# KARNATAK UNIVERSITY, DHARWAD

# Regulations

# For

## MASTER OF SCINECE GEOGRAPHY

### CHOICE BASED CREDIT SYSTEM (M. Sc - CBCS)

## 2016-17 & Onwards

# KARNATAK UNIVERSITY, DHARWAD

# REGULATIONS

**For**

## MASTER OF SCINECE GEOGRAPHY

### CHOICE BASED CREDIT SYSTEM (M. Sc - CBCS)

From

## 2016-17 & Onwards

# KARNATAK UNIVERSITY, DHARWAD

Regulations concerning Master Degree Programme

## Faculty of Science and Technology, from 2016-17

**Master Degree Programme in Geography (M. Sc.-CBCS)**

Regulations Governing the Post-Graduate Master Degree Programmes under Choice Based Credit System (KU-CBCS), framed under Section 44(1)(C) of K.S.U. Act, 2000.

**MASTER OF SCINECE IN GEOGRAPHY**
**CHOICE BASED CREDIT SYSTEM (CBCS)**

**Title:**

These Regulations shall be called "Karnatak University Regulations Governing Post-Graduate under the Choice Based Credit System" for Master Degree Programmes.

**Commencement:**

These Regulations shall come into force from the academic year 2016-17

**Definitions:**

In these Regulations, unless otherwise mentioned:

a) "University" means Karnatak University:
b) "Post-Graduate Programmes" means Master's Degree Courses.
c) "Compulsory Course" means a fundamental paper which a student admitted to a particular Post-Graduate programme should successfully complete to receive the Post-Graduate Degree in the concerned subject.
d) "Specialization Paper" means an advanced paper due to departmental choice for students wanting to receive Degree in the specialization area:
e) "Open elective" means a course offered by Department for students of other Departments in the same Faculty. Students have freedom to choose from a number of optional courses offered by other Department/s to add to their credits required for the completion of their respective programmes: however, if in a P. G. Centre there is only one Department for the time being, the students of that Department should study that open elective course.
f) "Credit" means the unit by which the course work is measured. For this Regulation, one Credit means on hour of teaching work or two hours of practical work per week.

Normally a Semester is of 16 weeks duration in any given academic year. As regards the marks for the courses, 1 credit is equal to 25 marks, 2 credits is equal to 50 marks, 3 credits is equal to 75 marks and 4 credits is equal to 100 marks as used in conventional system.

g) "Grade" is an index to indicate the performance of a student in the selected course. These Grades are arrived at by converting marks scored in each subject by the candidate after completing his/her Internal Assessment and Semester end Examinations. Each course carries a prescribed number of the marks of credits. These grades are awarded for each subject after conversion of the marks and after completion of the examinations in each semester.

h) "Grade Point Average" of GPA refers to an indication of the performance of the student in a given semester. GPA is the weighted average of all Grades a student gets in a given semester. The GPA depends on the number of courses student takes and the grades awarded to him/her for each of the subjects so chosen.

i) "Cumulative Grade Point Average" or CGPA refers to the cumulative Grade Point Averages weighted across all the semesters and is carried forward. The calculations of the GPA, CGPA is shown at the end of this regulation.

**Minimum Eligibility for Admission:**

The students who have successfully completed the three year/four-year Degree course or any other Degree course of this University or of any other University recognized as equivalent there to by this University shall be eligible for admission to the Post Graduate Programmes under the KU-CBCS Programme provided they also satisfy the eligibility conditions like percentage of marks etc., as may be prescribed by the University and as per Ordinance of the course.

**Entrance Test:**

Candidate seeking admission to the course shall be required to appear for entrance test conducted by the University as per the scheduled.

**Selection for Admission:**

The selection of students shall be made on merit in each category of reservations as per the University rules.

**Intake:**

The total number of candidates to be admitted to the course would be **35** only for the 1st semester. Two seats are allocated to other University candidates of which one for other University within the state and one for Outside state. Ten seats are under enhanced fee. Total Seats is **35.**

**Course of Study:**

The courses of study for M. Sc Degree shall comprise of Theory and Practicals as prescribed in the syllabus.

**Note: Specification of Degrees as per UGC notification dated March 2014 published in the Gazette of India, 5thJuly 2014 (Part III Section 4).**

**Duration of the Programme:**

The programme of study for the Post-Graduate Master Degree shall normally extend over a period of two academic years, each academic year comprising of two semesters, and each semester comprising of sixteen weeks of class work.

**Medium of Instruction:**

The medium of instruction and examination is English.

**Minimum Credits and Maximum Credits:**

a) There shall be three categories of courses viz., Compulsory course, Specialization Course and Open Elective Course. Compulsory and Specialization Course should be from the concerned Department only. The Open Elective is the courses offered by other Departments in the same Faculty.
b) Each course shall have a definite course objective, Eligibility criterion for taking the course, scheme of Evaluation including the components of Internal Assessment (IA) marks, Projects (if any), the number of contact hours, type of practical and the prescribed credits.
c) The credits for each of compulsory course may vary from 3 to 4 credits; for specialization course it may vary from 1 to 4. In case of Open Elective Course, it shall be 1 to 3 credits for each paper.
d) A student shall register for minimum of 18 credits and a maximum of 30 credits per semester. However, to qualify for the Degree in any Department under any school and

faculty, he/she should have registered and cleared a minimum number of credits, which vary from course to course.

**Course Structure:**

a) The students of Post-Graduate Programme shall study the courses as may be approved and prescribed by the Academic Council of the University from time to time.

b) A typical Master Degree program consists of a number of courses. This number varies from discipline to discipline. The term course is used to indicate a logical part of a subject matter of the programme (also referred to as paper). In essence the courses are of three types:

   i. Compulsory Course
   ii. Specialization Course or Optional Course and
   iii. Open Elective Course.

c) Each programme shall have a set of compulsory course that a student must complete to get the degree in the concerned Department. These are distributed in each semester. There could be a minimum of such papers for each semester depending on the department.

d) The students shall also choose a minimum number of specializations Course offered within the department. Each department will offer at least one specialization paper in the third and fourth semester. The Department, BOS and the Faculty may also have spell out the number of such specialization courses a student will have to take for the specialization. The Department offering of specialization course shall provide the flexibility in the system so that the student can opt for a variety of programmes depending upon their interest.

e) Each department shall offer at least two Open Elective courses for the II and III Semester for students from other Department. Student from the same Department are generally not allowed to opt the courses offered as Open Elective course in the same Department.

