

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR – 639 005

B.Sc. GEOGRAPHY COURSE STRUCTURE UNDER CBCS SYSTEM

(For the candidates admitted from the year 2016 - 2017 onwards)

SEMESTER	COURSE	SUBJECT TITLE	SUBJECT CODE	INSTR. HOURS WEEK	CREDIT	EXAM HOURS	MARKS		TOTAL	
							INT	ESE		
I	Tamil – I	Tamil – I	U16L1T1	6	3	3	25	75	100	
	English – I	English - I	U16L1E1	6	3	3	25	75	100	
	Core Course - I	Climatology	U16GE1C1	6	5	3	25	75	100	
	Core Course - II	Practical – I Scales, Relief & Climatic diagram	-	3	-	-	-	-	-	
	First Allied Course – I	Cartography -I	U16GE1A1	5	3	3	25	75	100	
	First Allied Course - II	Cartography -II (Practical)		2	-	-				
	Value Education	Value Education	U16VE1	2	2	3	25	75	100	
				30	16				500	
II	Tamil – II	Tamil – II	U16L2T2	6	3	3	25	75	100	
	English – II	English– II	U16L2E2	6	3	3	25	75	100	
	Core Course - II	Practical – I Scales, Relief & Climatic diagram	U16GE2C2P	3	4	3	25	75	100	
	Core Course – III	Geomorphology	U16GE2C3	6	5	3	25	75	100	
	First Allied Course – II	Cartography -II (Practical)	U16GE2A2P	2	4	3	25	75	100	
	First Allied Course – III	Cartography – III	U16GE2A3	5	3	3	25	75	100	
	Environmental Studies	Environmental Studies	U16ES2	2	2	3	25	75	100	
				30	24				700	
III	Tamil – III	Tamil- III	U16L3T3	6	3	3	25	75	100	
	English – III	English - III	U16L3E3	6	3	3	25	75	100	
	Core Course – IV	Oceanography	U16GE3C4	6	5	3	25	75	100	
	Core Course – V	Practical – II -Map Interpretation and Representation of Socio Economic Data	-	3	-	-	-	-	---	
	Second Allied Course I	Statistics - I	U16ST3A1	5	3	3	25	75	100	
	Second Allied Course II	Statistics – II (Practical)	-	2	-	-	-	-	---	
	Non Core Elective I	Speak Better Write Better - I	U16EN3N1	2	2	3	25	75	100	
				30	16				500	
IV	Tamil – IV	Tamil- IV	U16L4T4	6	3	3	25	75	100	
	English – IV	English -IV	U16L4E4	6	3	3	25	75	100	
	Core Course – V	Practical – II -Map Interpretation and Representation of Socio Economic Data	U16GE4C5P	5	4	3	25	75	100	
	Core Course – V I	Geography of Asia	U16GE4C6	2	5	3	25	75	100	
	Second Allied Course II	Statistics – II (Practical)	U16ST4A2P	2	4	3	25	75	100	
	Second Allied Course III	Statistics - III	U16ST4A3	5	3	3	25	75	100	
	Skill Based Elective I	Geography of Tourism	U16GE4S1	2	4	3	25	75	100	
	Non Core Elective II	English for Competitive Examinations	U16EN4N2	2	2	3	25	75	100	
				30	28				800	
V	Core Course – VII	Human Geography	U16GE5C7	5	5	3	25	75	100	
	Core Course – VIII	Geography of Resources – I	U16GE5C8	5	4	3	25	75	100	
	Core Course – IX	Geography of Tamil Nadu	U16GE5C9	4	3	3	25	75	100	
	Core Course - X	Practical – III - Remote sensing Interpretation & Field Study	-	3	-	-	-	-	-	
	Core Course - XI	Practical – IV - Map Projection and Surveying	-	3	-	-	-	-	-	
	Elective Course - I	Basics of Remote Sensing & GIS	U16GE5E1	4	4	3	25	75	100	
	Skill Based Elective II	Computer Applications in Geography	U16GE5S2	2	4	3	25	75	100	
	Skill Based Elective III	Disaster Studies	U16GE5S3	2	4	3	25	75	100	
	Soft Skills Development	Soft Skills Development	U16SSD3	2	2	3	25	75	100	
				30	26				700	
VI	Core Course – X	Practical – III - Remote sensing Interpretation & Field Study	U16GE6C10P	3	4	3	25	75	100	
	Core Course – XI	Practical – IV - Map Projection and Surveying	U16GE6C11P	3	5	3	25	75	100	
	Core Course – XII	Geography of India	U16GE6C12	6	5	3	25	75	100	
	Core Course – XIII	Geography of Resources - II	U16GE6C13	6	5	3	25	75	100	
	Elective Course - II	Bio - Geography	U16GE6E2	5	5	3	25	75	100	
	Elective Course - III	Urban Geography & Planning	U16GE6E3	6	4	3	25	75	100	
	Extension Activities	Extension Activities			-	1	-	-	-	-
		Gender Education	15UEA4		1	1	3	25	75	100
				30	30				700	
TOTAL				180	140				3900	

Sl. No.:

Subject Code:

U16GE1C1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

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

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To understand the concepts of weather, climate and components.*
- *To understand about the nature of atmosphere and wind systems of the world.*
- *To acquire knowledge on the types and forms of precipitation and climatic regions of the world.*

CLIMATOLOGY

Unit – I Climate: Definition – Weather and Climate – Components of Climate — Composition and Structure of Atmosphere.

Unit – II Insolation: Controlling Factors – Distribution - Heat Budget of the Earth And Atmosphere; Temperature: Controlling Factors – Horizontal Distribution - Vertical Distribution - Inversion of Temperature.

