BHARATHIDASAN UNIVERSITY

TIRUCHIRAPPALLI – 620 024

B.Sc. Geography

Curriculum Structure
&
Syllabus

(under CBCS)

(Applicable to the candidates admitted from the academic year 2014-15 onwards)

BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI – 620 024.

B.Sc. GEOGRAPHY – COURSE STRUCTURE UNDER CBCS

(For the candidates admitted from the academic year 2014-2015 onwards)

Eligibility : +2 pass with any group

Semester	Part	Course	Title	Instr Hours/ Week	Credit	Exam Hours	Marks		Total
							Int.	Extl	
I	I	Language Course – I (LC) Tamil*/Other Languages **#		6	3	3	25	75	100
	II	English Language Course - I (ELC)		6	3	3	25	75	100
	III	Core Course – I (CC)	Geomorphology - I	6	5	3	25	75	100
		Core Course – II (CC)	Major Practical – I Representation of Relief and Map Making	4	***	***	***	***	***
		First Allied Course –I (AC)	Statistics – I	5	3	3	25	75	100
		First Allied Course – II (AC)	Allied Practical – Statistics – II	3	***	***	***	***	***
	Total			**30**	**14**				**400**
II	I	Language Course – II (LC) Tamil*/Other Languages **#		6	3	3	25	75	100
	II	English Language Course – II (ELC)		6	3	3	25	75	100
	III	Core Course – II (CC)	Major Practical – I Representation of Relief and Map Making	2	3	3	40	60	100
		Core Course – III (CC)	Geomorphology - II	5	5	3	25	75	100
		First Allied Course – II (AC)	Allied Practical – Statistics - II	2	4	3	40	60	100
		First Allied Course – III (AC)	Statistics – III	5	3	3	25	75	100
	IV	Environmental Studies		2	2	3	25	75	100
		Value Education		2	2	3	25	75	100
	Total			**30**	**25**				**800**
III	I	Language Course – III (LC) – Tamil*/Other Languages ** #		6	3	3	25	75	100
	II	English Language Course - III (ELC)		6	3	3	25	75	100
	III	Core Course – IV (CC)	Climatology	6	5	3	25	75	100
		Core Course – V (CC)	Major Practical – II Climatic Diagrams and Weather Maps	3	***	***	***	***	***
		Second Allied Course – I (AC)	Cartography – I	5	4	3	25	75	100
		Second Allied Course – II (AC)	Allied Practical – Cartography - II	2	***	***	***	***	***
	IV	Non Major Elective I - for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto +2 but opt for other languages in degree programme	Remote Sensing	2	2	3	25	75	100
	Total			**30**	**17**				**500**

IV	I	Language Course –IV (LC) - Tamil*/Other Languages ** #		6	3	3	25	75	100
	II	English Language Course – IV (ELC)		6	3	3	25	75	100
	III	Core Course – V (CC)	Major Practical – II Climatic Diagrams and Weather Maps	2	4	3	40	60	100
		Core Course – VI (CC)	Oceanography	5	5	3	25	75	100
		Second Allied Course - II (AC)	Allied Practical – Cartography - II	2	4	3	40	60	100
		Second Allied Course – III (AC)	Cartography – III	5	2	3	25	75	100
	IV	Non Major Elective II	Basics of GIS	2	2	3	25	75	100
		Skill Based Elective I		2	4	3	25	75	100
	Total			**30**	**27**				**800**
V	III	Core Course – VII (CC)	Geography of Resources - I	5	5	3	25	75	100
		Core Course – VIII (CC)	World Regional Geography	5	5	3	25	75	100
		Core Course – IX (CC)	Human Geography	4	4	3	25	75	100
		Core Course – X (CC)	Major Practical – III Projection and Surveying	3	***	***	***	***	***
		Core Course – XI (CC)	Major Practical – IV Interpretation of Toposheets, Aerial Photos and Satellite Images	3	***	***	***	***	***
		Major Based Elective – I (EC)	Geography of India	4	4	3	25	75	100
	IV	Skill Based Elective – II		2	4	3	25	75	100
		Skill Based Elective – III		2	4	3	25	75	100
		Soft Skills Development		2	2	3	25	75	100
	Total			**30**	**28**				**700**
VI	III	Core Course – X (CC)	Major Practical – III Projection and Surveying	4	4	3	40	60	100
		Core Course – XI (CC)	Major Practical – IV Interpretation of Toposheets, Aerial Photos and Satellite Images	4	4	3	40	60	100
		Core Course – XII (CC)	Geography of Resource - II	6	5	3	25	75	100
		Core Course – XIII (CC)	Geography of Tamil Nadu	6	5	3	25	75	100
		Major Based Elective II (EC)	Bio-Geography	5	5	3	25	75	100
		Major Based Elective III (EC)	Disaster Studies	4	4	3	25	75	100
	V	Extension activities		-	1	-	-	-	-
		Gender Studies		1	1	3	25	75	100
	Total			**30**	**29**				**700**
	Grand Total			**180**	**140**				**3900**

