 1- Origin of the solar system, Earth: Interior Structure, Rocks and Rock Types; Earth Movements: Continental Drift, Plate Tectonics, Earthquake and Volcanicity

Unit 2- Geomorphic Processes: Weathering, Erosion and Mass-wasting; Cycle of erosion by Davis and Penck, Erosional and Depositional works by Rivers, Winds and Glaciers

Unit 3- Climatology- Atmospheric Composition and Structure; Insolation, Heat Budget of Earth, Atmospheric Pressure and Winds, air-masses, fronts; Cyclones: Tropical and Temperate Cyclones, Climatic classifications (Koppen's and Thornthwaite)

Unit 4- Oceanography- Ocean Floor Topography and Oceanic Water Movements: Waves, Currents and Tides. Ocean Salinity: Distribution and Determinants; Coral Reefs and Marine Deposits.

Reference Books:

1. Barry, R. G., and Chorley, R. J., (2009): Atmosphere, Weather and Climate (9th Edition),Routledge, New York.
2. Critchfield, H. J., (1987): General Climatology, Prentice-Hall of India, New Delhi
3. Gupta, L.S., (2000): Jalvayu Vigyan(Hindi),Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
4. Lal, D. S., (2006): Jalvayu Vigyan(Hindi),, Prayag Pustak Bhavan, Allahabad
5. Oliver, J. E., and Hidore J. J., (2002): Climatology: An Atmospheric Science, Pearson Education, N. Delhi.
6. Pinet, P. R., (2008): Invitation to Oceanography (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
7. Singh, S., (2009): Jalvayu Vigyan (Hindi),, Prayag Pustak Bhawan, Allahabad
8. Shukla, J (2016) Geomorphology, Disha International Publishing House, Delhi
9. Strahler, A.N., (1987) Modern Physical Geography, John Wiley and Sons, New York, Singapore.
10. Trewartha, G. T., and Horne L. H., (1980): An Introduction to Climate, McGraw- Hill.
11. Tiwari, R.K. (2020): Physical Geography, Rajasthan Hindi Akadami, Jaipur
12. Singh, Savindra (2022): Physical Geography, Prawalika Prakashan, Allahabad
13. Dayal P, Geomorphology (2019): A text book of Geomorphology

II. SKILL ENHANCEMENT COURSE- SEC 1:
BASICS OF CARTOGRAPHY

Marks: 75 Pr (ESE: 6Hrs) = 75	Pass Marks: Th (ESE) = 30

(Credits: Theory-03) **45 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students regarding the classification and elements of maps
2. To make student learn about proper utilization of maps for the development

Course Learning Outcomes:

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

1. Understand regarding the classification and elements of maps
2. Properly utilize maps for the development
3. Appreciate the preparation of various thematic maps using various cartographic techniques.

Course Content:

Unit 1- - Introduction and history of Cartography; Scale: Definition, types and methods of Graphic Representation-Plain, Comparative and Diagonal, Identification of rocks and minerals

Unit 2- Map: definition, components, classification; Properties, Uses and Limitations of- Dot, Isopleths, Choropleth, Proportional Circles, Stilgen Baur's Method, Sten De- Geer's method

Unit 3- Diagrams- Bar Diagrams- Polygraph Bar Graph, Multiple Bar Diagram, Compound Bar Diagram, Deviation Bar Diagram, Pyramid Diagram; Rectangular Diagram, Circle Diagram, Square Diagram; Three Dimensional Diagrams- Cubic or Volume Diagram, Sphere Diagram, Block pile Diagram, Rectangular Cartogram

References:

1. Misra, R.P.,(2014): Fundamentals of Cartography (Second Revised and Enlarged Edition), Concept Publishing, New Delhi.
2. Monkhouse, F. J. and Wilkinson, H. R.,(1973): Maps and Diagrams, Methuen, London.
3. Robinson, A. H.,(2009): Elements of Cartography (6th Edition), John Wiley and Sons, New York.
4. Sarkar, A.,(2015):Practical geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi
5. Sharma, J. P., (2010): Prayogic Bhugol(Hindi), Rastogi Publishers, Meerut.

SEMESTER II

I. MAJOR COURSE- MJ 2:
HUMAN GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:
The Learning objectives of this course are as follows-

1. To explain the concept, definition and themes of human geography
2. To familiarise students about human settlement types and patterns
3. To familiarise students about the division and distribution of mankind on the basis of religion, languages

Course Learning Outcomes:
After the completion of course, the students will have 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:

Unit 1- Introduction: Defining Human Geography; Major Themes; Contemporary Relevance, World migration pattern

Unit 2- Space and Society: Cultural Realm and Cultural Regions; Race and Racial classifications; Racial conflicts

Unit 3- Religious groups of the world and Languages of the World, Major linguistic families

Unit 4- Major tribes of the world; Human adaptation to extreme environment- Eskimos, Bushman, Pygmy, Gond

Reference Books:

1. Chandna, R.C., (2017): Population Geography, Kalyani Publishers, New Delhi.
2. Roy D (2022): Population Geography, 2nd Edition, Books & Allied, Kolkata
3. Daniel, P.A. and Hopkinson, M.F. (1989): The Geography of Settlement, Oliver & Boyd, London.
4. Hassan, M.I. (2005): Population Geography, Rawat Publications, Jaipur
5. Hussain, Majid., (2012):Manav Bhugol, Rawat Publications, Jaipur.
6. Johnston, R., Gregory, D., & Pratt, G., et al. (2008): The Dictionary of Human Geography, Blackwell Publication.
7. Jordan-Bychkov., et al., (2006): The Human Mosaic: A Thematic Introduction to Cultural Geography, W. H. Freeman and Company, New York.
8. Kaushik, S.D., (2010):Manav Bhugol, Rastogi Publication, Meerut.
9. Maurya, S.D., (2012):Manav Bhugol, Sharda Pustak Bhawan, Allahabad.
10. Rozenblat., Celine., Pumain., Denise and Velasquez., Elkin Eds. (2018): International and Transnational Perspectives on Urban Systems, Springer, Japan, pages 393.
11. 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.

II. SKILL ENHANCEMENT COURSE- SEC 2: ENVIRONMENTAL IMPACT ASSESSMENT

Marks: 75 Pr (ESE: 6Hrs) = 75	Pass Marks: Th (ESE) = 30

(Credits: Theory-03) **45 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students the techniques of environmental impact assessment and environmental management planning
2. To make students learn about methods of EIA, risk assessment, and cost-benefit analysis

Course Learning Outcomes:

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

1. Conduct Environmental Impact Assessment
2. Understand the Processes and stages of Environmental planning
3. Prepare EIA report

Course Content:

Unit 1: Conceptual Framework- Definition, meaning and concept of Environmental Impact Assessment (EIA) and Environmental Management Planning (EMP); Brief study of Legal and Policy Framework for Management: Air, Water, Forest. Environment Protection Act (EPA)

Unit 2: EIA- Methods and stages: Impact assessment, risk assessment, cost-benefit analysis; stakeholder's participation: Local bodies, citizens, relevant experts, assessing alternatives;

Unit 3: EMP- Components and methods, Environmental Impact (EI) reporting; EI monitoring and review; Prediction scenarios and mitigation, Environmental audit: Relevance and process, EIA/EMP case study of a mining project

References:

1. Gilpin, A. 1994. Environmental Impact Assessment: Cutting Edge for the 21st Century, Cambridge University Press
2. Khandeshwar, S.R., Raman, N.S., Gajbhiye, A.R. 2019. Environmental Impact Assessment, Dream tech Press
3. Tinsley, S. 2001. Environmental Management Plans Demystified, Rutledge.
4. Yerramilli, A., Manickam, V. 2020. Environmental Impact Assessment Methodologies, 3rd ed, BS Publication.
5. Example of an EIA report: Bengaluru Metro Rail Project: https://www.adb.org/sites/default/files/project-documents/53326/53326-001-eia-en.pdf\
6. Example of an EIA report: Vadodara–Mumbai Expressway Project: https://www.mpcb.gov.in/sites/default/files/public_hearing/exe_summary/2021-01/nationalhighwayexesummmaryeng21012021.pdf

SEMESTER III

I. MAJOR COURSE- MJ 3:

EVOLUTION OF GEOGRAPHICAL THOUGHT

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To explain the concept, definition and scope of Geography as a distinct discipline
2. To recognize the various branches, streams and school of thought in Geography
3. To understand the recent trends in geography

Course Learning Outcomes:

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

1. Distinguish the paradigms in geography discipline through time
2. Understand the geographical thinking in different regions of world
3. Appreciate the past and future trends of world geography in general and Indian geography in particular

Course Content:

Unit 1- Definition, nature and scope of geography, Development of geographical thought in India; Paradigms in Geography; Paradigmatic shift in Geography

Unit 2- Pre-Modern- Early Origins of Geographical Thinking with reference to the Classical and Medieval Philosophies.

Unit 3- Modern -Evolution of Geographical Thinking and Disciplinary Trends in Germany, France, Britain, United States of America. Debates - Environmental Determinism and Possibilism, Neo-Determinism/ Probablism Systematic and Regional, Ideographic and Nomothetic.

Unit 4- Trends - Quantitative Revolution and its Impact, Behaviouralism, Systems Approach, Radicalism, Feminism; Towards Post-Modernism, Structuralism - Changing Concept of Space in Geography, Future of Geography

Reference Books:

1. Bhat, L.S., (2009): Geography in India (Selected Themes). Pearson
2. Bonnett, A., (2008): What is Geography? Sage.
3. Dikshit, R. D., (1997): Geographical Thought: A Contextual History of Ideas, Prentice Hall India.
4. Freeman, R., (1970): Hundred year of Geography, Hutchinson. London.
5. Hartshone, R., (1959): Perspectives of Nature of Geography, Rand MacNally and Co.
6. Harvey, David., (1969): Explanation in Geography, London: Arnold
7. Holt-Jensen, A., (2011): Geography: History and Its Concepts: A Students Guide, SAGE.
8. Hussain, M., (2005): Bhougolik Chintan Ka Itihas, Rawat Publications
9. Johnston, R. J., (Ed.): Dictionary of Human Geography, Routledge.
10. Kapur, A., (2001): Indian Geography Voice of Concern, Concept Publications.
11. Martin Geoffrey J., (2005): All Possible Worlds: A History of Geographical Ideas, Oxford.
12. Sudeepta, Adhikari., (2015): Fundamentals of Geographical Thought, Orient Black Swan Pvt Ltd, Hyderabad

II. MAJOR COURSE- MJ 4:

PRACTICAL-I CARTOGRAPHIC TECHNIQUES

Marks: Pr (ESE: 6Hrs) =100	Pass Marks: Pr (ESE) = 40

(Credits: Practicals-04) **120 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):
There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 60 marks*
Practical record notebook	*= 15 marks*
Viva-voce	*= 25 marks*

Course Objectives:
The Learning objectives of this course are as follows-

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

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

1. Read and prepare maps.
2. Comprehend locational and spatial aspects of the earth surface.
3. Use and importance of maps for regional development and decision making.