Unit - III Atmospheric Pressure: Horizontal Distribution - Major Pressure Belts of the World – Shifting of Pressure Belts: Winds – Planetary Winds – Monsoons – Local Winds.

Unit -IV Atmospheric Moisture: Humidity - Definition – Ways of Expressing Humidity, Condensation – Precipitation –Forms and Types; Cloud and its Major Types.

Unit - V Cyclone and Anticyclone: Origin and Associated Weather - Koppens Climatic Classification.

Reference

1. Lal, D.S, (2010): Fundamentals of Climatology, Chaitanya Publishing House, Allahabad
2. Critchfield. J.H. (1975) General Climatology, Prentice Hall of India, Pvt. Ltd, New Delhi
3. Aswathi.A,(1995) Indian climatology, APH Publishing corporation, New Delhi.
4. Singh,S. (2005) Climatology, Prayag Pustak Bhavwan, Allahabad.
5. Oliver, J.E and J.J. Hidove, (2002) Climatology - An Atmospheric Science, Pearson Education, Delhi.
6. Trewarta, G.T (1968) , An Introduction to Climate, McGraw – Hill Kogakuga, Ltd, Tokyo
7. lockwood, J.G (1985) World Climatic System, Eward Arnold, Londaon.

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Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., - GEOGRAPHY– I SEMESTER - FIRST ALLIED COURSE – I

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To understand the techniques of map making, types and uses of maps.*
- *To understand the system of geographic co-ordinates, directions on maps and calculation of local time.*
- *To understand the concept of computer assisted cartography.*

CARTOGRAPHY - I

- Unit- I** Introduction – History of Cartography – Scope of Cartography – Branches of Cartography.
- Unit- II** Maps: Definition - Need for Maps – Classification of Maps – Uses of Maps, Scales: types – uses.
- Unit-III** Map Symbolization: Point, Line and Area Symbols – Quantitative and Qualitative Representation. Map Compilation and Generalization.
- Unit-IV** Geographic Coordinates: Latitudes – Longitudes – International Date Line; Direction: True, Magnetic and Grid North.
- Unit-V** Computer Assisted cartography –Basic Concepts, Application.

Reference:

- 1 Misra R.P. and A.P.Ramesh (2000) Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- 2 Robinson, Elements of Cartography, John Willy and Sons, New Delhi.
- 3 Keates J. S (1973) Cartographic Design and Production, Publisher Longman Inc. London
- 4 Raiz , (1962) Principles of Cartography – Publisher Mc. Graw Hill – London.
- 5 Sethurakkai, S, (2005) Pvipadaviyal: an Introduction, Shanmugam Publishing House, Madurai.

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., - GEOGRAPHY– II SEMESTER - CORE COURSE – II

(For the candidates admitted from the year 2016 - 2017 onwards)

CORE PRACTICAL – I (SCALES, RELIEF AND CLIMATIC DIAGRAMS)

Course Outcomes:

On the completion of this course the students will be able

- *To understand the methods of construction of map scales.*
- *To acquire knowledge on map enlargement and reduction and depiction of landforms by contours.*
- *To understand the techniques of climatic diagrams.*

Unit - I

Scales

- Definition
- Types
- Conversion

Construction of

- Plain
- Linear
- Comparative
- Diagonal
- Time Scales

Unit- II

Measurement of

- Distance
- Areas
- Directions and Bearings.

Unit - III

Methods of

- Enlargement
- Reduction
- Compilation of Maps

Unit-IV

Representation of Relief features on Maps

- Interpolation of Contours
- Methods of Depiction of landforms by Contours
- Cross Sections

Unit-V

Representation of Climatic Data

- Line Diagram
- Bar Diagram
- Climograph
- Hythergraph
- Ergograph
- Wind Rose
- Rainfall Dispersion Diagram

Reference

1. Singh, R.L, (1991) Elements of Practical Geography – Kalyani Publishers, New Delhi
2. Monkhouse and Willkinson (1976) Maps and Diagrams, Metuhuen & Co, London
3. Gopal Singh () Map Work and Practical Geography, Vikas Publishing House Pvt Ltd, New delhi.

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U16GE2C3

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.Sc., - GEOGRAPHY - II SEMESTER- CORE COURSE - III

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To understand the nature of solar system.*
- *To differentiate the endogenetic and exogenetic forces.*
- *To recognize the landforms created by the respective forces.*

GEOMORPHOLOGY

- Unit – I** Geomorphology: Meaning, Nature and Scope - Solar System – Origin of the Earth – Nebular Hypothesis – Internal Structure of the Earth
- Unit- II** Rocks: Igneous – Sedimentary – Metamorphic; Weathering – Mass Wasting and its Types.
- Unit-III** Earth Movements: Endogenetic Forces Fold, Fault – Earthquakes, Volcanoes – Continental Drift – Plate Tectonics.
- Unit-IV** Exogenetic Process: Geomorphic Work of Rivers – Erosional and Depositional landforms; Under Ground Water – Karst Topography.
- Unit-V** Glaciers: Types – Erosional and Depositional landforms; Aeolian landforms. Sea Waves and Coastal landforms.

Reference:

1. Ahmad, E., (1985) Geomorphology, Kalia Publishers, New Delhi.
2. Bloom, A.L, (2003) Geomorphology a Systematic Analysis of Late Cenozoic Landforms, Pearson Education, Delhi.
3. Dayal. P., (1996) A Text Book of Geomorphology, Shakla Book Depot, Patna.
4. Thornbury, W.D., (1969) Principles of Geomorphology, Wiley Eastern Limited, New Delhi.
5. Worcester, P.G (1948) A Text Book of Geomorphology Van Nuswand Reinhold Company, New York.