Note:

	Internal Marks	External Marks
1. Theory	25	75
2. Practical	40	60

3. Separate passing minimum is prescribed for Internal and External marks

The passing minimum for CIA shall be 40% out of 25 marks [i.e. 10 marks]

The passing minimum for University Examinations shall be 40% out of 75 marks [i.e. 30 marks]

* for those who studied Tamil upto +2 (Regular Stream)

** Syllabus for other Languages should be on par with Tamil at Degree level

those who studied Tamil upto 10^{th} or +2, but opt for other languages in degree level under Part I should study special Tamil in Part IV

*** Examination at the end of the next semester.

Extension activities shall be outside the instruction hours.

SEMESTER - I / PART – III / CORE COURSE - I

GEOMORPHOLOGY - I

Unit I

Origin of the Earth: Nebular theory, Tidal hypothesis, Binary star theory and Big bang theory - Structure of the Earth – Interior of the Earth.

Unit II

Classification of rocks: igneous, sedimentary and metamorphic rocks - Earth movements: Exogenetic and Endogenetic – Folds and Faults.

Unit III

Volcanoes and earthquakes: types and distribution – Wegner's Continental drift – Isostasy.

Unit IV

Major landforms: mountains, plateaus and plains - types and distribution.

Unit V

Weathering – mass wasting - types and resultant features – Soil: Formation, characteristics, types and distribution - soil profile.

Reference Books

1. Balbir Singh Negi, Physical Geography, S.J. Publications Meerut, 1993.
2. Das Gupta, A and Kapoor, A.N, Principles of Physical Geography, S.C. Chand & Company Ltd, 2001.
3. Strahler A.H and Strahler A.N – Modern Physical Geography, New York, John Wiley and Sons. INC, 1975.
4. Robinson H., Physical Geography, Mac Donald and Evans Ltd, 1971.
5. Thorn Bury. D., - Principles of Geomorphology, Wiley Eastern Ltd, New Delhi, 1984.
6. Lobeck. A.K, An Introduction to the study of Landscapes, Mc Graw –Hill Book Company, 1939.
7. Sharma. V.K., Earth Surface Process and forms, Tata Mc Graw – Hill Publishing Company Ltd, New Delhi, 1986.

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SEMESTER - I / PART – III / CORE COURSE – II

MAJOR PRACTICAL – I

REPRESENTATION OF RELIEF AND MAP MAKING

Unit I

Maps and scales – Types – Construction and uses.

Unit II

Measurements of distances and areas.

Unit III

Enlargement and reduction – Map combination.

Unit IV

Directions and bearings – Types of North.

Unit V

Representation of relief – Spot heights and bench marks – Contour diagrams of relief features – Interpolation of contours.

Reference Books

1. Gopal Singh – Map work and practical geography, Vikas Publishing House.
2. Ishtiaq – Practical geography, published by Jawahar publishing and distributors, 1994.
3. Monkhouse. F.J., and H.R Wilkinson – Maps and Diagrams, B.I publications , 1952.
4. Zamir Alvi – A text book of Practical Geography, Vikas Publishing house Pvt ltd, 1994.
5. Zulfequar Ahmad Khan. M.D., Text boom of Practical Geography, concept publishing company, New Delhi, 1998.

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SEMESTER – I / PART – III / FIRST ALLIED COURSE –I

STATISTICS – I

Unit-1:

Statistics – Definition – Nature and Scope – Importance and Uses – Graphs: Simple and Compound Bar and Line – Diagrams : Pie, Doughnut and Scatter – Histograms – Curve: Polygon, O give and Cumulative Percentage curve.

Unit-2:

Measures of Central Tendency – Mean: Arithmetic, Weighted, Harmonic, Geometric, Median, Mode and Quartiles from grouped and ungrouped data. Measures of Dispersion – Range, Variance, Mean deviation, Quartile deviation, and Standard deviation – Coefficient of Mean Deviation, Coefficient of Variations – Skewness and Kurtosis.

Unit-3:

Correlation – Karl Pearson's Correlation Coefficient – Spearman's Rank Correlation – Significance of 't' Test on Correlation - Regression lines and residuals

Unit-4:

Frequency – Cumulative Frequency – Frequency Distribution – Lorenz Curve – Ternary Diagram – Weaver's Combination Index.

Unit-5:

Bivariate Scatter Diagram and Regression Trend Line, Time Series – Moving average, Semi Average, Least Square Method and drawing of line of best fit.

