

GOVERNMENT ARTS COLLEGE (Autonomous),
(Re-accredited with 'A' Grade by NAAC and Affiliated to Bharathidasan University, Tiruchirappalli)

KARUR - 639 005.



PG

COURSE STRUCTURE

Course Structure under CBCS System

(Applicable to the Candidates admitted from the Academic Year **2021 - 2022** onwards)

M.Sc.,

GEOGRAPHY

M.SC GEOGRAPHY
SYLLABUS - 2021

GOVERNMENT ARTS COLLEGE

With

CHOICE BASED CREDIT SYSTEM (CBCS)



DEPARTMENT OF GEOGRAPHY
GOVERNMENT ARTS COLLEGE (Autonomous),

(Re-Accredited with A Grade by NAAC)

course structure under CBCS system

karur 639 005.

GOVERNMENT ARTS COLLEGE

CHOICE BASED CREDIT SYSTEM (CBCS)

POSTGRADUATE COURSES

About PG GEOGRAPHY

The subjects such as physical Geography, Regional and Economic Geography and Cartography which are covered in B.Sc., is advanced level in M.Sc., Course. Geographic Thought, Quantitative Techniques, Research Methodology, Remote Sensing and GIS are the other major subjects covered in M.Sc., Giving hands on training in GIS is a notable feature of this course. Professors, Cartographers, GIS Analyst, Regional planner, Meteorologist are some of the posts for which the post graduates are eligible. In addition to this, Geography is one of the most preferable optional subjects for writing competitive examinations and ready for top Ph.D. programs.

Vision

- To provide the students with the educational experiences of the highest quality which makes them highly competitive and capable of facing challenges in life.

Mission

- Providing educators with effective and relevant professional development, support and materials focusing on geographic concept and content.
- Imparting training in analytical, technical and communication skills that are essential for participating actively and successfully in a rapidly Changing environment.
- Leading the development of academic, educational and research directions of human and natural systems, urban and rural problems and geospatial information science, harnessing the integrative nature of geographic science to answer fundamental questions of global importance.

What is Credit system?

Weightage to a course is given in relation to the hours assigned for the course. The following Table shows the correlation between credits and hours. However, there could be some flexibility because of practical, field visits, tutorials and nature of project work. For PG courses, a student must earn a minimum of 90(+4) credits as mentioned in the table below. The total number of minimum courses offered by a department are given in the course pattern.

POST GRADUATE COURSE PATTERN(JUNE 2021 ONWARDS)

PART	SEMESTER	SPECIFICATION	NO. OF COURSES	HOURS	CREDITS	TOTAL CREDITS
III	I - IV	Core courses Theory	10	60	45	94
		Core course practical	4	24	14	
	I - IV	Elective Course	5	30	25	
	IV	PROJECT	1	6	6	
	V - VI	Extra Credit Course (MOOC)	2		4	
TOTAL			20	120	90 (+4)	94

However, there could be some flexibility because of practical, field visits, tutorials and nature of project work. For PG courses, a student must earn a minimum of 90 credits. The total number of courses offered by a department is given above.

Course Pattern

The Post-Graduate degree course consists of FOUR vital components. They are core course, core electives, Extra credit courses.

Core Courses

A core course is the course offered by the parent department related to the major subjects, components like theories, practicals, Project work, field visits, etc.

Core Elective

The core elective course is also offered by the parent department. The objective is to provide choice and flexibility within the department. There are FIVE core electives. They are offered in different semesters according to the choice of the school.

Extra Credit Courses

In order to facilitate the students gaining extra credits, the extra credit courses are given. According to the guidelines of UGC, the students are encouraged to avail this option of enriching by enrolling themselves in the Massive Open Online Courses (MOOC) provided by various portals such as SWAYAM, NPTEL etc.

Subject Code Fixation

The following code system (9 characters) is adopted for Post Graduate courses:

Year of Revision	PG Code of the Dept	Semester	Specification of Part	Running number in the part
↓	↓	↓	↓	↓
2021	P21	x	x	xx
2021	PGE	1	x	1

For example:

I M.SC-GEOGRAPHY, first semester ‘Advanced Climatology’

The code of the paper is P 2 1 G E 1 C 1

Thus, the subject code is fixed for other subjects.

EXAMINATION

Continuous Internal Assessment (CIA):

PG – Distribution of CIA Marks	
Passing Minimum: 50 Marks	
THEORY CIA MAXIMUM=25	THEORY CIA MINIMUM=10
PRACTICAL CIA MAXIMUM=40	PRACTICAL CIA MINIMUM=16

End-Semester Tests

Centralised – Conducted by the office of Controller of Examinations.

SEMESTER EXAMINATION

Testing with Objective and Descriptive questions

Part-A: (20 Marks) 10 x 2 = 20 (Write short answer questions)

Part-B & C: Descriptive (55 Marks)

Part-B: 5 x 5 = 25 marks; inbuilt choice;

Part-C: 3 x 10 = 30 marks; 3 out of 5 questions, open choice.

Duration of Examination must be rational:

3 Hours examination for the courses 4-6 hour/week

Grading System

1. Grading

Once the marks of the CIA and the end-semester examination for each of the courses are available, they will be added. The marks thus obtained, will then be graded as per the scheme provided in Table 1.

From the second semester onwards the total performance within a semester and the continuous performance starting from the first semester are indicated by **Semester Grade Point Average (GPA)** and **Cumulative Grade Point Average (CGPA)**, respectively. These two are calculated by the following formulae

$$\text{GPA} = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i} \quad \text{WAM (Weighted) Average Marks} = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

Where, 'C_i' is the Credit earned for the Course - i,

'G_i' is the Grade Point obtained by the student for the Course 'i'.

'M' is the marks obtained for the course 'i', and

'n' is the number of Courses **Passed** in that semester.

CGPA: Average GPA of all the Courses starting from the first semester to the current semester.

2. Classification of Final Results

- i) For each of the three parts, there shall be separate classification on the basis of the CGPA, as indicated in the following Table - 2.
- ii) For the purpose of Classification of Final Results, the Candidates who earn CGPA 9.00 and above shall be declared to have qualified for the Degree as 'Outstanding'. Similarly, the candidates who earn the CGPA between 8.00 - 8.99, 7.00 - 7.99, 6.00 - 6.99 and 5.00 - 5.99 shall be declared to have qualified for their Degree in the respective programmes as 'Excellent', 'Very Good', 'Good' and 'Above Average' respectively.
- iii) Absence from an examination shall not be taken as an attempt.

Table - I - Grading of the Courses

Marks Range	Grade Point	Corresponding Grade
90 and above	10	O
80 and above but below 90	9	A+
70 and above but below 80	8	A
60 and above but below 70	7	B+
50 and above but below 60	6	B
Below 50	N.A	R.A

Table – 2 – Final Result

CGPA	Classification of Final Results	Corresponding Grade
9.00 and above	O	Outstanding
8.00 to 8.99	A+	Excellent
7.00 to 7.99	A	Very Good
6.00 to 6.99	B+	Good
5.00 to 5.99	B	Above Average
Below 5.00	RA	Re - Appearance

Credit based weighted Mark System is adopted for individual semesters and cumulative

semesters in the column 'Marks Secured' (for 100).

A Pass will continue to be mandatory although the marks will not count for the calculation of the CGPA.

Declaration of Result:

Mr./Ms._____has successfully completed the post Graduate in _____programme. The candidate's Cumulative Grade Point Average (CGPA) in Part - III is_____and the class secured is_____by completing the minimum of 90 credits. The candidate has acquired_____(if any) extra credits offered by the parent department courses.

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR – 639 005

M.Sc., GEOGRAPHY COURSE STRUCTURE UNDER CBCS SYSTEM

(For the candidates admitted from the year 2021-21 onwards)

PROGRAMME OUTCOMES

1. Students get enlightened on the plate tectonics and climate change process.
2. Become familiar with the concepts, theories and models in geography.
3. To familiarize the technologies introduced in geography and their applications.
4. Apply the quantitative techniques in geographic studies and research.
5. Assess the world resources, urban morphology and geo-political scenario of the world.

PROGRAMME SPECIFIC OUTCOMES

1. Identify the earth plates, its movements, disaster – prone regions and the causes of disaster in the respective regions.
2. Learn the mechanism of climate change and the solutions to overcome the same.
3. Assess the morphology of urban regions
4. Apply the quantitative techniques in geographic studies and enhance the quality of research.
5. Apply the technology of remote sensing and GIS in geographic research.

Teaching, learning and evaluation methods:
Conventional black board, chalk and talk method, OHP LCD, Smart board, Models, Charts, Mind Maps, Quiz. Online Quiz. Open book exams, Online Teaching. Examination, Group Discussion, Debate. Seminars, Live Specimens, Museum Specimens and Field Visit

Bloom's Taxonomy Action verbs used for course objectives, outcomes and question setting. (K)*					
K1	K2	K3	K4	K5	K6
REMEMBERING	UNDERSTANDING	APPLYING	ANALYSING	EVALUATING	CREATING
List, Define, Describe, Recall, Arrange, List, Outline, State, Identify, etc	Comprehension, Explain, Summarise, Describe, Illustrate, Review, Classify, Clarify, Distinguish, Estimate, Give Example(S), Identify, etc.	Apply, Interpret, Manipulate, Relate, Use, Compute, Demonstrate, Illustrate, Sketch, Solve, etc	Analyze, Compare, Relate, Categorize, Criticize, Diagram, Differentiate, Distinguish, Infer, Examine, Outline, Experiment, Discuss, Point Out, etc	Judge, Justify, Assess, Estimate, Evaluate, Interpret, Compare, Conclude, Describe, Explain, Determine, etc	Create, Judge, Design, Rewrite, Summarize, Categorize, Develop, Formulate, Generate, Revise, Rearrange, Synthesize, etc.