f) Each course (paper) in this system is designed carefully to include lectures / tutorial/ Laboratory work/ seminars/ Project work/ practical training/ report writing/ Viva-voce etc., to meet effective teaching and learning needs and the credits are assigned suitably.

g) Master Degree Programmes are essentially semester system Programmes. There shall be Four Semesters in each Programme. There shall be Two Semesters for each year of the Programme. Each of the Semester will be of 16 weeks duration including evaluation and grade finalization period. The academic session in each semester will provide 90 teaching days with 48 hrs of teaching / learning periods in six days session per week.

h) The normal calendar for the semester would be as follows:

   i. I and III semester - August to November

   ii. II and IV Semester - January to April

**Attendance**

a. Each paper shall be taken as a unit for the purpose of calculating the attendance.

b. Each student will have to sign and mark his attendance for every hour of teaching of each paper. At the end of every month all teachers shall notify the attendance of every student on the Notice Board of the Department during 2nd week of every month. Chairman shall certify the fulfilment of required attendance of every candidate in the Examination form.

c. Certain proportion of the marks in Internal Assessment shall be awarded based on attendance as an incentive to the student for regularity in attendance.

d. A student shall be considered to have satisfied the requirement of attendance for each paper, if he/she has to attend not less-than 75% of the number of classes held up to the end of the semester including tests, seminars, group discussions, practical, tutorials, etc.

e. However, if a student represents his/her institution, University, State or Nation in sports, NCC, NSS of Cultural of any other officially sponsored activities, he/she shall be eligible to claim the attendance for the actual number of days participated subject to a maximum of 20 days in a semester based on the specific recommendation of the head of the Department.

# Course Outline for the M. Sc. Geography:

## SEMESTER – I

| Paper Code | Title of the Paper | Max. Marks | Internal Assessment | Total Marks | Credits | Teaching Hrs. |
|---|---|---|---|---|---|---|
| | **Compulsory Papers** | | | | | |
| **Geog-TP1.1** | **Geomorphology** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -TP1.2** | **Climatology** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -TP1.3** | **Oceanography** | 75 | 25 | 100 | 4 | 8 Hrs / week |
| **Geog -TP1.4** | **Development of Geographical Thought** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog-Prct1.5** | **Interpretation of Toposheets** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog - Prct1.6** | **Interpretation of Weather Maps** | 75 | 25 | 100 | 4 | 8 Hrs / week |

## SEMESTER – II

| Paper Code | Title of the Paper | Max. Marks | Internal Assessment | Total Marks | Credits | Teaching Hrs. |
|---|---|---|---|---|---|---|
| | **Compulsory Papers** | | | | | |
| **Geog -TP2.1** | **Geography of Agriculture** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -TP2.2** | **Geography of Marketing** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -TP2.3** | **Geography of Transport** | 75 | 25 | 100 | 4 | 8 Hrs / week |
| **Geog -TP2.4** | **Regional Geography of India** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -Prct2.5** | **Cartographic Methods** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog - Prct2.6** | **Basic Statistics.** | 75 | 25 | 100 | 4 | 8 Hrs / week |

## SEMESTER - III

| Paper Code | Title of the Paper | Max. Marks | Internal Assessment | Total Marks | Credits | Teaching Hrs. |
|---|---|---|---|---|---|---|
| | **Compulsory Papers** | | | | | |
| **Geog-TP3.1** | **Theoretical and Quantitative Geography** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog-TP3.2** | **Geography of Settlements** | 75 | 25 | 100 | 4 | 4 Hrs / |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | week |
| **Geog -TP3.3** | **Population Geography** | 75 | 25 | 100 | 4 | 8 Hrs / week |
| **Geog -TP3.4** | **Environmental Geography** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -Prct3.5** | **Quantitative Methods** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog - Prct3.6** | **Aerial Photo Interpretation** | 75 | 25 | 100 | 4 | 8 Hrs / week |

**SEMESTER - IV**

| Paper Code | Title of the Paper | Max. Marks | Internal Assessment | Total Marks | Credits | Teaching Hrs. |
|---|---|---|---|---|---|---|
| | **Compulsory Papers** | | | | | |
| **Geog-TP4.1** | **Natural Hazards and Management** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -TP4.2** | **Geography of Tourism** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog -TP4.3** | **Principles of Remote Sensing** | 75 | 25 | 100 | 4 | 8 Hrs / week |
| **Geog -TP4.4** | **Regional Planning.** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog –Prct4.5** | **Computer Applications and GIS** | 75 | 25 | 100 | 4 | 4 Hrs / week |
| **Geog –Prct4.6** | **Project Work.** | 75 | 25 | 100 | 4 | 8 Hrs / week |

**Project Report / Study Tour:**

There shall be a project report / study tour, which is compulsory as per the curricula and a student, has to submit a project report. The project report will be conducted at the beginning of the fourth semester.

**Submission of Journal:**

a) The students shall have to submit the journal to the Chairman duly signed by the course teacher for their allotted practical papers of each semester before the commencement of the theory examination of each semester.

b) Candidates keeping terms but not appearing for the theory and practical papers and not submitted the journal within the prescribed time may appear for respective examination and submit the journal within the prescribed time.

c) Candidates appearing for the examination under the provision of (c) will be not eligible for the award of any rank, prize, medal etc.

**Evaluation:**

a. Each Course has two components, the first being Internal Assessment Marks and the second being the Semester End Exams. The Internal Assessment (IA) marks are based on continuous Internal Assessment. The total marks for the Internal Assessment would be based on the total credit awarded to the Course. For instance, if a Compulsory Course has a Credit award of 4, then the total max marks would be 100 for the subject.

b. The marks shall be displayed on the Notice Board of the Department also. The tests shall be written in a separately designated book and after evaluation; the same should be shown to students.

c. In case of candidates who wish to appear in improvement examinations, if any, the marks obtained in the Internal Assessment shall not be revised. There is no improvement for internal assessment.

d. To encourage the students for the regular participation in academic curricula following break-up for attendance has been recommended.

| Attendance | Marks Allotted |
|---|---|
| 91 to 100% | 3 |
| 81 to 90% | 2 |
| 75 to 80% | 1 |

e. Students seeking the condoning of attendance after representing the University have to produce attendance certificates from the concerned authority and that attendance period to condone of shall be considered for the allotment of marks as under.

f. There shall be one end semester examination of three  duration (for 75 marks/ paper). Each answer scripts of the semester end examination (theory and project report) shall be assessed by two examiners (one internal and another external). The marks awarded to that answer script shall be the average of these two evaluations. If the difference in marks between two evaluations exceeds 20% of the maximum marks such a script shall be assessed by third external examiner. The marks allotted by the third examiner shall be average with nearer mark of the two evaluations.