Course Content:

Unit 1- Topographical maps: Interpretation, Identification of physical and cultural aspect. Construction of cross profile (serial, superimposed, projected, composite), Construction of Geological Map and its Interpretation

Unit 2- Interpretation of Weather maps: Drawing of Climograph, Hythergraph, Ergograph, Band graph, Polylinear graph, Windrose and visibility, Compound Windrose and wind star diagram

Unit 3- Projection: Map projections: classification, properties, Uses: Simple Conical with one and two standard parallels, Bonne's cylindrical Equal area, Mercator's projection. Gall's Stereographic, Sinusoidal Simple and Interrupted case

Unit 4- Construction of relief map, Slope map (after Wentworth, G.H. Smith), drainage density map of a delineated drainage basin. Construction of hypsometric curve and derivation of hypsometric basin (C. 5"x5") Plateau region

Practical Record: Practical record book- at least one exercise from all the topics.

Reference Books:

1. Misra, R.P.,(2014): Fundamentals of Cartography (Second Revised and Enlarged Edition), Concept Publishing, New Delhi.
2. Monkhouse, F. J. and Wilkinson, H. R.,(1973): Maps and Diagrams, Methuen, London.
3. Robinson, A. H.,(2009): Elements of Cartography (6th Edition), John Wiley and Sons, New York.
4. Sarkar, A.,(2015):Practical geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi
5. Sharma, J. P., (2010): Prayogic Bhugol(Hindi), Rastogi Publishers, Meerut.
6. Singh, R.L. and Singh R.P.B.,(1999): Elements of Practical Geography, Kalyani Publishers, New Delhi.
7. Singh, R.L. &Dutta, P.K., (2012):Prayogatmak Bhugol(Hindi), Central Book Depot, Allahabad
8. Singh,R.L.,& Singh, Rana. P.B.,(1991):Prayogtmak Bhugol ke Mool Tatva (Hindi), Kalyani Publishers, New Delhi
9. Steers, J.A. (1970):An Introduction to the Study of Map Projections, University of London Press, London.

III. SKILL ENHANCEMENT COURSE- SEC 3:
ELEMENTARY COMPUTER APPLICATION SOFTWARES

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

A Common Syllabus for FYUGP (Credits: Theory-03) **45 Hours**

Instruction to Question Setter
*There will be **objective type test** consisting of **Seventy-five questions of 1 mark each**. Students are required to mark their answer on **OMR Sheet** provided by the University.*

Course Objectives:

The objective of the course is to generate qualified manpower in the area of Information Technology (IT) and Graphic designing which will enable such person to work seamlessly at any Offices.

1. Basic Concept of Computer: What is Computer, Applications of Computer, Types of computer, Components of Computer System, Central Processing Unit (CPU) **(3 Hours)**

2. Concepts of Hardware: Input Devices, Output Devices, Computer Memory, Types of Memory, processing Concept of Computer **(4 Hours)**

3. Operating system: Operating System, Functions of Operating System (Basic), Introduction to Windows 11, Working on Windows 11 environment, Installation of Application Software, My Computer, Control Panel, searching techniques in windows environment, Basic of setting **(6 Hours)**

4. Concept of Software: What is Software, Types of Software, Computer Software- Relationship between Hardware and Software, System Software, Application Software, some high level languages **(4 Hours)**

5. Internet & its uses: Basic of Computer networks; LAN, WAN, MAN, Concept of Internet, Applications of Internet; connecting to internet, what is ISP, World Wide Web, Web Browsing software's, Search Engines, URL, Domain name, IP Address, using e-governance website, Basics of electronic mail, getting an email account, Sending and receiving emails. **(6 Hours)**

6. Microsoft Word: Word processing concepts, Creation of Documents, Formatting of Documents, Formatting of Text, Different tabs of word 2016 environment, Formatting Page, Navigation of Page, Table handling, Header and footer, Page Numbering, Page Setup, Find and Replace, Printing the documents **(7 Hours)**

7. Microsoft Excel (Spreadsheet): Spreadsheet Concepts, Creating, Saving and Editing a Workbook, Inserting, Deleting Work Sheets, Formatting worksheet, Excel Formula, Concept of charts and Applications, Pivot table, goal seek, Data filter, data sorting and scenario manager, printing the spreadsheet **(6 Hours)**

8. Microsoft Power Point (Presentation Package): Concept and Uses of presentation package, Creating, Opening and Saving Presentations, working in different views in Power point, Animation, slide show, Master Slides, Creating photo album, Rehearse timing and record narration **(5 Hours)**

9. Digital Education: Introduction & Advantages of digital Education, Concept of e-learning, Technologies used in e learning **(4 Hours)**

Reference Books

1. Nishit Mathur, *Fundamentals of Computer*, APH publishing corporation (2010)
2. Neeraj Singh, *Computer Fundamentals (Basic Computer)*, T Balaji, (2021)
3. Joan Preppernau, *Microsoft Power Point 2016 step by step*, Microsoft press (2015)
4. Douglas E Corner, *The Internet Book* 4th Edition, prentice –Hall (2009)
5. Wallace Wang, *Microsoft Office 2019*, Wiley (January 2018)
6. Noble Powell, *Windows 11 User Guide For Beginners and Seniors*, ASIN, (October 2021)

SEMESTER IV

I. MAJOR COURSE- MJ 5:

IKS IN GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

After completion of the course, the learner shall be able to understand:

1. Introduce students to indigenous Geographical knowledge embedded in Indian traditions.
2. To describe the changing spatial extent of Indian subcontinent through ancient to Medieval period
3. To appraise and to critique on the perspective of foreign philosophers to the Geographical aspects of India.

Course Learning Outcomes:

On successful completion of this course the student should know:

1. Association of Vedic and Puranic Geographical knowledge to modern conservation and sustainability.
2. To integrate the ancient knowledge to modern knowledge of civilization and planning to socio-cultural life.
3. To describe the changing spatial extent of Indian subcontinent through ancient to Medieval period

Course Content:

Unit-1- Indian Knowledge System and Geography– Concept, Sources of Geographic IKS, Components, contemporary challenges and opportunities; Brief introduction of ancient Indian philosophy and geographical environment; 18 Puranas, concept of Panch Kosh and Panch Mahabhoot. Indian Astronomy: as the science of determination of time, place and direction

Unit-2- Historical Geography of India-Rig Vedic India, Prithvisukta and Nadistuti Suktam and Rivers in Vedic Period, Indian concept of dwipas

Unit-3- Geographical lessons from Indus valley civilization (Harappa, Mohanjodaro and Lothal), Uttarpath in Ramayana their Archaeology and Geography.

Unit-4- History and Heritage of India through maps. Geography of Mahabharata and Ramayan; Sites of Indian Cultural Heritage with special reference to Jharkhand.

References-

1. Tripathi, Dayanath- Geographical thought- a contextual history of Ideas.
2. Ali, S.M. (1966). The Geography of Puranas, People's Publishing House, New Delhi
3. Rana, R.S. and Rawat, M.S.- Traditional ecological knowledge and natural resource management
4. Nayak, Anup and Jeffrey Alex- Geographical thought: an introduction to ideas in human geography
5. Gadgil & Guha, This Fissured Land: An Ecological History of India
6. Hussain, Majid- Indian Geography
7. Kak, Shivnath- Indian Knowledge systems

II. MAJOR COURSE- MJ 6:
FUNDAMENTALS OF REMOTE SENSING & GIS

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To explain the meaning, concept, and definition Remote sensing and GIS, as an important tool in the study and explaining geographic phenomenon
2. To familiarise students about satellite remote sensing, data processing and interpretation, classification
3. To aware students about use of GPS and GIS, its principle, working mechanism and applications

Course Learning Outcomes:

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

1. Appreciate the strength and application of remote sensing and GIS
2. Map the resources, their location and availability
3. Integrate geospatial techniques in planning and development

Course Content:

Unit 1- Remote Sensing: Meaning, Definition & Scope; Development of Remote Sensing; Components and Principle of Remote Sensing;

Unit 2- Remote Sensing Platforms & Sensors, Satellite Imagery Interpretation: Visual & Digital Interpretation Techniques; Image Rectification, Enhancement and Classification Techniques; Application of Remote Sensing

Unit 3- Geography & Geographic Information System: Definition & Development of GIS; Elements and components of GIS, Spatial Data: Types and data models; Raster & Vector Data Structures;

Unit 4- Coordinate Systems; Creation of Spatial & Non-Spatial Data Base; Basic Principles of Computer Assisted Cartography, GIS Database, Digital Elevation Models (DEM), Integration of GIS with Remote Sensing & Global Positioning System (GPS), Application of GIS

Reference Books:

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

III. MAJOR COURSE- MJ 7:
PRACTICALS-III

Marks: Pr (ESE: 6Hrs) =100	Pass Marks: Pr (ESE) = 40

(Credits: Practicals-04) **120 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):
There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 60 marks*
Practical record notebook	*= 15 marks*
Viva-voce	*= 25 marks*

Practicals:

REMOTE SENSING & GIS

Course Objectives:
The Learning objectives of this course are as follows-

1. To familiarise students to use satellite remote sensing imagery, data interpretation, ground data verification and classification using computers or manually
2. To make students learn the application of GIS, GPS technology, land use and vegetation mapping

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

1. Use and apply techniques of Remote Sensing, GIS and GPS
2. Map the resources, their location and availability and changes
3. Apply technology in solving many real time problems and issues in land use, forestry management

Course Content:

Unit 1- Satellite Data Browsing (NRSC/ Bhoonidhi, Glovis, Earth explorer) Image Analysis: Principles of Visual Image Interpretation, Recognition Elements and Interpretation Keys for Visual Interpretation. (Shape, Size, Colour, Tone, Texture, Association); Interpretation of a Satellite Image (Landsat, LISS III, LISS IV, Cartosat etc).