KNOWLEDGE LEVEL

Mapping of Student Learning Outcomes*							
BLOOM'S TAXONOMY REVISED (example verbs for learning Outcomes in italics)		COGNITIVE PROCESS DIMENSION					
		REMEMBERING Recall and retrieval of foundational	UNDERSTANDING Make meaning out of information.	APPLYING Use information in a similar situation.	ANALYZING Take apart information and	EVALUATING Examine critically and judge.	CREATING Create something new.
KNOWLEDGE DIMENSION	A. FACTUAL KNOWLEDGE Foundational information in a discipline	<i>List</i>	<i>Summarize</i>	<i>Respond</i>	<i>Select</i>	<i>Check</i>	<i>Generate</i>
	B. CONCEPTUAL KNOWLEDGE Connection of foundational elements to overall structure and function	Recognize	Classify	Provide	Differentiate	Determine	Assemble
	C. PROCEDURAL KNOWLEDGE Methods for investigating and acting	Recall	Clarify	Carry out	Integrate	Judge	Design
	D. META-COGNITIVE KNOWLEDGE Reflection on thinking in the discipline	Identify	Predict	Use	Deconstruct	Reflect	Create

*(Sources - Anderson L.W. Krathwohl D.R. January 2001. **A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives**, Edition 1st Publisher New York Longman, ISBN ISBN 0321084055 9780321084057 - Anderson & Krahwohl and A Model for Learning Objectives, Iowa State University Center for Excellence in learning and Teaching).



GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR– 639 005

(Re-accredited with A Grade by NAAC Affiliated to Bharathidasan university, Tiruchirapalli)

M.Sc – GEOGRAPHY COURSE STRUCTURE UNDER CBCS SYSTEM

(For the candidates admitted from the year 2021 - 2022 onwards)

SEMESTER	COURSE	COURSE TITLE	COURSE CODE	INST. HOURS WEEK	CREDIT	EXAM HOURS	MARKS		TOTAL
							INT	ESE	
I	Core Course – I	Advanced Climatology	P21GE1C1	6	5	3	25	75	100
	Core Course – II	Urban Geography	P21GE1C2	6	5	3	25	75	100
	Core Course- III	Geography of India	P21GE1C3	6	3	3	25	75	100
	Core Course - IV	Practical-I:Terrain & Climatic Data Analysis	P21GE1C4P	6	3	3	40	60	100
	Elective Course - I	Population Geography	P21GE1E1	6	5	3	25	75	100
				30	21				500
II	Core Course – V	Principles of Remote Sensing, GIS and GNSS	P21GE2C5	6	5	3	25	75	100
	Core Course – VI	Principles of Geomorphology	P21GE2C6	6	5	3	25	75	100
	Core Course- VII	Principles of Cartography	P21GE2C7	6	3	3	25	75	100
	Core Course – VIII	Practical – II - Socio-Economic Data Analysis	P21GE2C8P	6	3	3	40	60	100
	Elective Course - II	Oceanography and Hydrology	P21GE2E2	6	5	3	25	75	100
	Extra Credit Course	Internship programme (It Should be completed in the second semester Holidays)			(2)				
				30	21(+2)				500
III	Core Course – IX	Agricultural Geography	P21GE3C9	6	5	3	25	75	100
	Core Course – X	Research Methodology In Geography	P21GE3C10	6	5	3	25	75	100
	Core Course- XI	Geographic Thought	P21GE3C11	6	6	3	25	75	100
	Core Course – XII	Practical – III - Statistical Techniques and Cartographic Methods	P21GE3C12P	6	3	3	40	60	100
	Elective Course - III	Political Geography	P21GE3E3	6	5	3	25	75	100
	Extra Credit Course	Massive Open Online Course (MOOC's)			(2)				
				30	24(+2)				500
IV	Core Course – XIII	Regional Planning	P21GE4C13	6	3	3	25	75	100
	Core Course – XIV	Practical – IV – Techniques of Remote Sensing and GIS	P21GE4C14P	6	5	3	40	60	100
	Elective Course - IV	Environmental Geography	P21GE4E4	6	5	3	25	75	100
	Elective Course - V	Disaster and Management Studies	P21GE4E5	6	5	3	25	75	100
	Project Work	Project Work	P21GE4PW	6	6	3	*	*	100
					30	24			
		TOTAL		120	90+ (4)				200

** Dissertation – 80 Marks and Viva Voce Examinations – 20 Marks

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CONTROLLER OF EXAMINATIONS

CREDIT:5

COURSE CODE: P21GE1C1

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – I SEMESTER – CORE COURSE - I

(For the candidates admitted from the year 2021-2022 onwards)

ADVANCED CLIMATOLOGY

COURSE OBJECTIVES:

- Understanding the structure and composition of atmosphere.
- To gain knowledge on the distribution of temperature and pressure.
- To learn the nature and types of Air masses and Fronts.
- Studying the climatic classification and impact of climate change.

UNIT - I

Climatology - Introduction - Definition – Nature, Scope and trends – Atmosphere – Composition and structure – Insolation - Heat budget- Processes of heat energy transfer – Distribution of temperature: Horizontal and Vertical – Temperature inversion.

UNIT – II

Atmospheric Pressure: Vertical and Horizontal distribution – General circulation of Atmosphere; Surface wind system: Planetary winds - Latitudinal shifting of wind belts – Jet stream – Monsoon – Concepts of its origin– Local winds – Geostrophic wind – Gradient wind - La_nino and El-nino

UNIT - III

Precipitation: Definition – Forms and types; Humidity – Definition – Absolute – Relative – Specific; Dew point; Atmospheric equilibrium: Stability and instability – Adiabatic process – Temperature change – Condensation – Clouds and its types

UNIT - IV

Air Masses: Definition and Characteristics – Source regions – Classification; Fronts: Types – Characteristics - Frontogenesis – Frontolysis. Atmospheric disturbances: Cyclones: Tropical and Temperate and Anticyclones – Characteristics.

UNIT - V

Climatic classification: Koppen’s and Thornthwaite’s – Climate change – Process of weather forecasting – Heat island – Air pollution – Green house effects – Ozone depletion – Human comfort zones.

REFERENCE BOOKS:

1. Lal, D.S. (1996), Chaitanya Publishing House, Allahabad.
2. Collings, V.K. (1987), Weather, Radar and Flood Forecasting, John Wiley & Sons, NewYork.
3. Critchfield, H.J. (1996), General Climatology, Prentice Hall, New Jersey.
4. Menon, P.A. (1989), Our Weather, National Book Trust, New Delhi.
5. Smith, K., (1975), Principles of Applied Climatology, McGraw Hill Book Co., London.
6. Trewartha, G.T., (1968), An Introduction to Climate, McGraw Hill Book Co., New York.
7. Thornthwaite C.W., (1948) An Approach toward a Rational Classification of Climate, in Geogr.Review,.
8. Smith, K., Principles of Applied Climatology, McGraw-Hill, 1975.

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Course Outcomes

Students must be able to

1. Understand the nature of atmosphere, heat budget of the earth and atmosphere and temperature distribution.
2. Learn the distribution of atmospheric pressure and wind systems.
3. Analyse the forms and types of humidity, precipitation and cloud.
4. Know the types and characteristics of Airmass and Fronts.
5. Gain knowledge on climatic regions, effects of climate change and human comfort zones.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	3	3	3	3	2	1	3	--	2	2	2	--	2	3.25
CO2	3	1	2	2	2	1	3	1	1	2	1	2	2	2.88
CO3	3	--	1	--	2	3	3	1	2	1	2	1	2	2.63
CO4	2	1	2	2	2	3	3	--	2	1	2	1	2	2.88
CO5	3	2	2	2	2	3	3	1	1	1	3	1	2	3.25
Overall mean score for COs														2.98

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.98 (Excellent Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented	✓
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:V.TAMILARASAN

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CONTROLLER OF EXAMINATIONS

CREDIT: 5

COURSE CODE:P21GE1C2

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05
M.Sc., - GEOGRAPHY – I SEMESTER – CORE COURSE -II
(For the candidates admitted from the year 2021-2022 onwards)

URBAN GEOGRAPHY

COURSE OBJECTIVES:

- To understand the pattern of urbanization in India and the world.
- To recognize the Functional classification of towns, studying the morphology of towns and the characteristics of CBD.
- To be able to classify the towns based on size and studying the urban environmental problems.

UNIT - I

Nature, Scope and Development of Urban Geography - Urbanization – factors affecting urban growth - World urbanization - Urbanization in developing countries - Urbanization in India.

UNIT – II

Internal structure of cities-CBD-delimitation; Demographic structure of cities - Age and sex structure – Occupational structure; Urban land use: Types- Change in urban land use pattern.

UNIT - III

Urban land use models - Burgess - Hoyt - Harris and Ullman - Urban ecology - Social Area analysis - Factorial ecology - Economic base and functional organization of the city - Basic and Non-basic concepts - Functional classification of cities

UNIT - IV

Urban Expansion - Vertical - Urban renewal - Horizontal - Urban sprawl; Rural-Urban fringe - Suburbs - Growth and characteristics; City region – Um land demarcation

UNIT - V

Urban hierarchy - Rank size rule - Central Place theory - Urban problems: Slums, Transport – Pollution - Drinking water supply - Solid waste management - Urban Planning- Smart cities in India.