**Completion of Course:**

a. A candidate is expected to successfully complete P.G. Master Degree course in two years from the date of admission.
b. Whenever the syllabus is revised, the candidate reappearing shall be allowed for PG Degree examinations only according to the new syllabus.
c. The CBCS scheme is fully carry-over system. However, the four –semester two years course should be completed by a student within double duration of the normal course period (i.e. 4 years). For these periods, candidate may be permitted to take examination in cross-semester (even semester examination in even and odd semester examination in odd semester examination) after paying the examination fee of Rs. 1,000/- per paper.

**Declaration of Results:**

a. Minimum for a pass in each paper shall be 40% of the total 100 marks including both the IA and the semester end examinations. However, candidate should obtain at least 40% of the marks in the Semester End Examination. There is no minimum in the IA marks. However, after adding the IA and the semester end examination, the candidates should score a minimum of 40 % of the maximum marks for the subject.
b. The candidates, seeking improvement of their results shall submit a representation along with a permissible fee to the Registrar (Evaluation) and surrender the degree certificate/ provisional pass certificate /original marks card of that semester within 15 days of announcement of result.

**Marks and Grading:**

The grading of successful candidate at the examination shall be as follows:

| Percentage | GPA/CGPA | Letter | Class |
|---|---|---|---|
| 75.00 to 100.00 % | 7.50 to 10.00 | A | First Class with Distinction |
| 60.00 to 74.90% | 6.00 to 7.49 | B | First Class |
| 50.00 to 59.94% | 5.00 to 5.99 | C | Second Class |
| 40.00 to 49.94% | 4.00 to 4.99 | D | Pass |
| Less than 40.00% | Less than 4.00 | F | Fail |

# KARNATAK UNIVERSITY, DHARWAD

# SYLLABUS

**For**

## MASTER OF SCINECE GEOGRAPHY

### CHOICE BASED CREDIT SYSTEM (M. Sc - CBCS)

From

## 2016-17 & Onwards

## 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 Principles of Cartography and exposer in the technology for handling the spatial and non-spatial data and to integrate in Geographical Environment and Remote Sensing.

**SEMESTER I**

**Title of the Course: Geog-TP1.1: GEOMORPHOLOGY**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To define the Geomorphology and to explain the fundamental concepts of it. |
| 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 understand the concept of gradation, mass movement and slope replacement model. |
| 5. | To explain theGeomorphic processes erosion and depositional landforms. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **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. |
| **II** | Geotectonic Hypothesis: Isostacy, Wagner's Continental Drift Theory, Holme's Convectional Current Theory, Jolley's Thermal Cycle Theory, Plate Tectonics. |
| **III** | Earth Movements: Epeirogenic, Organic and Cymatogenic earth movements. Mountain Building – Geosynclines, Hinter land, Foreland and Median Mass. Forces of crustal instability. |
| **IV** | Exogenic Processes: Concept of gradation, Agradation and degradation, classification of weathering, mass movement. Slope evolution, down wearing, parallel retreat and slope replacement model. |
| **V** | Geomorphic processes: Cycle of Erosion, Fluvial, Glacial, Aeolian, Marine and Karst processes and resulting landforms, erosion and depositional landforms. |

**E: Suggested Readings**


| | | |
|---|---|---|
| 01 | Dayal, P. | A text book of Geomorphology Shukla book Depot, Patna, 1996. |
| 02 | Monkhouse, F.J | Principles of Physical Geography, Hodder and London, 1960. |
| 03 | Sparks, B.W | Geography Longmans, London, 1960. |
| 04 | Strahler, A.N & Strahler, A.H | Modern Physical Geography: John Wiley and Sons, Renised Edition 1992. |
| 05 | Thornbury W.D | Principles of Geography, Willey Eastern, 1969. |
| | Wooldridge, S.W & | The Physical basis of Geography: An outline of |

| | | |
|---|---|---|
| 06 | Morgan, R.S | Geomorphology, Longman Green and Co, Londan, 1959. |
| 07 | Siddharth, K | The Earth's dynamic surface. |
| 08 | Ranganath | PrakritikaBhoogolaShastradaMoolatatwagalu(Kannada Version). |


**Title of the Course:Geog -TP1.2: CLIMATOLOGY**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 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 it's 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. |
| 5. | To explain theclassification of climates with different scholars view point and globle climate changes. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Nature and scope of Climatology, composition and structure of the atmosphere. Insolation and heat balance. Vertical and Horizontal distribution of temperature. |
| **II** | Vertical and Horizontal distribution of atmospheric pressure, Isobaric maps, Pressure Zones and planetary winds. Mansoons: Mechanism and its distribution. |
| **III** | Humidity and its types, Hydrological Cycle, Process and forms of condensation. Types of Clouds, adiabatic cooling and precipitation, distribution and types of rainfall. |
| **IV** | Origin, Nature and source regions of air-masses, fronts Classification, air masses. Extra-Tropical and Tropical Cyclones. Thunder storms- their formation, types and distribution. |
| **V** | Climatic classification: Koeppen's and Thornthwaite's classification of climates: Global climatic changes: Human Impact on climate, ozone depletion, Heat Islands, Global Warming and its Consequences. |

**E: Suggested Readings:**

| | | |
|---|---|---|
| 01 | Trewartha. G.T Horn | An Introduction to Climate. |
| 02 | Blair. T.A | Climatology. |
| 03 | Lal. D.S | Climatology. |
| 04 | Willin Donn | Meteorology. |
| 05 | Critch Field | Climatology. |
| 06 | Berry &Chorlay | Atmosphere weather and Climate. |
| 07 | Griffiths John .F | Applied Climatology. |
| 08 | Griffith Tailor | Introduction to Climatology. |
| 09 | Majid Hussain | Physical Geography. |

**Title of the Course: Geog -TP1.3: OCEANOGRAPHY**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To define the oceanography and its concepts and 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. |
| 5. | To explain ocean as a store house of mineral wealth, food resource and marine pollution. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | 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. |
| **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. |
| **III** | Ocean Currents: Origin, causes and types of Ocean currents and their effects, currents of Atlantic, |

| | |
|---|---|
| | Pacific and Indian Ocean. |
| **IV** | Ocean Deposits: Terragenous and paleagic deposits. The nature, types and distribution of Coral Reefs and Theories of Origin of Coral Reefs. |
| **V** | Ocean as a store house of mineral wealth, food resource and marine pollution. |