Unit 2- Introduction to Digital Image Processing, Image Display, Layer Stack- True Colour and False Colour Composite Images and Preparation of Interpretation Keys, Image Rectification and Registration, Image Enhancement, Preparing Mosaic, Subset

Unit 3- Land Use/land Cover analysis with any Software, Vegetation monitoring using NDVI, Supervised and Unsupervised Classification, Accuracy Assessment and Ground verification; Digital Elevation Models.

Unit 4- Introduction to GIS Software, Spatial Data Entry, Editing, Topology Creation and Linking Spatial and Non Spatial Data, Spatial Data Visualization, Output Map Generation

Practical Record: Practical record book- at least one exercise from all the topics.

Reference Books:

1. Chauniyal, D.D., (2010): Sudur Samvedan evam Bhogolik Suchana Pranali (Hindi), Sharda Pustak Bhawan, Allahabad.
2. Jensen, J.R. (2007): Remote Sensing of the Environment: An Earth Resource Perspective, Prentice-Hall Inc., New Jersey.
3. Joseph, G. (2005): Fundamentals of Remote Sensing, United Press India.

SEMESTER V

I. MAJOR COURSE- MJ 8:

WORLD REGIONAL GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To explain the physical features, drainage and climatic feature of different continents
2. To familiarise students about major physiographic region of continents

Course Learning Outcomes:

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

1. Locate physical features of the world major continents.
2. Understand climatic condition and climatic pattern of the continents.
3. Understand the drainage of the continents

Course Content:

Unit 1- Asia - Physical features, Drainage & Climatic condition; agriculture and major industry; geographical account of Great plains of China

Unit 2-Europe- Physical features, Drainage & Climatic condition, agriculture and major industry, geographical account of Steppe's grassland

Unit 3-North America - Physical features, Drainage & Climatic condition, agriculture and major industry, geographical account of Appalachian Highland

Unit 4-South America - Physical features, Drainage & Climatic condition, agriculture and major industry, geographical account of Amazon Rainforest

References-

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

II. MAJOR COURSE- MJ 9:
GEOGRAPHY OF INDIA & JHARKHAND

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about physical geography of India & Jharkhand, its demography, social attributes
2. To explain the concepts of regionalisation based on physiography, socio-cultural and economic characteristics

Course Learning Outcomes:

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

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

Course Content:

Unit 1- Physical: Physiographic Divisions, Climate- Seasons, Monsoon mechanism, Drainage, Soil and Natural Vegetation

Unit 2- Population: Distribution and Growth, Structure; Social: Distribution of Population by Race, Caste, Religion, Language, Tribes and their spatial distribution

Unit 3- Economic: Mineral and Power Resources: Distribution and Utilization of Iron Ore, Coal, Petroleum, Gas; Agricultural Production of Rice, Wheat, Cotton and Sugarcane; Industrial Development: Industrial Corridors and Industrial Regions.

Unit 4- Regional Account of Jharkhand: Geological structure, Physiography, Drainage, Climate, Natural vegetation, Population and Tribes (Santhal, Oraon, Munda); Economic features: Agriculture, Minerals and Industry -Iron and Steel Industry, Silk, Tourism

Reference Books:

1. Deshpande, C. D., (1992): India: A Regional Interpretation, ICSSR, New Delhi.
2. Douglas, L. Johnson.,(2009): World Regional Geography, Tenth edition, Pearson Education Inc, New Jersey.
3. Johnson, B. L. C., ed. (2001): Geographical Dictionary of India. Vision Books, New Delhi.
4. Khullar, D.R. (2014): India: A Comprehensive Geography, Kalyani Publishers, New Delhi.
5. Majid Husain (2009): Geography of India, Tata McGraw hill Education Private Ltd, New Delhi.
6. Pathak, C. R. (2003): Spatial Structure and Processes of Development in India. Regional Science Assoc., Kolkata.
7. Sdyasuk, Galina and P, Sengupta., (1967): Economic Regionalisation of India, Census of India.
8. Sharma, T.C. (2013): Economic Geography of India. Rawat Publication, Jaipur.
9. Singh R. L., (1971): India: A Regional Geography, National Geographical Society of India.
10. Singh, R. B. and Prokop, Pawel.,(2016): Environmental Geography of South Asia, Springer, Japan.
11. Spate O. H. K. and Learmonth A. T. A., (1967): India and Pakistan: A General and Regional Geography, Methuen.
12. Tirtha, Ranjit (2002): Geography of India, Rawat Publs., Jaipur & New Delhi.
13. Tiwari, R.C. (2007): Geography of India. Prayag Pustak Bhawan, Allahabad
14. Tiwari, R.K (2019): Jharkhand ka bhugol, Bihar Hindi Granth Akadami, Patna
15. Tiwari, R.K (2019): Jharkhand ki ruprekha, Bihar Hindi Granth Akadami, Patna

III. MAJOR COURSE- MJ 10:
ECONOMIC GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

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

Course Learning Outcomes:

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

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:

Unit 1- Nature, scope and importance of Economic Geography, Factors Affecting location of Economic Activity with special reference to Agricultural location theory (Von-Thunen) and Industrial location theory (Weber's and Losch)

Unit 2- Primary Economic Activities: Pastoralism, Hunting, Fishing, Aquaculture, Food gathering, Agriculture (Subsistence and Commercial) and Mining;

Unit3- Secondary Activities: Manufacturing, Concept of Industrial Regions (Cotton Textile, Iron and Steel), Special Economic Zones and Technology Parks. Tertiary Activities: Transport (Land, Air, Water and Pipelines), Trade (National & International)

Unit-4 Concept of Sustainable Development. Sustainable Development: Definition, Components and Limitations; MDGs and SDGs: National Strategies, Human resource development; concept, measurement, indicators and component; HDI.

Reference Books:

1. Alexander, J. W., (1963): Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Bagchi-Sen, S. and Smith, H. L., (2006): Economic Geography: Past, Present and Future, Taylor and Francis.
3. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. (2000): The New Oxford Handbook of Economic Geography, Oxford Press.
4. Coe, N. M., Kelly P. F. and Yeung H. W., (2007): Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
5. Combes, P., Mayer T. and Thisse, J. F., (2008): Economic Geography: The Integration of Regions and Nations, Princeton University Press.
6. Durand, L., (1961): Economic Geography, Crowell.
7. Hodder, B. W. and Lee, Roger, (1974): Economic Geography, Taylor and Francis
8. Knowles, R. &Wareing, J., (2004): Economic and Social Geography Made Simple, Rupa& Co., Kolkata.
9. Saxena, H.M.,(2013): Economic Geography, Rawat Publications, Jaipur.
10. Siddhartha, K., (2013): Economic Geography, Kisalaya Publications Pvt. Ltd., New Delhi

IV. MAJOR COURSE- MJ 11:
PRACTICALS-IV

Marks: Pr (ESE: 6Hrs) =100	Pass Marks: Pr (ESE) = 40

(Credits: Practicals-04) **120 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 60 marks*
Practical record notebook	*= 15 marks*
Viva-voce	*= 25 marks*

Practicals:

INSTRUMENTAL SURVEY

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about various Instruments, methods, tools and techniques of ground survey
2. To make student learn and apply project development,

Course Learning Outcomes:

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

1. Understand the importance of field work, types of survey and application of instruments for leveling
2. Handle and apply the instrument to measure height, spot height determination techniques
3. Synthesis and develop the idea of project work on the basis of secondary and primary survey.

Course Content:

Unit 1: Importance of field work, Scope and purpose, Types of survey, Principles and applications of selected survey instruments, Plane Table, Plan preparation Methods- Radiation, Intersection and Traverse method- Open and Closed. Resection method: two-point problem, three-point problem

Unit 2: Prismatic Compass: Open and closed traverse, Introduction to other instruments: Sextant, Abney Level and Indian Clinometer.

Unit 3: Dumpy Level: Traverse Survey, Spot height determination and contour plan preparation

Unit 4: Theodolite: horizontal and vertical (height) measurement, Accessible and inaccessible method; Total Station; Survey of selected area, Preparation of base map by the use of surveying instruments.

Practical Record:

a. Practical record book- at least one exercise from all the topics.

Reference Books:

1. Robinson A.H (1995) Elements of Cartography John Wiley & Sons USA
2. Sarkar A.K.(1997): Practical Geography :A Systematic Approach, Oriental Longman Calcutta
3. Sharma J.P.(2010): Prayogatmak Bhugol,(Hindi) Sahitya Bhawan, Agra
4. Monkhouse F.J and Wilkinson HR (1952) Maps and Diagrams, their Compilations and Concentration, Muthuen & Co. London.
5. Harwel JD, Newson MD. (1973)- Techniques in Physical Geography, Mc. Millan Edu. Ltd. London.
6. Sarkar, A: Practical Geography – A Systematic Approach.
7. R.L. Singh (2010) Practical Geography, Sharada Pustak Bhavan, 11, University Road, Allahabad
8. Kaanetkar and Kulkarni: Surveying and Levelling, Part-I and Part-II.
9. Sharma, J.P (2014): Prayogik Bhugol, Rastogi Publication, Meerut

SEMESTER VI

I. MAJOR COURSE- MJ 12:
POPULATION GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives
The Learning objectives of this course are as follows-
1. To familiarize student with the nature and scope of Population geography.
2. To make students learn about the population change, and its dynamics

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

Unit 1: - Nature and Scope of Population Geography, Population studies and Demography, Sources of Population Data, Factors Influencing distribution of Population; Distribution and Density patterns of Population in the World and India

Unit 2:- Concept of Population Composition, Population Change: Growth of Population in the World and India, Components of Population Change- Fertility, Mortality and Migration, Demographic determinants of Fertility and Mortality, Demographic Transition Theory.

Unit 3:- Migration - Meaning and Types, Causes and Consequences, Theories of Migration – Ravenstein & Lee.