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Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., - GEOGRAPHY– II SEMESTER – FIRST ALLIED COURSE – II

(For the candidates admitted from the year 2016 - 2017 onwards)

ALLIED PRACTICAL - I (CARTOGRAPHY -II)

Learning outcomes:

On the completion of this course the students will be able

- *To analyse the different types of maps.*
- *To Familiarize the grid system, symbolisation and format of maps.*
- *To study the system of numbering and layout of Toposheets.*

Unit- I

Map Types Based on

- Information
- Scale
- Military use
- Relief Representation
- Special Purpose
- Qualitative Maps
- Quantitative Maps

Unit- II

- Cartography as Science of Human Communication
- Latitude and Distance
- Longitude and Time
- International date Line
- True North
- Magnetic North
- Grid North

Unit-III

Map Symbolization

- Qualitative Symbols
- Quantitative Symbols
- Point
- Line
- Area

Unit-IV

- Map Format and Toponymy
- Drawing Materials
- Drawing Equipment

Unit-V

- Grid System
- Toposheet Layout
- Toposheet Numbering

References:

- 1 Misra R.P. and A.P.Ramesh (2000) Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- 2 Robinson, Elements of Cartography, John Willy and Sons, New Delhi.
- 3 Keates J. S (1973) Cartographic Design and Production, Publisher Longman Inc. London
- 4 Raiz , (1962) Principles of Cartography – Publisher Mc. Graw Hill – London.
- 5 Sethurakkai, S, (2005) Pvipadaviyal: an Introduction, Shanmugam Publishing House, Madurai.

Sl. No.:

Subject Code:

U16GE2A3

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - II SEMESTER -FIRST ALLIED COURSE-III

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To Study the techniques of map design and layout.*
- *To familiarize with map reproduction processes.*
- *To understand the applications of remote sensing and computer applications in cartography.*

CARTOGRAPHY -III

- Unit- I** Map Design and Layout: Map Design – Principles and Constraints – Formats of Map.
- Unit- II** Lettering: Style, Form, Size – Mechanics of Lettering – Positioning of Letters.
- Unit-III** Map Reproduction: Duplicating – Printing Processes.
- Unit-IV** Aerial Remote Sensing: Aerial Photo – Types, Satellite Remote Sensing: Mechanisms – Types – Uses - Applications.
- Unit-V** Computer Applications in Cartography: CAD, GIS TIN Creation, Buffering, DEM, Overlay Analysis.

References

- 1 Misra R.P. and A.P.Ramesh (2000) Fundamentals of Cartography, Concept Publishing Company, New Delhi.
- 2 Robinson, Elements of Cartography, John Willy and Sons, New Delhi.
- 3 Keates J. S (1973) Cartographic Design and Production, Publisher Longman Inc. London
- 4 Raiz , (1962) Principles of Cartography – Publisher Mc. Graw Hill – London.
- 5 Sethurakkai, S, (2005) Pvipadaviyal: an Introduction, Shanmugam Publishing House, Madurai.

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Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY – III SEMESTER - CORE COURSE -IV

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To acquire knowledge on the relief of ocean floor.*
- *To study the distribution of temperature and salinity of ocean water.*
- *To understand the dynamic nature of ocean water and assess the ocean resources.*

OCEANOGRAPHY

Unit - I Oceanography: Definition, Nature, Scope and Significance – Extent and Distribution of Land and Oceans – Relief features of the Ocean Floor: Continental Shelf, Continental Slope, Deep Sea Plains and Oceanic Deeps.

Unit - II Major Relief Features of the Oceans: Atlantic, Pacific and Indian.

Unit - III Temperature and salinity: Temperature Controlling Factors - Horizontal and Vertical Distribution of Temperature; Salinity: Definition - Controlling Factors – Horizontal - Vertical Distribution – Density of Sea Water.

Unit - IV Dynamics of ocean water: Waves: Origin – Types. Tides: Origin – Types and Effects. Currents: Controlling factors – Currents in the Pacific, Atlantic and Indian oceans.

Unit - V Marine deposits, classification and distribution of Resources: Coral Reef - Conditions Favourable for Growth, Types and Distribution; Food and Mineral Resources – Marine Resource Organizations

REFERENCES:

1. Gross, M.G (1967) Oceanography Charles E Merrill Publishing Company, Ohio.
2. Moore, J.R (1967) Oceanography W.H Freeman and Company, San Francisco.
3. sharma, R.C and M vahal (1987) Oceanography for Geographers, Chaintanya Publishing Home, Allahabad.
4. Siddhartha, K (2005) oceanography a brief introduction, Kisalaya Publication Pvt, Ltd, Delhi.
5. Weisberg, J and H. parish (1974) introductory oceanography, MecGraw Hill Kogakuga, Ltd, Tokyo

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Sl. No.:

Subject Code:

U16ST3A1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

B.Sc., Geography - III SEMESTER – SECOND ALLIED COURSE - I

(For the candidates admitted from the year 2016 - 2017 onwards)

OPERATIONS RESEARCH - I

(LINEAR PROGRAMMING AND ITS APPLICATIONS)

Course Outcomes:

On the completion of this course the students will be able

- *To gain knowledge about various statistical optimization techniques.*
- *To understand the transportation and assignment problems.*

Unit - I

Introduction - Origin - Nature of OR - Structure - Characteristics - OR in Decision making - Models in OR - Phase of OR - Uses and Limitations of OR - LPP- Mathematical formulation of LPP - Graphical Method.

Unit - II

LPP - Standard form of LPP - Maximization - Minimization - Simplex method - Artificial variable technique - Two-Phase Method -Big-M method.

Unit - III

Duality in LPP - Formulation of Dual LPP - Primal - Dual relationship - Solving LPP using Dual concepts - Dual Simplex Method.

Unit - IV

Transportation problem - Balanced, Unbalanced T.P. - Initial basic feasible solution - North West Corner Rule- Row Minima - Column Minima - Matrix Minima (LCM) - Vogel's Approximation Method - Optimality Test - MODI Method.