E: **Suggested Readings:**

| | | |
|---|---|---|
| 01 | Sharma and Vatal | Oceanography for Geographers. |
| 02 | King C.A.M | Oceanography for Geographers. |
| 03 | Kuenen P.K | Marine Geology. |
| 04 | Sverdrup, Johnson & Flening | The Ocean. |
| 05 | Lal. D.S | Oceanography. |
| 06 | Siddharth .K | Oceanography. |

**Title of the Course: Geog -TP1.4: DEVELOPMENT OF GEOGRAPHICAL THOUGHT**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To discuss the contributions of the scholars during $18^{th}$&$19^{th}$ centuries. |
| 2. | To discuss the Development of Scientific Geography in $20^{th}$ Century, QuantitativeRevolution and development of scientific method and theory building. |
| 3. | To understand the Systems Analysis and Structure of Modern Geography. |
| 4. | To discuss the dualism in geography and types of dualism. |
| 5. | To discuss the themes in Geography in an effective manner. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| I | Development of Geography during 18th century, Methodology, Motivation and Content. The contributions of J.R. Forster, Karl Ritter, Alexander Von Humboldt, Emmanuel Kant.The growth of Geographical Knowledge in the19th Centuries: Methodology, Motivation and content. Contributions of Ratzel, Peshel, Richothofen, Penk, Blach, Mackindar, W.M. Davis and Miss. Semple. |
| II | The Development of Scientific Geography in 20th Century: Quantitative Revolution development of scientific method and theory building, locational patterns and regional analysis, Contributions of Taylor, Christaller, Hartshore and Peter Haggett. |
| III | Systems Analysis and Structure of Modern Geography: System theory, Positivism, Pragmatisim, Functionalism, Idealism, Existentialism, Marxism and Behaviouralism. |
| IV | Dualism in Geography and its need. Dualism between Man v/s Environment, General Geography v/s Regional Geography and Determinism v/s Possiblism. |
| V | Themes in Geography: Landscape Theme, Man- Environmental Relationship theme, Areal differentiation theme, Spatial and Geometric theme. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Taylor (ED) | Geography of 20th Century, Methew, London,. |
| 02 | Cooke and Johnson | Trends in Geography, Pergamow press, London. |
| 03 | Majid Hussain | Evolution of Geographical Thought, Rawat Publications, Jaipur, India. |
| 04 | Freeman T.W | A Hundred Years of Geography, London. |
| 05 | Hartshorne .R | Perspective on the Nature of Geography, Rand M.N and Co.Chicago. |
| 06 | Halt, Jensew | Geography: Its History and concepts, Longmans. |
| 07 | Dixit R.D. | The Art and Science of Geography. |
| 08 | Sudeepa Adhikari | Fundamentals o f Geographical Thought, Chaitanya Publishing House, University Road Allahbad (UP). |


**Title of the Course: Geog-Prct.1.5: INTERPRETATION OF TOPOGRAPHICAL MAPS**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To understand the cartographic appreciation of Indian Toposheets. |
| 2. | To interpret the Relief and Drainage, Settlements and Transport network and landuse. |
| 3. | To understand the cartographic appreciation of Foreign Toposheets. |
| 4. | To interpret the features of United Kingdom toposheets. |
| 5. | To interpret the features of United States of American's toposheets. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Cartographic appreciation of Indian Toposheets. |
| **II** | Interpretation of Relief and Drainage, Settlements and Transport network and landuse. |
| **III** | Cartographic appreciation and interpretation of Foreign Toposheets. |
| **IV** | Interpretation of UK Toposheets. |
| **V** | Interpretation of USA Toposheets. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Singh R.L | Elements of Practical Geography, Kalyani. |
| 02 | Ramamurthy .K | Map Interpretation, Krishnamurthy publishers, Madras. |
| 03 | Balbir Singh Negi | Practical Geography, Kedarnath Pub, Delhi. |


**Title of the Course: Geog-Prct.1.6: INTERPRETATIONS OF WEATHER MAPS**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To understand the Weather Maps, Signs and Symbols. |
| 2. | To interpret the Interpretation of Indian Weather Maps based on the elements. |
| 3. | To understand the Signs and Symbols of 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. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Weather Maps, Signs and Symbols. |
| **II** | Interpretation of Indian Weather Maps. |
| **III** | Signs and Symbols of foreign weather maps and Station model. |
| **IV** | Interpretation of Foreign Weather maps. |
| **V** | Weather Forecasting. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Singh R.I | Elements of Practical Geography, Kalyani. |
| 02 | Ramamurthy .K | Map Interpretation, Krishnamurthy publishers, Madras. |
| 03 | Balbir Singh Negi | Practical Geography, Kedarnath Pub, Delhi. |


**Semester-II**

**Title of the Course: Geog-TP 2.1: GEOGRAPHY OF AGRICULTURE**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | **1.** To define the agriculture geography and factors affecting agriculture |
| 2. | **2.** To employed the crop combination method of different scholars for the agriculture. |
| 3. | **3.** To understand the agricultural models and their significance and classifications. |
| 4. | **4.** To discuss green revolution in India and problems and prospects with regional disparities. |

| | |
|---|---|
| 5. | **5.** To discuss the soil pollutions & erosion, health hazard from ecological point of view. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Nature, Content and Scope of Agriculture Geography. Factors affecting Agriculture - Physical, Social- Economic and Technological. |
| **II** | Systems of Agriculture: Truck Farming (Horticultural) Commercial farming, Intensive and Extensive Agriculture. Concepts of Agricultural Region, Methods of regionalization - Crop combination (Weaver's Method), Crop concentration, diversification (S.S. Bhatia Method), and Agricultural efficiency(Kendal's Method). |
| **III** | Models in Agricultural Geography – Significance of Models, Classification of Agricultural Models- Normative, Descriptive and Diffusion Models. Von Thunen's Model and Johnson's Model. |
| **IV** | Green Revolution in India- Its problems and Prospects, Regional disparities, inter regional inequalities, intra- regional inequalities and inter crop disparities. |
| **V** | Ecological implications of Green Revolution- Salinisation, Water logging, Soil Pollution, Soil Erosion, Fallow Land, Health Hazards, Diffusion of agricultural innovations. |