Unit 4:- Population and Resources, Population-Resource Relationship, Malthus Population Theory, Population Resource Regions, Population Projection, Population Policy of India, Trends of World population

Reference Books:

1. Chandna R.C. (2009), Geography of Population, Kalyani Publicishers, Ansari Road, Daryaganj, N. Delhi-2.
2. Majid Hussain (1999), Human Geography, Rawat Publications, Jaipur.
3. Trewartha GT. (1959) A Geography of Population, World Patterns, John Wiley and Sons Inc. New York.
4. Ghosh BN. (1987) Fundamentals of Population Geography, Sterling Publishing Company, New Delhi
5. R.K. Tripati ((2000) Populaton Geography, Commonwealth Publishers, New Delhi.
6. Kayastha, S.L. (1998) Geography of Population, Rawat Publications, Jaipur.
7. Clerk I (1984) Geography of Population, Approaches and Applications, Pergamon Press, Oxford, UK.
8. Tiwari, Ram Kumar (2015): Jansankhya Bhugol, Prwalika Publication, Allahabad.
9. Hiralal (2007): Jansankhya Bugol Ke Mul Tatwa, Radha Publication, New Delhi.
10. Mourya, S.D. (2011): Jansankhya Bhugol, Sharda Pustak Bhawan, Allahabad.
11. Dubey, K.K. & Singh, M.B. (2001): Jansankhya Bhugol, Rawat Publication, Jaipur.
12. Roy, Debjani (2022) Population Geography, Books and Allied publisher, Kolkata

II. MAJOR COURSE- MJ 13:
ENVIRONMENTAL AND BIOGEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarize the concept of Environmental Geography, and Biogeography
2. To make students learn about the Ecosystem, its structure, functions

Course Learning Outcomes:

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

1. Understand the dynamic interactive relationship between man and environment.
2. The pattern and mechanism that govern the distribution of species and ecosystem, Factors influencing biodiversity
3. Threats to biodiversity and need for conservation, Role of biogeography in understanding and addressing environmental problems

Course Content:

Unit 1- Environmental Geography: Concepts and Approaches; Ecosystem – Concept, Structure and Functions; Ecological successions: stages and climax; Man-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions

Unit 2- Environmental Problems and Management: Air Pollution; Solid and Liquid Waste; Biodiversity Loss, Environmental Programmes and Policies – Global, National and Local levels.

Unit 3- Definition and concept of Biogeography; Geographical factors influencing the distribution of plants and animals, Distribution of plant and animal; biogeographical realms and regions; Evolution of major groups of floral and faunal provinces.

Unit 4- Biodiversity: Concept and Definition, Biodiversity hotspots, Sustainable development and biodiversity (CBD), Threats to Biodiversity in India and Conservation measures.

Reference Books:

1. Bhattacharyya, N.N.(2003): Biogeography, Rajesh Publications, New Delhi.
2. Chandna, R. C., (2002): Environmental Geography, Kalyani, Ludhiana.
3. Clarke, G. L. (1967): Elements of ecology, New York: John Wiley Pub.
4. Cunninghum, W. P. and Cunninghum, M. A., (2004): Principals of Environmental Science: Inquiry and Applications, Tata Macgraw Hill, New Delhi.
5. Goudie, A., (2001): The Nature of the Environment, Blackwell, Oxford.
6. Holechek, J. L. C., Richard, A., Fisher, J. T. and Valdez, R., (2003): Natural Resources: Ecology, Economics and Policy, Prentice Hall, New Jersey.
7. Hoyt, J.B. (1992): Man, and the Earth, Prentice Hall, U.S.A.
8. Huggett, R.J. (1998): Fundamentals of Biogeography, Routeldge, U.S.A.
9. Lapedes, D.N. (1974): Encyclopaedia of Environmental Science (eds.), McGraw Hill.
10. Mal, Suraj., and Singh, R.B. (Eds.) (2009):Biogeography and Biodiversity,Rawat Publication, Jaipur
11. Mathur, H.S. (1998): Essentials of Biogeography, Anuj Printers, Jaipur.
12. Miller, G. T., (2004): Environmental Science: Working with the Earth, Thomson Brooks Cole, Singapore.
13. MoEF, (2006): National Environmental Policy-2006, Ministry of Environment and Forests, Government of India.
14. Mountain and Tree cover in Mountain Regions Report - 2002, UNEP-WCMC.
15. Odum, E. P. et al, (2005): Fundamentals of Ecology, Ceneage Learning India.
16. Saxena, H.M., 2012: Environmental Studies, Rawat Publications, Jaipur.
17. Singh, Savindra., (2001): Paryavaran Bhugol (Hindi), Prayag Pustak Bhawan, Allahabad. (in Hindi)
18. UNEP, (2007): Global Environment Outlook: GEO4: Environment for Development, United Nations Environment Programme

III. MAJOR COURSE- MJ 14:
SETTLEMENT GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about Urbanization, its patterns and theories
2. To make student learn about urban functions, urban sprawl, urban renewal-policies, Master plan

Course Learning Outcome:

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

1. Understand the fundamentals and patterns of urbanization process
2. Learn the functional classification of cities and Central Place Theory
3. Know about policies of urban development of India

Course Content:

Unit 1- Meaning, Concept, and Scope of Settlement Geography; Rural Settlements: Types, Characteristics and Pattern, Rural-Urban Fringe, Rural-Urban Continuum; Population growth in Rural India

Unit 2- Nature and scope of Urban Geography- Classification of Urban Settlements; Trends and Patterns of World Urbanization, Concentric, Zonal and Multiple Nuclei Theories of Urban Structure,

Unit 3- Urban Functions- Basic and Non-Basic- Urban Hierarchy- Rank-Size Rule – Central Place Theory – Functional Classification of Towns by C.D. Harris and H.J. Nelson.

Unit 4- Urban Issues & Challenges: Water supply, traffic congestion, solid waste, smog, sewage and drainage system; Slum and housing problems Concept of City Region and Urban Hinterland; Peri- Urbanization. Elements of Urban Planning – Urban Renewal – Policies of Urban Development in India

References:

1. Baker (2014), The Geography of Rural Settlements.
2. Bansal, S.C. (2011): Nagariya Bhogol. Meenakshi Publication, Meeruth.
3. Beanjen-Garnier J&G. Chabot (1967) Urban Geography, Jhonwiley, New York.
4. Johnson James H (1966) Urban Geography – An Introductory Analysis, Pergamon Press Oxford, London.
5. Karen Stromme Christensen (1999) Cities and Complexity, University of California, Berkely USA, Sage Publication, New Delhi.
6. Mandal R.B. (2002) Urban Geography – A Text Book, Concept Publishing Company, New Delhi.
7. Mandal, R. B. (1988), Systems of Rural Settlements in Developing Countries, Concept Publication Co. New Delhi
8. Mayer H.M. & Kohn CF (1967) Urban Geography, Central Depot, Allahabad, India
9. Mishra H. N. (ed.) (1987), Contribution to Indian Geography, Volume 9, Rural Geography, Heritage Pub. New Delhi.
10. Northham Ray M. (1975) Urban Geography, Jhon Wiley & Sons, Inc. New York
11. Peter Roberts (2000) Urban Regeneration, University of Dundee, U.K., Sage Publication, New Delhi.
12. Ranan Paddison (2001) Hand Book or Urban Studies, University of Glasgow, U.K., Sage Publications, N. Delhi.
13. Roberts (2011), Rural Settlement in Britain
14. Saskia Sassen (2000) Cities in a World Economy, University of Chicago, USA, Sage Publications, New Delhi.
15. Siddartha K & S. Mukherjee (1996). Cities, Urbanization and Urban Systems, Transworld Media and Communication Pvt. Ltd. New Delhi
16. Stephen Ward (2004) Planning and Urban Change, Sage Publications, New Delhi
17. Prasad, Ayodhya - Rural Settlement of Chotanagpur plateau
18. Ahmad, E. – Bihar: a physical, economic and regional geography

IV. MAJOR COURSE- MJ 15:
PRACTICAL-V **STATISTICAL METHODS IN GEOGRAPHY**

Marks: Pr (ESE: 6Hrs) =100	**Pass Marks: Pr (ESE) = 40**

(Credits: Practicals-04) **120 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 60 marks*
Practical record notebook	*= 15 marks*
Viva-voce	*= 25 marks*

Course Objectives:

The Learning objectives of this course are as follows-

1. To explain the concept quantitative information in general and Geographical data in particular.
2. To explain the importance of data analytics. The ways data is collected, or data is taken from different sources.
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, methods of sampling, graphical data representation.
3. Understand the method of population projection

Course Content:

Unit 1- Use of Data in Geography: Significance of Statistical Methods in Geography; Sources of Data, Scales of Measurement (Nominal, Ordinal, Interval and Ratio).

Unit 2- Tabulation and Descriptive Statistics: Frequencies (Deciles, Quartiles, Percentile), Cross Tabulation, Central Tendency (Mean, Median and Mode) Dispersion (Range, Standard Deviation, Coefficient of Standard Deviation, Variance and Coefficient of Variation).

Unit 3- Probability and non-probability Sampling: Purposive, Quota, Random, Cluster, Systematic, Stratified. Association and Correlation: Rank Correlation, Product Moment Correlation, and Simple Regression.

Unit 4- Composite Rank Index method, Parametric and Non-Parametric Test, Chi-square, Z Test; Graphic representation -Histogram, polygons, cumulative frequency curve (Ogive), Scatter diagram, Lorenz curve, Skewness and Kurtosis

Practical Record: Each student will submit a record containing exercises from each topic

Reference Books:

1. Ajai, S. G. and Sanjaya, S.G. (2009) Statistical Methods for Practice and Research, Sage Publications, New Delhi.
2. Berry, B. J. L. and Marble, D. F. (eds.): Spatial Analysis a Reader in Geography.
3. Ebdon, D., (1977): Statistics in Geography: A Practical Approach.
4. King, L. S., (1969): Statistical Analysis in Geography, Prentice-Hall.
5. Mahmood, A., 1977: Statistical Methods in Geographical Studies, Concept.
6. Pal, S. K., (1998): Statistics for Geoscientists, Tata McGraw Hill, New Delhi.
7. Rogerson,P. A., (2001) Statistical Methods for Geography, Sage Publications, New Delhi.
8. Sarkar, A. (2013): Quantitative geography: techniques and presentations. Orient Black Swan Private Ltd., New Delhi
9. Sharma, J.P (2014): Prayogik Bhugol, Rastogi Publication, Meerut
10. Singh, R.L. & Singh, Rana P.B (2015): Elements of Practical Geography
11. Monkhouse, F. J. and Wilkinson, H. R.,(1973): *Maps and Diagrams*, Methuen, London.
12. Kaanetkar and Kulkarni: Surveying and Levelling, Part-I and Part-II.

SEMESTER VII

I. MAJOR COURSE- MJ 16:
RESEARCH METHODOLOGY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

1. To understand essential of research in Geography and its significance.
2. To understand the ways data are collected, classified tabulated and analysed.
3. To make student aware about fundamentals of sampling techniques in Geographic research.

Course Learning Outcomes:

1. Acquaintance with basics of research its typology and conceptualization of research problem
2. Understanding of sources, types and tools of data collection and data analysis
3. Understanding nuance of thesis writing in Geography.