Reference Books:

1. Gupta, C.B.(1978): An introduction to Statistical Methods, Vikas Pub.House,New Delhi.
2. Elhance, D.N. (1972): Fundamentals of Statistics, Kitab Mahal, Allahabad.
3. Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers (3rd Ed.), The Guilford Press.
4. King, L.J. (1991): Statistical Analysis in Geography. Prentice Hall, Englewood Cliff N.J.
5. Cole, J.P. & King, C.A.M. (1968): Quantitative Techniques in Geography. John Wiley & sons Inc.New York.
6. Gregory, S. (1978): Statistical Methods and the Geographer (4th Ed.), Wiley.
7. Hammond, R., and McCullagh, P.S. (1978): Quantitative Techniques in Geography: An Introduction (2nd Ed.), Oxford University Press, USA.
8. Kothari, C.R. (1996): Research Methodology: Methods and Techniques, Vishwas Prakashan, New Delhi.
9. Mahmood, A. (1977): Statistical Methods in Geographical Studies, Rajesh Pub, New Delhi.
10. Mishra, R.P. (1991): Research Methodology in Geography, Concept Publising, New Delhi.

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SEMESTER – I / PART – III / FIRST ALLIED COURSE – II (PRACTICAL)

STATISTICS – II

Unit-1:

Representation of Geographic Data – Graph: Bar, Line and Trend Line – Diagram: Scatter, Pie, Histograms in MS – EXCEL.

Unit-2:

Computation of Statistical Parameters: Mean, Weighted Mean, Median, Mode, Variance, Mean deviation, Quartile Deviation and Standard deviation.

Unit-3:

Correlation – Karl Pearson's Correlation Coefficient – Spearman's Rank Correlation – Linear Regression.

Unit-4:

Testing of Hypothesis: Student's t- test, F-test and z-test.

Unit-5:

Problems on Probability, Probability Distributions, Simple Random Sampling and Stratified Random Sampling.

Reference Books :

1. Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers (3rd Ed.), The Guilford Press.
2. Gregory, S. (1978): Statistical Methods and the Geographer (4th Ed.), Wiley,
3. Maguire, D.J. (1989): Computers in Geography, Longman, London.
4. Mahmood, A. (1977): Statistical Methods in Geographical Studies, Rajesh Pub, New Delhi.
5. Mather, P.M. (1991): Computer Applications in Geography, Wiley, New York, USA.
6. McFedries, P. (2007): Formulas and Functions with Microsoft Office Excel 2007, Que/Pearson, Indianapolis, Indiana, USA.
7. Miller, M. (2007): Absolute beginner's guide to computer basics (4th Ed.), Que/Pearson, Indianapolis, Indiana, USA.
8. Monmonier, M.S. (1982): Computer Assisted Cartography: Principles and Prospects, Prentice Hall.
9. Sarkar, A. (2009): Practical Geography: A Systematic Approach, Orient BlackSwan, Hyderabad, India.

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SEMESTER - II / PART – III / CORE COURSE – III

GEOMORPHOLOGY - II

Unit I

Denudation – Agents - Work of river – Erosional and Depositional landforms - river development stages – drainage pattern - river capture - rejuvenation.

Unit II

Glacial Processes and Landforms – Continental and Mountain glaciers - Erosional and Depositional landforms.

Unit III

Wind – Erosional and Depositional landforms in arid regions.

Unit IV

Underground water and karst topography – Erosional and Depositional landforms in limestone regions.

Unit V

Waves – Erosional and Depositional features – Coast – Johnson's classification of coast.

Reference Books

1. Balbir Singh Negi, Physical Geography, S.J. Publications Meerut, 1993.
2. Das Gupta, A., and Kapoor, A.N, Principles of Physical Geography, S.C. Chand & Company Ltd, 2001.
3. Strahler A.H and Strahler A.N – Modern Physical Geography, New York, John Wiley and Sons. INC, 1975.
4. Robinson .H., Physical Geography, Mac Donald and Evans Ltd, 1971.
5. Thorn Bury. D., - Principles of Geomorphology, Wiley Eastern Ltd, New Delhi, 1984.
6. Lobeck. A.K., An Introduction to the study of Landscapes, Mc Graw –Hill Book Company, 1939.
7. Sharma. V.K., Earth Surface Process and forms, Tata Mc Graw – Hill Publishing Company Ltd, New Delhi, 1986.

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SEMESTER – II / PART – III / FIRST ALLIED COURSE –III

STATISTICS – III

Unit-1:

Probability – Law of Multiplication – Probability Distribution – Discrete and Continuous – Binomial Distribution, Normal Distribution and Properties of normal curve.

Unit-2:

Comparisons and Hypothesis – Construction of Hypothesis – Parametric Tests – Student's t- test, F-test and z-test – Properties and Applications – Non-parametric test.

Unit-3:

Sources of Data – Nature of Statistical Data – Methods of Data Collection – Processing and Analysis of Data – Sampling – Fundamentals – Sample size and Estimation from Samples.