Unit - V

Assignment problem - Introduction - Balanced - Unbalanced - Maximization - Minimization - Hungarien Method.

Text Books:

1. KANTI SWARUP, P.K.GUPTA, and MANMOHN (1980) - "OPERATIONS RESEARCH", Sultan Chand and sons, New Delhi.

Reference Books:

1. J. K. SHARMA (1997), "OPERATIONS RESEARCH" and Application, Mc.Millan and Company, New Delhi.
2. NITA H. SHAH, RAVI M. GOR and HARDIK SONI (2010) -"OPERATIONS RESEARCH", PHI Learning Private Limited, New Delhi.

Sl. No.:

Subject Code:

U16EN3N1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR- 05
B.Sc., GEOGRAPHY - III SEMESTER – NON CORE ELECTIVE - I
(For the candidates admitted from the year 2016 - 2017 onwards)

SPEAK BETTER WRITE BETTER

Course Outcomes:

On the completion of this course the students will be able

- 1. To make the students express their basic grammar knowledge
- 2. To Examine the Different kinds of punctuation.
- 3. To identify and analyze the common mistakes & wrong usage of words in the sentence.

UNIT- I The Rudiments of Grammar

UNIT- II Punctuate It Right

UNIT-III Speak for Yourself

UNIT-IV Wrong Usage

UNIT-V The Art of Writing

Reference Book :

How to Write Speak Better English by Neil Jones, Published by Lotus Press, New Delhi.

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Sl. No.:

Subject Code:

U16GE4C5P

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY – IV SEMESTER - CORE COURSE- V

(For the candidates admitted from the year 2016 - 2017 onwards)

CORE PRACTICAL – II **MAP INTERPRETATION & REPRESENTATION OF** **SOCIO –ECONOMIC DATA**

Course Outcomes:

On the completion of this course the students will be able

- *To be able to interpret and appreciate the topographical maps of India.*
- *To study the methods of interpreting weather reports.*
- *To understand the procedure of the construction of graphs and diagrams used to represent socio-economic data and distribution maps.*

Unit-I Study of Topographic Sheets of Survey of India:

- Conventional Signs and Symbols

Cartographic Appreciation

- Marginal Informations
- Extra marginal Informations
- Intra Marginal Informations
- Interpretation of Physical and Cultural Features

Unit-II

- Study of Meteorological Signs and Symbols
- Weather Station Model
- Study and Interpretation of Weather Maps of India (January – May -July-November)

Unit-III Methods of Representing Socioeconomic Data:

- Line Graph
- Bar Diagram
- Pictorial Diagram
- Block Diagram
- Proportional Circles
- Proportional Spheres
- Pie Chart
- Pyramid Diagram

Unit-IV Mapping of Distributions

- Dot Map
- Isopleth
- Choropleth

References:

1. Khan, I.A. (1998) Text book of Practical Geography, Concept Publishing Company, New Delhi.
2. Dury, G.H, A.H Moodie, H.C. Brook field (1972) Map Interpretation, Pitman Publishing London.
3. Monkose, F .J and H. R. Wilkinson (1976) Maps and Diagram, Methuen and Co Ltd, London.
4. Rampal, K. K (1993) Mapping and Compilation of Concept Publishing Company, New Delhi.
5. Ramamurthy, K (1982) Map Interpretation, Ramamurthy (Publishers) Madurai.
6. Singh, R. L. (1991) Elements of Practical Geography, Kalyani Publishers, New York.

Sl. No.:

Subject Code:

U16GE4C6

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY – IV SEMESTER - CORE COURSE-VI

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To acquire knowledge about the distribution of relief, climate and drainage of Asia.*
- *To assess the resources of soil, agriculture, minerals and industries of Asia.*
- *To understand the distribution of population and modes of transport network of Asia.*

GEOGRAPHY OF ASIA

Unit- I Geographic Location and Extent – Locational Significance – Physical Divisions; Climate: Seasonal Pattern of Monsoons - Climatic Regions.

Unit- II Drainage System – Soil – Natural Vegetation – Types and distribution

Unit-III Agriculture: Farming Types – Major crops: Rice, Wheat, Cotton, Jute, Tea, Coffee and Rubber – Recent developments in Agriculture; Fishing – Inland and Marine.

Unit-IV Mineral Resources – Distribution and Production of Iron ore, Manganese, Copper, Tin, Gold, Gypsum and Mica; Industries: Locational Factors – Textiles – Sugar – Iron and Steel.

Unit-V Population: Controlling Factors – Growth- Distribution and Density, Transport: Roadways – Railways- Airways – Waterways.

Reference Books:

1. Introduction to Physical Hydrology () – Richard and Chorley – Methuen & Co Ltd
2. Manning, J.C (1989) Applied Principles of Hydrology, CBS Publishers. New Delhi.
3. Rangunath, H.M, ground water hydrology,
4. Ranjit Tirtha, (2001), geography of Asia, Rawat Publications, Jaipur.
5. Negai. B.S (1986), the continent of asia, s. chand and co.(Pvt)Ltd, New Delhi.

CHAIRMAN –BOS

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Sl. No.:

Subject Code:

U16ST4A2P

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

B.Sc., Geography - IV SEMESTER – SECOND ALLIED COURSE - II

(For the candidates admitted from 2016 - 2017 onwards)

ALLIED PRACTICAL - II
(Based on Second Allied Papers I & III)

Course Outcomes:

On the completion of this course the students will be able

- *To gain practical knowledge about various optimization techniques.*
- *To understand the transportation and assignment problems.*

LIST OF PROBLEMS:

- i. Graphical Method.
- ii. Simplex method.
- iii. Big-M method.
- iv. Transportation problem.
- v. Assignment problem.
- vi. Game Theory.
- vii. Queuing Theory.
- viii. Network Problems.