REFERENCE BOOKS:

1. Jones.E (1970) Towns and Cities , Oxford University Press.
2. Yeates and Corner: The North American City Harper and Row
3. Carter, H. the study of Urban Geography – Edward Arnold, London.
4. Major and Kohn, Readings in urban Geography, Central book Dept. Allahabad.
5. Northam, U.K.: Urban Geography, John Wiley and sons
6. Johnson . J.H. Urban Geography, Pergaoan.
7. Urban geography by R.B. Mandal

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Course Outcomes	
Students must be able to	
1.Synthesize the factors controlling urbanization, level of urbanization in India, developing and developed countries of the world.	
2.Describe the structure of cities, learn the composition of population and land use pattern of urban regions.	
3.Asses the suitability of land use models to cities of different regions and classify the cities based on their functions.	
4.Analyze the growth of cities and characteristics of rural-urban fringe.	
5.Identify the rank of cities based on their extent of service; learn the related theories and urban problems.	

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	1	3	3	--	1	1	3	3	2	2	2	--	1	2.75
CO2	1	2	3	1	1	2	2	3	2	2	1	--	1	2.63
CO3	2	2	2	2	2	1	1	3	2	2	2	--	1	2.75
CO4	1	1	3	1	2	1	1	3	2	2	2	1	--	2.50
CO5	--	1	3	2	2	1	1	2	2	2	3	1	--	2.50
Overall mean score for COs														2.63

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.63 (Excellent Relationship)

Nature of Course			
Knowledge and skill	✓	Employability oriented	
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:DR.S.MOORTHY

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CREDIT:3

COURSE CODE: P21GE1C3

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05
M.Sc., - GEOGRAPHY – I SEMESTER – CORE COURSE -III
(For the candidates admitted from the year 2021-2022 onwards)

GEOGRAPHY OF INDIA

COURSE OBJECTIVES:

- To acquire knowledge on the location, relief and climate of India.
- To assess the different natural resources of India and their methods of conservation.
- Understanding the status of human resources, trade and transport of India.

UNIT - I	Physical Landscape: Setting and Situation of India, strategic importance of its location, Physiographic divisions - Drainage - Interstate water disputes, International agreements for surface water resources, National Water Policy, El Nino and the Indian monsoon, Natural vegetation: types and distribution - forest products – conservation policy.
UNIT – II	Soil and Agriculture: Soil: types, characteristics and problems, conservation, Agriculture: salient features, determinants, irrigation, major crops and their distribution, Agricultural regions;Green, white and blue revolutions; Aquaculture, Sericulture, Horticulture, Poultry farming, Dry farming and Agribusiness.
UNIT - III	Mineral Resources: Iron, Manganese, Bauxite, Copper- Distribution and Production- Power Resources: Coal, Oil, Hydro – Electricity, Thermal and Atomic Power Development - Distribution and Production; Industries: Agro- Based Industries- Cotton, Jute, and Sugar; Metallurgical Industries: Iron and Steel, - Automobiles and Locomotive; Ship Building - Chemical - Paper and Fertilizer.
UNIT - IV	Transport: Roadways, Railways, Airways and Water Ways; Trade: Inland and Foreign- Export and Import- Communication.
UNIT - V	Urbanization and Contemporary issues: Population: growth - Distribution – Population explosion, Environmental degradation: soil erosion, salinization, deforestation and desertification;

REFERENCE BOOKS:

1. Gopal Singh- Geography of India (1970)
- 2 . Singh.R.L. India- a regional Geography, UBS publishers & Distributers Ltd, Seena Publication.
- 3.Spate O.H.K. India and Pakistan, Mathunan & Co (1970)
- 4.Sharmaand Coutinho- Economic and Commercial Geograpy- vikas publishing house Pvt.Ltd., New Delhi (1998)
- 5.Shanthi Swaroop – Geography of India , King /books Educational Publishers (1998).
- 6.Tikkha. R.N- Geography of India, New academic Publishing co, Jalandar (1998)
- 7.Indian Stattistical Books.
- 8.D.R.Khuller -India: A Comprehensive Geography.

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Course Outcomes	
<u>Students must be able to</u>	
<ol style="list-style-type: none"> 1. Learn the location of major landforms, its influence, nature and importance of monsoon, water resources and distribution of forests in India. 2. Relate the soil types with agriculture of India; learn the development in agriculture, dairying and aquaculture. 3. Assess and evaluate the mineral resources, power resources and the development of industries in India. 4. Analyse the distribution of different modes of transport and assess the value and volume of international trade of India. 	
Relate the population growth with urbanization and analyse the state of environmental degradation in the country	

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	2	1	1	2	2	2	3	2	1	2	1	1	2	2.75
CO2	1	1	1	2	2	2	2	1	2	2	1	--	1	2.25
CO3	1	1	1	1	2	1	1	--	2	2	2	1	1	2.00
CO4	1	2	1	2	2	1	2	1	2	2	2	1	1	2.50
CO5	--	1	1	2	1	--	1	3	2	2	1	1	2	2.13
Overall mean score for COs														2.33

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.33 (Very High Relationship)

Nature of Course			
Knowledge and skill	✓	Employability oriented	
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values Mean Score of Cos = ----- Total No. of PSOs	Total of mean score Over all mean Score for COs = ----- Total of COs
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COURSE DESIGNER:P.SUNDARARAJ

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CONTROLLER OF EXAMINATIONS

CREDIT:3

COURSE CODE: P21GE1C4P

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05
M.Sc., - GEOGRAPHY – I SEMESTER – CORE COURSE -IV
(For the candidates admitted from the year 2021-2022 onwards)

PRACTICAL – I – TERRAIN AND CLIMATIC DATA ANALYSIS

COURSE OBJECTIVES:

- To be able to analyze the different methods of depiction of relief and drawing of relief profiles.
- Learning the different mapping techniques used to represent climate data and morphometry.

UNIT - I

Methods of Depiction of Relief

- Spot Heights
- Bench marks
- Triangulation Station
- Hachuring
- Hill Shading
- Layer Tinting

UNIT – II

Drawing Profiles

- Simple
- Serial
- Superimposed
- Projected
- Composite
- Longitudinal

UNIT - III

Climatic data Analysis

- Foster’s Climograph
- Taylor’s Climograph
- Climatograph
- Rainfall Dispersion Diagram
- Octagonal Wind Rose
- Tracking of Cyclone

UNIT - IV

Morphometric Analysis

- Identification of Stream Orders
- Bifurcation Ratio
- Drainage Density

Shape Measurement

- Miller’s Circularity Ratio
- Boyce Clark Method
- Length Breadth Ratio Method

UNIT - V

Slope Analysis

- Wentworth
- Smith
- Robinson Methods

REFERENCE BOOKS:

1. Gopal singh, Map Work and Practical Geography, Vikas publishing house Pvt.Ltd. New Delhi.
2. Misra, R.P., and Ramesh .A (1989) Fundamentals of Cartography, concept publishing Co., New Delhi.
3. Rampal, K.K. mapping and Compilation – methods and techniques , concept publishing.
4. Singh R.L., Elements of Practical Geography, Kalyani Publishers, New Delhi

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Course Outcomes**Students must be able to**

1. Learn the different methods by which relief is represented on toposheets.
2. Draw relief profiles of any transect made across contour maps.
3. Apply knowledge to find out the nature of prevailing climate of any station through various climatic graphs and diagram.
4. Analyze the shape of any region by different methods.
5. Find out the degree of slope by different methods

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	3	2	1	--	2	3	2	3	2	2	--	1	2	3.29
CO2	2	2	2	1	2	3	2	2	1	2	1	1	1	3.14
CO3	1	2	2	--	2	1	3	2	1	2	2	--	--	2.57
CO4	2	2	3	1	2	2	1	3	2	2	--	--	--	2.86
CO5	3	2	1	2	1	2	2	2	2	2	--	--	1	2.86
Overall mean score for COs													2.94	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.94 (Excellent Relationship)**Note:**

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = ----- Total No. of PSOs	Over all mean Score for COs = ----- Total of COs

COURSE DESIGNER:V.TAMILARASAN**CHAIRMAN – BOS****CONTROLLER OF EXAMINATIONS**

CREDIT:5

COURSE CODE: P21GE1E1

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR -05
M.Sc., - GEOGRAPHY – I SEMESTER –ELECTIVE COURSE -I
(For the candidates admitted from the year 2021-2022 onwards)

POPULATION GEOGRAPHY

COURSE OBJECTIVES:

- Identifying the different sources of population data
- To study the distribution of population and associated factors.
- To acquire knowledge on population composition, human migration and population-resource ratio

UNIT - I	Introduction to Population Geography: Nature and scope of population Geography- Sources of population data: Census, Sample survey- population register- Vital registration system and International publications- problems in reliability of data.
UNIT – II	Factors affecting population distribution: world population distribution; dynamics of population – measures and determinants of fertility and mortality – world trends; population growth – world trend.
UNIT - III	Migration: Types – causes and consequences; population theories: Malthusian theory and demographic transition theory of W.S. Thompson.
UNIT - IV	Pattern of Population Composition: Racial Composition, Age – Sex composition; problems of aged - Religious, Linguistic composition – world pattern of literacy.
UNIT - V	Population and Resource Study: Resources: Human Resource – Natural Resource – Population resource ratio; Over – Under – Optimum Populations; Population and resource regions.