Course Content:

Unit-1- Introduction to Research Methodology: Defining Research, Methods of Research Types, Significance of Geographical Research, Research Ethics; Scientific Method in Geographical Studies, Inductive and Deductive, Basic Element and Attributes, Scale of Research, Macro, Meso, Micro Problem of Formulation and Identification; Review of Literature: Significance and Sources of Literature Review; Research Design: Meaning, Stages, Characteristics, Significance of Research Design.

Unit-2- Research Hypothesis and Sampling: Meaning of Hypothesis, Relevance and Types of Hypothesis; Identification of Problem and Hypothesis, Problem Identification, Testing Hypothesis, Generalization; Sampling: Meaning and Importance, Types of Sampling; Selection of Sample and size of Sample.

Unit-3- Nature of Geographical Data: Nature and Types of Geographical Data, Significance of Spatial and Temporal Data in Geographical Studies; Levels of measurement: Nominal, Ordinal, Ratio and Interval; Methods and Sources of Geographical Data Collection, Conventional and modern limitation of secondary data and need for data generation, collection of primary data: questionnaires and schedules, fieldwork, Sample surveys and their significance.;

Unit-4- Geographic data analysis and Report writing: Quantitative, Qualitative and advanced techniques of Geomorphic data processing and analysis, Geographical matrix and its significance in analysis of geographic data. Report writing- Introduction: Aim and Objective, Data and Methodology; Data Analysis, Result and Conclusion.; Referencing System, Webliography and Bibliography; Plagiarism Design, Concept of Impact Factor, Citation, DOI

References

1. Karlekar Srikant and Kale Mohan (2005) Statistical analysis of Geographical data, Diamond Publication
2. Clark W.A.V. and Hosking, P.C (1906) Statistical methods for Geographers, John Willey & Sons New York.
3. Dickinson Gre (1997). Statistical Mapping and Presentation of Statistics, Edward Arnold limited London.
4. Shukla, Jitendra (2011). Research Methodology in Geographical Research. Disha International publication, New Delhi.
5. Monmoniev Mark, (1982), Computer assisted Cartography Principles & Prospects, Prentice Hall, Inc London.
6. Agrawal Chetan (2012): Research Methodology in Geography: Common Wealth Publisher, New Delhi.
7. Mohmad Aslam (2004) Statistical methods in Geographical studies, Rajesh Publication, New Delhi
8. C.R. Kothari (2004) Research methodology method and Techniques, New age international (P) limited, Publisher, New Delhi
9. Kumar, Ranjit – Research Methodology: A Step by Step guide for beginners

II. MAJOR COURSE- MJ 17:
SOCIAL GEOGRAPHY

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

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 course, the students will have ability to: -

1. Understand the nature, scope and relationships of geography and human wellbeing
2. Acquire knowledge on spatial dimensions of social diversity components
3. Understand the contemporary social issues of India and the world

Course Content:

Unit 1- Meaning, nature, and scope of Social Geography; Social structure: caste and class. Social process: Urbanization, industrialization, and migration

Unit 2- Social indicators of development: Education and health; Concepts of social justice and social security with examples from India

Unit 3- Social problems in rural areas: Migration, Marginalization and deprivation; Social problems in urban areas: Poverty, Inequality and crime; Contemporary social issues: Gender related problems;

Unit 4- Social welfare schemes for tribes, women, and children; Social segregation: A comparison between cities of global north and south.

References

1. Ahmed A., 1999: Social Geography, Rawat Publications.
2. Anderson, K., Domosh, M., Pile, S., & Thrift, N. (Eds.). (2003). Handbook of cultural geography. SAGE Publications.
3. Casino V. J. D., Jr., 2009) Social Geography: A Critical Introduction, Wiley Blackwell.
4. Cater J. and Jones T., 2000: Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.
5. Panelli R., 2004: Social Geographies: From Difference to Action, Sage.
6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: Introducing Social Geographies, Oxford University Press.
7. Smith D. M., 1977: Human geography: A Welfare Approach, Edward Arnold, London.
8. Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: The SAGE Handbook of Social Geographies, Sage Publications.
9. Sopher, David (1980): An Exploration of India, Cornell University Press, Ithasa
10. Srinivas, M. N. (1966). Social change in modern India. University of California Press
11. Srinivas, M. N. (1987). The dominant caste and other essays. Oxford University Press.
12. Srinivas, M. N. (1998). Village, caste, gender and method: Essays in Indian social anthropology. Oxford University Press.
13. Valentine G., 2001: Social Geographies: Space and Society, Prentice Hall.
14. Valentine, G. (2001). Social geographies: Space and society. Routledge.

III. MAJOR COURSE- MJ 18:

PRACTICAL-VI **ADVANCED CARTOGRAPHY**

Marks: Pr (ESE: 6Hrs) =100	**Pass Marks: Pr (ESE) = 40**

(Credits: Practicals-04) **120 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 60 marks*
Practical record notebook	*= 15 marks*
Viva-voce	*= 25 marks*

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about methods, tools and techniques of cartography
2. To make student learn and apply principles of map design, thematic mapping techniques and preparation of an Atlas

Learning Outcomes:

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

1. Have sound knowledge regarding construction of maps using computers or manual methods.
2. Have proper utilization of maps for the planning and development.
3. Appreciate the preparation of various thematic maps with the application of various techniques.

Course Content:

Unit 1- Thematic Maps – Preparation and Interpretation of atlas

Or

Maps – Classification and Types, Thematic Mapping Techniques – Properties, Uses and Limitations Elements of map

Unit 2- Mapping of Pollution Intensity, Air Quality index, Mapping and measuring traffic density, traffic flow map

Or

Spatial and non-Spatial data; Point, Line and Areal Data, Coordinates system

Unit 3- Water potential zones (study and its interpretation in India and Jharkhand), simple numerical problems related to determining permeability in the field and laboratory,

Or

Principles of Map Design, Introduction of GIS software- QGIS

Unit 4- Ground water flow, Well hydraulics, Mapping religious contour of India (on an outline map of India), Mapping tribal pattern and contour in India and Jharkhand, mapping and analysis of international boundary of India

Or

Spatial data handling, creation, editing, joining of spatial and non-spatial data, Creating thematic maps, Layout preparation

Note: -

- 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.

References:

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.

IV. ADVANCED MAJOR COURSE- AMJ 1: ADVANCED GEOMORPHOLOGY

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

(Credits: Theory-04) **60 Hours**

(Only for Hons Degree)

Course Objectives:

The Learning objectives of this course are as follows-

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

Course Learning Outcomes:

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

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 Contents-

Unit 1- Defining the field, nature and scope of geomorphology, fundamental concepts, Process of landform evolution – concept of gradation, theory of landform evolution and Slope Development;

Unit 2- Earth movements- Epierogenic, Orogenic and Cymatogenic, climatogentic, Isostasy and anthropogenic evolution of landforms, drainage system analysis, morphometric analysis, drainage basin and channel morphology

Unit 3- Regional geomorphology of Chotanagpur plateau, Palamu upland, Rajmahal upland, Kolhan Region and denudation chronology

Unit 4- Applied Geomorphology- application of geomorphology to urbanization, agriculture, water resource management, watershed planning and development forestry, regional planning and development, Geomorphic hazard

Reference Books:

1. Ahmad, E (1985) Geomorphology, Kalyani Publishers , New Delhi
2. Bloom, A. L., (2003): Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
3. Christopherson, R. W. and Birkeland, G. H., (2012) Geosystems: An Introduction to Physical Geography (8th edition), Pearson Education, New Jersey.
4. Das Gupta, A and Kapoor, A.N., (2001) Principles of Physical Geography, S.C. Chand & Company Ltd. New Delhi
5. Dayal, P., (1996) A Text book of Geomorphology. Shukla Book Depot, Patna.
6. Huggett, R.J. (2007) Fundamentals of Geomorphology, Routledge, New York.
7. Kale, V. S. and Gupta A., (2001): Introduction to Geomorphology, Orient Longman, Hyderabad.
8. Khullar, D.R., (2012) Physical Geography, Kalyani Publishers, New Delhi.
9. Singh Savindra(2015): Bhuakriti vigyan ka Swarup, Prayag Pustak Bhawan, Allahabad
10. Strahler, A. H. and Strahler, A N., (2001):Modern Physical Geography (4/E), John Wiley and Sons, Inc., New York.
11. Shukla, J (2016) Geomorphology, Disha International Publishing House, Delhi
12. Summerfield M. A. (2013): Global Geomorphology, Routledge, New York
13. Thornbury, W. D., (2004): Principles of Geomorphology, Wiley, New York.

OR RESEARCH COURSES- RC 1: (In lieu of AMJ 1)

RESEARCH PLANNING & TECHNIQUES

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

(Credits: Theory-04) **60 Hours**

(Only for Hons with Research Degree)

Course Objectives:

1. To understand essential of research in Geography and its significance.
2. To understand the ways data are collected, classified tabulated and analysed.
3. To make student aware about fundamentals of sampling techniques in Geographic research.

Course Learning Outcomes:

1. Acquaintance with basics of research its typology and conceptualization of research problem
2. Understanding of sources, types and tools of data collection and data analysis
3. Understanding nuance of thesis writing in Geography.

Course Content:

Unit 1: Research Planning: Research in Geography: Meaning, type and significance, approach; Literature review and formulation of research design, Motivation, objective and Hypothesis; Research methods, Field Work in Geographical Studies: Role and Significance; Selection of study area and objectives; Pre-field and academic preparations; Ethics of Field Work. Field work-based preparation of research proposal.

Unit 2- Discipline based research method and preparations: Geomorphologic methods: landscape surveys using transact and diagrams, record through sketches, photo and videos. Methods of morphometric analysis. Methods of slope and stream channel analysis; Socio-economic and Cultural, Urban geographic method and analysis of population stability and demographic variables analysis. HDI, Regional disparity, development level and urban attributes analysis.

Unit-3- Land use studies: Land use, crop combination, agricultural efficiencies and intensity; Land use crop combination, agricultural efficiency and intensity; Environmental Disaster and Health Hazards analysis methods; Environmental Impact Assessment (EIA) for urban/industrial development project; Sampling, Quality assessment of water using portable tester, pH, salinity, hardness; Air Quality interpretation, Noise Pollution.