Unit-4:

Sampling Techniques – Probability Sampling – Simple Random Sampling and Stratified Random Sampling – Purposive Sampling – Significance of Statistical Techniques in Geography.

Unit-5:

Research – Objectives and Types – Research Approaches – Significance of Research – Selection of Research Topic and Study Area – Research Processes – Research Problem and Research Design – Research Report Writing.

Reference Books:

1. Gupta, C.B.(1978): An introduction to Statistical Methods, Vikas Pub. House, New Delhi.
2. Elhance, D.N. (1972): Fundamentals of Statistics, Kitab Mahal, Allahabad.
3. Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers (3rd Ed.), The Guilford Press.
4. King, L.J. (1991): Statistical Analysis in Geography. Prentice Hall, Englewood Cliff N.J.
5. Cole, J.P. & King, C.A.M. (1968): Quantitative Techniques in Geography. John Wiley & sons Inc.New York.
6. Gregory, S. (1978): Statistical Methods and the Geographer (4th Ed.), Wiley.
7. Hammond, R., and Mc Cullagh, P.S. (1978): Quantitative Techniques in Geography: An Introduction (2nd Ed.), Oxford University Press, USA.
8. Kothari, C.R. (1996): Research Methodology: Methods and Techniques, Vishwas Prakashan, New Delhi.
9. Mahmood, A. (1977): Statistical Methods in Geographical Studies, Rajesh Pub, New Delhi.
10. Mishra, R.P. (1991): Research Methodology in Geography, Concept Publising, New Delhi.

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SEMESTER - III / PART – III / CORE COURSE – IV

CLIMATOLOGY

Unit I

Atmosphere – origin, composition and structure - Insolation – convection – conduction – radiation - heat balance.

Unit II

Temperature – factors affecting distribution - diurnal- seasonal- horizontal and vertical - normal lapse rate – temperature inversion - Air pressure – pressure gradient – diurnal and seasonal changes – pressure distribution – vertical and horizontal.

Unit III

Wind – controlling factors - general circulation – Planetary wind belts – seasonal winds – monsoon: origin and characteristics - local winds – El Nino – La Nina.

Unit IV

Humidity: types and measurements - Evaporation – Condensation – Clouds: types – Precipitation – forms – types - Air masses – fronts – tropical and temperate cyclones - thunderstorms - tornado – jet streams.

Unit V

Climatic classification – Koppen's and Thronthwaite's classifications - Weather forecasting methods – benefits of forecasting.

Reference Books

1. Lal. D.S., Climatology, Chatianya Publishing House, Allahabad, 1990.
2. Howard J. Chritchfield, General Climatology, Prentice – Hall of India Pvt Ltd, 1987.
3. Glen. T.Trewartha and Lyes H.Horn An Introduction to Climate, International student Edition, Mc Graw Hill International Book Company, 1980.
4. Patterson – Climatology.
5. Barry & Chorley – Atmosphere, weather and climate – Methuen 1968.

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SEMESTER - III / PART – III / CORE COURSE – V

MAJOR PRACTICAL – II

CLIMATIC DIAGRAMS AND WEATHER MAPS

Unit I

Diagrammatic representation of climatic data – line and bar diagrams – Construction and uses.

Unit II

Hythergraph, Climograph and Climatographs – Construction and uses.

Unit III

Wind roses diagram and Ergo graph - Construction and uses.

Unit IV

Rainfall Dispersion diagrams - Construction and uses.

Unit V

Weather symbols - station model - weather map interpretation.

Reference Books

1. M. Ishtiaq- Practical Geography-published by Jawahar publishers and Distributors-1994.
2. F.J. Monkhouse and H.R. Wilkinson-Maps and Diagrams-B.I.Publications-1952.
3. MD.Zulfequar Ahmad Khan-Text Book of Practical Geography-Concept Publishing Company, New Delhi-1998.
4. Gopal singh-Map work and practical geography- Vikas publishing House pvt.Ltd-1996.
5. R.L Singh – Elements of Practical Geography, Kalyani publishers, 1979.

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SEMESTER - III / PART – III / SECOND ALLIED COURSE – I

CARTOGRAPHY - I

Unit I

Nature, Scope and Content of cartography – History of cartography - Branches of cartography.

Unit II

Maps: Classification of maps - Uses of maps – Limitations.

Unit III

Map scale – Types: Plain Linear, Statement, Diagonal and comparative - Representative Fraction - Uses.

Unit IV

Shape, size and direction dimension of the earth – plane, spherical and rectangular systems – latitudes and longitudes – International Date Line – time zones – direction.

Unit V

Map Projections: general principles and classification - Cylindrical, Conical and Zenithal projections – Choice of map projections.

