KARNATAK UNIVERSITY, DHARWAD
ACADEMIC (S&T) SECTION

ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಧಾರವಾಡ
ವಿದ್ಯಾಮಂಡಳ (ಎಸ್&ಟಿ) ವಿಭಾಗ

ಸ್ವಾತಂತ್ರ್ಯದ ಅಮೃತ ಮಹೋತ್ಸವ

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'A' Grade 2014

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No. KU/Aca(S&T)/JS/MGJ(Gen)/2024-25/436 Date: 11 NOV 2024

ಅಧಿಸೂಚನೆ

ವಿಷಯ: ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯನುಸಾರ 2024–25ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಎಲ್ಲ ಸ್ನಾತಕೋತ್ತರ ಪದವಿಗಳಿಗೆ / ಸ್ನಾತಕೋತ್ತರ ಡಿಪ್ಲೋಮಾಗಳಿಗೆ ಪಠ್ಯಕ್ರಮವನ್ನು ಪ್ರಕಟಣೆ ಕುರಿತು.

ಉಲ್ಲೇಖ: 1. ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯ ನಿರ್ಣಯ ಸಂಖ್ಯೆ: 2 ರಿಂದ 9, ದಿ: 08.11.2024.

2. ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಅನುಮೋದನೆ ದಿನಾಂಕ: 11.11.2024.

ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿಯನುಸಾರ 2024–25ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಅನ್ವಯವಾಗುವಂತೆ, ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯದ ಎಲ್ಲ ಸ್ನಾತಕೋತ್ತರ ಪದವಿಗಳಾದ M.A./ M.Sc / M.Com / MBA / M.Ed 1 ರಿಂದ 4ನೇ ಸೆಮೆಸ್ಟರ್‌ಗಳಿಗೆ ಮತ್ತು 1 & 2ನೇ ಸೆಮೆಸ್ಟರ್‌ಗಳ ಸ್ನಾತಕೋತ್ತರ ಡಿಪ್ಲೋಮಾಗಳಿಗೆ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯ ಅನುಮೋದನೆಯೊಂದಿಗೆ ಈ ಕೆಳಗಿನಂತೆ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಅಳವಡಿಸಿಕೊಳ್ಳಲಾಗಿದೆ. ಕಾರಣ, ಸಂಬಂಧಪಟ್ಟ ಎಲ್ಲ ಸ್ನಾತಕೋತ್ತರ ವಿಭಾಗಗಳ ಅಧ್ಯಕ್ಷರು / ಸಂಯೋಜಕರು / ಆಡಳಿತಾಧಿಕಾರಿಗಳು / ಮಹಾವಿದ್ಯಾಲಯಗಳ ಪ್ರಾಚಾರ್ಯರುಗಳು / ಶಿಕ್ಷಕರು ಸದರಿ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಅನುಸರಿಸುವುದು ಮತ್ತು ಸದರಿ ಪಠ್ಯಕ್ರಮವನ್ನು ಕ.ವಿ.ವಿ. ಅಂತರ್ಜಾಲ www.kud.ac.in ದಲ್ಲಿ ಭಿತ್ತರಿಸಲಾಗಿದನ್ನು ಸಂಬಂಧಪಟ್ಟ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಸೂಚಿಸುವುದು.

Arts Faculty

Sl.No	Programmes	Sl.No	Programmes
1	Kannada	8	MVA in Applied Art
2	English	9	French
3	Folklore	10	Urdu
4	Linguistics	11	Persian
5	Hindi	12	Sanskrit
6	Marathi	13	MPA Music
7	MVA in Painting		

Faculty of Science & Technology

Sl.No	Programmes	Sl.No	Programmes
1	Geography	10	M.Sc (CS)
2	Chemistry	11	MCA
3	Statistics	12	Marine Biology
4	Applied Geology	13	Criminology & Forensic Science
5	Biochemistry	14	Mathematics
6	Biotechnology	15	Psychology
7	Microbiology	16	Applied Genetics
8	Zoology	17	Physics
9	Botany	18	~~Anthropology~~

Faculty of Social Science

Sl.No	Programmes	Sl.No	Programmes
1	Political Science	8	Journalism m & Mass Commn.
2	Public Administration	9	M.Lib. Information Science
3	History & Archaeology	10	Philosophy
4	A.I.History & Epigraphy	11	Yoga Studies
5	Economics	12	MTTM
6	Sociology	13	Women's Studies
7	MSW		

Management Faculty

Sl.No	Programmes	Sl.No	Programmes
1	MBA	2	MBA (Evening)

Faculty of Commerce

Sl.No	Programmes	Sl.No	Programmes
1	M.Com	2	M.Com (CS)

Faculty of Education

Sl.No	Programmes	Sl.No	Programmes
1	M.Ed	2	M.P.Ed

OEC subject for PG

Sl.No	Programmes	Sl.No	Programmes
1	Russian	5	Veman Peetha
2	Kanaka Studies	6	Ambedkar Studies
3	Jainology	7	Chatrapati Shahu Maharaj Studies
4	Babu Jagajivan Ram	8	Vivekanand Studies

PG Diploma

Sl.No	Programmes	Sl.No	Programmes
1	PG Diploma in Chatrapati Shahu Maharaj Studies	2	P.G. Diploma in Women's Studies
3	P.G. Diploma in Entrepreneurial Finance		

ಕುಲಸಚಿವರು.

ಅಡಕ: ಮೇಲಿನಂತೆ

ಗೆ,

1. ಕ.ವಿ.ವಿ. ಸ್ನಾತಕೋತ್ತರ ಅಧ್ಯಕ್ಷರುಗಳಿಗೆ / ಸಂಯೋಜಕರುಗಳಿಗೆ / ಆಡಳಿತಾಧಿಕಾರಿಗಳಿಗೆ / ಮಹಾವಿದ್ಯಾಲಯಗಳ ಪ್ರಾಚಾರ್ಯರುಗಳಿಗೆ
2. ಎಲ್ಲ ನಿಖಾಯದ ಡೀನರು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.

ಪ್ರತಿ:

1. ಕುಲಪತಿಗಳ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
2. ಕುಲಸಚಿವರ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
3. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ) ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
4. ಅಧೀಕ್ಷಕರು, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ / ಗೌಪ್ಯ / ಜಿ.ಎ.ಡಿ. / ವಿದ್ಯಾಂಡಳ (ಪಿ.ಜಿ.ಪಿಎಚ್.ಡಿ) ವಿಭಾಗ/ ಸಿಸ್ಟಮ್ ಅನಾಲೆಸಿಸ್ಟ್ / ಸಂಬಂಧಿಸಿದ ಪದವಿಗಳ ವಿಭಾಗಗಳು, ಪರೀಕ್ಷಾ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
5. ನಿರ್ದೇಶಕರು, ಕಾಲೇಜು ಅಭಿವೃದ್ಧಿ / ವಿದ್ಯಾರ್ಥಿ ಕಲ್ಯಾಣ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
6. ನಿರ್ದೇಶಕರು, ಐ.ಟಿ. ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ ಇವರಿಗೆ ಕ.ವಿ.ವಿ. ಅಂತರ್ಜಾಲದಲ್ಲಿ ಪ್ರಕಟಿಸುವುದು.

KARNATAK UNIVERSITY, DHARWAD

Faculty of Science and Technology

Two Years PG Programme

M.Sc. Geography

Programme Guidelines and Syllabus

As per NEP-2020

With Effect from 2024-25

GENERAL INSTRUCTIONS

Preamble:

The Karnatak University has successfully adopted NEP-2020 from the academic year: 2021-22 for all its Under Graduate Programmes. The first batch under this scheme after completing 03 Years with 3rd year exit provision entering into Post Graduate programme from the academic Year: 2024-25. In view of this and the present global demand, it is necessary to revise the curriculum frame work for all its Post Graduate Programmes and syllabus accordingly.

As per the provisions in NEP-2020 scheme the Two- year Post Graduate Programme, the curriculum has a provision to study the open electives courses in 2nd and 3rd semesters, Discipline specific Electives for a deeper knowledge in focused area in 3rd and 4th semesters and Internship / dissertation / project work for field experience or hands on training to inculcate the skill and develop cognitive thinking / higher order thinking to analyze the information obtained from project work / internship in the 4th semester.

It is therefore, this is a revised CBCS as per NEP - 2020 having minimum 90 and maximum 100 credits in two years programme with provision of choice as above and hence, shall be called as NEP syllabus. In this context, the prevailing regulations (CBCS scheme adopted from 2009) needs some modifications and adopted herewith as Guidelines to execute all the PG Programmes unless otherwise stated.

However, the eligibility for admission to the concerned PG Programmes shall be decided by the respective Board of Studies.

I. CREDIT, WORKLOAD AND SYLLABUS EQUIVALENCE

1. One credit is equal to 1 hour theory teaching per week.
2. One credit is equal to 2 hour practical teaching per week.
3. One credit is equal to 15 hours theory syllabus per semester (1 Unit is equal to 15 Hours)
4. One credit is equal to 30 hours practical syllabus per semester (1 credit practical is equal to 2 hours/ week)

A. Workload for theory subjects

1. There shall be 16 hrs/week workload for Assistant Professor
2. There shall be 14 hrs/week workload for Associate Professor/ Professor/Senior Professor.
3. There shall be 2hrs/week workload relaxation for Guiding Ph.D. students

B. Workload for practical subjects

1. There shall be 20 hrs/week workload for Assistant Professor
2. There shall be 18 hrs/week workload for Associate Professor/ Professor/Senior Professor.

3. There shall be 2hrs/week workload relaxation for Guiding Ph.D. students

C. Workload for practical batches

1. A batch of 10-12 students shall have 1 teacher

D. Workload for Project

1. Students for projects / internship shall be preferably guided by permanent faculty for atleast10 students by sharing equally among the permanent faculty. If remained excess shall be allotted to other teacher's on roll on temporary basis.
2. If there are no permanent faculty, the students shall be distributed among the temporary teachers on roll.
3. There shall be maximum of 4 hrs/week workload for guiding the students for project work irrespective of number of students.

II. ALLOTMENT OF SPECIALIZATION: While allotting specialization in 3rd and 4th semester, minimum of 10 students shall have to select the specialization.

III. **ATTENDANCE:** 75% attendance is mandatory for every course (paper). No marks are reserved for attendance. If the candidates fail to fulfill 75% attendance in any one of the course (paper) in the given semester, such candidate is not eligible to appear for examination in all the papers and candidate has to get the readmission for such semester. However, up to 20% attendance may be condoned with the supportive documents for a student who represents University /State / National level sports, cultural and other events. Monthly attendance shall be displayed on notice board.

IV. CREDIT AND MARKS EQUIVALENCE

1. Generally, 20% weightage for Formative assessment and 80% weightage for Summative assessment.
2. Up to 2 credits equal to 50 marks (10 marks Formative assessment and 40 marks summative assessment).
3. 3-4 credits equal to 100 marks (20 marks Formative assessment and 80 marks summative assessment).
4. 5-6 credits equal to 150 marks (30 marks Formative assessment and 120 marks summative assessment).
5. Example for 100 marks out of which 20 marks for Formative assessment i.e., Formative Assessment shall be in two internal assessments i.e.: 10 marks I.A. for 8th week and 10 marks for 14thweek of every semester.

V. **Conduct of Examination**

1. Formative assessment examination shall be conducted for 1hr. There shall not be any reexamination for improvement or the student remaining absent. However, a special Formative assessment examination shall be conducted for a student who represents University /State / National level sports, cultural and other events if a schedule is overlapping.
2. 80 marks summative theory examination shall be conducted for 3 hrs and 40 marks for 1.5 hrs.
3. 80/ 40 marks Formative / Summative Practical examination shall be conducted for 4 hrs.
4. There shall be a single examiner for both even and odd semesters' Formative Practical examination.
5. There shall be a single examiner for odd semester Summative Practical examination and two examiners for even semester Summative Practical examination; one from internal and other shall be external examiner.