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Sl. No.:

Subject Code:

U16ST4A3

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05

B.Sc., Geography - IV SEMESTER – SECOND ALLIED COURSE - III

(For the candidates admitted from the year 2016 - 2017 onwards)

OPERATIONS RESEARCH - II

Course Outcomes:

On the completion of this course the students will be able

- to train the students with Optimization techniques towards solving decision making problems based on deterministic and probabilistic models .
- to impart an insight of the applications of Operations Research in Management.

Unit - I

Introduction - definition - pay-off - types of games - the maximin - minimax principles - Saddle Point - Game with Saddle Point - without saddle point - mixed strategies - 2×2 games - graphical method for $2 \times n$ or $m \times 2$ games - dominance property - Resolving games by L.P.P. - Simple problems.

Unit - II

Decision theory - Introduction- Types of Decision Making Environment - Decision Making under uncertainty - Maximin criterion - Maximax criterion - Minimax criterion - Laplace criterion - Hurwitz criterion - Decision Making under risk - EMV - EOL - EVPI - Decision Tree Analysis - Concepts only - simple problems.

Unit - III

Queuing system - elements of queuing system - operating characteristics of a queuing systems - deterministic queuing system - probability distribution in queuing system.

Unit - IV

Classification of queuing models - definition of transient and steady states - Poisson queuing system - Model I: $\{(M/M/1): (/FIFO)\}$ and Model II: $\{(M/M/1): (/SIRO)\}$ - Simple Problems.

Unit - V

Network analysis - Basic concepts - Constraints in network - Construction of network - Critical path method (CPM) - Program Evaluation Review Technique (PERT) -simple problems.

Text Books:

1. KANTI SWARUP, P.K.GUPTA, and MANMOHN (1980) - "OPERATIONS RESEARCH", Sultan Chand and sons, New Delhi.

Reference Books:

1. J. K.SHARMA (1997), "OPERATIONS RESEARCH AND APPLICATION", Mc.Millan and Company, New Delhi.
2. NITA H.SHAH, RAVI M. GOR, and HARDIK SONI (2010) - "OPERATIONS RESEARCH", PHI Learning Private Limited, New Delhi.

Sl. No.:

Subject Code:

U16GE4S1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY – IV SEMESTER - SKILL BASED ELECTIVE - I

(For the candidates admitted from the year 2016 - 2017 onwards)

GEOGRAPHY OF TOURISM

Course Outcomes:

On the completion of this course the students will be able

- *To analyze the nature and types of tourism.*
- *To understand the factors influencing tourism.*
- *To study the major tourist centres of Tamil Nadu and India and the role of TTDC and ITDC in tourism development.*

Unit- I Scope and Content - Growth of Tourism: Classification of Tourist Travellers: Merchants – Explorers – Pilgrims – Factors Controlling Tourism – Types of Tourism

Unit- II Travel Agency and Tourist Documents – Functioning and Role of Travel Agencies; Passport – Visa and its Types; Traveliers Cheque – Credit Cards; Role of Accommodation: Hospitality and Transport in Tourism Development.

Unit-III Entertainment – Trade Fairs, Festivals, Sport and Games as Promoters of Tourism: Classification of Hotels – Motels - Chaultry – Guest House; Travel Agency and their Functions

Unit-IV Development of Tourism in India – Govt. Policy – Role of ITDC in Tourism Promotion; Development of Tourism in Tamil Nadu – Role of TTDC in Promotion of Tourism in the State.

Unit-V A General Study on Tourist Centers in India and Tamil Nadu: Mumbai, Chennai, Bangalore, Trivandrum Madurai, Ooty, Yercaud and Kodaikanal.

References:

1. Khan, M.A, (2005) introduction to tourism, Anmol Publication Pvt Ltd, New delhi.
2. Sangar, J.P., (2006) Tourism Management, Anmol Publication Pvt Ltd, New delhi.
3. Sharma, S.P., (2007) Tourism and Environment, Concepts, Principles and Approaches, Kanishka Publishes Distribution, New Delhi.

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Sl. No.:

Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR- 05
B.Sc., GEOGRAPHY - IV SEMESTER – NON CORE ELECTIVE - II
(For the candidates admitted from the year 2016 - 2017 onwards)

ENGLISH FOR COMPETITIVE EXAMINATION

Course Outcomes :

On the completion of this course the students will be able

1. To develop competitive skills through various types of objectives.
2. To inculcate reading skills in their daily life.
3. To enhance their ability to speak in English and face on interview.

UNIT- I	Subject – Verb Agreement Articles Common Errors Sequence of Tenses
UNIT- II	One Word Substitutes Words Often Confused Foreign Words and Phrases
UNIT-III	Reading and Reasoning
UNIT-IV	Paragraph Writing Report Writing Reviews – Film and Book
UNIT-V	Group Discussion and Interview

References:

English for Competitive Examination by V. Saraswathi and Maya K. Mudbhatkal
(Emerald Publishers)

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY – V SEMESTER - CORE COURSE- VII

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To understand the concepts of schools of Human Geography.*
- *To recognize the human races and their distribution.*
- *To study the settlement pattern, population distribution, human migration and impacts of man on environment.*

HUMAN GEOGRAPHY

- Unit- I** Human Geography - Nature and Scope; Historical Perspectives , Schools of Human Geography: Determinism – Possibilism – Neo - Determinism – Social Determinism
- Unit - II** World Human Races and Distribution; Mosaic of Culture; Classification and Spatial Distribution of Languages – Religion – Customs.
- Unit -III** World Population: History of Population Growth – Controlling Factors of Population – Distribution and Density; Migration: Push and Pull factors – Types - Effects of Migration
- Unit -IV** Human Settlements: Origin – Site and Situations – Classification of Settlements – Rural and Urban Settlements: Pattern and Functions.
- Unit -V** Impact of Man on Environment: Deforestation – Soil Erosion – Urbanization – Climate Change – Ozone Depletion – Acid Rain

Reference

1. Peripillous A.V. Human Geography, Longman Group Limited, 1997
2. Chandra, R.C: A Geography of Population Concepts., determine and Patterns.
3. Singh., R.L. Readings in Rural Settlements and Land Use, Hutchinson, London, 1970.
4. Meyer, H.M and Kohn, C.F. Readings In Urban Geography Chicago Printing Press, Chicago.