## E: Suggested Readings:


| | | |
|---|---|---|
| 01 | Hussain M | Agricultural Geography Inter- India Publications Delhi. |
| 02 | Orgon and Munton | Agricultural Geography Mathuew London. |
| 03 | Symons L. | Agricultural Geography Bell and Sons London. |
| 04 | Tarrant J R. | Agricultural Geography David and Charls London. |
| 05 | Greger H.F | Geography of Agriculture themes and research Prentice HallEaglewood Cliff London. |
| 06 | Ilbury B W | Agricultural Geography Oxford university Press. |
| 07 | Singh Jasbir | Agricultural Geography New Delhi DhilionS.S |


**Title of the Course: Geog-TP2.2: GEOGRAPHY OF MARKETING**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 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. |
| 3. | To understand the classification of markets: Permanent, Periodic, Fair, Retailing, Wholesaling and Services. |
| 4. | To discuss locational characteristics of markets, spatio-temporal distributions and Consumer and Trader behaviour and travel patterns. |
| 5. | To discuss the locational characteristics of regulated markets and their development. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **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. |
| **II** | Evolutionary aspects of trade system: Early history of trade and beginning of market place trade. |
| **III** | Classification of Markets: Permanent, Periodic, Fair, Retailing, Wholesaling and Services. |
| **IV** | Periodic Markets: Locational and distribution characteristics, spatio- temporal relationships, Hierarchy of market centres and their tributary areas. Consumer and Trader behaviour and travel patterns. |
| **V** | Regulated Markets: Locational and Developmental characteristics. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Davis R.L | :Marketing Geography, Mathuel and Co, London. |
| 02 | Garnier &Delobez | Geography of Marketing, Longman, London. |
| 03 | Saxena H.M | Geography of Marketing, Concepts and Methods, New Delhi. |
| 04 | Berry. B.J.L | Geography of market centres and retail Distribution, Prentice Hall Engle-wood Cliffs, New Jersey. |
| 05 | Bromley R.J | Periodic Markets Daily Markets and Fairs, Swanses. |
| 06 | Hugar S. I | Traditional and Non Traditional Market Exchange: a study in spatial development, Ganga Cauvery Publication, Varanasi. |


**Title of the Course: Geog-TP 2.3: GEOGRAPHY OF TRANSPORT**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To discuss the geography of transportation, significance and its role in regional economies. |
| 2. | To understand the significance of different means of transportation . |
| 3. | To discuss the spatial interaction complementarities intervening opportunity, Transferability and place and time utility. |
| 4. | To discuss the Graph Theoretic measures for network analysis. |
| 5. | To handle the methods of flow analysis and gravity potential model for regional planning. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Nature, Scope and development of Geography of Transport, Significance of transportation and its role in the development of regional economies. |
| **II** | Characteristics and relative significance of different means of transportation Railways, Roads, Water ways and Air ways. |
| **III** | Basis for Spatial interaction complementarities intervening opportunity, Transferability and place and time utility. |
| **IV** | Graph Theoretic measures and network analysis, Location, Structure, Density Pattern, Order, Measures of connectivity and accessibility. |
| **V** | Concept and method of flow analysis, Gravity Potential Model, structure and efficiency. Transport and regional development planning. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Eliot Hurst (ed) | Transportation Geography, McGraw Hill, New York. |
| 02 | Taffe, E.J & Gauthier | Geography of Transportation, Prince Hall, Englewood Cliff, New Jersey. |
| 03 | Sealy. Keneth | Geography of Air Transport, Rinenart, NewYork. |
| 04 | Lowe &Moryadas | Geography of movements. |
| 05 | Peter Heggett | Network Analysis, Edward Arnold, London. |


**Title of the Course: Geog- TP 2.4: REGIONAL GEOGRAPHY OF INDIA AND KARNATAKA**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 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 understand the major mineral industries their distribution and production. |
| 5. | To discuss the physical aspects, major irrigation projects and major crops in Karnataka. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Physical features of India: Soil types, Drainage, Vegetation. Water resources: Three major irrigation projects and Three major Hydro Electric Power projects (Multi Purpose Projects- Nagarjuna, Bhakranangal and Damodar). |
| **II** | Forest Resources: Types of forests and their distribution, Forest based industries: Paper Industry. Major Agricultural Crops, their distribution and production; Rice, Wheat, Cotton, Tea and Sugarcane. |
| **III** | Distribution, Production and Conservation of Major Mineral Resources: Iron-ore, Manganese, Mice and Coal. |
| **IV** | Distribution, Production and Problems of Major Industries; Iron and Steel, Cotton Textile and Fertilizer. India's Foreign Policy and Foreign Trade. |
| **V** | Karnataka: Physiography, 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. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Spate, O.H. K & Learmonth A.T.A | India and Pakistan, Methuen, London. |
| 02 | Negi. B.S | Geography of India, Kedarnath, New Delhi. |
| 03 | Singh R.N | India a Regional Geography, NGSI,4 Varanasi. |
| 04 | Sharma T.C &Coutinho .O | Economic and Commercial Geography of India. |
| 05 | Deshpande C.D | India Region Interpretation, ICSSR, New Delhi. |
| 06 | Sharma T.R | Location of Industries in India, Hind Kitab, Bombay. |
| 07 | Mallanna P. | Geography of Karnataka, Chetna Book house ChamrajaDouble, Mysore. |
| 08 | Sharma T.C | Technological Change in Indian Agriculture, Rawat Publishers, |

| | | |
|---|---|---|
| | | Jaipur. |

**Title of the Course: Geog-Prct. 2.5: CARTOGRAPHIC INSTRUMENTS AND METHODS**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To handle the cartographic instruments of pantography, planimeter and opisometer. |
| 2. | To prepare the Profiles, i.e. Super Imposed, Projected and Composite. |
| 3. | To draw one point and two Point perspective block Diagrams for analysis. |
| 4. | To prepare the slope analysis by employing Went Worth's method. |
| 5. | To prepare the Simple Cylindrical, Conical, Bones and Mercator's Projections. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Cartographic Instruments: Enlargement and Reduction of Maps (Pantograph), Measurement of Area (Planimeter), Measurement of Length (Opisometer). |
| **II** | Profiles: Super Imposed, Projected and Composite. |
| **III** | Block Diagrams: One point and Two Point perspective block Diagrams, |
| **IV** | Slope Analysis: Went Worth's method. |
| **V** | Map Projection: Simple Cylindrical, Conical, Bones and Mercator's Projection. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Singh R.L | Elements of Practical Geography, Kalyani Publishers, New Delhi. |
| 02 | Danghesty R | Data Collection, Science in Geography, Oxford University Press, London. |
| 03 | Mcculla. P | Data use and Interpretation, Science in Geography. |
| 04 | Toyne P. & Newby T. | Techniques in Human Geography, Macmillan and Co, London. |
| 05 | Aslam Mohammad | Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi. |