VI. Assessment

1. **Theory papers:** There shall be a single valuation for odd semester theory papers preferably internal examiner and double valuation for even semesters; one from internal and other shall be external examiner.
2. **Project/Internship assessment**

A) **For100 marks Project/Internship assessment (Wherever applicable)**

i. **Formative Assessment**: Project/Internship assessment carrying 20 marks out of 100 marks Candidate has to submit two Progress Reports; each carries 10 Marks. i.e. 10 x 2= 20 marks.

ii. **Summative Assessment**: Project/Internship assessment carrying 80 marks out of 100 marks

   a. Project Report : 35
   b. Presentation : 25
   c. Viva-voce : 20

B) For150 marks **Project/Internship assessment (Wherever applicable)**

i. **Formative Assessment**: Project/Internship assessment carrying 30 marks out of 150 marks Candidate has to submit two Progress Reports; each carries 15 Marks. i.e. 15 x 2= 30 marks.

ii. **Summative Assessment:** Project/Internship assessment carrying 120 marks out of

150 marks

a. Project Report : 60
b. Presentation : 35
c. Viva-voce : 25

VII. Passing criteria:

1. There shall be no minimum passing marks for Formative assessment.
2. Candidate has to score minimum 40% in summative examination and fulfill 40% of the maximum marks including Formative assessment marks. For example: for 80 marks summative examination, candidate has to score minimum of 32 marks (40%) and should score cumulatively 40 marks including formative assessment in every course.

VIII. DECLARATION OF RESULT

1. Candidate has to score 40% as above in all the courses to pass the semester end examination to declare pass.
2. **Percentage and Grading:** Result shall be declared in terms of SGPA and at the end of four semesters as CGPA. The calculation of CGPA is as under
3. If P is the percentage of marks secured (IA + semester end score) by the candidate in a course which is rounded off to the nearest integer, the grade point (GP) earned by the candidate in that course will be given as below.

Percentage (%)	Grade(GP)	Percentage (%)	Grade(GP)
40	4.0	71-75	7.5
41-45	4.5	76-80	8.0
46-50	5.0	81-85	8.5
51-55	5.5	86-90	9.0
56-60	6.0	91-95	9.5
61-65	6.5	96-100	10.0
66-70	7.0		

Grade point of less than 4 shall be considered as fail in the course, hence, GP=0 and for the absent candidate also GP=0

4. A student's level of competence shall be categorized by grade point (GP), Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of the programme.
5. **Semester Grade Point Average (SGPA):** The SGPA is a ratio of sum of the number

of Credit Grade Points scored from all the courses (subject) of given semester to the total credits of such semester in which the candidate studied. (Credit Grade Points of each course = Credits x GP).

6. **Cumulative Grade Point Average (CGPA):** It is calculated as below for 4 semester programme.

   CGPA=$(Credit_1 \times SGPA_1) + (Credit_2 \times SGPA_2) + (Credit_3 \times SGPA_3) + (Credit_4 \times SGPA_4)$ / Total credits of programme (sum of credits of 4 semesters).

7. After studying and passing, all the credits prescribed for the programme the degree shall be awarded with CGPA score after rounding off to second decimal and class distinguishing as second class, first class, and distinction along with grade letter as under:

CGPA of the programme(Degree)	Class obtained	Grade Letter
9.5 to 10.00	Outstanding	A^{++}
7.00 to 9.49	Distinction	A^{+}
6.00 to 6.99	First Class	A
5.50 to 5.99	Second class	B^{+}
5.00 to 5.49		B
4.00 to 4.99	Pass	C
Less than 4.0	Fail/ Reappear	D

8. Each semester Grade Card shall have marks and SGPA and final Grade Card shall have semester wise marks obtained in all semesters, CGPA and % of cumulative marks obtained from all semesters.
9. There shall be Revaluation / Challenge valuations provisions as per the prevailing rules and regulations.
10. Marks obtained from the OEC shall not be considered for award of CASH PRIZE / RANK / GOLD MEDAL.

IX. MAXIMUM DURATION FOR COMPLETION OF THE PROGRAMME

A candidate admitted to any P.G. Programme shall complete it within a period, which is double the duration of the programme from the date of admission.

X. ANY OTHER TERMS AND CONDITIONS

Apart from the above, the prevailing rules(CBCS) and regulation are valid for any other matters which are not addressed in this regard.

Karnatak University, Dharwad
Programme structure: Effective from**2024-25**

Karnatak University, Dharwad
M.Sc.in Geography Effective from2024-25

Semester	Type of Course	Theory/ Practical	Course Code	Course Title	Instruction hour/ week	Total hours / sem	Duration of Exam	Marks			Credits
								Formative	Summative	Total	
I	DSC-	Theory	**A1GEO001T**	Development of Geographical Thought	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A1GEO002T**	Advanced Geomorphology	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A1GEO003T**	Advanced Climatology	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A1GEO004T**	Advanced Oceanography	04	60hrs	03hrs	20	80	100	04
	DSC-	Practical	**A1GEO005P**	Interpretation of Indian and Foreign Topomaps and Weather Maps	04	60 hrs	04hrs	20	80	100	04
	DSC-	Practical	**A1GEO006P**	Techniques in Physical Geography	04	60 hrs	04hrs	20	80	100	04
								120	**480**	**600**	**24**
II	DSC-	Theory	**A2GEO001T**	Natural Hazards and Management	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A2GEO002T**	Agriculture Geography	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A2GEO003T**	Marketing Geography	04	60hrs	03hrs	20	80	100	04
	OEC -	Theory	**A2GEO204T**	Geography of India with special reference to Karnataka	04	60hrs	03hrs	20	80	100	04
	DSC-	Practical	**A2GEO005P**	Statistical Methods in Geography	04	60 hrs	04hrs	20	80	100	04
	DSC	Practical	**A2GEO006P**	Techniques in Human Geography	04	60 hrs	04hrs	20	80	100	04
								120	**480**	**600**	**24**

Semester	Type of Course	Theory/ Practical	Course Code	Course Title	Instruction hour/ week	Total hours / sem	Duration of Exam	Marks			Credits
								Formative	Summative	Total	
III	DSC-	Theory	**A3GEO001T**	Theoretical and Quantitative Geography	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A3GEO002T**	Research Methodology	04	60hrs	03hrs	20	80	100	04
	DSE- A DSE- B	Theory	**A3GEO103AT**	Settlement Geography	04	60hrs	03hrs	20	80	100	04
			A3GEO103BT	Population Geography							
	OEC -	Theory	**A3GEO204T**	Environmental Geography	04	60hrs	03hrs	20	80	100	04
	DSC-	Practical	**A3GEO005P**	Quantitative Techniques in Geography	04	60 hrs	04hrs	20	80	100	04
	DSC-	Practical	**A3GEO006P**	Aerial Photo Interpretation	04	60 hrs	04hrs	20	80	100	04
								120	**480**	**600**	**24**
IV	DSC-	Theory	**A4GEO001T**	Principles of Remote Sensing	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A4GEO002T**	Tourism Geography	04	60hrs	03hrs	20	80	100	04
	DSC-	Theory	**A4GEO003T**	Regional Planning and Development	04	60hrs	03hrs	20	80	100	04
	DSE- A DSE- B	Theory	**A4GEO104AT**	Resource Conservation and Management	04	60hrs	03hrs	20	80	100	04
		Theory	**A4GEO104BT**	Transportation Geography							
	DSC-	Practical	**A4GEO005P**	Geographical Information System	04	60 hrs	04hrs	20	80	100	04
	DSC-	Practical	**A4GEO006P**	Project Report and Field Study	04	60 hrs	04hrs	20	80	100	04
								120	480	600	24

					Total			**480**	**1920**	**2400**	**96**

KARNATAK UNIVERSITY, DHARWAD

PG Programme

M.Sc. Geography

Curriculum Structure & Syllabus

As per NEP-2020

With Effect from 2024-25

Brief Profile of the Department

The Post-Graduate Department in Geography was established in 1961 under the stewardship of late Prof. C. D. Deshpande and offered MA/ M. Sc. Programmee. Later on, Dr. M. P. Srivastava a dynamic academician served the Department as a Head and subsequently, **27** HoD's were headed the Department so far. Department was started the M.A/M. Sc Applied Geography Courses in 1971. Meanwhile, Dr. N. C. VijayaRaj has served long period of 13 years as Head and maintained good academic standard and accordingly produced good graduates and were served in Government of India as well as State Government in different capacities apart from teaching and research.

The Department of Geography started functioning with dynamic academician Dr. M. P. Srivastava, Reader and Head of the Department and served the Department in a very short period of six months from June to October, 1961and Dr. R. J. Goodman from England took the responsibility as Head and also not remained in a longer time and left to England in June, 1962. Later on, Dr. S. C. Bose was appointed as Professor and Head in the year 1962 and left the Department to take up new assignment at National Atlas Organization (NATMO) Calcutta in 1963. Subsequently, Prof. G. S. Singh was appointed as Head of the Department. Prof. Singh was a great scholar, innovative teacher and teaching was very effective and appreciated by the not only the students of the Department but also faculty members in the university campus and able administrator has left indelible mark on Geography Department. Prof. was an instrumental for initiated the Departmental Seminars and the academic activities were conducted regularly and made the students involved in the learning process thereby students gained the knowledge accordingly. Prof. Singh was appreciated by the student community resulted into the formation of a forum of Karnatak University Geographical Society (KUGS) along with the faculty, research Scholars and Post-Graduate students and still it is functioning in the Department. This forum has invited the eminent Geographers from different parts of India has been invited and arranged the academic discussions, special lectures and interactive sessions were conducted and paved the way for effective academic environment. Due to the multi-talented personality of Prof. Singh, the foreign invitations made him to leave the Department and accordingly left the in the year 1966 to Canada. Dr. B. N. Sinha took over the charge and was responsible for introducing field/project work as a part of M. A/M. Sc. Curriculum and maintained the academic standard and Headed the Department till 1970. Prof. Sinha became a research guide and produced only three candidates and awarded their Ph. D Degree in Geography. First of its kind that the First Ph. D has been awarded to Prof. M.F. Karenavar in 1969 and later on Dr. D.G.Kulakarni and Prof. N.C Vijayaraj have been awarded the Ph. D Degree under the able guidance and supervision of Prof. Sinhna in 1973 and 1975 respectively and Prof. has left the Department in 1970.

Later on, Dr. N. B. K. Reddy was a successor of Prof. Sinhna, Prof. M. S. Honrao, headed the Department from 1971-76. Prof. Honnarao was responsible for starting the M.A/M.Sc Course in Applied Geography. Dr. N. C. Vijayaraj became the Head and Headed the Department for a long period of 13 years. The rotation among the Chairman's of the Department was witnessed by changing from 1983 with Dr. M. F. Karennavar, Dr. D. G. Kulkarni, Dr. S. S. Naregal, Dr. S. R. Patil, Dr. S. G. Kadarmandalgi, Dr.S.I.Hugar, Dr.S.R. Nidagundi, Dr. S.I.Biradar and Dr. Aravind Mulimani. However, Dr. S.S. Nanjannavar, Dr. F.V.

Yavagal, Dr. V.S. Bhadrapur, Dr. Y.M.Madar and Dr. (Smt) Hymavati Reddy were the faculty members served the Department without heading the Department. Presently, Dr. Aravind Mulimani, Senior Professor of Geography heading the Department as Chairman having Fifth term experiences from 2011. Dr. M.G.Nayak, Faculty member working in the Department since, 2012.

In the process of introducing CBCS in the University only M.Sc Degree in Geography has been offered and continued till under NEP.

GENERAL INSTRUCTIONS

I. CREDIT, WORKLOAD AND SYLLABUS EQUIVALENCE:

1. One credit is equal to 1 hour theory teaching per week.
2. One credit is equal to 2 hour practical teaching per week.
3. One credit is equal to 15 hours theory syllabus per semester (1 Unit is equal to 15 Hours)
4. One credit is equal to 30 hours practical syllabus per semester (1 credit practical is equal to 2 hours/ week)

A. Workload for theory subjects:

1. There shall be 16 hrs/week workload for Assistant Professor
2. There shall be 14 hrs/week workload for Associate Professor/ Professor/Senior Professor.
3. There shall be 2hrs/week workload relaxation for Guiding Ph.D. students

B. Workload for practical subjects:

1. There shall be 20 hrs/week workload for Assistant Professor
2. There shall be 18 hrs/week workload for Associate Professor/ Professor/Senior Professor.
3. There shall be 2hrs/week workload relaxation for Guiding Ph.D. students

C. Workload for practical batches:

1. A batch of 10-12 students shall have 1 teacher

D. Workload for Project:

1. Students for projects / internship shall be preferably guided by permanent faculty for atleast10 students by sharing equally among the permanent faculty. If remained excess shall be allotted to other teacher's on roll on temporary basis.
2. If there are no permanent faculty, the students shall be distributed among the temporary teachers on roll.
3. There shall be maximum of 4 hrs/week workload for guiding the students for project work irrespective of number of students.