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Sl. No.:

Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY – V SEMESTER - CORE COURSE-VIII

(For the candidates admitted from the year 2016 - 2017 onwards)

GEOGRAPHY OF RESOURCES – I

Course Outcomes:

On the completion of this course the students will be able

- *To be able to recognize the types of resources.*
- *To Study the wealth of agricultural, livestock, mineral and power resources.*
- *To understand the economic importance of these resources.*

Unit-I Resources – Definition – Types – Biotic and Abiotic – Potential and Developed Resources – Demand for Natural Resources.

Unit-II Agricultural Crops: Distribution and Production of Wheat - Cotton-Sugarcane – Tea – Coffee - Rubber.

Unit-III Distribution Characteristics and Production; Livestock - Dairy Farming and Fishing

Unit-IV Power Resources: Distribution and Production of Coal and Petroleum – Thermal Power – Hydel Power and Atomic Power; Non Conventional Sources of Energy: Tidal – Wind and Solar

Unit-V Mineral Resources – Distribution and Production – Types, Metallic and Non Metallic Minerals – Iron Ore-Bauxite – Gold – Manganese – Silver.

References:

1. Peach W.N. and Costentin James A. World Resources and Industries, Harper & Row Publications-New York.
2. Koeacheng Leong and Morgen – Economic and Human Geography – Oxford University Press-New Delhi.
3. Clawson Marion(ed) Natural Resources and International Development, New York.
4. S.K. Sadhkhani (1994) Economic Geography An Appraisal of Resources.
5. K. Kanna & V.K. Gupta (1998) Economic and Commercial Geography.

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Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY – V SEMESTER – CORE COURSE - IX

(For the candidates admitted from the year 2016 - 2017 onwards)

GEOGRAPHY OF TAMIL NADU

Course Outcomes:

On the completion of this course the students will be able

- *To Familiarize the students with the natural settings, climate and drainage of Tamil Nadu.*
- *To assess the distribution of soil, natural vegetation, water, agriculture, minerals and industrial resources of Tamil Nadu.*
- *To know about the population distribution, trade and transport of Tamil Nadu.*

Unit- I Geographical Location – Administrative divisions – Relief features – Drainage system – Climate- Controlling factors – Seasons

Unit- II Soils and Natural Vegetation: Types and distribution; Sources of irrigation: canals, Tanks and Wells

Unit-III Agriculture: Problems - Cropping seasons -Major Crops: Rice, Millets, Pulses, Groundnut, Cotton, Sugarcane, Tea, Coffee and Rubber - Animal husbandry: Dairy development, Poultry and Fisheries.

Unit-IV Mineral Resources: Iron ore, Bauxite and Coal. Power Resources: Thermal, Hydel, Atomic, Solar and Wind; Industries: Cotton, Sugarcane, Iron & Steel and Automobiles.

Unit-V Population – Distribution and Density; Transport: Roadways, Railways, Airways and Water ways. Trade – Inland and Foreign.

Reference:

1. V.Kumaraswamy, (2003) Geography of Tamil Nadu, Sakthi Publishing House, Kumbakonam
2. Tiwari and Ramesh (1985), Basic Resource Atlas of Tamil Nadu

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Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - V SEMESTER – ELECTIVE COURSE - I

(For the candidates admitted from the year 2016 - 2017 onwards)

BASICS OF REMOTE SENSING AND GIS

Course Outcomes:

On the completion of this course the students will be able

- *To understand the working principles of aerial and satellite remote sensing.*
- *To analyze the applications of remote sensing in geography.*
- *To understand the basic applications of GIS AND GPS.*

Unit- I Remote Sensing: Meaning - Development – Types - Electromagnetic Energy– Electromagnetic Spectrum – Energy Interactions – Ideal Remote Sensing System.

Unit- II Fundamentals of Aerial Remote Sensing: Components of Aerial Camera - Types of Aerial Photographs - Stereoscopic Vision Marginal Information of Aerial Photographs - Elements of Air Photo Interpretation

Unit-III Fundamentals of Satellite Remote Sensing: Types of Satellites: Geo-Stationary and Sun-Synchronous Satellites: Sensors – Platforms – satellite image - Resolution: Spatial, Spectral, Radiometric and temporal; Ideal Remote Sensing System.

Unit-IV Application of Remote Sensing in Geography: Geomorphology - Water Resources, Forest, Land Use and Agriculture.

Unit-V GIS: Definition – Terminology – Development – Components; Data Structure: Raster and Vector –Output of GIS maps - GIS: Definition – developments – significance and applications of GIS and GPS

Reference Books:

1. Curran.P.J. Principles of Remote Sensing, English Language Book Society Longmans (1985).
2. Sabins Jr. Remote Sensing-Principles of Interpretations, Freeman & Co, Sanfrancico (1978).
3. Lillesand & Kiefer, Remote Sensing and Image Interpretation, John Wiley & Sons, New York (1979).