Reference Books

1. Misra. R.P and A,Ramesh – Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000.
2. Erwin and Raisz – Principles of Cartography, Mc Graw Hill Book Company 1962.
3. Robinson.H.,Elements of Cartograhphy, John Wiley and Son INC,1960.
4. Monkhouse – Map and diagrams – methuan 1971.
5. RC Singh – Elements of Practical Geography – Students to friends, Allahabad 1968.

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SEMESTER - III / PART – III / SECOND ALLIED COURSE – II (PRACTICAL)

CARTOGRAPHY - II

Unit I

SOI Toposheet layout and numbering – 2 inch to 1 mile, 1 inch to 1 mile, 1 inch 4 miles, 1: 250,000, 1:50,000, 1: 25,000 and OSM series – Conversion.

Unit II

Latitude, longitude, distance and time – Latitude and distance – Longitude and time – International date line.

Unit III

Drawing conventional signs and symbols of SOI toposheets, British Ordnance survey sheets – US topo sheets – Comparison.

Unit IV

Drawing International Beaufort Notations – Weather elements.

Unit V

Map symbolization – qualitative and quantitative symbols of point, line and area.

Reference Books

1. Misra. R.P and A,Ramesh – Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000.
2. Erwin and Raisz – Principles of Cartography, Mc Graw Hill Book Company 1962.
3. Robinson.H.,Elements of Cartograhphy, John Wiley and Son INC,1960.
4. Monkhouse – Map and diagrams – methuan 1971.
5. RC Singh – Elements of Practical Geography – Students to friends, Allahabad 1968.

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SEMESTER - III / PART – IV / NON-MAJOR ELECTIVE – I

REMOTE SENSING

Unit I

Principles of remote sensing – history – recent trends.

Unit II

EMR – Electro-magnetic spectrum – Energy interactions with atmosphere and earth surface features.

Unit III

Platforms – Types – Sensors – active and passive – image resolutions.

Unit IV

Aerial photographs – Types – Elements of interpretation - uses of aerial photographs.

Unit V

Satellite images – Types – Visual image interpretation – Applications.

Reference Books

1. C.S.Agarwal & P.K.Grag – Text Book of Remote Sensing – Wheeler Publishing 2000.
2. Lillesend TM & Kiefer R.W – Remote Sensing & Image Interpretation – John Wiley & sons, New York.
3. Campbell. James B.I. Introduction to Remote Sensing – The Guild Press, New York.
4. Curran – Fundamentals of Remote Sensing – Longman, London.
5. Luedev D.R. Aerial Photographic Interpretation Mc. Graw Hill Company, New York.

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SEMESTER - IV / PART – III / CORE COURSE – VI

OCEANOGRAPHY

Unit I

Distribution of Land and sea – Surface configuration of the ocean floor: continental shelf, continental slope, abyssal plain, mid-oceanic and oceanic trenches - Relief of Indian, Atlantic and Pacific Oceans.

Unit II

Temperature – Process of heating and cooling **-** Controlling factors - Distribution - Salinity- Controlling factors – Distribution.

Unit III

Circulation of oceanic waters: Waves, Tides and Currents - Currents of Indian, Atlantic and Pacific Oceans.

Unit IV

Marine resources: Coral reef – Types and Distribution – Minerals – Other marine resources.

Unit V

Marine deposits: Sources – Classification – Marine Sediments – Distribution of Sediments.

Reference Books

1. Lal. D.S., Oceanography, Chatianya Publishing House, Allahabad, 1990.
2. Grant Gross – Oceanography, Prentice – Hall International Editions, 1987.
3. Sharma.R.C., and M.Vital – Oceanography for Geographers, Chatianya publishing house, Allahabad, 1987.
4. Paul R. Pinet – Oceanography, West Publishing Company, 1992.

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SEMESTER - IV / PART – III / SECOND ALLIED COURSE – III

CARTOGRAPHY – III

Unit I

Map symbolization – Point, line and area symbols – Qualitative and Quantitative representation.

Unit II

Map compilation and generalization - Map design and layout – Principles and constraints – Formats of map.

Unit III

Lettering – style, form and size – Mechanics of lettering – Positioning of letters.

Unit IV

Map production and reproduction – Methods – Instruments – duplicating process – printing process.

Unit V

Computer assisted cartography – basic concepts – components - Applications.

Reference Books

1. Misra. R.P and A,Ramesh – Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000.
2. Erwin and Raisz – Principles of Cartography, Mc Graw Hill Book Company 1962.
3. Robinson.H.,Elements of Cartograhphy, John Wiley and Sons INC,1960.
4. Monkhouse – Map and diagrams – methuan 1971.
5. RC Singh – Elements of Practical Geography – Students to friends, Allahabad 1968.

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SEMESTER - IV / PART – IV / NON-MAJOR ELECTIVE – II

BASICS OF GIS

Unit I

GIS – definition – history – components: hardware – software – data – people.