II. ALLOTMENT OF SPECIALIZATION:

While allotting specialization in 3rd and 4th semester, minimum of 10 students shall have to select the specialization.

III. **ATTENDANCE:** 75% attendance is mandatory for every course (paper). No marks are reserved for attendance. If the candidates fail to fulfill 75% attendance in any one of the course (paper) in

the given semester, such candidate is not eligible to appear for examination in all the papers and candidate has to get the readmission for such semester. However, up to 20% attendance may be condoned with the supportive documents for a student who represents University /State / National level sports, cultural and other events. Monthly attendance shall be displayed on notice board.

IV. CREDIT AND MARKS EQUIVALENCE:

1. Generally, 20% weightage for Formative assessment and 80% weightage for Summative assessment.
2. Up to 2 credits equal to 50 marks (10 marks Formative assessment and 40 marks summative assessment).
3. 3-4 credits equal to 100 marks (20 marks Formative assessment and 80 marks summative assessment).
4. 5-6 credits equal to 150 marks (30 marks Formative assessment and 120 marks summative assessment).
5. Example for 100 marks out of which 20 marks for Formative assessment i.e., Formative Assessment shall be in two internal assessments i.e.: 10 marks I.A. for 8^{th} week and 10 marks for 14^{th}week of every semester.

V. **Conduct of Examination:**

1. Formative assessment examination shall be conducted for 1hr. There shall not be any provision for improvement. A special Formative assessment examination shall be conducted for a student who represents University /State / National level sports, cultural and other events if a schedule is overlapping.

2. 80 marks summative theory examination shall be conducted for 3 hrs and 40 marks for 1.5 hrs.

3. 80/ 40 marks Formative / Summative Practical examination shall be conducted for 4 hrs.

4. There shall be a single examiner for both even and odd semesters' Formative Practical examination.

5. There shall be a single examiner for odd semester Summative Practical examination and two examiners for even semester Summative Practical examination; one from internal and other shall be external examiner.

VI. Assessment:

1. **Theory papers:** There shall be a single valuation for odd semester theory papers preferably internal examiner and double valuation for even semesters; one from internal and other shall be external examiner.
2. **Project/Internship assessment**

A) **For100 marks Project/Internship assessment (Wherever applicable):**

i. **Formative Assessment**: Project/Internship assessment carrying 20 marks out of 100 marks Candidate has to submit two Progress Reports; each carries 10 Marks. i.e. 10 x 2= 20 marks.

ii. **Summative Assessment**: Project/Internship assessment carrying 80 marks out of 100 marks

a. Project Report : 35
b. Presentation : 25
c. Viva-voce : 20

B) **For150 marks Project/Internship assessment (Wherever applicable):**

i. **Formative Assessment**: Project/Internship assessment carrying 30 marks out of 150 marks Candidate has to submit two Progress Reports; each carries 15 Marks. i.e. 15 x 2= 30 marks.

ii. **Summative Assessment:** Project/Internship assessment carrying 120 marks out of 150 marks

a. Project Report : 60
b. Presentation : 35
c. Viva-voce : 25

VII. Passing criteria:

1. There shall be no minimum passing marks for Formative assessment.
2. Candidate has to score minimum 40% in summative examination and fulfill 40% of the maximum marks including Formative assessment marks. For example: for 80 marks summative examination, candidate has to score minimum of 32 marks (40%) and should score cumulatively 40 marks including formative assessment in every course.

VIII. DECLARATION OF RESULT:

1. Candidate has to score 40% as above in all the courses to pass the semester end examination to declare pass.
2. **Percentage and Grading:** Result shall be declared in terms of SGPA and at the end of four semesters as CGPA. The calculation of CGPA is as under
3. If P is the percentage of marks secured (IA + semester end score) by the candidate in a course which is rounded off to the nearest integer, the grade point (GP) earned by the candidate in that course will be given as below.

Percentage (%)	Grade(GP)	Percentage (%)	Grade(GP)
40	4.0	71-75	7.5
41-45	4.5	76-80	8.0
46-50	5.0	81-85	8.5
51-55	5.5	86-90	9.0
56-60	6.0	91-95	9.5
61-65	6.5	96-100	10.0
66-70	7.0		

Grade point of less than 4 shall be considered as fail in the course, hence, GP=0 and for the absent candidate also GP=0

4. A student's level of competence shall be categorized by grade point (GP), Semester Grade

Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of the programme.

5. **Semester Grade Point Average (SGPA):** The SGPA is a ratio of sum of the number of Credit Grade Points scored from all the courses (subject) of given semester to the total credits of such semester in which the candidate studied. (Credit Grade Points of each course = Credits x GP).
6. **Cumulative Grade Point Average (CGPA):** It is calculated as below for 4 semester programme.

   CGPA=$(Credit_1 \times SGPA_1) + (Credit_2 \times SGPA_2) + (Credit_3 \times SGPA_3) + (Credit_4 \times SGPA_4)$ / Total credits of programme (sum of credits of 4 semesters).
7. After studying and passing, all the credits prescribed for the programme the degree shall be awarded with CGPA score after rounding off to second decimal and class distinguishing as second class, first class, and distinction along with grade letter as under:

CGPA of the programme(Degree)	Class obtained	Grade Letter
9.5 to 10.00	Outstanding	A^{++}
7.00 to 9.49	Distinction	A^{+}
6.00 to 6.99	First Class	A
5.50 to 5.99	Second class	B^{+}
5.00 to 5.49		B
4.00 to 4.99	Pass	C
Less than 4.0	Fail/ Reappear	D

8. Each semester Grade Card shall have marks and SGPA and final Grade Card shall have semester wise marks obtained in all semesters, CGPA and % of cumulative marks obtained from all semesters.
9. There shall be Revaluation / Challenge valuations provisions as per the prevailing rules and regulations.
10. Marks obtained from the OEC shall not be considered for award of CASH PRIZE / RANK / GOLD MEDAL.

i. MAXIMUM DURATION FOR COMPLETION OF THE PROGRAMME:

A candidate admitted to any P.G. Programme shall complete it within a period, which is double the duration of the programme from the date of admission.

X. ANY OTHER TERMS AND CONDITIONS:

Apart from the above, the prevailing rules and regulation are valid for any other matters which are not addressed in this regard.

Karnatak University, Dharwad

M.Sc.in Geography Effective from2024-25

Semester	Type of Course	Theory/ Practical	Course Code	Course Title	Instruction hour/ week	Total hours / sem	Duration of Exam	Marks			Credits
								Formative	Summative	Total	
I	DSC- 01	Theory	A1GEO001T	Development of Geographical Thought	04	60hrs	03hrs	20	80	100	04
	DSC- 02	Theory	A1GEO002T	Advanced Geomorphology	04	60hrs	03hrs	20	80	100	04
	DSC- 03	Theory	A1GEO003T	Advanced Climatology	04	60hrs	03hrs	20	80	100	04
	DSC- 04	Theory	A1GEO004T	Advanced Oceanography	04	60hrs	03hrs	20	80	100	04
	DSC-05	Practical	A1GEO005P	Interpretation of Indian and Foreign Topomaps and Weather Maps	08	120 hrs	04hrs	20	80	100	04
	DSC-06	Practical	A1GEO006P	Techniques in Physical Geography	08	120 hrs	04hrs	20	80	100	04
								120	**480**	**600**	**24**
II	DSC-07	Theory	A2GEO001T	Natural Hazards and Management	04	60hrs	03hrs	20	80	100	04
	DSC-08	Theory	A2GEO002T	Agriculture Geography	04	60hrs	03hrs	20	80	100	04
	DSC-09	Theory	A2GEO003T	Marketing Geography	04	60hrs	03hrs	20	80	100	04
	OEC-01	Theory	A2GEO204T	Geography of India with special reference to Karnataka	04	60hrs	03hrs	20	80	100	04
	DSC-10	Practical	A2GEO005P	Statistical Methods in Geography	08	120 hrs	04hrs	20	80	100	04
	DSC-11	Practical	A2GEO006P	Techniques in Human Geography	08	120 hrs	04hrs	20	80	100	04
								120	**480**	**600**	**24**

Semester	Type of Course	Theory/ Practical	Course Code	Course Title	Instruction hour/ week	Total hours / sem	Duration of Exam	Marks			Credits
								Formative	Summative	Total	
III	DSC-12	Theory	**A3GEO001T**	Theoretical and Quantitative Geography	04	60hrs	03hrs	20	80	100	04
	DSC-13	Theory	**A3GEO002T**	Research Methodology	04	60hrs	03hrs	20	80	100	04
	DSE -01A	Theory	**A3GEO103A T**	Settlement Geography	04	60hrs	03hrs	20	80	100	04
	DSE-01B		**A3GEO103BT**	Population Geography							
	OEC -02	Theory	**A3GEO204T**	Environmental Geography	04	60hrs	03hrs	20	80	100	04
	DSC-14	Practical	**A3GEO005P**	Quantitative Techniques in Geography	08	120 hrs	04hrs	20	80	100	04
	DSC-15	Practical	**A3GEO006P**	Aerial Photo Interpretation	08	120 hrs	04hrs	20	80	100	04
								120	**480**	**600**	**24**
IV	DSC-16	Theory	**A4GEO001T**	Principles of Remote Sensing	04	60hrs	03hrs	20	80	100	04
	DSC-17	Theory	**A4GEO002T**	Tourism Geography	04	60hrs	03hrs	20	80	100	04
	DSC-18	Theory	**A4GEO003T**	Regional Planning and Development	04	60hrs	03hrs	20	80	100	04
	DSE -02A	Theory	**A4GEO104A T**	Resource Analysis and Management	04	60hrs	03hrs	20	80	100	04
	DSE-02B		**A4GEO104BT**	Transportation Geography							
	DSC-19	Practical	**A4GEO005P**	Geographical Information System	08	120 hrs	04hrs	20	80	100	04
	DSC-20	Practical	**A4GEO006P**	Project Report and Field Study			04hrs	20	80	100	04
								120	480	600	24
						Total		**480**	**1920**	**2400**	**96**

***Each DSE theory student shall select any one DSE each in 3rd and 4th semester**

PROGRAMME SPECIFIC OUTCOMES (PSOS)

PO 1: Enrich the knowledge of understanding the relevant concepts and principles of geography and its evolutionary process in the historical past.

PO 2: Enhanced the capabilities to understand the concepts and principles of geomorphology, climatology and oceanography in Physical Geography.

PO 3: Enhanced the capability to explain the relevant theories and models in both Physical and human geography for geographical analysis.

PO 4: Know the complex and interactive nature of physical and human environments and changing Process.

PO 5: Understand Conceptual clarity about the human actions on nature, relationship between the man and environment and important issues related to human induced hazards and natural hazards.

PO 6: Enhanced the existing knowledge with regards to the concepts related to settlements and population and spatial distribution, trends, pattern and spatio- temporal variations on any geographical space in the world.

PO 7: Enrich the knowledge in the principles of spatial movements, interactions, arrangements, behavior and perception in past changing aspects in marketing, transportation and tourism activities on geographical environment.

PO 8: Demonstrate the skill of analysis of geographical information, evidences and cause and effects and process of changes of physical and cultural aspects with socio-economic aspects.

PO 9: Develop the consciousness of relevance of geography to understand and solving the contemporary environmental issues with rural, urban and regional development.

PO 10: Enhance the knowledge and the skills in Map Making procedures and Principle of Cartography and expose in the technology for handling the spatial and non-spatial data and to integrate in Geographical Environment and Remote Sensing.