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Sl. No.:

Subject Code:

U16GE5S2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - V SEMESTER – SKILL BASED ELECTIVE - II

(For the candidates admitted from the year 2016 - 2017 onwards)

COMPUTER APPLICATIONS IN GEOGRAPHY

Course Outcomes:

On the completion of this course the students will be able

- *To Study the components and basics of computers.*
- *To make graphs and diagrams using MS Excel.*
- *To understand the use of computers in data processing, use of SPSS and GIS softwares.*

Unit- I Basics of Computer- Meaning, Types and Generations of Computers.

Unit- II Hardware Components: CPU – Mother Board – Computer Memory and its Types – Storage Devices; Software and its Types – Operating System – File Extensions.

Unit-III Diagrammatic Representation of data with MS Excel: Line , Bar, Pie and Scatter Diagrams; DBMS and its uses in Geography

Unit-IV Use of Computer in Geography Data Processing - Analysis using SPSS and GIS Software– Role of Internet in Geographical Studies.

Unit-V Computer in Mapping: Introduction – Geo-Reference- Storage- Retrieval and Graphical Display – Remote Sensing Image Mapping Analysis

Reference:

1. Robinson. A. etal (1978), Elements of Cartography Willey, New York
2. Misra R.P. and A.Ramesh, Fundamentals of cartography, concept publications New Delhi
3. Monkhouse & Wilkinson, Map and Diagrams, B.I Publications Pvt. Lts.
4. Lillesand and Kiefer, Remote Sensing and image interpretation, John Wiley and sons, NewYork (1979)
5. S.Kumar. (2003) Basics of Remote sensing and GIS, Laxmi publications, New Delhi.

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Sl. No.:

Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - V SEMESTER – SKILL BASED ELECTIVE - III

(For the candidates admitted from the year 2016 - 2017 onwards)

DISASTER STUDIES

Course Outcomes:

On the completion of this course the students will be able

To understand the causes and effects of natural and man-made disasters.

To understand the methods and importance of disaster management.

To familiarize the major hazards in India.

Unit- I Disaster-Definition - Scope and Content- Interdisciplinary Nature of Disasters Studies

Unit- II Natural Disasters: Earthquakes – Volcanism – Landslide – Tsunami – Cyclone – Flood – Drought – Causes and effects

Unit-III Man-Made Disasters: Natural – Geological Disasters: Earthquake – Volcanoes – Landslide and Tsunami; Climatological Disasters: Cyclone – Flood and Drought

Unit-IV Hazards in India: Earthquake – Landslide – Cyclone – Tsunami – Flood – Drought – Bhopal gas Tragedy – Mumbai Bomblast - Kumbakonam school tragedy

Unit-V Disaster Management: Concept – Disaster preparedness – Mitigation – Rehabilitation measures

Reference

1. A Text book of Environmental Sciences S.S.Purohit., O.J .Sharamani and A.K.Agarwal.
2. Environmental Pollution(Tamil) P.Chandrasekaran.
3. Environmental Geography - Savindra Singh.
4. Introduction to Environmental Science-V.Anjaneyelu.
5. Environmental Problems and Solutions-B.K.Sharama, Kaur.

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - VI SEMESTER – CORE COURSE - X

(For the candidates admitted from the year 2016 - 2017 onwards)

CORE PRACTICAL - III

REMOTE SENSING INTERPRETATION & FIELD STUDY

Course Outcomes:

On the completion of this course the students will be able

- *To identify the marginal information of Topo-sheets, aerial photos and satellite images.*
- *To understand the methods of interpretation of the said ones.*

Unit- I Remote Sensing

- EMR
- Platforms
- Radiation laws

Unit- II Aerial Photo

- Scale determination
- Marginal information
- Stereovision
- Interpretation of Physical and Cultural Features.

Unit-III Satellite Image

- Study of Marginal Information
- Elements of interpretation
- Interpretation of Physical and Cultural Features
- Comparison of Satellite Image, Aerial Photo and Toposheets

Unit-IV Field Study

- Selection of the problems
- Data collection
- Mapping
- Simple analysis
- Report Writing

Reference Books:

1. Dickinson, G.C (1979) Map and Airphotographys, Arnold Heinemann, London.
2. Lilles and T.M and R.N.Klefer (1987) – Remote Sensing and Image Interpretations – John Wiley and Sons, New York.
3. Robinson, A.H. Randale, D.S. Morrison, J.L. and P.C. Muchrcke (1984)- Elements of Cartography, John Wiley and Sons, New York.

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - VI SEMESTER – CORE COURSE - XI

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- To understand the methods of construction of different projections.
- To study the suitability of different projections for different regions.
- To understand the methods of surveying by different instruments.

CORE PRACTICAL - IV

MAP PROJECTION AND SURVEYING

Unit-I Cylindrical and conical projection

Cylindrical

- Simple Projection
- Equal Area Projection
- Equi Distance Projection
- Equal Area Projection
- Orthamorphic Projection
- Mercators Projections

Conical Projection

- One Standard
- Two Standard
- Bonne's
- Polyconic
- International Projections

Unit- II Zenithal projection

- Equidistant
- Equal Area (Polar Cases Only)
- Orthographic
- Stereographic
- Gnomonic

Conventional

- Sinusoidal
- Mollweide's (Normal Cases Only)
- Sinusoidal Interrupted
- Mollweide Interrupted

Unit-IV

Surveying – Measurement of Area

- Chain
- Prismatic Compass
- Plane Table
- GPS

Measurement of Elevation

- Abney Level
- Indian Clinometer

References:

1. Kellaway George.P. – Map Projections Methuen & Co., London.
2. Steers J.A.-Map Projections, University London Press, London.
3. R.L. Singh-Practical Geography-Kalyani Publishers, New Delhi.
4. Jayachandran.S-Practical Geography.