**Title of the Course: Geog-Pract.2.6: BASIC STATISTICS**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To handle the cartographic instruments of pantography, planimeter and opisometer. |
| 2. | To prepare the Profiles, i.e. Super Imposed, Projected and Composite. |
| 3. | To draw one point and two Point perspective block Diagrams for analysis. |
| 4. | To prepare the slope analysis by employing Went Worth's method. |
| 5. | To prepare the Simple Cylindrical, Conical, Bones and Mercator's Projections. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Application of Statistics in Geographical Analysis. |
| **II** | Methods of Investigation and Sampling, Frequency distribution and Curves. |
| **III** | Measures of Central Tendency: Mean, Median, Mode, Harmonic and Geometric Mean. |
| **IV** | Measures of Dispersion: Range, Quartile Deviation, Mean deviation, Standard deviation and Co-efficient. |
| **V** | Correlation, Chi-Square Test and Confidence. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Singh R.L | Elements of Practical Geography Kalyani Publishers New Delhi. |
| 02 | Danghesty R | Data Collection Science in Geography Oxford University Press London. |
| 03 | Mcculla. P | Data use and Interpretation Science in Geography. |
| 04 | Toyne P.& NewbyT | Techniques in Human Geography Macmillan and Co London. |
| 05 | Ebdon David | Statistics in Geography: A practical Approach Basil Black Wel Oxford. |
| 06 | Sunpon&Kefka | Basic Statistics Oxford and IBH publishing Co. Culcutta. |

| | | |
|---|---|---|
| 07 | Dalton Retal | Correlation Techniques in Geography George Philp & sons London. |
| 08 | Aslam Mohammad | Statistical Methods in Geographical Studies Rajesh Publications New Delhi. |

**Title of the Course: Geog-TP 3.1: THEORETICAL AND QUANTITATIVE GEOGRAPHY**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 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 understand the major mineral industries their distribution and production. |
| 5. | To discuss the physical aspects, major irrigation projects and major crops in Karnataka. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | 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. |
| **II** | Dichotomies in geography with special reference to Ideographic and Nomothetic studies. Interdependence of theoretical and quantitative geography. Quantitative revolution and the emergence of new geography. |
| **III** | Quantitative Geography: Its need, Purpose and Scope, Models, Analogies and paradigms and their use in geographical analysis, Gravity Potential Model. The nature of Geographical data and the need for data summarization. |
| **IV** | Comparing geographic relationship and the correlation within and between areas. Spatial and temporal variations. |
| **V** | Applications of quantitative and statistical techniques in geographical studies. The theoretical background of Shape Index, Centrographic Analysis. Network analysis, Nearest Neighbour Analysis and Crop Combination Analysis, |

**E: Suggested Readings:**

| | | |
|---|---|---|
| 01 | David Harvey | Explanation in Geography, Edward Arnold, N.J. |
| 02 | Hartshorne R | Perspectives on the nature of Geography, Association ofAmerican |

| | | |
|---|---|---|
| | | Geographers, Washington. |
| 03 | Minshull R | The changing nature Geography, Hutchainson, London. |
| 04 | Peter Heggett. | Locational analysis in Human of Geography, Edward Arnold, London |
| 05 | Anede&Golledge | An Introduction to Scientific Reasoning in Geography Johnwilley and sons, New York, |
| 06 | Gregory's | Statistical Methods and the Geography, Longmans, London. |
| 07 | Hammod&Mecullah | Quantitative techniques in Geography, A Introduction Clarendon Press Oxford. |
| 08 | Yeats.M | An Introduction to Quantitative Analysis in Human Geography, Mc Graw Hill New York. |
| 09 | Cole & King | Quantitative Geography, M Jhon Wiley and Sons, New York. |
| 10 | King L.J. | Statistical Analysis in Geography, Prentice Hall, Englewood Cliffs, New Jersey. |
| 11 | Wheeler | Statistical Techniques in Geographical Analysis, John Wiley. |


**Title of the Course: Geog-TP 3.2: GEOGRAPHY OF SETTLEMENT**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To discuss the human settlements, evolution, size and growth, distribution and spatio-temporal trends of settlements. |
| 2. | To understand the spatial distribution and pattern of settlements with theoretical models and empirical findings. |
| 3. | To discuss the morphological structure of settlements and landuse theories, functions of towns along with the difference between rural & urban. |
| 4. | To apply the Christaller and Losch theories for determine the hierarchy of the settlements. |
| 5. | To discuss the issues and policies on population& settlements as well as environment. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|

| | |
|---|---|
| **I** | Evolution, Size and Growth of Human Settlements: Theories of Evolution of Settlements; Size, Distribution, Spatial and Temporal trends in Size and Growth of Settlements. |
| **II** | Distribution Pattern: Spatial Distribution pattern of settlements: Theoretical models and empirical findings. |
| **III** | Settlement Structure: Morphological aspects of settlements. Land use theories and functions of towns. Difference between Rural and Urban. Rural house types and building material. |
| **IV** | Settlement Hierarchy: Theories of Christaller and Losch .Determination of hierarchy. |
| **V** | Issues, perspective and policies on population and human settlements. Interface between human settlements and environment. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Ambrcse. Peter | Concepts in Geography Vol I Settlement patternLongman1970. |
| 02 | Haggett Peter, Andrew D Cliff& Allen Frey (Editor) | Locational models Arnolds Heinemann, 1979. |
| 03 | King, Leslie, J | Central Place Theory, Saga Publications New Delhi. 1986. |
| 04 | Mitra Ashok,Mukharji .S& Bose .R | Indian Citeis Abhinav Publications New Delhi1980. |
| 05 | Ramachandran .R | Urbanization and Urban systems in India OxfordUniversity Press, New Delhi,1992. |
| 06 | Singh R.L & Singh K.L | Readings in Rural settlement Geography, National Geographical Society of India, Varanasi, 1975. |
| 07 | Chishom .M | Rural settlements and landuse, Hutchinson University library London. |