REFERENCE BOOKS:

1. Ghosh. B.N (1987): Fundamentals of Population Geography, Sterling Publishers, Ltd, New Delhi.
2. Hansraj. (1981): Introduction to Demography, Surjeet Publication, New Delhi.
3. Clarke John.I (1981): Geography of Population- Approaches and Applications, Pergamon Press, Oxford.
4. Hornby William (1986): An Introduction to Population, Cambridge University Press, London.
5. Glenn. T.T.Trewartha: A Geography of Population – World Pattern, John Willey and Sons Publications.

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Course Outcomes

Students must be able to

1. Recognize the sources of population data and the problems associated with its reliability.
2. Gain knowledge on growth, distribution and trend of world population and the factors responsible for those.
3. Understand the pattern of human migration, its types and the concept of population theories.
4. Learn the distribution of human races and composition of world population.
5. Assess the human population and resource ratio of different countries and classify regions with under, optimum and over population.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	1	2	1	2	2	--	2	2	2	1	2	1	1	2.25
CO2	2	2	2	2	2	1	2	2	2	2	1	2	1	2.88
CO3	1	2	2	2	2	1	2	2	2	2	1	2	1	2.75
CO4	1	2	2	2	1	1	2	1	2	2	1	1	1	2.38
CO5	1	1	1	3	2	1	2	1	2	1	1	2	1	2.38
Overall mean score for COs														2.53

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.53 (Excellent Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented	✓
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:DR.T.KAVITHA

CHAIRMAN – BOS

CONTROLLER OF EXAMINATIONS

CREDIT:5

COURSE CODE: P21GE2C5

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – II SEMESTER –CORE COURSE -V

(For the candidates admitted from the year 2021-2022 onwards)

PRINCIPLES OF REMOTE SENSING, GIS AND GNSS

COURSE OBJECTIVES:

- Understanding the components and principles of remote sensing, GIS and GNSS
- To be able to classify the air photos and satellite images and the resolution characteristics of different images.
- Familiarizing the applications of remote sensing, GIS and GNSS in geographic studies.

UNIT - I

Remote sensing-Types; Aerial and Satellite- Active and Passive- Photogrammetry; - GIS and GNSS - Historical development - Emerging trends.

UNIT – II

Terrestrial and Aerial Remote Sensing: Basic principles - EMR - Energy interaction in atmosphere - Terrestrial interaction - Spectral signature – Spectral reflectance curves - Aerial photograph and its types - Visual interpretation: key elements and equipments

UNIT - III

Satellite Remote Sensing: Platforms - Sensors - FOV and IFOV - Pixel - Resolution: spatial, spectral, radiometric and temporal - Earth observation satellites: weather satellites, land and marine observation satellites.

UNIT - IV

Geographical Information System: Definition - Components– Raster and vector data structures - RDBMS - Spatial referencing - Spatial data input and editing - GIS analysis – Web GIS - Applications.

UNIT - V

Global Navigation Satellite System: Segments: space segment - GPS Satellite systems – IRNSS; Control segment - Satellite tracking; user segment – modern survey instruments – error sources – Satellite augmented systems - DGPS - GNSS applications.

REFERENCE BOOKS:

1. Gomasasca, M. A. (2009) Basics of Geometrics, Springer Science, New York
2. Lillisand T.M and R.W. Kiefer (1994) Remote Sensing and Image Interpretation. John Wiley & Sons, New York.
3. Burrough, P. A., & McDonnell, R., (2000). Principles of Geographical Information Systems, Oxford Press, London.
4. Agarwal, N. K., (2006). Essentials of GPS, Geodesy and GPS publications, Hyderabad.
5. Jensen, J. R., (2007). Remote Sensing of the Environment: An Earth Resource Perspective, Prentice-Hall Inc., New Jersey.
6. Hofmann W., Lichtenegger, & Wasle, (2008). Global Navigational Satellite Systems, SpringerWien New York.
7. Jensen, J.R., (2006). Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice-Hall Inc., New Jersey.
8. Heywood, I., Comelius, S., and Carver, S., (1988). An Introduction to Geographical Information Systems, Addison Wiley Longmont, New York.

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CONTROLLER OF EXAMINATIONS

Course Outcomes

Students must be able to

1. Learn the historical development of remote sensing, GIS, GNSS, Photogrammetry and the trend in these subjects.
2. Understand the principles of EMR, its interaction, learn the types of aerial photos and the way of interpreting them.
3. Analyse the principles of satellite remote sensing, types of resolution and satellites.
4. Synthesize the functions and applications of GIS and the nature of raster and vector data structures.
5. Enhance knowledge on GNSS, its segments and applications.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	1	2	2	2	2	1	1	--	1	2	2	--	2	2.25
CO2	1	1	1	1	2	1	2	1	2	2	1	1	1	2.13
CO3	1	1	--	1	2	1	1	1	1	2	1	1	1	1.75
CO4	2	1	1	2	2	2	2	2	2	2	2	1	1	2.75
CO5	1	1	1	1	2	2	2	1	2	1	2	2	1	2.38
Overall mean score for COs														2.25

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.25 (Very High Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented	✓
Skill oriented	✓	Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:DR.S.MOORTHY

CHAIRMAN –BOS

CONTROLLER OF EXAMINATIONS

CREDIT:5

COURSE CODE: P21GE2C6

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05
M.Sc., - GEOGRAPHY – II SEMESTER –CORE COURSE -VI
(For the candidates admitted from the year 2021-2022 onwards)

PRINCIPLES OF GEOMORPHOLOGY

COURSE OBJECTIVES:

- Studying the geological timescales and theories on origin of earth.
- To understand the internal and external processes of the earth and the resultant landforms.
- Learning the applications of geomorphology in different fields.

UNIT - I	Geomorphology: Nature, scope and development of geomorphology- Geological time scale – Fundamental concepts in geomorphology .
UNIT – II	Internal Processes: Isostasy, Continental drift, Seafloor spreading; Plate tectonics: Plate boundaries and margins – folding - faulting – earthquake and volcanoes: causes and effects – zones.
UNIT - III	External Process – Erosional, transportational and depositional landforms of Fluvial, Glacial, Aeolian, Coastal and Karst
UNIT - IV	Weathering and Mass movement – types; Arid erosion cycle - Normal cycle of Erosion by Davis and Penck
UNIT - V	Ice ages – Morphogenetic regions; Applications of geomorphology in mineral exploration, oil exploration, hydrology and terrain evaluation

REFERENCE BOOKS:

1. Thornbury W.D. (1969) Principles of Geomorphology. John Wiley and sons New York.
2. Strahler., A.N. & Strahler A.H. (1984) Elements of Physical Geography, John and Wiley.
3. P.Dayal (1990) Text book of Geomorphology, Shukla book depot.
4. Small . R.J (1975) the Study of landforms. Cambridge University press, Cambridge.
5. Sparks (1984) Geomorphology, Longmans.
6. Savindra singh (2002) Geomorphology, Kalyan Publications, New Delhi

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CONTROLLER OF EXAMINATIONS

Course Outcomes

Students must be able to

1. Understand the development of Geomorphology, its fundamental concepts and the concept of theories on origin of earth.
2. Learn about plate tectonics, continental drift and identify the zones of earth which are prone to earthquakes and volcanoes.
3. Recognize the external forces of earth, understand the landforms created by them and the regions associated with the respective forces.
4. Analyse the cyclic process of erosion, the theories of Davis and Penck on this, the nature and types of mass movements.
5. Relate the climate with the associated forces and types of landforms and apply the geomorphological knowledge in different fields of study.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	3	2	1	2	2	3	2	1	2	1	2	--	2	2.88
CO2	3	2	1	2	2	3	1	1	2	2	1	--	1	2.63
CO3	3	2	1	2	1	3	1	1	2	2	1	--	1	2.50
CO4	3	2	1	1	1	2	2	1	2	2	1	--	1	2.38
CO5	3	3	2	3	2	2	3	1	2	2	1	--	1	3.13
Overall mean score for COs													2.70	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.70 (Excellent Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented	
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:V.TAMILARASAN

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CONTROLLER OF EXAMINATIONS

CREDIT:3

SUBJECT CODE: P21GE2C7

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – II SEMESTER –CORE COURSE - VII

(For the candidates admitted from the year 2021-2022 onwards)

PRINCIPLES OF CARTOGRAPHY

COURSE OBJECTIVES:

- Understanding the concept of thematic mapping, its types, map design and layout principles.
- Learning the techniques of mapping the earth and the availability of remote sensing data for mapping.
- Studying the methods of reproduction of maps and the concept of computer assisted cartography.

UNIT - I

Map Characteristics: Uniqueness of maps - Cartographic communication process - Representation of map scales- Map types and uses; map compilation and generalization.

UNIT – II

Map Perception and Design: Cartographic design: colours- patterns - lettering and Toponymy- Perceptual considerations - Graphic communication – Controls on map design - Design planning - theory and models - Map elements.

UNIT - III

Map Symbolization: Symbolization features -Mapping the statistical surface: point, line, area and volume symbols – Visualization methods - Statistical mapping

UNIT - IV

Thematic mapping: Types-simple thematic map: Qualitative-semi-Quantitative- Quantitative; Complex thematic map; Problems in thematic mapping: Data and their representation- Selection of Map Projection-Generalization of data-standardization of symbols- Compilation of data-Designing of maps.