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Subject Code:

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - VI SEMESTER – CORE COURSE - XII

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To acquire knowledge on the relief, climate and drainage of India.*
- *To assess the soil, forest, agriculture, minerals and industrial resources of India.*
- *To study the population distribution, the nature of trade and different modes of transport of India.*

GEOGRAPHY OF INDIA

Unit- I India: Geographical location and extent – India as a Sub-Continent – Major Physical divisions - Drainage Systems, Major Multipurpose River Valley Projects, Climate: Controlling Factors – Seasons.

Unit- II Soil: Types and Distribution – Soil Erosion and Conservation – Natural Vegetation: Forest types and distribution – Forest Products and Uses.

Unit-III Agriculture: Problems – Cropping seasons – Farming types – Green Revolution – Food Crops – Rice, Wheat; Commercial Crops: Sugarcane, Cotton, Jute; Plantation Crops: Tea, Coffee and Rubber.

Unit-IV Mineral resources – Iron ore, Manganese, Bauxite, Coal and Oil. Power Resources – Hydrel, Thermal and Atomic; Industries – Cotton Textiles, Iron and Steel, Shipbuilding and Automobiles.

Unit-V Population – Distribution and Density. Transport: Roadways – Railways – Waterways – Air ways - Trade: Volume and Various Items

References:

1. Sign, Gopal –Geography of India, Atmarani, New Delhi 1970.
2. Aranachalam.B Economic Geography of India-Bombay
3. Sharma-Economic and Commercial and Geography of India.
4. Singh. R.L(ed) India a Regional Geography -1971, NGSI, Varanasi – 5.

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - VI SEMESTER – CORE COURSE - XIII

(For the candidates admitted from the year 2016 - 2017 onwards)

GEOGRAPHY OF RESOURCE – II

Course Outcomes:

On the completion of this course the students will be able

- *To study the distribution of major industrial centres of the world.*
- *To analyze the different modes of transport of the world.*
- *To understand the role of major trading organizations of the world.*

- Unit- I** Industrial location factors - Manufacturing Industries - Iron and Steel Industries – Cotton Textiles – Sugar Industries.
- Unit- II** Distribution of Chemical – Aircraft – Machine Tools – Automobiles – Ship Building Industries.
- Unit-III** Industrial Development and Environmental Problems – Conservation and Importance of Exhaustible Minerals Resources.
- Unit-IV** Transport System: Road – Rail – Air – Water Ways – Inland Water Ways and Ocean Routes.
- Unit-V** Trade: International Trade – Patterns – Balance of Trade – International Trading Organizations: WTO, EU, ASEAN, LAFTA and CARIFTA

References:

1. John W. Alexander – Economic Geography – Prentice Hall of India – New Delhi.
2. Peach W.N. and Constantine James A. World Resource and Industries Harper & Row Publications – New Delhi.

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U16GE6E2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - VI SEMESTER – ELECTIVE COURSE - II

(For the candidates admitted from the year 2016 - 2017 onwards)

BIO GEOGRAPHY

Course Outcomes:

On the completion of this course the students will be able

- *To analyze the distribution of flora and fauna in relation to different factors.*
- *To study the causes and effects of extinction of plants and animals.*
- *To acquire knowledge on the nature of different biomes and ecological regions of India.*

Unit- I Biogeography: Definition, Nature and Scope – Biosphere – Structure and Functions of Ecosystem – Bio Geo Chemical Carbon and Nitrogen Cycle — Concepts of Biome, Ecotone and Community.

Unit- II Origin of fauna and flora: Plant and animal evolution through the geological times- distribution of Plant life on the earth and its relation to soil types, climate and human practices.

Unit-III Endangered species – Causes of Extinction of plant and animal life – Problems of Extinction – Prevention and Conservation methods.

Unit-IV Major Biomes: Equatorial biome –Tropical forest - Temperate grass land Tropical Desert and Tropical grasslands.

Unit-V Study of Ecological regions of Himalayas and Western Ghats- Problems, Conservation and management measures.

References:

1. Robionson, H. Bio geography: ELBS: Mc Donald and Evana, London 1982.
2. Allce W.C and Schmidt, K.P. Ecological Animal Geography
3. Barry C: Bio geography-An Ecological and Evolutionary Approach, Cod Bloack Well, Oxford, 1977.
4. M.E. Hardy The Geography of Plants.
5. Peter A. Furley and Waleter W. Newey Geography of the Biosphere.

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., GEOGRAPHY - VI SEMESTER – ELECTIVE COURSE - III

(For the candidates admitted from the year 2016 - 2017 onwards)

Course Outcomes:

On the completion of this course the students will be able

- *To understand the process of urbanization and morphology of towns.*
- *To study the hierarchy of urban centres.*
- *To become familiar with the urban policies of Tamil Nadu and the functions of CMDA.*

URBAN GEOGRAPHY AND PLANNING

Unit- I Urban Geography: Scope and Content – Approaches – Patterns and Levels of Urbanization in Developed and Developing countries.

Unit- II Urban Centers: origin - Sites and Situation- Occupational Structure - Urban Morphology-Functional Classification of Towns (Ruso and Nelson) - Satellite towns.

Unit-III Hierarchy of Urban Centers- Rank-Size Rule – Central Place Theory – Rural – Urban Fringe – Urban Problems.

Unit-IV Need for Urban Planning: Contemporary Issues in Town Planning; Urban Development plans and Policies in India.

Unit-V Urban Planning and Policies in Tamil Nadu Master Plan of Chennai; CMDA and its Functions.

Reference:

1. Northam.R.M(1975) Urban Geography, John Wiley and Sons New York.
2. Carter.H.(1972) The study of Urban Geography, Edward Arnold London.
3. Majid Hussain Urban Geography
4. Coh Cheng Leong Human and Economic Geography.

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