M Sc. Semester – I

Discipline Specific Course (DSC)

Course Title: Development of Geographical Thought
Course Code: A3GEO001T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-01	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To discuss the nature and scope and also Traditions in geography
2. To discuss the contributions of the scholars during 18th &19th centuries.
3. To discuss the Quantitative Revolution, Scientific Geography and contributions in 20th century.
4. To understand the dualism in geography and Systems Analysis

Unit	Content	60hrs/ Sem
I	**Introduction:** Definition and meaning of geography: Nature and scope of geography. Geography as a social and natural science. Limits in geography. Traditions in geography: Area differentiation, landscape theme, Environment theme, spatial distribution and geometric theme. Inter-disciplinary and intra-disciplinary approaches in geography.	**15**
II	**Development of Geography during 18th & 19th century :** Methodology, Motivation and Content of 18th & 19th Century. The contributions of J.R. Forster, Karl Ritter,Alexander Von Humboldt, Emmanuel Kant. Contributions of Ratzel, Peshel, Richothofen, Penk, Blach, Mackindar, W.M. Davis and Miss. Semple.	**15**
III	**The Development of Scientific Geography in 20th Century:** Methodology, Motivation and Content. Quantitative Revolution development of scientific method and theory building, Locational patterns and regional analysis, Contributions of Taylor, Christaller, Hartshore and Peter Haggett.	**15**
IV	**Dualism and dichotomies in Geography :** Determinism v/s Possibilism, Physical Geography v/s Human Geography, Forman Site v/s Functional regions. Historical Geography v/s Contemporary Systems analysis and regional concepts. Modern themes in geographical thought.	**15**

Suggested Readings:

1. Adhikari S. (2004) : Fundamentals of Geographic thought, concept publishers, New Delhi.
2. Cooke and Johnson : Trends in Geography, Pergamow press, London.
3. David Harvey (2000) : Explanations in Geography, Macmillan, New York.
4. Dikshit R.D. (2001) : Geographical Thought: A Conceptual History of ideas, prentice Hall publishing Company, New Delhi-2.
5. Dixit R.D. : The Art and Science of Geography.
6. Frazire J.W. (1982) : Applied Geography, Prentice Hall, New Delhi.
7. Freeman T.W : A Hundred Years of Geography, London.
8. Halt, Jensew : Geography: Its History and concepts, Longmans.
9. Hartshorne .R : Perspective on the Nature of Geography, Rand M.N and Co. Chicago.
10. Harvey ME (2002) : Theme in Geographical thought, R.K. Publications and distributors, Ansari Road, New Delhi – 2.
11. Majid Hussain (2001) : Evolution of Geographic thought, Rawat Publications, New Delhi.
12. Peter Hagget (1972) : Geography: A Modern Synthesis.
13. Singh. I (2006) : Diverse aspect of Geographical thought: ALFA Publications, New Delhi.
14. Sudeepa Adhikari : Fundamentals o f Geographical Thought, Chaitanya Publishing House, University Road Allahbad (UP).
15. Taylor (ED) : Geography of 20th Century, Methew, London.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – I

Discipline Specific Course (DSC)

Course Title: Advanced Geomorphology
Course Code: A1GEO002T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-02	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To define the Geomorphology and to explain the fundamental concepts.
2. To understand the geotectonic hypothesis futfourth by different scholars about the plate tectonics.
3. To explain the earth movements, geosynclines and forces of crustal instability.
4. To explain the Geomorphic processes erosion and depositional landforms.

Unit	Content	60hrs/ Sem
I	Nature and Scope of Geomorphology, Fundamental Concepts**:** Multicyclic and Polygenetic evolution of landscape. The interior of the earth, Seismological evidences. Geological time scale. Davis & Penck views of cycle of erosion.	**15**
II	Geotectonic Hypothesis: Isostacy, Wagner's Continental Drift Theory, Holme's Convectional Current Theory, Jolley's Thermal Cycle Theory, Plate Tectonics.	**15**
III	Earth Movements: Epeirogenic, Organic and Cymatogenic earth movements. Mountain Building – Geosynclines, Hinter land, Foreland and Median Mass. Forces of crustal instability. Concept of gradation, Agradation and degradation, classification of weathering, mass movement. Slope evolution, down wearing, parallel retreat and slope replacement model.	**15**
IV	Geomorphic processes: Cycle of Erosion, Fluvial, Glacial, Aeolian, Marine and Karst processes and resulting landforms, erosion and depositional landforms.	**15**

Suggested Readings:

1. Anhert, F., (1996): Introduction to Geomorphology, Arnold, London, Sydney, Auckland.
2. Bloom, A. L. (2002): Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Pearson Education Pvt. Ltd., and Singapore.
3. Chattopadhyay, S. (2017): Geomorphological Field Guide Book on Laterites and Backwaters of Kerala (Edited by Amal Kar). Indian Institute of Geomorphologists, Allahabad.
4. Chorley R. J, Schumm, S.A. and Sugden D.E. (1984): Geomorphology, Methuen, London.
5. Cooke, R. U. and Doornkamp, J.C., (1974): Geomorphology in Environmental Douglas, J. and Spencer, I. (1985): Environmental Change and Tropical Geomorphology, George Allen and Unwin, London.
6. Garner, H.F. (1974): Origin of Landscapes A synthesis in Geomorphology, Oxford University Press, New Delhi.
7. Hart, M.G. (1986): Geomorphology: Pure and Applied, George Allen and Unwin, London.
8. John R.hails., (1977): "Applied Geomorphology" Elsevier Scientific publishing Company, New York.
11. Sharma, H. S. (ed.) (1991): Indian Geomorphology, Concept, New Delhi.
12. Spark B.W. (1972): Geomorphology, Longman, New York.
13. Strahler A.H. and Strahler, A.N. (1998): Introducing Physical Geography, John Wiley and Sons, Inc. New York.
14. Thornbury, W.D. (1960): Principles of Geomorphology", John Wiley and Sons, New York.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – I

Discipline Specific Course (DSC)

Course Title: Advanced Climatology
Course Code: A1GEO003T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-03	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able :

1. To define the Climatology, composition and structure of the atmosphere, insolation and heat balance.
2. To understand the vertical and horizontal distribution of atmospheric pressure, Monsoons and its mechanism.
3. To explain the humidity and its types, hydrological cycle, types of clouds and rainfall.
4. To understand the classification, air masses and fronts, cyclones and thunderstorms and classification of climatic regions.

Unit	Content	60hrs/ Sem
I	**Introduction:** Nature, scope and content of climatology. Elements of weather and climate. Origin, composition and structure of atmosphere. Temperature: Solar radiation principles, solar budget, Green house effects, horizontal and vertical distribution of temperature & inversion of temperature. Global warming and global cooling.	**15**
II	**Atmospheric pressure** : Pressure gradient, Coriolis Effect, horizontal and vertical distribution of air pressure and pressure belts. Winds: planetary, monsoons, local winds, jet streams. Mechanism of monsoon. Humidity, precipitation and hydrological cycle and types of clouds and rainfall.	**15**
III	**Air masses**: Definition, nature, source region, classification of air masses. Fronts –fronto-genesis and frontolysis, classification of fronts, frontal zones. Cyclones: types, tropical cyclones-Origin, types and structure of tropical cyclone. Distribution of tropical and temperate cyclones features of temperate cyclone, source region, and origin of temperate cyclone. Polar front, study of weather disturbances through satellites.	**15**
IV	**Classification of World Climates:** Koppen's & Thornthwaite classification. Changes in world climate: Global warming, depletion of ozone layer, Weather forecasting, El-Nino and la Nina phenomena, el- nino-southern oscillation (ENSO). Problems and prospects of weather forecasting in India.	**15**

Suggested Readings:

1. Adger, W. N. (2006): Vulnerability, Global Environmental Change, 16 (3), 268-281
   Barros, Vicente R. (eds.) (2014): Climate Change 2014. Impacts, Adaptation and Vulnerability: Global and Sectoral Aspects. Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Part B; Regional Aspect), Cambridge University Press, New York.
2. Barry, R.G. and Chorley, R.J. (2003): Atmosphere, Weather and Climate, Routledge, London Brewster, E. N. (2010): Climate Change Adaptation: Steps for a Vulnerable Planet, New York, Nova Science
3. Critch field, H. J. (1983): General Climatology. Prentice Hall India Ltd (2010 Reprint)
4. IPCC, Climate Change (2013): The Physical Science Basis, the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley.(eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA,
5. John E. Hobbs (2016): Applied climatology: A study of Atmospheric Resources,
6. Elsevier, London.
7. Lal, D. S. (2003): Climatology, Allahabad: Sharda Pustak Bhawa.
8. Oliver, J.E. (1993): Climatology: An Atmospheric Science, Pearson Education Indi New- Delhi.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – I

Discipline Specific Course (DSC)

Course Title: Advanced Oceanography
Course Code: A1GEO004T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-04	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To the Theories of Permanency, bottom relief of oceans and their origin.
2. To understand the Physical and Chemical Properties of Ocean water and Types of tides and theories.
3. To understand the origin, causes and types of ocean currents and their effects, currents of Atlantic, Pacific and Indian Ocean.
4. To discuss the ocean deposits, types and distribution of Coral Reefs and Theories of Origin of Coral Reefs and Mineral wealth, food resource and marine pollution.

Unit	Content	60hrs/ Sem
I	**Introduction:** The permanency of Ocean Basins: Theories of Permanency, Bottom Relief of Oceans: Continental Shelf, Slope, Ocean Plains and Ocean Deeps. Origin and their salient features, hypsographic curve, Indian Ocean, Atlantic Ocean and Pacific Ocean.	**15**
II	Origin and distribution of submarine canyons. Physical and Chemical Properties of Ocean water. Distribution of Temperature, Origin and distribution of Salinity, Dynamics of Ocean water. Waves, Tides, Types of tides, Theories of Tides, Progressive Theory, Stationary Wave Theory.	**15**
III	Ocean Currents: Origin, causes and types of Ocean currents and their effects, currents of Atlantic, Pacific and Indian Ocean.	**15**
IV	Types and Distribution, Coral Reefs: Origin, Types and Theories of Origin of Coral Reefs (Darwin, Dally and Murray), Issue of Coral Bleaching. Ocean as a store house of mineral wealth, food resource and marine pollution. Impact of Humans on the Marine Environment. Recent Trends in Oceanography.	**15**

Suggested Readings:

1. Lal. D.S. (2003): Oceanography, Sharada Pustak Bhavan, Allahabad 02.
2. King Cuchalaine A.M. (2000): Oceanography for geographers, Edward Arnold publications, London.
3. Savindra Singh (2004): physical geography, Prayog Pustak Bhavan, Allahabad -02
4. Siddharth (2005): Oceanography: A brief introduction, Rawat Publishers. New Delhi.
5. Sharma R.C. (2000): Oceanography for Geographers, Chaitanya Publishers, Allahabad - 02
6. Vattal and Sharma (2003): Oceanography for Geographers, Chaitanya Publishers, Allahabad -02
7. Yadav A.S. (2002): Geography of Minerals of Oceans, concept Publishers, New Delhi,
8. Basu S.K. (2003): Hand book of oceanography, Global vision, Delhi.
9. Garisson Tom (1999): Oceanography, Cole, Wadsworth, New York.
10. Sharma and Vattal (1962): Oceanography for Geographers, Chaitanya Publication House, Allahabad.
11. Turman Harold (1985): Introductory Oceanography, Bell & Howell Co. London.
12. http://drs.nio.org/drs/index.jsp

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – I

Discipline Specific Course (DSC)

Course Title: Interpretation of Indian and Foreign Topographical Maps and Weather Maps
Course Code: A1GEO005P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-05	**Practical**	**04**	**08**	**120 hrs.**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To understand the elements of Indian and Foreign Topographical Maps
2. To Interpretation of Indian and Foreign Topographical Maps
3. To understand the Signs and Symbols of Indian and Foreign weather maps and Station model.
4. To interpret the Foreign Weather maps of their weather elements.
5. To Forecasting the weather condition both Indian and Foreign Weather maps.