UNIT - V

Map Reproduction Methods – Computer application in Cartography: Web mapping and multimedia-Geo visualization-map as a decision tool.

REFERENCE BOOKS:

1. Misra R.P. and Ramesh (1989): Fundamentals of Cartography, Concept publishing Co., New Delhi.
2. Neg. P.Ed., (1992): Cartography and Remote Sensing, Concept Publishing Company, New Delhi.
3. Robinson, A.H., Sale Morrinson J.L. and Muehrake 1985): Elements of Cartography, John Wiley Sons, New York.
4. Kraak, M.J. (2010) Cartography: e- Atlas. Visualization of Geospatial Data 3rd ed, Pearson Education, London.

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CONTROLLER OF EXAMINATIONS

Course Outcomes

Students must be able to

1. Learn the basics of maps, methods of representation of map scales, able to compile and generalize maps.
2. Design maps with suitable symbols and colours.
3. Understand the suitability of symbols to represent different features and the ways of mapping the statistical surface.
4. Gain knowledge on preparation of thematic maps and selection of map projection for mapping different regions.
5. Know the different methods of reproducing maps and the application of computers in map making process.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	--	1	2	1	2	1	1	1	2	2	1	2	--	2.00
CO2	--	2	2	2	2	1	1	1	2	2	1	1	1	2.25
CO3	2	2	2	1	1	1	1	1	1	2	1	--	--	1.88
CO4	1	1	1	1	2	1	1	2	1	2	1	--	--	1.75
CO5	--	1	--	1	2	1	1	2	2	2	1	1	1	1.88
Overall mean score for COs													1.95	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 1.95 (High Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented
Skill oriented	✓	Entrepreneurship oriented

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:M.BALAMURUGAN

CHAIRMAN –BOS

CONTROLLER OF EXAMINATIONS

CREDIT:3		COURSE CODE: P21GE2C8P	
GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05 M.Sc., - GEOGRAPHY – II SEMESTER –CORE COURSE - VIII (For the candidates admitted from the year 2021-2022 onwards) PRACTICAL- II: SOCIO – ECONOMIC DATA ANALYSIS			
COURSE OBJECTIVES: <ul style="list-style-type: none"> • Learning the techniques of drawing and applications of different graphs and distribution maps. • Understanding the statistical techniques used to analyse agricultural data. • To comprehend the techniques and methods used in transport network analysis and hypotheses testing 			
UNIT - I	Preparation of graphs <ul style="list-style-type: none"> ➤ Simple graph ➤ Semi – log graph ➤ Triangular graph ➤ Lorenz curve 		
UNIT – II	Distribution Maps <ul style="list-style-type: none"> ➤ Mono dot Mapping ➤ Multi dot Mapping ➤ Choropleth Mapping ➤ Isopleth Mapping 		
UNIT - III	Agricultural Data Analysis <ul style="list-style-type: none"> ➤ Crop Concentration ➤ Crop Diversification <i>Crop Combinational Analysis</i> <ul style="list-style-type: none"> ➤ Weaver’s Method ➤ Doi’s Method ➤ Rafiullah’s Method 		
UNIT - IV	Simple Transport Network Analysis <ul style="list-style-type: none"> ➤ Connectivity ➤ Centrality ➤ Accessibility ➤ Alpha , Beta & Gamma Indices ➤ Detour Index 		
UNIT - V	Hypothesis Testing <ul style="list-style-type: none"> ➤ ‘Chi’ Square ➤ ‘F’ Test ➤ ‘t’ Test 		
REFERENCE BOOKS: <ol style="list-style-type: none"> 1. Monkhouse and Wilkinson- Maps and Diagrams, Methuen &CO, Ltd. (1976) 2. Peter Toyne & Peter T.Newby- Techniques in Human Geography’ Macmillan Education Ltd., London., (1986). 3. Statistical Methods in Geography , Mcullah. 			
CHAIRMAN –BOS		CONTROLLER OF EXAMINATIONS	

Course Outcomes

Students must be able to

1. Construct different types graphs
2. Draw distribution maps for suitable data
3. Apply statistical techniques for analyzing agricultural data
4. Analyse the efficiency of transport network by different statistical and cartographic methods
5. Learn the methods of testing of hypotheses

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	1	1	1	1	1	1	2	1	2	1	2	--	1	2.14
CO2	2	2	1	2	2	2	2	1	2	2	1	--	1	2.86
CO3	2	2	--	1	2	1	2	1	2	2	2	1	1	2.71
CO4	2	2	2	1	2	2	2	1	2	1	1	--	1	2.71
CO5	1	1	1	1	2	1	2	1	1	1	2	1	1	2.29
Overall mean score for COs														2.54

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.54 (Excellent Relationship)

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:V.TAMILARASAN

CHAIRMAN – BOS

CONTROLLER OF EXAMINATIONS

CREDIT:5

SUBJECT CODE: P21GE2E2

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05
M.Sc., - GEOGRAPHY – II SEMESTER –ELECTIVE COURSE - II
(For the candidates admitted from the year 2021-2022 onwards)
OCEANOGRAPHY AND HYDROLOGY

COURSE OBJECTIVES:

- To study the origin of oceans, distribution of temperature and salinity, movements of oceans and their effects
- To gain knowledge on ocean resources and their importance
- To acquire knowledge of hydrologic cycles and its characteristics, water balance application and impact of human on water resources

UNIT - I

Nature of Oceans – origin and history; ocean circulation: affecting factors – horizontal and vertical circulation; relief features of ocean floor; sea water: temperature and salinity distribution; sea floor spreading.

UNIT – II

Movement of ocean water: waves – tides – currents: types, causes and effects; Tsunami: characteristics and effects

UNIT - III

Ocean resources: Coastal ecosystems - Fisheries - Hydrothermal Power – Mangrove forest - Corals reefs – Types; coast: types and characteristics.

UNIT - IV

Hydrological cycle and sub cycles – Elements: Precipitation, evaporation, infiltration, runoff; Drainage basin characteristics.

UNIT - V

Ground water – occurrence and movements –Water balance and application – Human impact on hydrological system and water resources

REFERENCE BOOKS:

1. Barry, R.G., and Chorley P.J., 1998. Atmosphere, Weather and Climate, Routledge, London and New York.
2. Critchfield, J.H., 1993. General Climatology, Prentice Hall, New Delhi, India.
3. Das, P.K., 1987. Monsoons National Book Trust, New Delhi. Oceanography for Meteorologists, H U Sverdrub, Biotech Books, Delhi, 2001
4. Oceanography - Contemporary readings in ocean sciences, Second edition. David
5. A.Ross, Oxford University Press, New York, 1977
6. Introductory Oceanography, Joseph Weisberg and Howard Parish, McGraw- Hill Kogakusha, Ltd, Kosaido Printing Co Ltd., Tokyo, Japan. 1974
7. The World Ocean – An Introduction to Oceanography, William A. Anikouchine and Richard W. Sternberg, Prentice – Hall, Inc., Englewood Cliffs, New Jersey, 1973
8. Oceanography, J. Robert Moore, W. H. Freeman and Company, San Francisco, California, 1971

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Course Outcomes

Students must be able to

1. Understand the origin of oceans, distribution of temperature and salinity in ocean water and the general relief of ocean floor.
2. Explain the movements in ocean water, causes and effects of the same.
3. Enhance the knowledge on ocean resources, their distribution and importance.
4. Analyze the process of hydrological cycle, sub-cycles and describe the characteristics of drainage basins.
5. Learn the way of occurrence and movements of ground water, find the water balance, its applications, and recognize the human impact on hydrological system and water resources.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	1	1	1	1	2	2	2	1	1	2	--	--	1	1.88
CO2	2	1	1	1	2	2	2	--	2	2	--	--	1	2.00
CO3	2	1	1	2	2	2	2	1	2	2	1	--	1	2.38
CO4	2	2	1	2	2	2	2	1	2	1	1	--	1	2.38
CO5	2	1	1	1	2	2	1	1	2	2	--	--	2	2.13
Overall mean score for COs													2.15	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.15 (Very High Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented
Skill oriented		Entrepreneurship oriented

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:DR.S.MOORTHY

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CONTROLLER OF EXAMINATIONS

CREDIT:5

SUBJECT CODE: P21GE3C9

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – III SEMESTER –CORE COURSE - IX

(For the candidates admitted from the year 2021-2022 onwards)

AGRICULTURAL GEOGRAPHY

COURSE OBJECTIVES:

- **To be able to analyze the nature of Agricultural geography and the influencing factors of agriculture.**
- **Understanding the Agricultural systems of the world and the methods of agricultural Regionalization.**
- **To become familiar with the characteristics of Indian agriculture.**

UNIT - I

Nature, scope and significance of Agricultural Geography - Approaches to the study of Agricultural geography - Elements of agriculture.

UNIT – II

Physical Factors and Agriculture: Terrain: Topography and altitude; Climate: temperature, sunshine, frost, moisture, drought, snow and winds; Soils: Parent material, climate, living organism; Socio-Economic Factors and Agriculture: Land tenancy, Size of holdings and fragmentation of fields, Consolidation of holdings and operational efficiency, labour, Capital, Mechanization and equipments and government policy.

UNIT - III

Agricultural systems of the world: Nomadic herding, Livestock ranching, Commercial grazing, Shifting cultivation, Sedentary agriculture, Intensive subsistence agriculture, Intensive agriculture, Extensive agriculture, Mixed farming, Dairy farming, Horticulture, Collective farms and State farms.