Unit-4- Post Field Tabulation Techniques: Field techniques and tools, observation, participants and non-participants, questionnaires (open & closed, structured, non-structured) interviews; Positioning and collection of samples, preparation of inventories from field data; Post field tabulations, processing and analysis of quantitative and qualitative data; Remote sensing, analyzing data from satellite imageries and aerial photographs; GIS – Analyzing and visualizing spatial data; Use of latest techniques as geo-statistics and geo-visualization. Geospatial technologies, Stakeholder analysis, tools for data analysis – CS-Pro/ Nvivo, /Atlas.ti software, SPSS, Qualitative logic, focus groups, Drone mapping and analysis.

Reference Books:

1. Karlekar Srikant and Kale Mohan (2005) Statistical analysis of Geographical data, Diamond Publication
2. Clark W.A.V. and Hosking, P.C (1906) Statistical methods for Geographers, John Willey & Sons New York.
3. Dickinson Gre (1997). Statistical Mapping and Presentation of Statistics, Edward Arnold limited London.
4. Shukla, Jitendra (2011). Research Methodology in Geographical Research. Disha International publication New Delhi.
5. Monmoniev Mark, (1982), Computer assisted Cartography Principles & Prospects, Prentice Hall, Inc London.
6. Agrawal Chetan (2012): Research Methodology in Geography: Common Wealth Publisher, New Delhi.
7. Mohmad Aslam (2004) Statistical methods in Geographical studies, Rajesh Publication, New Delhi
8. C.R. Kothari (2004) Research methodology method and Techniques, New age international (P) limited, Publisher, New Delhi

SEMESTER VIII

I. MAJOR COURSE- MJ 19:

HYDROLOGY & WATERSHED MANAGEMENT

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

(Credits: Theory-04) **60 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about nature, scope and significance of hydrology
2. To make student learn about soil development, hydrological cycle, surface and ground water and its management

Course Learning Outcomes:

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

1. Study the soil as a basic resource, focusing its distribution, problems and management.
2. Understand the basic components of hydrological cycle and comprehend practices of integrated watershed management.
3. Evaluate the water balancing and river basin and water disputes

Course Contents-

Unit 1- Definition and scope of hydrology, Hydrological cycle, Importance of water; ground water and surface water; water storages – glaciers, river channels, lakes and reservoirs, soil moisture

Unit 2- Ground water: characteristics of stream flow, Darcy's law, permeability, infiltration, ground water storage, ground water aquifers in different rock systems, movement and discharge.

Unit 3- Concept and demarcation of watershed, their utility as units of hydrological environmental and landuse planning and management; Water conservation: Micro-Catchment, Watershed harvesting, evaporation separation, and seepage reduction, supplemental irrigation, Ground water recharge, afforestation.

Unit 4- Preparation of Watershed developmental plan, administrative arrangement and agency selection for plan implementation, monitoring and evaluation system, Management of Soil erosion: over land flow and gullies

References:

1. Timothy, Davie. 2003. Fundamentals of Hydrology. Routledge, Taylor and Francis Group, U.K.
2. Todd, D.K. 2009. Groundwater Hydrology. John Wiley & Sons Inc.
3. Mahajan, G. 1989. Evaluation and Development of Groundwater. Ashish Publishing House, New Delhi.
4. Karanth, K.R.C. 1988.Ground Water: Exploration, Assessment and Development. Tata-Mcgraw Hill, New Delhi.
1. Andrew D. Ward and Stanley Trimble. 2004(2nd edition). Environmental Hydrology. Lewis Publishers.

II. MAJOR COURSE- MJ 20:

PRACTICAL-VII **PHYSICAL SURVEY PRACTICAL**

Marks: Pr (ESE: 6Hrs) =100	**Pass Marks: Pr (ESE) = 40**

(Credits: Practicals-04) **120 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 60 marks*
Practical record notebook	*= 15 marks*
Viva-voce	*= 25 marks*

Course Objectives

The Learning objectives of this course are as follows-

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 course, the students will have 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

Unit 1: Trace the prominent features of the area to be surveyed. Identify the salient landform features of the selected area on a topographical sheet.

Unit 2: Identify the landforms on the surface, while in the field. Also note the agents of erosion, transportation and deposition associated with the landforms.

Unit 3: Identify and classify the biodiversity in the area (Flora and Fauna).

Unit 4: Observe the relationship of various landforms, flora and fauna with land use, settlement, structure and life style of the people.

Note:

1. Departmental council will decide the physical survey area based on broad geomorphic and distinct region (Mountainous, Hilly, Coastal, Deltaic, Forest, Desert areas) for at least 5-10 days.
2. University/College will provide the requisite fund for physical survey.
3. It is mandatory to all the students to participate in the physical survey.
4. 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.
5. 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.
6. Two written questions in the practical examination based on the physical survey report-
    a. writing method
    b. physical survey

References-

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

III. ADVANCED MAJOR COURSE- AMJ 2:
REGIONAL PLANNING AND DEVELOPMENT

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

(Credits: Theory-04) **60 Hours**

(Only for Hons Degree)

Course Objectives

The Learning objectives of this course are as follows-

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, Multi-Purpose Projects

Course Learning Outcomes:

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

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

Course Content:

Unit 1- Concept of Region, Types, hierarchy, characteristics and delineation of Region, Regional planning: concept, scope, methods, techniques and need of regional planning; Regionalisation of India: Physiographic (R. L. Singh), Socio-Cultural (Sopher), Economic (Sengupta), Agro Ecological Zones

Unit 2- Theories and Models for Regional Planning: Growth Pole Model of Perroux; Growth Centre Model in Indian Context; Myrdal, Hirschman, Rostow and Friedmann; evaluation of regional disparities/imbalances, method of measuring imbalances

Unit 3- Concept of Development, Indicators of development, problems and issues of development, Backward regions: identification and its development; Planning process-sectoral, multi-level, Niti Ayog, Policy and framework,

Unit 4- Integrated area development (IADP), planning tribal and hill areas, draught prone areas, command areas in watershed, Border area development, Urban Green belt, Planning for metropolitan region; a case study- Dandakaranya, Multi-Purpose river valley projects-Damodar

Reference Books:

1. Agyeman, Julian, Robert, D. Bullard and Bob, Evans., (Eds.) (2003): Just Sustainabilities: Development in an Unequal World. London: Earth scan. (Introduction and conclusion.).
2. Anand, Subhash..(2011):Eco-development : Glocal Perspectives, Research India Press, New Delhi.
3. Baker, Susan., (2006): Sustainable Development. Milton Park, Abingdon, Oxon; New York, NY: Routledge (Chapter2," The concept of sustainable development"
4. Blij, H. J. De., (1971): Geography: Regions and Concepts, John Wiley and Sons.
5. Friedmann, J. and Alonso W. (1975): Regional Policy - Readings in Theory and Applications, MIT Press, Massachusetts.
6. Haynes J., (2008): Development Studies, Polity Short Introduction Series.
7. Misra, R. P., Sundaram, K.V. and V.L.S. Prakasa Rao, (1974): Regional Development planning in India, Vikas Publishing House Delhi.
8. Peet, R., (1999): Theories of Development, The Guilford Press, New York.
9. Singh, R.B. (2002): Human Dimensions of Sustainable Development, Rawat Pub., Jaipur, pages
10. UNDP (2001-04): Human Development Report, Oxford University
11. Shukla, J (2016) Regional Planning and Development, Disha Publication, Delhi

IV. ADVANCED MAJOR COURSE- AMJ 3:

PRACTICAL-VII - ADVANCE MAJOR PRACTICAL

Marks: Pr (ESE: 6Hrs) =100	Pass Marks: Pr (ESE) = 40

(Credits: Practicals-04) **120 Hours**

(Only for Hons Degree)

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 60 marks*
Practical record notebook	*= 15 marks*
Viva-voce	*= 25 marks*

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about drainage density, drainage texture and stream ordering
2. To make student learn and apply methods of soil testing, planning of satellite and garden town

Course Learning Outcomes:

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

1. Estimate the soil quality such as soil pH, macro nutrients, identification of soil problems and management.
2. Understand stream ordering techniques, calculation of bifurcation ratio.
3. Evaluate the traffic flow through diagrams, water budget, rainfall dispersion

Course Content:

Unit 1- Stream Ordering (Strahller's, Shrew, Horton, Shiedeger's,) Bifurcation ratio, Drainage Density, Drainage Texture, Thalweg, Channel Profiles, Hypsometric Curve, Area-height Diagram, Profiles, Perspective Block Diagram: one point perspective, two point perspective, Non-perspective, multiple section method, layer method

Unit 2- Study of Soil PH Value, Nitrogen Content, Phosphorous and Construction of Soil Profiles.

Unit 3- Spherical Diagram, Isopleth, Volumetric or Sten de Geer's method, Traffic Flow Diagram. Regional Pattern of Urbanisation, Planning of Satellite and Garden Town

Unit 4- Water Budget, Rainfall Dispersion Diagram, Ergo graph, Climatograph

Practical Record- exercise on each topic above

References:

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

OR RESEARCH COURSES- RC 2: (In lieu of AMJ 2 & AMJ 3)

RESEARCH/ PROJECT DISSERTATION/ RESEARCH INTERNSHIP/ FIELD WORK

Marks: 50 (SIE: 25 Synopsis + 25 Viva on Synopsis: 1Hr) + 100 (ESE Pr: 6Hrs) + 50 (Viva) = 200	**Pass Marks = 80**

(Only for Hons with Research Degree)

Guidelines to Examiners for Semester Internal Examination (SIE):

Evaluation of project dissertation work may be as per the following guidelines:

Project Synopsis = *25 marks*

Project Synopsis presentation and viva-voce = *25 marks*

Guidelines to Examiners for End Semester Examination (ESE):

Evaluation of project dissertation work may be as per the following guidelines:

Project model (if any) and the Project record notebook = *70 marks*

Project presentation and viva-voce = *30 marks*

The overall project dissertation may be evaluated under the following heads:

- *Motivation for the choice of topic*
- *Project dissertation design*
- *Methodology and Content depth*
- *Results and Discussion*
- *Future Scope & References*
- *Participation in an Internship programme with a reputed organization*
- *Application of the Research technique in Data collection*
- *Report Presentation*
- *Presentation style*
- *Viva-voce*

Research Project

Research project in Geography under the supervision of a Supervisor of the Department/Institution may be allocated to the eligible and qualifying candidate.

Project Dissertation/ Research Internship/ Field Work

The students of Post-Graduation must work Thirty-Six (36) days as Interns under Any Organisation having an MoU with the Ranchi University, which may include Government Organizations/judiciary/ Health Care Sectors/ Educational Institutions/ NGOs etc.