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Introduction of Indian Topographical maps- SOI, Conventional Signs and Symbols and Marginal information of Topographical
2	Interpretation of Indian Topographical minimum two.
3	Introduction of Foreign Topographical maps, Signs and Symbols and Marginal information.
4	Interpretation of U K. Topographical Maps.
5	Interpretation of U S. Topographical Maps.
6	Introduction of IMD, Indian and Foreign Daily Weather Maps, Signs and Symbols and Marginal information.
7	Specifications of Station Model
8	Interpretation of Indian Daily Weather Maps minimum two.
9	Interpretation of Foreign Weather Maps.
10	Forecasting the Indian and Foreign Weather Maps.

Suggested Readings:

1. Monkhouse F.J. & H.R. Wilkinson (1952): Maps and Diagrams, their compilations and concentration, Methuen & Co. London.
2. Ashis Sen (1997): Systematic Practical Geography, Oriental Longman Ltd. Kolkata
3. Namowitz S.N. & Donald B. Stone (1965): Earth Science – The World We Live in 3rd Edition, D. Vam North and company Inc. New Hersy, USA, pp. 3-59
4. Mishra R.P. (1969): Fundamentals of Cartography, Prasanga University of Mysore.
5. Harwell J.D. & M.D. Newson (1973): Techniques in Physical Geography, Macmillan Edn, Ltd. London.
6. R.L. Singh (2010): Practical Geography, Sharada Pustak Bhavan, 11, University Road, Allahabad, UP - India

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – I

Discipline Specific Course (DSC)

Course Title: Techniques in Physical Geography

Course Code: A1GEO006P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-06	**Practical**	**04**	**08**	**120 hrs.**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To understand the different types of profile drawing
2. To do the Morphometric Analysis.
3. To evaluate the slope analysis.
4. To construct the Block Diagrams- one point perspective and two-point perspective.
5. To representation of Relief on a Block Diagram.

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Profile- Definition, Importance and Uses.
2	Methods Drawing of Profile.
3	Types of Profiles- Serial, Superimposed Profile.
4	Types of Profiles- Projected, Composited and Longitudinal Profile.
5	Construction of landforms through contour feature- Hill, Plateau, George, Escarpment.
6	Construction of Land forms through Contour features- Waterfall, V and U Shaped Valley, Cliffs.
7	Morphometric Analysis. Linear and Areal Morphometric Parameters.
8	Slope Development- Smith's Slope Analysis and Wentworth's Slope Analysis.
9	Block Diagrams- one point perspective and two-point perspective.
10	Representation of Relief on a Block Diagram.

Suggested Readings:

1. Monkhouse F.J. and Wilkinson H.R. (1952): Maps and Diagrams, their compilations and concentration, Muthuen & Co. London.
2. Harwel J.D, Newson MD. (1973): Techniques in Physical Geography, Mc. Millan Edu. Ltd. London.
3. Mishra R.P. And Ramesh A. (1968): Fundamentals of Cartography, Prasaranga, University of Mysore, Mysore.
4. Robinson & Marison (1995): Elements of Cartography USA.
5. R.L. Singh (2010): Practical Geography, Sharada Pustak Bhavan, 11, University Road, Allahabad, UP – India.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – II

Discipline Specific Course (DSC)

Course Title: Natural Hazards and Management

Course Code: A2GEO001T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-07	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

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

1. To discuss the origin of natural hazards and their nature.
2. To classify the natural hazards and their characteristics.
3. To discuss the Dimensions of Various Natural Hazards.
4. To understand the hazards managements and their mitigations.
5. To discuss the hazards management policies and role of National Emergencies and Management Authorities.

Unit	Content	60hrs/ Sem
I	Natural Hazards: Meaning, origin and their nature. Causes and Consequences of Natural hazards and Classification of Natural Hazards: Climatic, Geomorphic, Geological, Biological and Human induced Hazards.	**15**
II	Dimensions of Various Natural Hazards: Earthquakes, Volcanic Eruptions, Land Sliding and Avalanches. Floods and Droughts, Cyclones and Tsunamis, Deforestation and degradation of Bio-diversity.	**15**
III	Hazards Management: Hazard event and Vulnerability, Risk Factors, Prevention measures, Mitigation Responses, Research and Rescue, Survival Skills, Relief and Rehabilitation.	**15**
IV	Hazard Management Policies: National, State, District, Block and Village level. Role of National Emergencies and Management Authorities.	**15**

Suggested Readings:

1. R.B. Singh(1990) : Environmental Geography, Heritage Publishers New Delhi.
2. Savinder Singh (1997): Environmental Geography, Prayag Pustak Bhawan.
3. Kates,B.I & White. G.F. (1978): The Enviornment as Hazards, Oxford, New York.
4. R.B.Singh(2000): Disaster Management, Rawat Publication, New Delhi.
5. H.K.Gupta(2003): Disaster Management, University Press, India.
6. A.S.Arya Action Plan for Earthquake, Disaster, Mitigation in V.K.Sharma(Ed).
7. Disaster Management IIPA Publication New Delhi, 1994.
8. R.K.Bhandani : An overview on Natural & Manmade Disaster & their Reduction, CSIR, New Delhi.
9. M.C.Gupta (2001): Manuals on Natural Disaster Management in India, National Centre for Disaster Management, IIPA, New Delhi.
10. Global Environment Outlook (2002) : UNEP Earth Scan Publications Ltd, London.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – II

Discipline Specific Course (DSC)

Course Title: Agriculture Geography

Course Code: A2GEO002T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-08	**Theory**	**04**	**08**	**120 hrs.**	**3hrs.**	**20**	**80**	**100**

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

1. To define the agriculture geography and factors affecting agriculture
2. To employed the crop combination method of different scholars for the agriculture.
3. To understand the agricultural models and their significance and classifications.
4. To discuss green revolution in India and problems and prospects with regional disparities.
5. To discuss the soil pollutions & erosion, health hazard from ecological point of view.

Unit	Content	60hrs/ Sem
I	Nature, Content and Scope of Agriculture Geography. Origin & evolution of agriculture. Approaches: Commodity, systematic, regional and systems approaches.	**15**
II	Factors affecting Agriculture: Physical, Social- Economic, Technological and Political. Land holding and land tenure systems, land use policy and planning, irrigation and dry-farming, command area development	**15**
III	Cropping Pattern, Crop Combinations, Crop Diversification, and Intensity of Cropping, Degree of Commercialization, agricultural efficiency and productivity, HYV seeds. Classification of agriculture: Whitley's classification of world agriculture, Von-Thunen's theory of agriculture and its relevant modifications, game theory & decision making. Role of WTO in agriculture.	**15**
IV	Green Revolution. White revolution, Blue revolution, Yellow revolution, Horticulture & Floriculture. Emerging impact on agriculture: Food security, salinization and Water logging, Soil Pollution, Soil Erosion, Fallow Land, Health Hazards, Diffusion of agricultural innovations.	**15**

Suggested Readings:

1. Mohammad Shafi (2006): Agricultural Geography, Dorling Kindessley (India) Pvt. Ltd. New Delhi.
2. Negi. B.S. (2003): Indian Agriculture: problems, Progress & Prospects, Vikas publishing house Pvt. Ltd. S. Ansari Road, Daryagani, New -Delhi-2.
3. Majid Hussain (2000): Agricultural Geography, Ed Anmol Publishing Pvt. Ltd. Ansari Road, Daryagani, New Delhi-2.
4. Shafi M. (1999): Agricultural Geography, Kedarnath Ram Nath, 132, R.G. College road, Meerat UP-1.
5. Singh & Dhillion (2000): Agricultural Geography, Prayog Pustak Bhavan, 20 A, University Road, Allahabad-211002, UP.
6. Jasbir Singh (2001): Agricultural geography, Prayog Pustak Bhavan, 20 A, University Road, Allahabad-211002, UP.
7. Memoria C.B. (1998): Agricultural Problems in India: Prayog Pustak Bhavan, 20 A, University road, Allahabad-211002, UP.
8. Majid Husain (2007): Systematic Agricultural Geography, Rawath Publications, Jawahar Nagar, Jaipur, New Delhi – 92.
9. Goh Cheng Leong & Gillian C. Morgan (2009): Human and Economic Geography, Oxford University Press, New Delhi, New York.
10. The Hindu Publications (2005 to 2010): Survey of Indian Agriculture.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – II

Discipline Specific Course (DSC)

Course Title: Marketing Geography

Course Code: A2GEO003T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-09	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

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

1. To discuss the marketing geography and its significance along with its development.
2. To trace the evolutionary process of trade system and beginning of market place trade and classification of markets
3. To discuss Locational characteristics of markets, spatio-temporal distributions and Consumer and Trader behavior and travel patterns.
4. To discuss the Periodic and Regulated Markets and their development.

Unit	Content	60hrs/ Sem
I	Nature, Scope and Significance of Marketing Geography, Development of Marketing Geography, Marketing as a Geographical Phenomenon, Marketing Geography as an area of specialization, Importance of market settlements among the settlement systems.	**15**
II	Evolutionary aspects of trade system: Early history of trade and beginning of market place trade. Classification of Markets: Permanent, Periodic, Fair, Retailing, Wholesaling and Services.	**15**
III	Periodic Markets: Locational and distributional characteristics, Spatio- Temporal relationships, Hierarchy of Market Centres and their tributary areas. Consumer and Trader Behaviour and Travel Patterns.	**15**
IV	Rural and Regional Development: Role of Periodic Markets in Rural Development. Regulated Markets Locational and Developmental characteristics of regulated Markets and Regional Development. Agricultural Marketing Planning and Policies.	**15**

Suggested Readings:

1. Applebaum.W. (1954): Marketing Geography, American Geography Inventory and Prospects, Syracuse Univ. pp.245-51.
2. Bijapur. D.M & Mulimani A.A (2023): Agricultural Marketing & Rural Development. Sarswati publication, Chattisgad.
3. Berry, B.J.L (1967): Geography of Market Centers and Retail Distribution, Englewood Cliffs. N.J.Prence Hall, PP.v, 2.3. 125.
4. Bromely R.J (1971): Marketing in Developing Countries A Review; Geography, Vol.56, pp.124-32.
5. Davis R.L (1976): Marketing Geography, Mathuel and Co, London.
6. Dixit R.S. (1981): Spatial Organization of Market Centers in Hamirpur District, Pointer Publisher Jaipur.
7. Hill, P and R.H.T. Smith (1972): The Spatial and Temporal Synchronization of Periodic Markets , Economic Geography, 48, pp, 345-355.
8. Saxena H.M.(2004): Geography of Marketing, Concepts and Methods, Rawat Publication, New Delhi.
9. Hodder, B.W (1965a): The Distribution of Markets in Yoruba land ; Scottish Geographical Magazine,
10. Hugar, S.I (2000): Traditional and Non-Traditional Market Exchange: A Study in Spatial Development,
    G. K. Publishing Corporation, New Delhi.
11. Mulimani.A.A (2006): Marketing Geography: A Spatio-Functional Perspective, Premier Publication, Dharwad.
11. Mulimani.A.A & Belgaum.M.S.(2016): Periodic Markets and Rural Development in India, Prateeksha Publication , Jaipur.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – II

Discipline Specific Course (DSC)

Course Title: Geography of India with special reference to Karnataka

Course Code: A2GEO204T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
OEC-01	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

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

1. To discuss the physical features of India, particularly the soil, drainage, vegetables along with water resources of India.
2. To understand the forest and agricultural resources and their distributions.
3. To understand the major mineral resources of India, production and distribution.
4. To discuss the physical aspects, major irrigation projects and major crops in Karnataka.