UNIT - IV

Agricultural Regionalization: Delimitation of agricultural regions, Methodology for agricultural regionalization, Crop combination regions, Crop diversification, Land Capability classification in India; Models in agricultural geography: Vonthunen's and Jonasson's – significance and limitations.

UNIT - V

Agricultural regions of the world - A review of Whittlessey's agricultural classification; Agricultural regions of India – Characteristics; Agricultural regions of Tamil Nadu.

REFERENCE BOOKS:

1. **Majid Hussain, (1999): Systematic Agricultural Geography, Rawat Publications, Jawahar Nagar, Jaipur.**
2. **Hussain, M., (1979): Agricultural Geography, Inter India Publications, New Delhi.**
3. **Morgan, W.B. and Munton, R.J., (1972): Agricultural Geography, Methuen & Co., London.**
4. **Sing, Jasbir and S.S. Dhillon, (1994): Agricultural Geography, Tata McGraw-Hill Publications, New Delhi.**

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Course Outcomes

Students must be able to

1. Understand the nature of agricultural geography, approaches followed in its study and the elements of agriculture.
2. Explain the various factors which affect agriculture.
3. Analyse the characteristics of different agricultural systems and the regions where they are practiced.
4. Learn the methods of delimitation of agricultural regions, the nature of agricultural models and the way of classifying agricultural land based on its capability.
5. Analyse the agricultural regions of Tamil Nadu, India and the world

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	1	1	--	1	2	--	1	--	2	2	1	1	1	1.63
CO2	2	1	2	1	2	1	2	1	2	2	1	1	2	2.50
CO3	1	1	--	--	2	1	2	2	1	2	1	--	2	1.88
CO4	1	1	1	1	2	1	2	2	2	2	1	1	1	2.25
CO5	1	1	1	1	1	1	1	1	2	2	2	1	--	1.88
Overall mean score for COs													2.00	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.00 (High Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented	
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:M.BALAMURUGAN

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CONTROLLER OF EXAMINATIONS

CREDIT:5

SUBJECT CODE: P21GE3C10

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – III SEMESTER –CORE COURSE - X

(For the candidates admitted from the year 2021-2022 onwards)

RESEARCH METHODOLOGY IN GEOGRAPHY

COURSE OBJECTIVES:

- Learning the meaning, types, objectives of research and research design.
- Acquiring knowledge on the methods of collection of data and the methods of selection of samples.
- Learning the methods of writing thesis, Abstract, Research proposal and organisation of thesis

UNIT - I

Research: Meaning – need for scientific research – types of research – approaches to geographical research; traditional and scientific – identification of fields, sub field and themes.

UNIT – II

Logic in Research: Hypothesis, concepts and facts, principles, law, theory and their implication in geographical research – the science of geography – role of models – research trends in geography

UNIT - III

Research Design: Concept- Selection of topic – statement of problem – formulation of hypothesis, Testing of hypothesis – Time schedule – Literature survey – Role of internet – Bibliography.

UNIT - IV

Data Acquisition and Analysis: Collection of data – sources of data- primary and secondary – structuring the data – data transformation – Quantitative revolution in geography – Quantitative techniques in analysis of data; sampling techniques – Correlation, regression – digital elevation model.

UNIT - V

Thesis Writing & Project Management: Organization of the thesis; the preliminaries, text and reference materials – drafting of thesis – final evaluation – language and presentation (form and style) – writing of abstract – research report – research project proposal.

REFERENCE BOOKS:

1. Anderson, J., Durston, B.H and Poole, M., (1970), Thesis and Assignment Writing, Wiley Eastern Ltd., New Delhi.
2. Cooray, P.G., (1992). Guide to Scientific and Technical Writing, Hindagala, Sri Lanka
3. Davis, J.C., (1986), Statistics and Data Analysis in Geology, John Wiley & Sons, New York.
4. Davis, W.K.D., (1972) The conceptual Revolution in Geography, University of London Press Ltd., London
5. Fitzgerald, B.P., ed. (1974), Science in Geography, series 1,2,3,4,5, and 6, Oxford University Press, London.
6. Hammond, R. and McCullagh, P., (1978). Quantitative Techniques in Geography: An Introduction, Clarendon Press, Oxford.
7. Hanag, L.L., and Lounsbury, J.F., (1971). Research Methods in Geography, Brown Company Publishers, Iowa.

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Course Outcomes

Students must be able to

1. Learn the types of research, approaches to geographical research, able to identify fields and sub-fields in geographical research.
2. Understand the principles of research, role of models in research and research trends in geography.
3. Enhance knowledge in research design, learn the role of internet in research and the way of writing bibliography.
4. Become familiar with the nature of data and sources, apply statistical techniques to process and analyse data.
5. Write the thesis in the prescribed format and capable of writing abstract, research report and project proposal.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	2	1	2	1	1	1	2	2	3	2	1	--	2	2.86
CO2	2	2	2	3	2	3	1	3	1	2	2	1	--	3.43
CO3	2	1	1	1	1	2	2	1	--	--	--	--	2	1.86
CO4	2	2	2	2	2	1	1	2	3	3	2	--	1	3.29
CO5	2	1	1	1	3	3	3	2	3	2	--	1	--	3.14
Overall mean score for COs														2.91

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.91 (Excellent Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented
Skill oriented	✓	Entrepreneurship oriented

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:DR.T.KAVITHA

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CONTROLLER OF EXAMINATIONS

CREDIT:6

SUBJECT CODE: P21GE3C11

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – III SEMESTER –CORE COURSE - XI

(For the candidates admitted from the year 2021-2022 onwards)

GEOGRAPHIC THOUGHT

COURSE OBJECTIVES:

- To study the origin and development of geography and its changing nature .
- Learning about the schools of geography and their contribution to the subject.
- Understanding the Quantitative revolutionary aspect and modern trends in Geography.

UNIT - I

The Field of Geography: Nature –Branches- Approaches- Development of Geographic Thought: Classical period- Medieval period- Greeks, Roman and Arab. Impacts of exploration and discoveries in geographical development.

UNIT – II

Four Traditions in Geography: Man – Land, Area studies, Spatial and Earth sciences. - Dualism in Geographical Studies: Determinism Vs Possibilism - Physical Vs Human – Systematic Vs Regional -Ideographic Vs Nomothetic - Quantitative Vs Qualitative.

UNIT - III

Contribution of major schools of geography: German: Alexander Von Humbolt, Carl Ritter and Friedrich Ratzel: French: Vidal de La Blache, Jean Brunhes, Albert Demageon and Emmanuel de Martonne: British: L.D.Stamp, J.Mackinder, Peter Haggett, A.J. Herbertson: American: Ellen Churchill Semple, Huntington, W.M.Davis and Isaiah Bowman.

UNIT - IV

Ancient and Modern Indian Contributions to the Development of Geography: Contributions of Ancient Indians to the Development of Geography. Development of Modern Geography in India in the fields; Geomorphology, Climatology, Settlement Geography, Agricultural Geography, Urban Geography and Population Geography.

UNIT - V

Recent Trends in Geography; Applied geography and applied research - Paradigms in Geography – role of ISRO, Geological Survey of India and NATMO in geographical research - Geoinformatics-Online resources.

REFERENCE BOOKS:

1. Adhikari, S., (1992). Fundamentals of Geographical Thought, chaitanya Publishing House, Allahabad, India.
2. Freeman, R., (1970). Hundred Years of Geography, Hutchinson, London.
3. Hartshorne, R., (1959) Perspective on Nature of Geography, AAAG, Washington.
4. Harvay, D., (1972). Explanation in Geograohy, Edward Amold publications, London
5. Hussain, M., (1994), Human Geography, Rawat Publications, New Delhi, India.
6. Hussain, M.(1995), Evolution of Geographical thought, Rawat Publications, New Delhi, India.
7. Negi, B.S., (1994). Geographical Thought, Kedar Nath Ram Nath, Meerut, India.
8. Wayne Davis, K.D., (1972). Conceptual Revolution in Geography, University of London press, London.

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Course outcomes

Students must be able to

- 1.Synthesize the development of geographic thoughts during different periods.
- 2.Gain knowledge on major traditions in geography
- 3.Trace out the contributions to geography by different schools.
- 4.Learn the modern Indian contribution to the development of geography
- 5.5.Analyse the recent trends in geography

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	2	2	2	2	1	1	2	2	2	1	1	1	1	2.50
CO2	2	2	1	1	1	1	1	1	--	--	1	1	1	1.63
CO3	1	1	2	1	1	2	2	2	1	1	2	1	1	2.25
CO4	2	2	2	2	2	2	2	2	2	2	2	1	1	3.00
CO5	2	2	2	2	2	2	2	2	2	3	2	1	1	3.13
Overall mean score for COs													2.50	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.50 (Very High Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented
Skill oriented		Entrepreneurship oriented

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:P.SUNDARARAJ

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CONTROLLER OF EXAMINATIONS

CREDIT:3

SUBJECT CODE: P21GE3C12P

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – III SEMESTER – CORE COURSE - XII

(For the candidates admitted from the year 2021-2022 onwards)

PRACTICAL - III – STATISTICAL TECHNIQUES AND CARTOGRAPHIC METHODS

COURSE OBJECTIVES:

- To gain knowledge on techniques and methods of sampling.
- Understanding the statistical methods for measuring dispersion and central tendency.
- Studying the methods of Frequency analysis and Statistical methods and analyse the correlation between variables.