- The nature and the place of working must be informed in writing, seeking permission from the head of the department or the institution before undertaking the Project dissertation.

Submission of the Project Work

Each student has to submit two copies of the dissertation work duly forwarded by the HOD of the Department concerned. The forwarded copies will be submitted to the Department/Institution for evaluation at least seven days before the seminar.

The paper will consist of

a. Field work/Lab work related to the project.
b. Preparation of the dissertation based on the work undertaken.
c. Presentation of project work in the seminar on the assigned topic & open viva there on.
d. At least one Research paper must be presented at a conference or may be published in a reputed journal.

Topics

Project work related to the Industrial/socially relevant topics may be given.

NB: Students will select topics for the project work in consultation with a teacher of the department. The seminar will be held in the respective P.G. Department at Ranchi University, Ranchi.

ASSOCIATED CORE COURSE- MN A **Either may be opted in Sem-I or Sem-II**

I. ASSOCIATED CORE COURSE- MN A: INTRODUCTION OF GEOGRAPHY

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

(Credits: Theory-03) **45 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about the Earth system, its origin, interior
2. To make student learn about evolution of landforms, structure and composition of atmosphere,
3. To aware about population distribution, human races, religion and languages

Learning Outcomes:

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

1. Appreciate the fundamental concepts of geography;
2. apply day to day issues in society and its relation with geography
3. to understand population growth, social diversity

Course Content:

Unit 1- Origin of the Earth, Interior structure of the earth, Earthquake and volcanoes, Evolution of landforms- Fluvial, glacial, Aeolian, coastal, Karst

Unit 2- Structure and composition of atmosphere, pressure belt and planetary winds, mechanism of Monsoon

Unit 3- Distribution of human races, religion, language, tribes, Distribution, density, and growth of World population, Migration, HDI, Population policy

Reference Books;

1. Bloom, A. L., (2003): Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Shukla, J (2016) Geomorphology, Disha International Publishing House, Delhi
3. Singh Savindra (2015): Bhuakriti vigyan ka Swarup, Prayag Pustak Bhawan, Allahabad
4. Christopherson, R. W. and Birkeland, G. H., (2012) Geosystems: An Introduction to Physical Geography (8th edition), Pearson Education, New Jersey.
5. Das Gupta, A and Kapoor, A.N., (2001) Principles of Physical Geography, S.C. Chand & Company Ltd. New Delhi.
6. Chandna, R.C., (2017): Population Geography, Kalyani Publishers, New Delhi.
7. Roy D (2022): Population Geography, 2nd Edition, Books & Allied, Kolkata
8. Daniel, P.A. and Hopkinson, M.F. (1989): The Geography of Settlement, Oliver & Boyd, London.
9. Hassan, M.I. (2005): Population Geography, Rawat Publications, Jaipur
10. Hussain, Majid., (2012):Manav Bhugol, Rawat Publications, Jaipur

MINOR COURSE-B

I. MINOR COURSE- MN B:

GEOGRAPHY OF INDIA AND JHARKHAND

Marks: 15 (15 SIE: 1Hr) + 60 (ESE: 3Hrs) = 75	**Pass Marks: Th (SIE + ESE) + Pr (ESE) = 40**

(Credits: Theory-03) **45 Hours**

Course Objectives:

The Learning objectives 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:

Unit 1- India: Physiographic Divisions, Seasons, Drainage, Soil and Natural vegetation

Unit 2-: Mineral and Power Resources: Distribution and Utilization of Iron Ore, Coal, Petroleum, Gas, Agricultural Production of Rice, Wheat; Industrial Corridors and Industrial Regions of India

Unit 3- Jharkhand: Physiography, Drainage, Climate, natural vegetation; Agriculture, minerals and industry -iron and steel industry; Tourism, tribes (Santhal, Oraon, Munda)

Reference Books:

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.

II. MINOR COURSE- MN B PR:
MINOR PRACTICAL-B PR

Marks: Pr (ESE: 6Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practicals-01) **30 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 15 marks*
Practical record notebook	*= 05 marks*
Viva-voce	*= 05 marks*

Practical:

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about the concept of scale, RF
2. To make student learn about topographical maps, conventional sign and interpretation

Learning Outcomes:

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

1. Appreciate the concepts of scale, RF;
2. apply information from topographical maps
3. to understand conventional signs and symbols

Course Content:

Unit 1- Scale- simple linear scale and RF

- Study of Topographical Maps- Conventional signs and Interpretation (one each- hilly/plain area)

Practical Record:

A Project File comprising at least one exercise each, on scale and interpretation of topographic sheet

Reference Books;

1. Anson, R., and Ormelling F. J., (1994): International Cartographic Association: Basic Cartographic, Vol. Pregmen Press.
2. Singh, Gopal., (1998): Map Work and Practical Geography (4th Edition), Vikas Publishing House, Ahmedabad.
3. Gupta, K.K. and Tyagi V.C., (1992): Working with Map, Survey of India, DST, New Delhi.
4. Kraak, M.J., (2010):Cartography: Visualization of Geospatial Data (3rd edition), Pearson Education Ltd., London.

MINOR COURSE-C

I. MINOR COURSE- MN C:
RURAL DEVELOPMENT

Marks: 15 (15 SIE: 1Hr) + 60 (ESE: 3Hrs) = 75	Pass Marks: Th (SIE + ESE) + Pr (ESE) = 40

(Credits: Theory-03) **45 Hours**

Course Objectives-

The Learning objectives of this course are as follows-

1. To familiarise students about the rural development, and its concept
2. To make student learn about programme and plans for the development of rural development

Learning Outcomes:

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

1. Appreciate the concepts, needs and various approaches to rural development;
1. Understand the strong economic bases of rural areas of India;
2. Appreciate the area based and target group based approaches and provision of services to rural development.

Course Content:

Unit-1- Defining Development: Inter-Dependence of Urban and Rural Sectors of the Economy; Need for Rural Development, Gandhian Approach of Rural Development.

Unit-2- Rural Economic Base: Panchayati Raj System, Agriculture and Allied Sectors, Seasonality and Need for Expanding Non-Farm Activities

Unit-3- Area Based Approach to Rural Development: Drought Prone Area Programmes, Target Group Approach to Rural Development: SJSY, MNREGA, Jan Dhan Yojana and Rural Connectivity

References:

1. Anand, Subhash.,(2013): Dynamics of Rural Development, Research India Press, Delhi
2. Gilg, A. W., (1985): An Introduction to Rural Geography, Edwin Arnold, London.
3. Krishnamurthy, J.,(2000): Rural Development - Problems and Prospects, RawatPubls., Jaipur
4. Lee, D. A. and Chaudhri, D. P., (eds.)(1983): Rural Development and State, Methuen, London.
5. Misra, R. P., and Sundaram, K. V., (eds.)(1979): Rural Area Development: Perspectives and Approaches, Sterling, New Delhi.
6. Misra, R. P., (ed.), (1985): Rural Development: Capitalist and Socialist Paths, Vol. 1, Concept, New Delhi.

II. MINOR COURSE- MN C PR:
MINOR PRACTICAL-C PR

Marks: Pr (ESE: 6Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practicals-01) **30 Hours**

Instructions to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 15 marks*
Practical record notebook	*= 05 marks*
Viva-voce	*= 05 marks*

Practical:

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about methods, tools and techniques of mapping
2. To make student learn and apply thematic mapping techniques and preparation of maps

Learning Outcomes:

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

1. Have sound knowledge regarding elements of maps, methods to draw maps.
2. Have proper utilization of maps for the planning and development.
3. Appreciate the preparation of various thematic maps with the application of various techniques.

Course Content:

Unit 1- Thematic Mapping Techniques – Properties, Uses and Limitations;

- Areal Data- Dot, Choropleth, Point Data – Isopleths. Graph- Line, Bar;

Practical Record: Practical record book

Reference Books

1. Cuff J. D. and Mattson M. T., 1982: Thematic Maps: Their Design and Production, Methuen Young Books
2. Dent B. D., Torguson J. S., and Holder T. W., 2008: Cartography: Thematic Map Design (6th Edition), Mcgraw-Hill Higher Education
3. Gupta K. K. and Tyagi V. C., 1992: Working with Maps, Survey of India, DST, New Delhi. Kraak M.-J. and Ormeling F., 2003: Cartography: Visualization of Geo-Spatial Data, Prentice- Hall.
4. Mishra R. P. and Ramesh A., 1989: Fundamentals of Cartography, Concept, New Delhi. Sharma J. P., 2010: Prayogic Bhugol, Rastogi Publishers, Meerut.
5. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers. Slocum T. A., Mcmaster R. B. and Kessler F. C., 2008: Thematic Cartography and Geovisualization (3rd Edition), Prentice Hall.
6. Tyner J. A., 2010: Principles of Map Design, The Guilford Press

MINOR COURSE-D

I. MINOR COURSE- MN D:

ENVIRONMENTAL GEOGRAPHY & SUSTAINABLE DEVELOPMENT

Marks: 15 (15 SIE: 1Hr) + 60 (ESE: 3Hrs) = 75	**Pass Marks: Th (SIE + ESE) + Pr (ESE) = 40**

(Credits: Theory-03) **45 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about structure, function of ecosystem, environmental problems
2. To make student 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:

Unit 1- Environmental Geography: Concepts and Approaches; Ecosystem – Concept, component and functions.

Unit 2- Environmental Problems and Management: Air Pollution; Solid and Liquid Waste; Biodiversity Loss,
Environmental Programmes and Policies – National Environmental Policy;

Unit 3- History and emergence of the concept of Sustainable Development.: Definition, Components and Limitations; MDGs and SDGs: National Strategies

Reference Books:

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 Press, Chennai.
4. Miller, G.T. (2007) Living in the Environment: Principles, Connections, and Solutions, Brooks/ Cole Cengage Learning, Belmont.
5. Agyeman, Julian, Robert D. Bullard and Bob, Evans., (Eds.) (2003): Just Sustainabilities: Development in an Unequal World. London: Earthscan. (Introduction and conclusion.).
6. 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.
7. Baker, Susan., (2006): Sustainable Development. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge.
8. Lohman, Larry., (2003):Re-imagining the population debate, Corner House Briefing.