Unit	Content	60hrs/ Sem
I	**Physical Setting of India.** Locational Characteristics, Physiographic Divisions, Natural Drainage Systems and their Distribution. Climate: seasons & climatic regions. Soils: Types, Distribution, Erosion and Conservation. Natural Vegetation: Types and Distribution, Degradation and Conservation. Water resources: Three major irrigation projects and Three major Hydro Electric Power projects (Multi Purpose Projects- Nagarjuna, Bhakranangal and Damodar).	**15**
II	**Agriculture and Forest resources:** Major Agricultural Crops, their distribution and production; Rice, Wheat, Cotton, Tea and Sugarcane. Forest Resources: Types of forests and their distribution.	**15**
	Minerals and Major Industries: Distribution, production and trade of important Minerals & Power resources: Iron Ore, Manganese, Mica, Copper, Bauxite, Coal, Petroleum, Natural Gas, Atomic Energy, Hydral and Thermal Power. Growth, Development and Distribution of Major Industries: Iron & Steel, Engineering, Cement, Paper, Fertilizers, Cotton, Textiles, Silk, Knowledge-based Industries: Industrial Regions of India.	**15**
IV	**Karnataka:** Location Characteristics, Physiography, Drainage, Soils, Vegetation, and Rainfall, Major Irrigation Projects: Krishna, Tungabhadra and Cauvery. Energy Resources: Thermal, Hydro-Electric and Wind Projects. Distribution and Production of Major Crops: Rice, Jowar, Groundnut, Cotton, Sugarcane and Coffee.Transport and Industrial Development.	**15**

Suggested Readings:

1. Khullar DR. (2009): India: A Comprehensive Geography, kalyani Publishes, New Delhi, Hyderabad, Kolkota.
2. Alka Gautam (2009): Geography of India, Sharada pustak bhawan, University Road, Allahabad – UP.
3. Sharma TC & Coutinho O. (2005): Economic and Commercial geography of India, Vikas Publishing House ltd., New Delhi-14
4. Tiwari RC. (2008): Geography of India, Prayag pustak Bhavan, 20-A, University Road, Allahabad- UP
5. Pritivish Nag & Smita sengupta (1992): Geography of India, Concept Publishing Company,New Delhi – 59.
6. Ranganath (2007): Geography of India, Vidhyanidhi Prakashan, Station Road, Gadag-01.
7. Phani Deka & Abani Bhagabati (1992): Geography: Economic and Regional, Wiley Eastern Limited, Ansari Road, Daryaganj, N. Delhi-01.
8. Majid Husain (2008): Geography of India, Tata Mc. Graw hill publishing co. Ltd. New Delhi.
9. Singh R.L. (1971): India A Regional Geography, National Geographical Society of India, Varanasi, UP.
10. Jadish Sing (2003): India: A comprehensive systematic geography, Gyanodaya Prakashan Gorakhapur- UP.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – II

Discipline Specific Course (DSC)

Course Title: Statistical Methods in Geography

Course Code: A2GEO005P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-10	**Practical**	**04**	**08**	**120 hrs.**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To understand the different types Investigation and Sampling.
2. To calculate the Measures of Central Tendency
3. To calculate the Measures of Dispersion
4. To calculate the Correlation and Chi-Square Test

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Importance of Statistics in Geographical Analysis.
2	Sources of the Data and Methods of Investigation. Sampling and Types of Sampling.
3	Measures of Central Tendency: Calculation of Mean - single, Discrete and Continuous series.
4	Calculation of Median- single, Discrete and Continuous series.
5	Calculation of Mode- single, Discrete and Continuous series.
6	Measures of Dispersion: Range, Quartile Deviation,
7	Calculation of Mean Deviation of all the series data.
8	Calculation of Standard deviation and Co-efficient.of all the series data.
9	Correlation Method: Rank Order Correlation and Karl Pearson's Product Movement Test.
10	Chi-Square Test and Confidence

Suggested Readings:

1. Aslam Mohamed (1977): Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi.
2. Haymond and Mccullah (1974): Quantitative techniques in geography, An introduction, Oxford London.
3. Gupta C.B. (1979): An introduction to statistical methods, Vikas publishing house pvt. Ltd. New Delhi.
4. Murray R. Spiegal (1972): Theory and problems of statistics, Mc. Grawhill Book co. New York.
5. Singh R.L. (1979): Elements of Practical Geography, Kalyani Publishers, New Delhi

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – II
Discipline Specific Course (DSC)

Course Title: Techniques in Human Geography
Course Code: A2GEO006P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-11	**Practical**	**04**	**08**	**120 hrs.**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To understand the different Techniques in Human Geography.
2. To prepare Lorenz Curve and Rank Size Relationship and interpretation.
3. To Calculation of Shape Index and Centrographic Method :
4. To calculate the urban Sphere of Influence and Detour Index.

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Importance of Techniques in Human Geography and their significance.
2	Preparation of Lorenz Curve and Interpretation.
3	Rank Size Relationship and Interpretation.
4	Preparation of Trigular Graph and Interpretation.
5	Decadal Growth and Deity of Population
6	Calculation of Shape Index.
7	Centrographic Method : Identification of Geographical and Population Centre.
8	Gravity Potential Model
9	Break Point, Urban Sphere of Influence.
10	Detour Index

Suggested Readings:

1. Aslam Mohamood (1977): Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi
2. Gupta C.B. (1979): An Introduction to Statistical Methods, Vikas Publishing House Pvt. Ltd. New Delhi.
3. Murray R. Toffee R. Transportation Geography, Prentice Hall Publication, New York.
4. Gregory's, Statistical Methods and the Geography, Longmans, London.
5. Hammod & Mecullah, Quantitative techniques in Geography, A Introduction, Clarendon Press Oxford.
6. Yeats .M, An Introduction to Quantitative Analysis in Human Geography, Mc Graw Hill New York.
7. Cole & King, Quantitative Geography, M Jhon Wiley and Sons, New York.
8. King L.J., Statistical Analysis in Geography, Prentice Hall, Englewood Cliffs, New Jersey.
9. Wheeler, Statistical Techniques in Geographical Analysis, John Wiley

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – III
Discipline Specific Course (DSC)

Course Title: Theoretical and Quantitative Geography

Course Code: A3GEO001T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-12	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To understand the emergence of Theoretical and Quantitative Geography.
2. To discuss the Scientific Method and Theory Building and Location theories.
3. To understand Quantitative Geography and define model and understand Types of Models.
4. To know the Technological transformation of Geography.

Unit	Content	60hrs/ Sem
I	**Introduction:** Significance of Theoretical and Quantitative Geography. Emergence of Theoretical and Quantitative Geography and Quantitative Revolution. Concepts of Law, Hypothesis, Model and Theory.	**15**
II	**Theories in Geographical analysis:** The need for theories in Geographical analysis, Scientific Method and Theory Building. Location concepts and the importance of location theories in geographical studies. Location theories of Von Thunen, Alfred Weber and Walter Christaller.	**15**
III	**Quantitative Geography:** Need of Quantitative Geography, Purpose and Scope, Models and Types of Models, Analogies and paradigms and their use in geographical analysis, Gravity Potential Model. The nature of Geographical data and the need for data summarization.	**15**
IV	Recent Trends of Geography: Emergence of New Geography, Technological Changes in Geography, Space Technology- Remote Sensing, Geographical Information System and Global Positioning System.	**15**

Suggested Readings:

1. Cole & King : Quantitative Geography, M Jhon Wiley and Sons, New York.
2. Cooke and Johnson : Trends in Geography, Pergamow press, London.
3. David Harvey (2000) : Explanations in Geography, Macmillan, New York.
4. Dikshit R.D. (2001) : Geographical Thought: A Conceptual History of ideas, prentice Hall publishing Company, New Delhi-2.
5. Frazire J.W. (1982) : Applied Geography, Prentice Hall, New Delhi.
6. Freeman T.W : A Hundred Years of Geography, London.
7. Halt, Jensew : Geography: Its History and concepts, Longmans.
8. Hammod & Mecullah : Quantitative techniques in Geography, A Introduction, Clarendon Press Oxford.
9. Hartshorne .R : Perspective on the Nature of Geography, Rand M.N and Co. Chicago.
10. Peter Hagget (1972) : Geography: A Modern Synthesis.
11. Peter Heggett : Locational analysis in Human Geography, Edward Arnold, London.
12. Singh. I (2006) : Diverse aspect of Geographical thought: ALFA Publications,New Delhi.
13. Taylor (ED) : Geography of 20th Century, Methew, London.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – III
Discipline Specific Course (DSC)

Course Title: Research Methodology

Course Code: A3GEO002T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-13	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To discuss the Definitions, objectives, characteristics and types of research.
2. To understand the Research Approaches and Significance of Research.
3. To understand Research Topic and Design.
4. To handle the data Analysis and mapping by using GIS and Remote Sensing and writing the thesis.

Unit	Content	60hrs/ Sem
I	**Research Methodology:** Meaning, Definitions, objectives, characteristics and types of research. Steps involved in Research and Research Ethics.	**15**
II	**Forms of Research:** Research Approaches. Historical Research, Descriptive Research, Experimental Research, Case Study oriented Research, Nomothetic and Ideographic Research, Deductive and Inductive and Significance of Research.	**15**
III	**Research Topic and Design:** Scientific Method, Identification of problem and selection of Study Area. Formulation of Hypothesis, Primary and Secondary sources of data Observation, perception, Interview, Questionnaire, scheduled and checklist. Testing of the Hypothesis and Research Design.	**15**
IV	**Thesis writing:** Effective Introduction, Concepts Related to the Topic, Review of Literature, Content, Critical Analysis, Language, data Analysis and mapping and using GIS and Remote	**15**

	Sensing. Planning Strategy and References with Required appendix.	

Suggested Readings:

1. Clifford, N.J. and G. Valentine (2003): Key methods in Geography, Sage, London.
2. Gilbert, N. (2001): Researching Social Life, Sage, London.
3. Flowerdew, R. and D. Martin (2005): Methods in Human Geography: A Guide for students doing a research project, Prentice Hall, New York.
4. Leedy, P. D. and J.E. Ormrod (2001): Practical Research: Planning and Design,

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – III

Discipline Specific Course (DSC) – 14 A

Course Title: **Settlement Geography**

Course Code: **A3GEO103A T**

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSE- 01A	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To discuss the resent trends in Settlement Geography.
2. To understand Morphological aspects of settlements and Types of settlements.
3. To understand the Theories and Determination of hierarchical order of settlements.
4. To discuss the Issues in rural and urban settlements, perspective and policies.

Unit	Content	60hrs/ Sem
I	**Introduction, Evolution & Distribution of Settlements**: Nature, Scope, Significance and Recent Trends in Settlement Geography. Evolution of Settlements in India: Emergence of Village Settlements, Origin and Growth of Towns; Basic and Non-Basic Concepts in Settlement formation. Distribution of Settlements, Spacing of Settlements.	**15**
II	**Types of Settlements:** Rural and Urban Settlements. Rural Settlements - Types of Rural Settlements, House Types and Morphological aspects of settlements. Land use theories and functions of towns. Difference between Rural and Urban. Rural house types and building material.	**15**
III	**Theories in Settlement Geography :** CBD, Centrifugal and Centripetal Forces Theory, Urban Fringe, Urban structures theories. Theories of Christaller and Losch . Determination of hierarchical order of settlements.	**15**
IV	**Issues and Policy:** Important Issues in rural and urban settlements, perspective and policies on population and human settlements. Interface between human settlements and environment. Implications on urban environment and urban challenges.	**15**

Suggested Readings:

1. Hudson, F. S. (1976): Geography of Settlements, Macdonald, London.
2. Northam Ray, M. (1979): Urban Geography, John Wiley and Sons, New York.
3. Ambrose, Peter, (1970): Concepts in Geography, Vol.-I, Settlement Pattern, Longman.
4. Baskin, C., (Translator) (1996): Central Places in Southern Germany, Prentice-Hall Inc. Englewood Cliffs New Jersey.
5. Haggett, Peter, Andrew D. Cliff and Allen Frey (Ed.) (1979): Locational Models Arnold Heinemann.
6. King, Leslie, J., (1986): Central Place Theory, Saga Publications, New Delhi.
7. Mayer, M. Harold and Clyde F. Kohn (Ed.) (1967): Readings in urban Geography, Central Book Depot, Allahabad.
8. Mitra, Asok, Mukherjee S and Bose, R., (1980): Indian Cities Abhinav Publications, New Delhi.
9. Nangia, Sudesh, (1976): Delhi Metrpolitan Region, K.B. Publications, New Delhi.
10. Prakasa, Rao, V. L. S., (1992): Urbanization in India: Spatial Dimensions, Concept Publishing Co., New Delhi.
11. Ramachandran, R., (1992): Urbanization and Urban Systems in India, Oxford University Press, New Delhi.
12. Singh, R. L. and Kashi Nath Singh (Ed.) (975): Readings in Rural Settlement Geography,National Geographical Society of India, Varanasi.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – III
Discipline Specific Course (DSC) – 14B

Course Title: Population Geography

Course Code: A3GEO103BT

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSE-01 B	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To discuss the nature and scope of population geography.
2. To understand the components of population.
3. To understand the Causes and consequences of Migration.
4. To discuss the Population Policy in India.