UNIT - I

Types and Methods of Sampling

Geographical sampling

- Point, Line and Area

Random Sampling

- Simple random sampling
- Systematic random sampling
- Stratified random sampling

UNIT – II

Graphical Representation of Frequency Distribution

- Frequency Distribution
- Frequency Curve
- Frequency Polygon
- Histogram
- Cumulative Frequency Curve / Ogive

UNIT - III

Measures of Central Tendency and Geographical Pattern

- Mean centre
- Median centre
- Mean centre and standard distance
- Mode
- Rn index

UNIT - IV

Measures of Dispersion

- Range
- Mean deviation
- Quartile deviation
- Standard deviation

UNIT - V

Association analysis

Simple correlation

- Karl Pearson's Product moment correlation
- Spearman's rank Correlation
- Simple regression

REFERENCE BOOKS:

1. Monkhouse and Wilkinson maps and diagrams, Methuen & CO, Ltd (1976)
2. Peter toyne & peter T. Newby – techniques in human geography, Macmillan education Ltd, London (1986)
3. Statistical methods in geography , Mcullah.

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Course OutcomesStudents must be able to

1. Select samples by different methods
2. Create frequency distribution tables and graphs for the same.
3. Compute mean and median centres and measure the geographical pattern.
4. Apply different measures of dispersion.
5. Use the statistical techniques of correlation and regression for analysis.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	2	2	2	2	1	1	2	2	2	1	2	1	1	3.00
CO2	2	2	2	2	1	2	2	2	2	--	2	1	1	3.00
CO3	1	1	1	1	1	1	1	2	2	--	--	1	--	1.71
CO4	1	1	1	1	1	1	1	1	1	--	1	--	1	1.57
CO5	2	2	1	1	1	2	2	1	2	--	2	--	1	2.43
Overall mean score for COs													2.34	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.34 (Very High Relationship)**Note:**

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:V.TAMILARASAN**CHAIRMAN – BOS****CONTROLLER OF EXAMINATIONS**

CREDIT:5

SUBJECT CODE: P21GE3E3

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – III SEMESTER – ELECTIVE COURSE - III

(For the candidates admitted from the year 2021-2022 onwards)

POLITICAL GEOGRAPHY

COURSE OBJECTIVES:

- To study the nature of political Geography, its traditions and its relations with other disciplines.
- Understanding the concept of States, Nations and the theories on global strategic views.
- To get an overview on Multinational organization, reorganization of states and interstate disputes in India.

UNIT - I	Introduction: Meaning, nature and scope of political geography – Recent trends in political geography – Approaches to political geography - Major traditions in political geography- Relevance of political geography in international relations.
UNIT – II	States and Nations: Concepts of Nations – State and Nations – Types of Nation -Elements of the State - Typology of State - Frontiers and boundaries - Unitary States and federal States - Forms of governance - Nationalism and nation building.
UNIT - III	Geopolitics: Development of geopolitics - Global strategic views: Heartland theory, Rimland theory, Organic theory and Domino theory – Sea power: Geopolitical significance of the Indian Ocean - Recent trends in Geopolitics: Meta-geopolitics.
UNIT - IV	Electoral Geography: History of electoral studies - Geography of voting and representation - Geographic influences on voting pattern - Voting system in India: Factors affecting voting systems - Electoral distortion and bias: Gerrymandering and Malapportionment - Electoral mapping.
UNIT - V	Political Realm of India: Governance system in India – Changing Political maps of India - Emergence of new states - Unity and Diversity: Centripetal and centrifugal forces - Interstate issues - Federal India - Political relation of India - Geo-political problems of Border States.

REFERENCE BOOKS:

1. Alexander, L.M. World Political Patterns, London, 1964
2. Dikshit, R.D. Political Geography, New Delhi. 2004
3. Dwivedi, R.L. Fundamentals of Political Geography, Allhabad,2010
4. Valkenburg, V. Elements of Political Geography, New York, 1957
5. Kasperson / Minghi, Structure of Political Geography, London
6. Adhikari, S. (2004) Political Geography, Rawat Publication, New Delhi.
7. Dr. Sudeepth (2013), Political Geography of India –Sharda PustakBhawan Allahabad.
8. SdudeptaAdhikari (2007) Political Geography –Rawat Publication NewDelhi

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Course Outcomes

Students must be able to

1. Understand the nature, approaches to study traditions in political geography and its relevance to international relations.
2. Differentiate the state and nation, frontiers and boundaries; learn the types of states and forms of governance.
3. Synthesize the concept of geopolitics, views of different theories on global strategy and the geopolitical significance of Indian Ocean.
4. Learn the subject associated with electoral geography, voting system in India and the factors which influence voting system.
5. Analyse the governance system in India, emergence of new states, interstate issues and geo- political problems of Border States.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	1	1	1	1	2	2	1	2	2	2	1	3	1	2.50
CO2	2	2	1	1	2	1	1	1	2	2	2	3	1	2.63
CO3	2	2	3	2	1	1	1	2	2	1	2	3	--	2.75
CO4	1	2	1	2	2	1	1	1	2	2	1	3	1	2.50
CO5	1	1	2	2	2	1	1	2	--	2	2	3	1	2.50
Overall mean score for COs														2.58

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.58 (Excellent Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented
Skill oriented		Entrepreneurship oriented

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:V.TAMILARASAN

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CREDIT:3		SUBJECT CODE: P21GE4C13	
GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05 M.Sc., - GEOGRAPHY – IV SEMESTER –CORE COURSE - XIII (For the candidates admitted from the year 2021-2022 onwards) REGIONAL PLANNING			
COURSE OBJECTIVES: <ul style="list-style-type: none"> • Understanding the concept of planning, Regions and their types. • Studying the approaches to Regional analysis, the regional imbalances in resources and associated problems in India. • To comprehend the planning system in Tamil Nadu. 			
UNIT - I	Region: Concept and types; planning: concept and types - Regional imbalance and Disparity - Regional planning - Principles and Scope - Concept of Regional Hierarchy - Sectoral and Spatial planning concepts.		
UNIT – II	Regional disparity and problems in India; Approaches to Regional analysis: Geographic approach – Economic approach - Sociological approach – Holistic Approach; Regions for planning in India.		
UNIT - III	Theories of Regional Development - Economic base theory - Location - Allocation - models - Linear Programming, Central place theory - Growth pole theory and diffusion models - Input - Output Analysis - Cost benefit analysis.		
UNIT - IV	Planning in India: Historical Development; Appraisal of Five-Year Plans and Annual Plans, Multi Level Planning, Planning regions in India; Objectives and achievements of special programmes; Drought Prone Area programme, Tribal and Hill Area Development Programme, Backward Area Development Programme, National Watershed Development Programme.		
UNIT - V	Planning in Tamil Nadu: State Planning Commission – District Planning units and its Implementing authorities. Panchayat Raj System – Power and functions of town panchayat, Municipality and corporation –CMDA – Planning regions of Tamil Nadu		
REFERENCE BOOKS: <ol style="list-style-type: none"> 1. Misra R.P., (1992): Regional planning: Concepts, techniques, policies and casestudies, Concept Publishing Company, New Delhi. 2. Misra,R.P,Sundaram,K.VandPrakasarao,V.L.S.,(1947):Regionaldevelopment planning in India, Vikash publishing house, New Delhi. 3. Mahesh Chand and Vinay Kumar Puri (1985): Regional planning in India, Alliedpublishers Pvt. Ltd., Delhi. 4. Prakasa Rao, V.L.S (1963): Regional planning, Asia Publishing House, Calcutta. 			
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Course Outcomes

Students must be able to

1. Understand the concept and types of regions, regional imbalance and disparity.
2. Assess the regional imbalance, learn about the regions for planning in India and approaches to regional analysis.
3. Apply the theories and models which are related to regional development in the real situations.
4. Gain knowledge on five year plans, annual plans, special plans implemented in India, the achievements of the same and the planning regions in India.
5. Explain about the planning organization, planning units and planning regions of Tamil Nadu.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	2	2	1	2	2	1	1	2	2	2	2	--	1	2.50
CO2	1	2	3	3	1	1	1	2	2	2	1	1	2	2.75
CO3	3	3	3	2	1	3	2	3	3	1	2	2	2	3.75
CO4	--	2	2	1	2	2	1	1	2	2	2	2	1	2.50
CO5	2	2	2	2	1	1	--	1	1	1	1	1	1	2.00
Overall mean score for COs													2.70	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.70 (Excellent Relationship)

Nature of Course

Knowledge and skill	✓	Employability oriented	
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:P.SUNDARARAJ

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CREDIT:5

SUBJECT CODE: P21GE4C14P

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – IV SEMESTER – CORE COURSE - XIV

(For the candidates admitted from the year 2021-2022 onwards)

PRACTICAL – IV – TECHNIQUES OF REMOTE SENSING AND GIS

COURSE OBJECTIVES:

- Acquiring knowledge on marginal information and able to interpret Aerial photos and Satellite images.
- To be able to compute scales of Aerial photos.
- To be able to prepare maps with GIS softwares and surveying by GPS.