Unit II

Geographic data – point, line and area – spatial data and non spatial data - Georeferencing.

Unit III

Data model – raster and vector – data conversation – digitization – errors.

Unit IV

GIS analysis: Measurements - query – overlay – buffer analysis.

Unit V

GNSS/GPS - Definition – history – segments – uses.

Reference Books

1. Ball D.R. – Babbage – Geographic Information System for Defence Application – Pergamum Press – Australia.
2. Barrette & Burough – Principles of GIS for Land Resource Assessment – Clarendon Press – Oxford.
3. Bidhanesh Misra – Geographic Information System & Economic Development.
4. Ian Heywod, Sarah Cornelines, An Introduction to Geographical Information System I Addison – Wesley, Longman Ltd, 2000.

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SEMESTER - V / PART – III / CORE COURSE – VII

GEOGRAPHY OF RESOURCES - I

Unit I

Concept of resources, resource elements – soil, water, land, forest, agriculture, minerals and energy – renewable and non-renewable resources.

Unit II

Land: land use types – conservation – Soil: erosion and conservation

Unit III

Water: Uses - irrigation and transport – Problems – Conservation – Fisheries – Major fishing grounds of the world – Problems.

Unit IV

Natural vegetation: Forest – Types – Products - Conservation.

Unit V

Grassland: Types – Distribution - Livestock.

Reference Books

1. Prithvish Roy & Somnath mukerjee – Economic geography an appraisal of resources, new central book agency, culcutta - 700 009.
2. V.K. Gupta – Economic and Commercial Geography, Sultan Chand and Sons, 1977.
3. S.K. Sadhukhan – Economic Geography an Appraisal of resources, S.Chand and company Ltd.-1982.
4. A.Das Gupta – Economic and Commercial Geography, Mukhrjee and Co. Pvt.Ltd.-1978.
5. M.C.Agarwal – Commercial Geography, Himalaya Publishing House, 1981.
6. B.S.Negi – Economic and Commercial Geography of the World, S.Chand and Co.Ltd. 1980.

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SEMESTER - V / PART – III / CORE COURSE – VIII

WORLD REGIONAL GEOGRAPHY

Unit I

Asia: Physical, economic and demographic set-up - Regional studies of South, South East, East West and Central Asia.

Unit II

Europe: Physical, economic and demographic set-up - Regional studies of British Isles, New South Wales, North Ireland, European Union, Eastern Europe and Mediterranean Realm.

Unit III

North and South America: Physical, economic and demographic set-up - Regional Studies of North America, Latin America, South America, New England, Brazil, Chile and Peru.

Unit IV

Australia and New Zealand: Physical, economic and demographic set-up – Regional studies of Australia, New Zealand and Pacific Islands.

Unit V

Contemporary issues in world geography: globalization, W.T.O. and World Summit, UN Environment programmes (UNEP), UN Development Programmes, Population, environment and sustainable development.

Reference Books

1. Heintzelman and Highsmith – World Regional Geography, Prentice – Hall, India – 1965.
2. Don R.Hoy – Geography and Development a World Regional Approach, Collier Mac Millan Publisher – 1978.
3. Goh-Cheng leong– Certificate Human and Economic Geography, Oxford University Publications – 1995.
4. Jackson, R.H. and Hudman, L.E.: World Regional Geography: Issues for Today. John Wiley, New York, 1991.
5. Cole, J.: A Geography of the World's Major Regions, Routledge, London, 1996.
6. Ward, P.W. and Miller, A.: World Regional Geography: A Question of Place. John Wiley, New York, 1989.

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SEMESTER - V / PART – III / CORE COURSE – IX

HUMAN GEOGRAPHY

Unit I

Scope and content, definition – concept of determinism, Possiblism and Probabilism – Recent trends in human geography - branches in human geography.

Unit II

World cultural regions – Food gatherers – Hunters – Cultivators – Nomads - Levels of culture in twentieth century.

Unit III

Human Races – Classification – Distribution – Religion – Major types and distribution.

Unit IV

Population – Spatial pattern of distribution – growth – problems of over population and under population – Malthus Theory of Population – Migration: Types, Causes and consequences.

Unit V

Rural and Urban settlement – factors – types - growth – Urban morphology and functional classification of towns – Urbanization – Trends in World and India.

Reference Books:

1. Majid Husain - Human Geography-Rawat Publications 1994.
2. Gillian C.Morgan – Human and Economics Geography, Oxford University Publications 1999.
3. Aime Vincent Perpillou - Human Geography, Longman Group limited London 1977.
4. C.Daryll Forde - Habitat, Economy and Society, Methuen Publishers 1977.
5. Chanda R.C. - Popualtion Geography, Kalyani Publishers.
6. Ray-M.Northam - Urban Geography, John Wiley and sons Publications – 1979.