Unit	Content	60hrs/ Sem
I	**Inroduction:** Nature and scope of population geography, population geography and Demography, Sources of population data. Density and distribution of population and its pattern in the world. Factors influencing distribution of the world population.	**15**
II	**Population change:** Growth of population in the world and India, components of population change, Fertility, Mortality, Mobility and Determinants of fertility and mortality Determinants of fertility and mortality, Demographic Transition Theory.	**15**
III	**Migration:** Meaning and Concept of Migration. Types of Migration. Causes and consequences of Migration. Theories of migration and	**15**
IV	**Population and resources**: Concept of optimum population, over population and under population. population resource regions. Malthus Theory of Population and Population policies in developing and under developed countries, Population Policy in India.	**15**

Suggested Readings:

1. Beaujeu, Garnier, J. (1966): Geography of Population, Longman,London.
2. Bogue, D.J. (1969): Principles in Demography, John Wiley, New York.
3. Bose, A. et al. (1974): Population in India's Development (1947-2000),Vikas Publication House, New Delhi.
4. Chandna, R .C. (2000): Geography of Population, Kalyani Publ., New Delhi.
5. 22 Clarke, J.I. (1972): Population Geography, Pergamon Press, Oxford Clarke,John I. (1973): Population Geography, Pergamon Press, Oxford. Crook, Nigel (1997): Principal of Population and Development, Pergamon Press, New York.
6. Garnier, B. J. (1970): Geography of Population, Longman, London.
7. Ghosh, S. (1998): Settlement Geography, Orient Longman Ltd. , Kolkata
8. Jones, H.R., (2000): Population Geography, Paul Chapman, London
9. Mamoria, C.B. (1981): India's Population Problems, Kitab Mahal, New Delhi.
10. Mitra, Ashok (1978): India's Population Problems and Control (Vol. I & II), Kitab Mahal, New Delhi.
11. Srinivasan, K. and Vlassoff, M. (2001): Population and Development Nexus in India, Challenges for the new Millennium, Tata McGraw Hill, New Delhi.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – III
Discipline Specific Course (OEC)

Course Title: Environmental Geography

Course Code: A3GEO204T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
OEC-02	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To discuss the significance of environmental geography and changing relationship between man& environment.
2. To understand the major biomes, economic importance of forest and National Forest Policy in India.
3. To discuss the Migration, Factors, Causes and Types, Internal and International migration.
4. To understand the determinants of population and Population Policy in India.

Unit	Content	60hrs/ Sem
I	**Introduction:** Nature, Scope and significance of Environmental Geography, Meaning of Environment, Components of abiotic and biotic environment, the changing relationship of man and Environment.	**15**
II	**Biomes:** Major biomes and their importance, Economic significance of Forests, Afforestation and Deforestation. Social Forestry and Agro- Forestry, National Forest Policy in India.	**15**
III	**Population Growth and Migration:** Population Growth and economic development, Migration, Factors, Causes and Types, Internal and International migration.	**15**
IV	**Environmental Degradation:** Nature and types of degradation, Causes and effects of Environmental degradation, Problems of Environmental Degradation and Global Warming: Ozone Layer depletion and its consequences, Environmental planning and policies, Environmental Impact Assessment (EIA), Sustainable Development, management of environmental quality.	**15**

Suggested Readings:

1. Anderson J.M. (1981): Ecology for Environmental Science: Biosphere, Ecosystems and Man, Arnold, London.
2. Balakrishnan, M., (1998): Environmental Problems and Prospects in India, in Das, R.C., et. al. Oxford & IBH Pub., New Delhi.
3. Canter Chary, L. W. (1996): Environmental Impact Assessment, 2nd edition, McGraw Hill, New York
4. Chichester: Marsh, W.M. and Grossa, J.M. (1996): Environmental Geography: Science, Land use and Earth Systems, John Wiley & Sons.
5. Das, M.C.(1993): Fundamentals of Ecology, Tata Mc Graw Hill, New Delhi.
6. Farmer, A. (1997): Managing Environmental Pollution, Routledge, London
7. Gilpin, A. (1996): Dictionary of Environment and Sustainable Development, John Wiley and Sons Ltd.,
8. Goudie, Andrew (1984): The Nature of the Environment, Oxford Katerpring Co. Ltd. Huggett, R.J. (2002): Fundamentals of Biogeography, Routledge, London & New York.
9. Maryk, Theodore (1996): Major Environmental Issues Facing 21st Century, Prentice Hall.
10. Middleton N.(1995): The Global Casino: An .Introduction to Environmental Issues, John Wiley and Sons Inc., New York.
11. Nobel and Wright (1996): Environmental Science, Prentice Hall, New York.
12. Odum, E.P. (1971): Fundamental of Ecology, W.B. Sanders, Philadelphia.
13. Roberts, N. (1994): The Changing Global Environment, 3rd edition, Blackwell Pub. Co., London.
14. Sharma, P.D. (1975): Ecology and Environment, Rastogi Publication, Meerut.
15. Singh, R.B. (ed.) (1989): Environmental Geography, Heritage, New Delhi.
16. Slaymaker, A. & Spencer T. (1998): Physical Geography & Global Environmental Change, Longman, UK.
17. Speth, I.G. (2005): Global Environmental Challenges – Transitions to a Sustainable World, Orient Longman, New Delhi.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – III

Discipline Specific Course (DSC)

Course Title: Quantitative Techniques in Geography

Course Code: A3GEO005P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-14	**Practical**	**04**	**08**	**120 hrs.**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To understand the different Quantitative Methods in Geography
2. To calculate the Nearest Neighbor and Network Analysis.
3. To calculate the crop combination and mapping.
4. To identify the functional Classification of Towns.

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Importance of Quantitative Methods in Geography.
2	Nearest Neighbor Analysis
3	Network Analysis: Alfa, Beta and Gama Indices
4	Analysis of Crop combination and Mapping- J.C. Weaver's Method
5	Analysis of Crop combination and Mapping- Doi's Method
6	Analysis of Crop combination and Mapping- Rafiuallah's Methods
7	Crop diversification
8	Crop Intensity
9	Population Potential
10	Functional Classification of Towns

Suggested Readings:

10. Aslam Mohamood (1977): Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi
11. Gupta C.B. (1979): An Introduction to Statistical Methods, Vikas Publishing House Pvt. Ltd. New Delhi.
12. Murray R. Toffee R. Transportation Geography, Prentice Hall Publication, New York.
13. Gregory's, Statistical Methods and the Geography, Longmans, London.
14. Hammod & Mecullah, Quantitative techniques in Geography, A Introduction, Clarendon Press Oxford.
15. Yeats .M, An Introduction to Quantitative Analysis in Human Geography, Mc Graw Hill New York.
16. Cole & King, Quantitative Geography, M Jhon Wiley and Sons, New York.
17. King L.J., Statistical Analysis in Geography, Prentice Hall, Englewood Cliffs, New Jersey.
18. Wheeler, Statistical Techniques in Geographical Analysis, John Wiley Hall.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – III

Discipline Specific Course (DSC)

Course Title: Aerial Photo Interpretation

Course Code: A3GEO006P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-15	**Practical**	**04**	**08**	**120 hrs.**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To understand the Types of Aerial Photographs.
5. To discuss the elements of Aerial Photo interpretation.
6. To calculate the scale of vertical photographs.
7. To collect the Satellite image data sources.

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Study of marginal information of aerial photographs.
2	Types of Aerial Photographs.
3	Elements of Aerial Photo interpretation.
4	Stereo vision test and stereoscopic viewing through stereoscopes.
5	Determination of scale of vertical photographs
6	Study of aerial photographs for mapping physical features.
7	Study of aerial photographs for mapping cultural features.
8	Manual Preparation of Land Use and Land cover maps from aerial photographs.
9	Satellite image data sources. Collecting major satellite images (Landsat, Sentinel 2A, Carto DEM)
10	Interpretation of Satellite Imagery.

Suggested Readings:

1. Paul R. Wolf (1999): Elements of Photogrammetry, Mc. Grawhill, International Book Company, New Delhi.
2. Averte and GL. Berrin (2001): Fundamentals of Remote Sensing and Aerial Photo interpretation, McMillan, New York.
3. Singh and Sharma (2004): Introduction of Remote Sensing, Rawath Publications, New Delhi
4. George Joseph (2002): Fundamentals of Remote Sensing, University press Pvt. Ltd. Hyderabad-29
5. A Verte and G.L. Berrin (2001): Fundamentals of Remote Sensing and Aerial Photo Interpretation, Mc. Millan, New York.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – IV

Discipline Specific Course (DSC)

Course Title: Principles of Remote Sensing

Course Code: A4GEO001T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-16	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To define the basic principles of Remote Sensing and its concepts.
2. To understand the historical background of Aerial remote Sensing, types of aerial photos and scales of photos.
3. To discuss the different types of satellites, platforms and resolutions and orbiting mechanism.
4. To understand the Principles of Image Interpretation and Advantages of Remote Sensing over conventional Surveys.

Unit	Content	60hrs/ Sem
I	**Introduction:** History and Concepts: Energy sources and Radiation Principles- Energy Interactions in the Atmosphere: Electromagnetic Spectrum, Atmospheric Windows, Energy interactions with Earth Surface features; Spectral reflectance patterns of earth surface features in different wavelengths.	**15**
II	**Aerial Remote Sensing:** Historical and types of photographs, scales of aerial photograph; scale distributions, photographic resolution. Aerial photo interpretation techniques- photo recognition, elements and equipment.	**15**
III	**Satellite Remote Sensing:** Different Satellites: Remote Sensing Platforms, Resolutions: Spectral, Spatial, Temporal and Radiometric resolutions of Satellites, Sensors: Scanning mechanism and orbiting mechanism. Characteristics of IRS.	**15**
IV	**Principles of Image Interpretation:** Elements of Image Interpretation, Visual Interpretation Techniques. Marginal information and decoding. Advantages of Remote Sensing over conventional Surveys. Development of Remote Sensing in India. Thrust areas of Remote Sensing.	**15**

Suggested Readings:

1. Anji Reddy. M (2008) Text book of Remote Sensing and Geographical Information System, B.S.Publications Hyderabad.
2. Barret, E.C.& L.F.Curtis (1992). Fundamentals of Remote Sensing and Air Photo Interpretation,Mcmillan, New York.
3. Bhatta. B, Introduction to Remote Sensing and GIS Oxford University Press.
4. Bossler J.D (2002): Manual of Geospatial Science and Technology, Taylor and Francis, London.
5. Compbell, J (1989), Introduction of Remote Sensing Guilford, New York.
6. Curran, Paul, J (1985), Principles of Remote Sensing, Longman, London.
7. Girard M.C and Girard C.M (2003): Processing of Remote Sensing Data, Oxford & IBH, New- Delhi.
8. John R. Jensen (2000): Remote Sensing of the environment: An earth resource perspective, Pearson publication.
9. John.Wiley and Sons. Pradip Kumar Guha (2013): Remote Sensing for the beginner, Third Edition, East-West Press, New Delhi.
10. Kumarswamy. K. (2005 Ed), Remote Sensing for Environmental Studies, Union Offset Printers,Tiruchanapalli.
11. Lilles and T M., and Kiefer R W., (2000): Remote Sensing and Image interpretation, New York,
12. Suresh S and Mani K., (2017): Application of Remote Sensing in understanding the relationship Between NDVI and LST, IJRET, Vol. 6, Issue: 02.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – IV
Discipline Specific Course (DSC)

Course Title: **Tourism Geography**

Course Code: **A4GEO002T**

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-17	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To define the basic principles of Tourism Geography.
2. To understand the different mode of transportation and its impact on socio-economic aspects.
3. To discuss the different types of tourism development and historical, cultural Sites and important cities in India and Karnataka.
4. To understand the tourism, planning in India with special reference to Karnataka.