UNIT - I

Aerial Photo

- **Marginal Information**
- **Interpretation of Aerial Photo**
- **Determination of scale and height**

UNIT – II

Satellite Image

- **Marginal Information**
- **Visual Interpretation**
- **Digital Image Enhancement**
- **Image Classification**

UNIT - III

GIS Operations

- **Scanning**
- **File Conversion**
- **Geo-Referencing**
- **Digitizing**
- **Data Coding**
- **Vector and Raster Data**
- **Generation of DEM and TIN**

UNIT - IV

- **GPS survey**
- **Thematic mapping**

REFERENCE BOOKS:

1. Principle of Aerial Photographic Interpretation – Luder,D.R. McGraw hill book, Co,London
2. Lillesand, T.M., and Keifer, R.W., (1994). Remote Sensing and Image Interpretation,John Wiley & Sons, New York.
3. Concepts and Techniques of Geographic Information Systems – Yeung, Albert, K.W.,Prentice Hall of India Private Ltd, New Delhi
- 4.Sabins, F.F.Jr., (1987). Remote Sensing: Principles and Interpretation, W.H. Freeman&Co., New York.

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Course Outcomes**Students must be able to**

1. Identify the kind of marginal information covered in aerial photos and able to interpret physical and cultural features figured in the photos.
2. Compute the scale of aerial photos by different methods.
3. Identify the kind of marginal information covered in satellite images and able to carry out visual interpretation of images.
4. Develop map from data using GIS and generate DEM and TIN from the given map using relief.
5. Survey the given features by GPS and prepare maps from them.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	3	3	--	2	1	3	3	2	3	2	2	1	1	3.71
CO2	1	1	1	--	--	1	1	1	1	1	--	--	--	1.14
CO3	1	--	--	--	2	1	1	2	1	1	1	1	1	1.71
CO4	3	2	2	1	2	3	2	3	2	2	2	1	1	3.71
CO5	1	2	2	1	2	2	1	2	1	2	2	1	1	2.86
Overall mean score for COs														2.63

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.63 (Excellent Relationship)**Note:**

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:S.MOORTHY**CHAIRMAN – BOS****CONTROLLER OF EXAMINATIONS**

CREDIT:5

SUBJECT CODE: P21GE4E4

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05
M.Sc., - GEOGRAPHY – IV SEMESTER –ELECTIVE COURSE - IV
(For the candidates admitted from the year 2021-2022 onwards)

ENVIRONMENTAL GEOGRAPHY

COURSE OBJECTIVES:

- Understanding the components of environment and changing nature of concepts in man-environment relationship.
- Studying the nature of ecosystem, its functions and impacts of man on environment.
- Recognizing the social issues of environment and the measures in practice to protect environment.

UNIT - I

Nature and scope of Environmental Studies – Role of geography – Changing nature of the concepts – Determinism – Possibilism – Neo determinism – Marxian view on environment

UNIT – II

Concept of ecosystem - Structure and functions of ecosystem - Food chain, Food web food Pyramids; Nutrient cycles: Carbon cycle - Oxygen cycle – Nitrogen cycle ; natural disruptions of ecosystem

UNIT - III

Human interference of the ecosystem – Population growth and its impact – Man’s impact on the biosphere – Agriculture – Green Revolution - HYV and pesticides – Man’s impact on land – Mining – Soil – Coastal areas

UNIT - IV

Impact of man on Environment: Eco crisis- Noise hazards –‘E’ waste – Heat Island — Ozone depletion – Acid rain-Marine pollution-Global warming

UNIT - V

Environmental Management: Environmental quality - Management and planning - Plan of Environmental Impact Assessment- Environmental law and protection-conservation movements- Earth summits

REFERENCE BOOKS:

1. Savindra S. and Jeetendra S. (2013) Disaster Management, Pravalika Publications, Allahabad.
2. Govt. of India (2008) Vulnerability Atlas of India. BMTPC, New Delhi.
3. Govt. of India (2011) Disaster Management in India. Ministry of Home Affairs, New Delhi.
4. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
5. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
6. Carter, N. (1991) Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila.

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Course Outcomes	
Students must be able to	
1. Learn the scope of environmental geography, different concepts on man-environment interaction and Marxian view on environment.	
2. Analyse the structure and functions of ecosystem and nutrient cycles among various spheres.	
3. Understand the impact of growth of population on agriculture, soil and coastal resources.	
4. Relate the features such as E-waste, heat island, ozone depletion and acid rain and global warming with man's interaction.	
5. Understand the meaning of the term Eco-crisis, environmental management aspects and learn the environmental movements in India.	

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	2	2	2	2	2	2	2	1	2	2	1	2	--	2.75
CO2	1	--	--	2	1	1	1	1	2	2	1	--	1	1.63
CO3	2	2	3	1	2	1	1	1	2	2	3	1	2	2.88
CO4	1	1	2	2	--	--	1	2	1	2	1	2	--	1.88
CO5	1	2	2	2	1	1	1	--	2	2	2	3	1	2.50
Overall mean score for COs													2.33	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.33 (Very High Relationship)

Nature of Course			
Knowledge and skill	✓	Employability oriented	
Skill oriented		Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:DR.T.KAVITHA

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CREDIT:5

SUBJECT CODE: P21GE4E5

GOVERNMENT ARTS COLLEGE (Autonomous) KARUR - 05

M.Sc., - GEOGRAPHY – IV SEMESTER –ELECTIVE COURSE -V

(For the candidates admitted from the year 2021-2022 onwards)

DISASTER AND MANAGEMENT STUDIES

COURSE OBJECTIVES:

- To study the meaning and types of disaster and its importance
- To learn the causes and effects of natural and man-made disasters.
- To understand the methods and importance of disaster management.
- To learn the role of technology in disaster management

UNIT - I Introduction: Concepts and Terminologies: Disaster, Hazard, Catastrophes, Emergency, Risks, Vulnerability - types of disasters – Environment and economic implications – Increasing of importance of disaster management studies

UNIT – II Natural Disasters: Geophysical: Earthquakes, Tsunamis, Landslides and Volcanoes - Hydrological: Floods and Avalanches - Meteorological: Cyclones, Drought; do's and dont's before, during and after disasters.

UNIT - III Anthropogenic Disasters: Fire accidents, Nuclear disasters, mining, oil spill - deforestation, Bio-Diversity Loss - Coral and Mangrove Depletion - transport accidents – causes and effects.

UNIT - IV Disaster Risk Management: Management Cycle - Prediction and warning - Mitigation and prevention - Preparedness planning - risk assessment - response and recovery - Role of geo-informatics in disaster management

UNIT - V Hazard vulnerability profile of India: Disaster management agencies of India: NDRF – NDMA – NIDM- ISDR; Tamil Nadu State Disaster Management Authority (TNSDMA)

REFERENCE BOOK:

1. Savindra S. and Jeetendra S. (2013) Disaster Management, Pravalika Publications, Allahabad.
2. Govt. of India (2008) Vulnerability Atlas of India. BMTPC, New Delhi.
3. Govt. of India (2011) Disaster Management in India. Ministry of Home Affairs, New Delhi.
4. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
5. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
6. Carter, N. (1991) Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manila.

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Course Outcomes

Students must be able to

1. Explain the terminologies in disaster, analyse the types of disasters, its environmental implications and increasing importance of disaster studies.
2. Understand the causes, effects of natural disasters, its management and apply it practically.
3. Learn the causes and effects of anthropogenic disasters.
4. Gain knowledge on elements, stages of disaster risk management, the role of geoinformatics in disaster management and apply it practically.
5. Identify the hazard vulnerability regions of India and learn about different disaster management agencies in India and Tamil Nadu.

Relationship Matrix for Course Outcomes with programme outcomes and Programme Specific Outcomes

Course Outcomes (COs)	Programme Outcomes(POs)					Programme Specific Outcome (PSOs)								Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	
CO1	2	2	2	2	2	2	2	2	2	2	1	1	1	2.88
CO2	2	2	2	1	2	2	2	1	2	2	1	1	2	2.75
CO3	2	2	2	2	2	2	2	3	2	2	2	1	1	3.13
CO4	2	2	2	2	2	1	1	3	2	2	1	2	--	2.75
CO5	1	1	1	1	1	1	1	2	2	2	2	1	1	2.13
Overall mean score for COs													2.73	

(Values Reference – 3 –high, 2 – Medium, 1 – Low)

Result: The matrix score of this course is 2.73 (Excellent Relationship)

Nature of Course

Knowledge and skill		Employability oriented	✓
Skill oriented	✓	Entrepreneurship oriented	

Note:

Scale	1	2	3	4	5	6
Relation	0 – 0.5	0.5 – 1.0	1.0 – 1.5	1.5 – 2.0	2.0 – 2.5	2.5 – 3.0
Quality	Very Poor	Poor	Moderate	High	Very High	Excellent

Value Scaling:

Total Values	Total of mean score
Mean Score of Cos = -----	Over all mean Score for COs = -----
Total No. of PSOs	Total of COs

COURSE DESIGNER:V.TAMILARASAN

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CREDIT : 6**COURSE CODE:P21GE4PW****GOVERNMENT ARTS COLLEGE (AUTONOMOUS): KARUR-05****MSc., - GEOGRAPHY IV SEMESTER - PROJECT WORK****(For the candidates admitted from the year 2021-22 onwards)****PROJECT WORK****COURSE OBJECTIVES:**To design and conduct *social-scientific studies* for specific topic

To Identify key research area in social science which will further lead to do for Ph.D work.

SL.	Area of Work	Maximum Marks
1.	PROJECT WORK: (i) Plan of the Project (ii) Execution of the plan / Collection of data / Organization of materials/ Fabrication Experimental study / Hypothesis, Testing etc., and Presentation of the report. (iii) Individual Initiative	20 45 15
2.	VIVA VOCE EXAMINATION	20
TOTAL		100

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