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SEMESTER - V / PART – III / CORE COURSE –X

MAJOR PRACTICAL - III

PROJECTION AND SURVEYING

Unit I

Construction of map projections (graphical methods only) - Zenithal (polar case only), Cylindrical projection and Conical projections - Properties and Uses.

Unit II

Polyconic – One standard and two standard parallel – Bonne's projection - Sinusoidal and Mollweide's projections – Properties and uses.

Unit III

Principles of survey – chain, prismatic compass and plane table survey

Unit IV

Indian Clinometer and Dumpy level survey

Unit V

Electronic and GNSS**/**GPS survey.

Reference Books

1. M. Ishtiaq- Practical Geography-published by Jawahar publishers and Distributors-1994.
2. F.J. Monkhouse and H.R. Wilkinson-Maps and Diagrams-B.I.Publications-1952.
3. MD.Zulfequar Ahmad Khan-Text Book of Practical Geography-Concept Publishing Company, New Delhi-1998.
4. Gopal singh-Map work and practical geography- Vikas publishing House pvt.Ltd-1996.
5. R.L Singh – Elements of Practical Geography, Kalyani publishers, 1979.

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SEMESTER - V / PART – III / CORE COURSE –XI

MAJOR PRACTICAL - IV

INTERPRETATION OF TOPOSHEETS, AERIAL PHOTOS AND SATELLITE IMAGES

Unit I

Interpretation of SOI Topographic sheets – physical and cultural details.

Unit II

Interpretation of NATMO maps – Cartographic appreciation.

Unit III

Interpretation of Ordinance survey maps and US topo maps.

Unit IV

Aerial photographs – Stereo vision - Visual elements – Tracing physical and cultural details - Interpretation.

Unit V

Satellite images – Tracing physical and cultural details – Preparation of Landuse /land cover maps - Interpretation.

Reference Books

1. Dr.M. Kudrat – Digital Remote Sensing concept publishing company, NewDelhi – 1998.
2. K.K. Rampal – Handbook of Aerial Photography and Interpretation – concept publishing company, NewDelhi-1999.
3. R.K.Banerjee Bireswar Banerjee – Remote Sensing Techniques for Regional Development – Ashok Kumar Mittal Concept Publishing Company – 2000.
4. R.P.Misra, A. Ramesh – Fundamentals of cartography – concept publishing company – 2000.
5. Paul. J. Curran-Principles of Remote Sensing –Longman Group UK Ltd. – 1985.

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SEMESTER - V / PART – III / MAJOR BASED ELECTIVE – I

GEOGRAPHY OF INDIA

Unit I

Location – continent of unity in diversity- relief – drainage – climate -soil – types and distribution.

Unit II

Natural vegetation: types and distribution - Irrigation: types – canal – tank - well – Multi-purpose projects.

Unit III

Agriculture: types - major crops: rice, wheat, millets, cotton, oilseeds, tea, coffee and jute – Agricultural regions - problems of Indian agriculture – Animal husbandry.

Unit IV

Minerals: coal, oil, iron ore, manganese, bauxite, copper – Power resources: hydel, thermal, wind and atomic - Industries: iron and steel, cement, textile, sugar , paper, ship building, small scale and cottage industries.

Unit V

Population: growth – distribution - density - problems – Unbanization - Transport - Trade.

Reference Books

1. Ranjit Tirtha and Gopal Krishnan – Geography of India, Rawat Publications, Jaipur-NewDelhi-1996.
2. Prithvish Nag and Smita Sengupta- Geography of India, Concept Publishing Company – New Delhi-1999.
3. C.B. Mamoria- Geography of India, Shivalal Agarwala & Company - Agra-1975.
4. R.L. Singh – India A Regional Geography, National Geographical Society of India, 1971.

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SEMESTER - VI / PART – III / CORE COURSE – XII

GEOGRAPHY OF RESOURCE - II

Unit I

Agriculture: types – intensive, extensive, wet and dry, mixed farming, subsistence farming, commercial farming and plantation agriculture.

Unit II

Energy: coal, oil, water and nuclear power – non- conventional – solar and wind.

Unit III

Minerals: ferrous and non-ferrous – iron ore, manganese, mica, copper and bauxite.

Unit IV

Major Industries: locational factors - iron and steel, automobile, shipbuilding and textile industries.

Unit V

Transport: land, water and air – Trade: Internal and International – Trading blocks.

Reference Books

1. Prithvish Roy & Somnath mukerjee – Economic Geography - An Appraisal of Resources, New Central Book Agency, Culcutta - 700 009.
2. V.K. Gupta – Economic and Commercial Geography, Sultan Chand and Sons, 1977.
3. S.K. Sadhukhan – Economic Geography an Appraisal of resources, S.Chand and company Ltd.-1982.
4. A.Das Gupta – Economic and Commercial Geography, Mukhrjee and Co. Pvt. Ltd. - 1978.
5. M.C.Agarwal – Commercial Geography, Himalaya Publishing House, 1981.
6. B.S.Negi – Economic and Commercial Geography of the World, S. Chand and Co. Ltd. 1980.