Unit	Content	60hrs/ Sem
I	**Introduction:** Nature and Concept of Tourism, Definition of Tourism, Concept of Tourism and emergence of tourism as an industry. Robinson's classifications of tourism. Domestic and International Tourism.	**15**
II	**Transport and Tourism:** Water Transport, Railways and Roadways. Development of Air Transport and International Agencies. Impact of Tourism, Physical impact, impact on air and water quality. Socio-economic impacts.	**15**
III	**Tourism Development:** Perseveration and development of Costal Tourism, Island Tourism, Mountain Tourism, Inland Water and Countryside Tourism and Resort Tourism. Historical, Cultural Sites and important cities in India and Karnataka.	**15**
IV	**Tourism Planning:** Environmental law and tourism Government policies for planning and promotion of tourism in India. State level tourism, planning in India with special reference to Karnataka. Tourism Policy and Spatial Planning for Tourism.	**15**

Suggested Readings:

1. Arvill R. (1967), Man and Environment – London Publishers.
2. Aldos T. (1972), Battle of Environment- London Publishers.
3. Beeton, S. (2006): Community Development through Tourism, Land links Press.
4. Bhatia A.K, (1996): Tourism Development: Principles and Practices, Sterlingpublishers, New Delhi,
5. Bhatia, A.K, (1991): International Tourism-Fundamentals and Practices, Sterling, New Delhi,
6. Buckley, R. (2009): Ecotourism: Principles and Practices, CABI.
7. Cohen E. (1978), The Impact of Tourism on Physical Environment, Annals of Tourism Vol .1&2.
8. Dora Smolcic Jurdana (2006): Planning city tourism development – principles and issues, Tourism and hospitality management, volume no 12, no 2.
9. Hudson, Geography Tourism, Daya Publishing House Delhi.
10. Singh P.G, 50 Years of India Toursm, Atmaram publishers,New Delhi.
11. Tiwari S.P (1994), Tourism Dimensions, Atmaram Publishers New Delhi.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – IV
Discipline Specific Course (DSC)

Course Title: Regional Planning and Development

Course Code: A4GEO003T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-18	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To understand the concept and scope of regional planning.
2. To understand the Growth pole and growth foci theory.
3. To discuss the regional development strategies, problems and issues in regional planning
4. To discuss the theories of regional development.

Unit	Content	60hrs/ Sem
I	**Introduction:** Importance of regional Planning, Concept of region, Types and characteristics of regions, delineation methods of regions, formal, functional and nodal. Geography and regional planning. Concept and scope of regional planning. Regional approaches. Principles, methods, techniques of regional planning, need for planning.	**15**
II	**Theoretical frame work of regional planning**: Growth pole and growth foci. Planning processes: Sectoral, multilevel, decentralized planning. Integrated area development planning (IADP). Planning for tribal and hill areas, drought prone areas, command areas and watershed. Planning for metropolitan region: CDP, satellite towns, urban green belt.	**15**
III	**Concept of Development**: Indicators of development. Regional imbalance. Regional development strategies. Problems and issues in regional planning. Sustainable development of regions. Regionalization of India: Based on natural, economic and administration (macro and meso levels only).	**15**
IV	**Theories of Regional Development:** Central place theory, diffusion theory (Hegerstand's). The role of Locational theories in regional planning process. An evaluation of regional disparities / imbalances – backward regions of India. Identification of backward areas, planning backward area. Causes and consequences regional disparities. Measures of disparities. Harnessing the information through GIS, remote sensing, GPS for regional planning and development.	**15**

Suggested Readings:

1. Action Programme for the 11th FYP, New Delhi: Planning Commission of India.
2. Administrative Reforms and Public Grievances website, http://arc.gov.in/6-1.pdf
3. Company Concept Publishing Company. Experiences, New Delhi: Concept Publishing Company. Future. New Delhi: Second Administrative Reforms Commission. Retrieved from Department of Government of India. (2006).
4. Report of the Expert Group: Planning at the grassroots level – An Government of India. (2007). Sixth Report on Local Governance: An Inspiring journey into the Hooja, Rakesh and Prakash Chand Mathur. (Eds.) (1991), District and Decentralized Planning, http://www.indiaenvironmentportal.org.in/files/Man%20and%20development%202.pdf ISS. (1994), Decentralized Planning and Panchayati Raj, New Delhi: Institute of Social Sciences.

11. Misra Prakash Rao & Sundaram. K.V. () Regional Development Planning in India.

12. Glasson : Introduction to Regional Planning.
13. Minshull, H. : Regional Geography.
14. Sundaram K.V. : Urban & Regional Planning in India.
15. Chamdana Puri : Regional Planning.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – IV

Discipline Specific Elective (DSE) – A

Course Title: Resource Analysis and Management

Course Code: A4GEO104A T

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSE –02A	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To understand the concept of resources and Economic importance Resources.
2. To understand the soil and Economic Significance of Minerals.
3. To discuss the Climate and Vegetation Resource, Livestock and Dairying.
4. To discuss the Issues, Management and Policy.

Unit	Content	60hrs/ Sem
I	Introduction: Importance of Resource Geography, Concept of Resource, Classification, Significance and Economic importance Resources: Land and Water. Land-use, Land capability, Wasteland reclamation.	**15**
II	**Soil and Mineral Resource:** Soil types, Profile Soil Properties, Permeability, and Infiltration soil fertility, Ph-value, Soil erosion, Soil Pollution, Soil Management, Metallic and Non-Metallic Minerals, Economic Significance of Minerals.	**15**
III	**Climate and Vegetation Resource:** Climatic regions, Agro-climatic regions, Hydrological Cycle, Green house effect, Air pollution, and controlling measures, Types of Vegetation and distribution of biomes, deforestation and its consequences and Afforestation. Livestock and dairying Economic Significance of animal wealth,	**15**
IV	**Issues, Management and Policy:** Land Erosion, Degradation, Wasteland reclamation, Sources of water and potential, watershed Management, rain water harvesting water pollution, and Land water Management. Mineral conservation and mineral policy of India. Human Resource Development and forest polices.	**15**

Suggested Readings:

1. Dubey R.N. and Negi B.S. (2002): Economic Geography of India, Kitab Mahal, Allahabad.
2. Guha J.L. and Chattoraj (2004): A New approach to economic Geography, A study of Resources, the World Press Pvt. Ltd. Culcutta.
3. Khanna K.K. and Gupta V.K (1993): Economic and Commercial Geography, Sultan Chand, New Delhi.
4. Roy. PR. (2001): Economic Geography- A study of Resources, New Central Book Agency, (p) Ltd. Calcutta.
5. P. Hagget (1997): Geography, A Modern Synthesis, Haper and Rao publications, New York.
6. Mishra R.P, Sundaram. K.V. and Prakash Rao, V.L.S. (1980). Multi-Level Planning and Integrated Rural Development In India, Heritage Publishers New Delhi.
7. Mishra R.P, Sundaram. K.V. (1974). Regional Development Planning In India.
8. Morkar P.R & Mulimani.A. A. (2014) Growth Centres and Regional Planning in India, Prateeksha Publications, Jaipur.
9. http://www.nationmaster.com/graph/geo_nat_res-geography-natural-resources.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – IV

Discipline Specific Course (DSC) B

Course Title: Transportation Geography

Course Code: A4GEO104BT

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-02 B	**Theory**	**04**	**04**	**60 hrs.**	**3hrs.**	**20**	**80**	**100**

Course Outcomes: After the completion of this course, students will be able:

1. To understand the concept and significance of Transportation Geography.
2. To understand the characteristics and relative significance of different means of transportation.
3. To discuss the Spatial Movement and Spatial interaction.
4. To discuss the Method of flow analysis and Planning.

Unit	Content	60hrs/ Sem
I	**Introduction:** Nature and Scope of Geography of Transport, Concept of Transportation. Significance of Transportation Geography. Role of Transportation in development of regional economies.	**15**
II	**Mode of Transportation:** Characteristics and relative significance of different means of transportation. Railway Transportation, Road Transportation, Water ways and Air ways and their economic significance.	**15**
III	**Spatial Movement and Spatial interaction:** Basis for Spatial interaction, complementarities intervening opportunity, Transferability and place and time utility. Graph Theoretic measures and network analysis, Location, Structure, Density Pattern, Order, Measures of connectivity and accessibility.	**15**
IV	**Method of flow analysis and Planning:** Concept and method of flow analysis, Gravity Potential Model, structure and efficiency. Transport and regional development planning.	**15**

Suggested Readings:

1. Eliot Hurst (ed) : Transportation Geography, McGraw Hill, New York.
2. Taffe, E.J & Gauthier : Geography of Transportation, Prince Hall, Englewood Cliff, New Jersey.
3. Sealy. Keneth : Geography of Air Transport, Rinenart, NewYork.
4. Lowe & Moryadas : Geography of Movements.
5. Peter Heggett : Network Analysis, Edward Arnold, London.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – IV

Discipline Specific Course (DSC)

Course Title: **Geographical Information System**

Course Code: **A4GEO005P**

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-19	**Practical**	**04**	**08**	**120 hrs.**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To understand the different Quantitative Methods in Geography
2. To calculate the Nearest Neighbor and Network Analysis.
3. To calculate the crop combination and mapping.
4. To identify the functional Classification of Towns.

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Introduction to GIS software.
2	Geo-Referencing.
3	Digitization - Extraction of features from Toposheets, Satellite image.
4	Map layout.
5	Linking spatial and non-spatial data.
6	Surface Analysis - Elevation, Slope and Aspect mapping.
7	Measurement of lengths perimeter, areas.
8	Queries and Buffer analysis.
9	Overlay analysis.
10	Rainfall Variability and Intensity Map.

Suggested Readings:

1. Peter A. Burrough and Rachael A. McDonnell (1998): Principles of Geographic Information systems, Oxford University Press, New York.
2. Aronoff S. (1989): Geographic Information System, A Management Perspective, WDL Publications, Ottawa, Canada.
3. Ian Heywood, Sarah Cornelius, Steve Carver (2003): An Introduction to Geographic Information System, Pearson Education Ltd., India.
4. Chrisman N.R. (1997): Exploring Geographic Information System, Wiley, New York.
5. www.gisdevelopment.net/tutorials/human008.html
6. www.gisloungue.com/remotesening.html.

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**
Formative Assessment as per guidelines.	

M Sc. Semester – IV

Discipline Specific Course (DSC)

Course Title: **Field Study and Project Report**

Course Code: **A4GEO006P**

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-20	**Practical**	**04**	**--**	**--**	**4hrs.**	**20**	**80**	**100**

Course Outcomes (COs):At the end of the course students will be able:

1. To identify the project problem.
2. To understand the data collection through the field work.
3. To analyze the data by using different techniques suits to the problem.
4. To finalize the project report.

Exercise No	Title of the Exercise (Total 60 Hrs.)
1	Introduction of Field Survey
2	Review of Literature
3	Project Design
4	Identification of Project Title
5	Sources of Data Collection
6	Tabulation of the Data
7	Methodology Employed
8	Preparation of Tables, Figures and maps
9	Data Analysis
10	Report Writing and Submission.

Suggested Readings:

1. Ahuja (2004): Research Methods, R.K. Books, New Delhi
2. Kothari (1990): Research Methodology – Wiley Eastern Ltd. New Delhi.
3. Gopal M.H. (1970): Introduction to Research Procedure in Social Science, Asia PublishingHouse, Bombay.
4. Young Pauline V. (1980): Scientific Survey and Research, Prentice Hall, New Delhi.
5. Limb (2001): Quantitative Methodologies for Geographer R.K. Books, New Delhi.
6. Mishra R.P. (2001): Research Methods in Geography, R.K. Books, New Delhi.
7. Pal (2005): Computing Techniques in Geography, R.K. Books, New- Delhi.

Formative Assessment for Project	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Total	**20 Marks**

Formative Assessment as per guidelines.

Summative Assessment for Project	
Assessment Occasion/ type	**Marks**
Project Report	**35**
Presentation	**25**
Viva-Voc e	**20**
Total	**80 Marks**
Summative *Assessment as per guidelines.*	

GENERAL PATTERN OF THEORY QUESTION PAPER

(80 marks for semester end Examination with 3 hrs duration)

Answer any FIVE questions out of EIGHT.

Each question carries 16 Marks.

Each questions have A or B of each unit.

Short Note question is compulsory.

SD/-

CHAIRMAN

DEPARTMENT OF GEOGRAPHY