**Title of the Course: Geog-TP 3.3: POPULATION GEOGRAPHY**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To discuss the population geography and its development |
| 2. | To understand the Malthusian and Karl Marx's theory of population |
| 3. | To discuss the Migration |
| 4. | To understand the determinants of population and the concept of optimum |
| 5. | To the Population policies in developing and under developed countries |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Nature and Scope of Population Geography, Development of population Geography as specialized branch, Factors influencing the distribution of population. Growth trend of population in the world and India. Pattern, Density and Distribution of population. |
| **II** | Theories of Population Growth: Malthusian and Karl Marx's theory, theory of demographic transition and its stages. |
| **III** | Population Growth and economic development, Migration: Factors, Causes and Types, Internal and International migration. |
| **IV** | Fertility, Mortality, Mobility, Determinants of fertility and mortality. Population and resources: Concept of optimum population, over population and under population. |
| **V** | Population policies in developing and under developed countries, Population Policy in India. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Garnier. B.J | Geography of Population, Londan: Longmans, 1966 |
| 02 | Chanda R.c | Geography of Population, Kalyani publishers, 4779, Ansari Road 23, Daryaganj New Delhi-110002. |
| 03 | Clarke J.L | Population Geography, Oxford Pergamon Press. |
| 04 | Dermko, George | Population Geography, A Reader abnd Rose. |
| 05 | Ghosh B.N | Population Theories and Analysis. |
| 06 | Ghosh B.N | Fundamentals of population Geography, Sterling Publishers, New Delhi |
| 07 | TrewathaG.T | Geography of Population, Wiley, New York. |
| 08 | Jones H.R | Population Geography, Harper and Row Publishers, London. |


**Title of the Course: Geog-TP 3.4: ENVIRONMENTAL GEOGRAPHY**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 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 the concept of optimum, over and under population. |
| 5. | To understand the population policies in developing and under developed countries, Population Policy in India. |

## D: Detail Curriculum:

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

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Straler and Straler A.H | Geography of Man's Environment. |
| 02 | Frank R.G & Frank D.N | Man and the Changing Environment. |
| 03 | Smith R.L | Man and his Environment. |
| 04 | Savindra Singh | Environmental Geography. Pravalika Publication, Allahabad. |
| 05 | Haggett .P | Geography of Modern Synthesis. |
| 06 | Saxena H.M | Environmental Geography. |

| | | |
|---|---|---|
| 07 | Tark J. | Introduction of Environmental Studies. |
| 08 | Majid Hussain | Environmental Geography. |

**Title of the Course: Geog-Prct. 3.5 QUANTITATIVE METHODS**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To employe the Crop Combination Analysis as per J.C. Weaver's Method, Crop Concentration As per S.S. Bhatia's Method. |
| 2. | To able to apply the methods for Functional Classification of Towns Nearest Neighbour Analysis, Centrographic Analysis. |
| 3. | To use the Shape Index and Detour Index for different situations. |
| 4. | To emphasis on the application of Quantitative Methods in Geographical Research. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Lorenz Curve, Rank Size Rule, Crop Combination Analysis as per J.C. Weaver's Method, Crop Concentration As per S.S. Bhatia's Method. |
| **II** | Functional Classification of Towns by Web's method, Nearest Neighbour Analysis, Centrographic Analysis. |
| **III** | Applications of Shape Index and Detour Index. |
| **IV** | Gravity Potential Model, Break Point, Urban Sphere of Influence. |
| **V** | Application of Quantitative Methods in Geographical Research. |

**E: Suggested Readings:**

| | | |
|---|---|---|
| 01 | Singh .R.L | Elements of Practical Geography, Nagi Varanasi. |
| 02 | Kothari C.R | Research Methodology, Prakashan New Delhi. |
| 03 | Mishra R.P | Research Methodology in Geography. |
| 04 | Hammod .S&Oullah M.C | Quantitative Techniques in Geography: an Introduction, Clarendon Press, Oxford. |

**Title of the Course: Geog- Prct. 3.6 AERIAL PHOTO INTERPRETATIONS**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To discuss the development of Aerial photography and their types and mechanism of taking the photographs. |
| 2. | To determine the scales of aerial photography with different parameters. |
| 3. | To use the Pocket Stereoscope and Sketch Master, Mirror Stereoscope instruments. |
| 4. | To define the applications of Remote Sensing: Mechanism of remote sensing, types of remote sensing, types of satellites. |
| 5. | To interprite the Satellite Imageries (Visuals) based on the elements of aerial photos. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Development of Aerial Photography, Types of Aerial Photographs and Mechanism of taking Aerial photographs. |
| **II** | Determination of Scale of Aerial Photographs. |
| **III** | Elements of Aerial Photo Interpretation, Interpretation of aerial Photo pairs, use of Pocket Stereoscope and Sketch Master, Mirror Stereoscope. Interpretation of Satellite Imageries. |
| **IV** | Remote Sensing: Mechanism of remote sensing, types of remote sensing, types of satellites. |
| **V** | Interpretation of Satellite Imageries (Visuals). |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Er.Jain. V.K | Computer for Beginners. |
| 02 | Heywood, Cornelius, Carver | An Introduction to Geographical Information System. |
| 03 | Kumaraswami .K | Remote Sensing for Environmental Studies |


**Semester-IV**

**Title of the Course: Geog-TP 4.1: NATURAL HAZARDS AND MANAGEMENT**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 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. |

## D: Detail Curriculum:

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

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Saxena H.M. | Environmental Geography, Rawat Publication, New Delhi. |
| 02 | Burton Robert W.K &Gilbert F.W. | The Environment as Hazard, Oxford University Press, New York |
| 03 | Savindra Singh | Environmental Geography, |


**Title of the Course: Geog-TP4.2: GEOGRAPHY OF TOURISM**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To discuss the nature and concept of tourism: Definition of tourism |
| 2. | To understand the impact of tourism |
| 3. | To discuss the perseveration and development of Costal Tourism |
| 4. | To understand the role of transportation in tourism |
| 5. | To understand the Planning of Tourism Development: Resort Tourism Planning |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | 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. |
| **II** | Impact of Tourism: Physical impact, impact on air and water quality. Socio- economic impacts. Historical, Cultural Sites and important cities in India and Karnataka. |
| **III** | Tourism and Environment: Perseveration and development of Costal Tourism, Island Tourism, Mountain Tourism, Inland Water and Countryside Tourism. |
| **IV** | Transport and Tourism:Water Transport, Railways and Roadways. Development of Air Transport and International Agencies. |
| **V** | Planning of Tourism Development: Resort Tourism Planning, Tourism Policy and Spatial Planning for Tourism. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Tiwari S.P. | Tourism Dimensions, Atmaram Publishers New Delhi, 1994. |
| 02 | Singh P.G. | 50 Years of India Toursm, Atmaram publishers, New Delhi. |
| 03 | Arvill R. | Man and Environment – London Publishers, 1962 |
| 04 | Aldos T. | Battle of Environment- London Publishers, 1972 |
| 05 | Cohen E. | The Impact of Tourism , on Physical Environment,Annals of Tourism vol .1.2. 1978 |
| 06 | Hudson | Geography Tourism Daya Publishing House, New Delhi. |
| 07 | Mowa , Sushma | Piligrmiage Tourism Marketing Strategy withspecial reference to Shree Mata Vaishnave Deve Shrine, 2004. |