II. MINOR COURSE- MN D PR:
MINOR PRACTICAL-D PR

Marks: Pr (ESE: 6Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practicals-01) **30 Hours**

Instructions to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment = *15 marks*
Practical record notebook = *05 marks*
Viva-voce = *05 marks*

Practicals:

Course Objectives:

The Learning objectives 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:

Unit 1: Sources of Data- primary, secondary; Measures of central tendency- Mean, median and mode

- Graphic representation- histogram, Ogive, polygons

Reference Books:

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. Shinha, Indira (2007) Sankhyiki bhugol. Discovery Publishing House, New Delhi

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MINOR COURSE-E

I. MINOR COURSE- MN E:

CLIMATE CHANGE VULNERABILITY AND ADAPTATION

Marks: 15 (15 SIE: 1Hr) + 60 (ESE: 3Hrs) = 75	**Pass Marks: Th (SIE + ESE) + Pr (ESE) = 40**

(Credits: Theory-03) **45 Hours**

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about climate change, global warming
2. To make student learn about vulnerability, adaptation and mitigation to climate change

Course Learning Outcomes:

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

1. Understand the foundational concepts of climate change and its impacts.
2. Assess the human and environmental vulnerability to climate change.
3. Learn the various adaptation and mitigation for reducing the impacts of climate change and national action plan.

Course Content:

Unit 1- Climate Change: Understanding Climate Change; Greenhouse Gases and Global Warming; Global Climatic Assessment- IPCC

Unit 2- Impact of Climate Change: Agriculture and Water; Flora and Fauna; Human Health

Unit 3- Climate Change and Vulnerability: Physical Vulnerability; Economic Vulnerability; Social Vulnerability, Adaptation and Mitigation, National Action Plan on Climate Change

Reference Books:

1. IPCC (2014): Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
2. OECD (2008): Climate Change Mitigation: "What do we do?" (Organisation and Economic Co-operation and Development).
3. Sen, Roy, S., and Singh, R.B., (2002): Climate Variability, Extreme Events and Agricultural Productivity in Mountain Regions, Oxford & IBH Pub., New Delhi.
4. Singh, M., Singh, R.B., and Hassan, M.I., (Eds.) (2014): Climate change and biodiversity, Proceedings of IGU Rohtak Conference, Volume 1. Advances in Geographical and Environmental Studies, Springer
5. Singh, R.B., Mal, Suraj, and Huggel, Christian (2018): Climate Change, Extreme Events and Disaster Risk Reduction, Springer, Switzerland, pages 309.

II. MINOR COURSE- MN E PR:
MINOR PRACTICAL-E PR

Marks: Pr (ESE: 6Hrs) = 25	**Pass Marks: Pr (ESE) = 10**

(Credits: Practicals-01) **30 Hours**

Instructions to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 15 marks*
Practical record notebook	*= 05 marks*
Viva-voce	*= 05 marks*

Practicals:

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students to use satellite remote sensing imagery, data interpretation
2. To make students learn application of GIS, GPS technology

Course Learning Outcomes:

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

1. Use and apply methods of remote sensing, GIS and GPS
2. Apply technology in solving many real time problems and issues

Course Content:

Unit 1- Remote sensing- Definition, types and its application; platform and sensor, satellite (Landsat and IRS) image interpretation

-GIS: Definition, Components and its Application, Raster and Vector Data Structure; Global Positioning System (GPS) – Principles and Uses, waypoint collection using mobile phone (geotagging)

Practical Record: A file of practical record should be prepared consisting exercises from each topic above

References-

1. Bhatta , B., (2008): *Remote Sensing and GIS*, Oxford University Press, New Delhi.
2. Campbell, J. B., (2007): *Introduction to Remote Sensing*, Guildford Press
3. Chauniyal, D., (2010): *Sudur Samvedana Avam Bhaugolik Suchna Pranali*, Sharda Pustak Bhawan, Allahabad.
4. Hord R.M.,(1989): *Digital Image Processing of Remotely Sensed Data*, Academic, New York.
5. Jensen, J. R., (2005): *Introductory Digital Image Processing: A Remote Sensing Perspective*, Pearson Prentice-Hall.
6. Jensen, J. R.,(2007): *Remote Sensing of the Environment: An Earth Resource Perspective*, Prentice-Hall Inc, New Jersey.
7. Joseph, G.,(2005): *Fundamentals of Remote Sensing*, United Press India.

MINOR COURSE-F

I. MINOR COURSE- MN F:
DISASTER MANAGEMENT

Marks: 15 (15 SIE: 1Hr) + 60 (ESE: 3Hrs) = 75	**Pass Marks: Th (SIE + ESE) + Pr (ESE) = 40**

(Credits: Theory-03) **45 Hours**

Course Objectives:
The Learning objectives of this course are as follows-

1. To familiarise students about disaster management
2. To make students learn about types of disaster

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

1. Gain a perspective of disasters and various dimensions of disaster management
2. Have comprehensive knowledge of various natural and manmade disasters in India
3. Examine the response and mitigation measures of disasters

Course Content:

Unit-1- Disasters: meaning, definition and concepts; Classification, Manmade disasters: Causes, Impact, Distribution and Mapping

Unit-2- Disasters in India: (a) Flood: Causes, Impact, Distribution and Mapping; (b) Drought: Causes, Impact, Distribution and Mapping, (c) Cyclone: Causes, Impact, Distribution and Mapping

Unit-3- Disasters in India: Earthquake and Tsunami: Causes, Impact, Distribution and Mapping; Disasters: Mitigation and Preparedness, NDMA and NIDM

References:

1. Government of India, (2008): Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Govt. of India, (2011): Disaster Management in India, Ministry of Home Affairs, New Delhi.
3. Kapur, Anu., (2010): Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
4. Modh, S., (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
5. Singh, Jagbir., (2007): "Disaster Management Future Challenges and Opportunities", 2007.

II. MINOR COURSE- MN F PR:
MINOR PRACTICAL-F PR

Marks: Pr (ESE: 6Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practicals-01) **30 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 15 marks*
Practical record notebook	*= 05 marks*
Viva-voce	*= 05 marks*

Practical:

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about writing report on disaster management
2. To make students learn about identifying disaster vulnerability in an area

Learning Outcomes:

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

1. Understand processes and impact of disaster
2. Understand both the natural and man-made disaster and human negligence in context of environment
3. Write a field work based report on Disaster Management to minimize the disaster risk/ Risk from Disaster.

Course Content:

The Project Report based on any two fields based case studies among following disasters and one disaster preparedness plan of respective college/locality and district:

1. Flood
2. Drought
3. Cyclone and Hailstorms
4. Earthquake and Volcanoes
5. Landslides
6. Human Induced Disasters: Fire Hazards, Chemical, Industrial accidents

References:

1. Carter, N., (1991): Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila.
2. Government of India (2011): Disaster Management in India. Ministry of Home Affairs, New Delhi.
3. Government of India (2008): Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India
4. Kapur, A., (2010): Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
5. Modh, S., (2010): Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.

MINOR COURSE-G

I. MINOR COURSE- MN G:
HUMAN GEOGRAPHY

Marks: 15 (15 SIE: 1Hr) + 60 (ESE: 3Hrs) = 75	**Pass Marks: Th (SIE + ESE) + Pr (ESE) = 40**

(Credits: Theory-03) **45 Hours**

Course Objectives:
The Learning objectives of this course are as follows-

1. To familiarise students about division of mankind
2. To make students learn about population growth, distribution
3. To make student understand about settlement, types and characteristics

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

1. Understand the basic concepts in various sub-fields of human geography;
2. Appreciate the growth, distribution and composition of population in different parts of the world;
3. Analyse the types and patterns of rural and urban settlements, urbanisation and related issues in India and other regions of the world.

Course Content:

Unit-1- Definition, Nature, and scope of Human geography; Space and Society: Cultural Regions; Race and Language

Unit-2- Population: Distribution, density, and growth of World population and Demographic Transition Theory

Unit-3- Settlements: Types and Patterns of Rural Settlements; Classification of Urban Settlements;

References:

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher, New Delhi.
2. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver& Boyd, London.
3. Ghosh, S. (2015) Introduction to Settlement Geography, Orient Black Swan Private Ltd., Kolkata.
4. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur.
5. Johnston, R; Gregory, D, Pratt, G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication,New Jersey.
6. Jordan-Bychkov, et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
7. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
8. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan, Allahabad.

II. MINOR COURSE- MN G PR: MINOR PRACTICAL-G PR

Marks: Pr (ESE: 6Hrs) = 25	Pass Marks: Pr (ESE) = 10

(Credits: Practicals-01) **30 Hours**

Instruction to Question Setter for

End Semester Examination (ESE):

There will be one Practical Examination of 6Hrs duration. Evaluation of Practical Examination may be as per the following guidelines:

Experiment	*= 15 marks*
Practical record notebook	*= 05 marks*
Viva-voce	*= 05 marks*

Practical:

Course Objectives:

The Learning objectives of this course are as follows-

1. To familiarise students about conducting field work
2. To make students learn about surveying methods, use of questionnaire and schedule

Learning Outcomes:

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

1. Conduct proper field work for the collection of primary data to bring out grassroots realities.
2. Make use of proper tools and surveying methods for measurement in context of collection and processing of data.
3. Prepare a report based on field data.

Course Content:

Unit-1-Field Work in Geographical Studies: Meaning, Significance of field work, Sources and types of Data; Methods of Collection

- Field Techniques – Merits, Demerits of - Observation method, (Participant / Non-Participant); Schedule and Questionnaires method, (Open/ Closed / Structured / Non-Structured); Focus Group Discussion method.

References:

1. Creswell, J., (1994): Research Design: Qualitative and Quantitative Approaches Sage Publications.
2. Dikshit, R. D.,(2003):The Art and Science of Geography: Integrated Readings, Prentice-Hall of India, New Delhi.
3. Evans, M., (1988): "Participant Observation: The Researcher as Research Tool" in Qualitative Methods in Human Geography, eds. J. Eyles and D. Smith, Polity.
4. Misra, R.P., (2014). Fundamentals of Cartography. (Second revised, enlarged Edition). Concept Publishing, New Delhi.
5. Mukherjee, Neela.,(1993): Participatory Rural Appraisal: Methodology and Application, Concept Publs. Co., New Delhi.
6. Mukherjee, Neela.,(2002):Participatory Learning and Action: with 100 Field Methods. Concept Publs. Co., New Delhi

DEPARTMENT OF GEOGRAPHY

ST. XAVIER'S COLLEGE, RANCHI

(An Autonomous College of Ranchi University)

EXAMINATION DEPARTMENT

UG & PG - DEPARTMENT OF GEOGRAPHY

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IMPLEMENTED FROM ACADEMIC SESSION 2025-2026 & ONWARDS.

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