| | | |
|---|---|---|
| 08 | Richard Sharpley | Travel and Tourism. |

**Title of the Course: Geog-TP 4.3: PRINCIPLES OF REMOTE SENSING.**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 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. Visual Interpretation Techniques. Marginal information and decoding. |
| 5. | To discuss the Advantages of Remote Sensing over conventional Surveys, thrust areas of Remote Sensing and development of remote sensing in India. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Introduction to Remote Sensing: 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. |
| **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. |
| **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. |
| **IV** | Principles of Image Interpretation: Elements of Image Interpretation, Visual Interpretation Techniques. Marginal information and decoding. |
| **V** | Advantages of Remote Sensing over conventional Surveys. Development of Remote Sensing in India. Thrust areas of Remote Sensing. |

**E: Suggested Readings:**


| | | |
|---|---|---|
| 01 | Anji Reddy. M | Text book of Remote Sensing and Geographical Information System, B.S.Publications Hyderabad, 2008. |
| 02 | Barret, E.C.&L.F.Curtis | Fundamentals of Remote Sensing and Air Photo Interpretation, Mcmillan, New York.1992 |
| 03 | Bhatta. B. | Introduction to Remote Sensing and GIS Oxford University Press. |

| | | |
|---|---|---|
| 04 | Compbell, J. | Introduction of Remote Sensing Guilford, New York, 1989. |
| 05 | Curran, Paul, J. | Principles of Remote Sensing, Longman, London, 1985. |
| 06 | Kumarswamy. K. (Ed) | Remote Sensing for Environmental Studies, Union OffsetPrinters, Tiruchi, 2005. |

**Title of the Course: Geog-TP 4.4: REGIONAL PLANNING.**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To understand the concept of region, regional analysis and importance in regional planning. |
| 2. | To understand the basic issues in regional planning and economic development. |
| 3. | To discuss the types of planning, choice of region and planning strategy. |
| 4. | To understand the issues, growth pole concept and theory, policies and problems involved in regional planning. |
| 5. | To plan for Regional Planning in Karnataka: Policies and Program for Backward Area Development. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | The Concept of region, regional analysis. Resource analysis. (Physical, Human, land and water) and its importance in regional Planning. |
| **II** | Basic issues in Regional Planning. Grass root level and Systems approach to Regional Planning, Regional interactions and economic development. |
| **III** | Types of Planning and choice of regions for planning purposes. Development strategy and planning for natural, Social and economically backward regions: Tribal and problem regional. Regional Planning for Rural Development. |
| **IV** | Growth Pole concept: Growth Point theory and regional Planning. Regional imbalances and regional Planning in India, Policies, issues, Problems involved. |
| **V** | Regional Planning in Karnataka: Policies and Program for Backward Area Development. |

**E: Suggested Readings:**

| | | |
|---|---|---|
| 01 | Misra Prakash Rao&Sundaram | Regional Development Planning in India. |

| | | |
|---|---|---|
| 02 | Glasson | Introduction to Regional Planning. |
| 03 | Minshull, H. | Regional Geography. |
| 04 | Sundaram K.V. | Urban & Regional Planning in India. |
| 05 | Chamdana Puri | Regional Planning. |

**Title of the Course: Geog-Prct. 4.5: COMPUTER APPLICATIONS & GIS**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**
**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To understand the basics of computer and operate the M.S. Office. |
| 2. | To handle the operational procedures of Graphical Representationof the data. |
| 3. | To understand the applications of Geographical Information System |
| 4. | To understand the Components of Geographical Information System and Operation of GIS. |
| 5. | To classify the raster and vector data and to handle meta data for data analysis. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Basic of Computer Applications and operation of M.S.Word, M.S.Office, Excel and Power Point. |
| **II** | Graphical Representation of the data. |
| **III** | Applications of Geographical Information System in Geographical Analysis. |
| **IV** | Components of Geographical Information System and Operation in GIS. |
| **V** | Types of Geographical data: Vector and Raster, Meta data. Data Analysis. |

**E: Suggested Readings:**

| | | |
|---|---|---|
| 01 | Anji Reddy. M | Text book of Remote Sensing and Geographical Information System, B. S. Publications, Hyderabad. |
| 02 | Er. V.K.Jain. | Computer for Beginners. |
| 03 | Heywood, Cornelius, Carver | An introduction to Geographical Information System. |
| 04 | K.Kumaraswamy | Remote Sensing for Environmental Studies. |

**Title of the Course: Geog-Prct. 4.6: PROJECT WORK**

**Credits: 04** **Maximum Marks: 75 + 25 IA Marks.**

**Teaching Hours: 56** **04 Hours per week.**

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

| COS | Content |
|---|---|
| 1. | To identify the project problem. |
| 2. | To understand the data collection through the field work. |
| 3. | To form the hypothesis for the project. |
| 4. | To analyse the data by using different techniques suits to the problem. |
| 5. | To finalise the project report. |

## D: Detail Curriculum:

| Unit | Content |
|---|---|
| **I** | Identification of Problem. |
| **II** | Field Work and Data Collection. |
| **III** | Formation of hypothesis. |
| **IV** | Data Analysis. |
| **V** | Finalization of Dissertation and Submission. |

**E: Reference:**


| | | |
|---|---|---|
| 01 | Hagget P. | Locational Analysis in Human Geography. |
| 02 | Douglas and Colledge | An Introduction to scientific Reasoning in Geography. |
| 03 | Harvey D. | Explanation in Geography. |
| 04 | Chorley R.J. | Directions in Geography. |
| 05 | Waye & Davis | The conceptual Revolution in Geography. |
| 06 | Roger Minshull | An Introduction to Models in Geography. |
| 07 | Gosh B.N. | Scientific Method and Social Research. |
| 08 | Arya A.S. | Guide to thesis and Paper writing. |
| 09 | Beaheu Garnier | Methods and Perspectives in Geography. |