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SEMESTER - VI / PART – III / CORE COURSE – XIII

GEOGRAPHY OF TAMIL NADU

Unit I

Location – Relief – Drainage – Climate - Soil.

Unit II

Natural Vegetation – Irrigation: types – multi-purpose projects.

Unit III

Agriculture: Rice – Cotton – Sugarcane – Coffee - Tea – Agricultural regions.

Unit IV

Minerals: Iron – Coal – Bauxite – Industries: textile Industries – sugar Industry – cement Industry – Industrial regions.

Unit V

Population: Growth, Distribution, Density and Problems – Urbanization - Transport - Trade.

Reference Books

1. R.L. Singh – India Regional Geography – VBS publishers and Distributors Ltd., New Delhi – 1995.
2. Dr. A. Ramesh and P.S. Tiwari – Basic Resource Atlas of TamilNadu, University of Madras -1983.
3. Poduval R.N – Foodgrain Economy of TamilNadu Problems and Prospects, Emerald Publishers, Chennai – 1987.
4. Velappan D – Economic Development of TamilNadu – Emeral Publishers, Chennai – 1986.
5. Ranjet Tirtha & Gopala Krishnan – Geography of India – Rawat Publications, Jaipur – 1996.
6. Prithvish Nag & Smitha Sengupta – Geography of India – Concept publishing company – New Delhi – 1999.
7. Gopal Singh – Geography of India – Athma Ram & Sons, Delhi – 1988.

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SEMESTER - VI / PART – III / MAJOR BASED ELECTIVE – II

BIO-GEOGRAPHY

Unit I

Definition, scope and significance of biogeography – Basic ecological concepts and principles - Ecosystem: Types, Components and Functions – Biome: Types , Ecotone and Community – Bio diversity.

Unit II

Origin of fauna and flora – Plant and animal evolution through geological times - Distribution of plant life on earth and its relation to soil types.

Unit III

Problem of extinction of plant and animal life – habitat decay and their conservation – Process of desertification – its consequenences and management.

Unit IV

Effluents: Types - Sources - Effects on fresh water biology – Eutrophication - Management practices (special reference to India).

Unit V

Ecological regions of Himalayas and Western Ghats - Plant and animal life – Interrelationships - Problems – Conservation and management measures.

REFERENCE BOOKS

1. Robinson – Biogeography – ELBS Mc Donald and Evans London, 1982.
2. L.G. Simons – Biogeographically process – Allen and Unwell, London.
3. C Barry – Cox, Black Well - Biographical – an Ecological Evolutionary approach - Oxford 1977.
4. B, Seddon – Biogeography – Duck worth, London 1971.

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SEMESTER - VI / PART – III / MAJOR BASED ELECTIVE – III

DISASTER STUDIES

Unit I

Environmental hazards: Types of disasters - Earthquake, Volcanoes, Landslides, Cyclones, Tsunami and Floods – effects.

Unit II

Drought: Types – Factors influencing drought – Desertification Processes - Ozone layer depletion – Global warming – Greenhouse effect – Acid rain – Snow melt – Sea level rise – related problems.

Unit III

Nuclear, Chemical, Industrial, Oil spill and Mining Disasters – Consequences.

Unit IV

Epidemics – Ecological degradation – Forest fire - bio-diversity loss - Population extinction.

Unit V

Disaster Management – Prevention, Mitigation and Preparedness – Role of State and Central Governments – NGOs.

Reference Books

1. Frampton C., Hardwick and Mc Naught - Causes, Consequences and Management of Disasters, Hodder and Stoughton, London.
2. Robinson H. – Biogeography, Plymouth, MacDonald and Evans Ltd.,
3. Keith S., Environmental Hazards: Assessing Risk and Reducing Disaster, Routeledge, London.
4. Sharma P.D. – Ecology and Environment, Meerut, Rasogi Publications.
5. Disaster Management in India - A Status Report, National Disaster Management Division, Ministry of Home Affairs, Government of India, New Delhi.
6. Reid, D: Sustainable Development, Earthscan Pub. London.

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SEMESTER – I / PART – III / FIRST ALLIED COURSE – I

STATISTICS – I

Unit-1:

Statistics – Definition – Nature and Scope – Importance and Uses – Graphs: Simple and Compound Bar and Line – Diagrams : Pie, Doughnut and Scatter – Histograms – Curve: Polygon, O give and Cumulative Percentage curve.

Unit-2:

Measures of Central Tendency – Mean: Arithmetic, Weighted, Harmonic, Geometric, Median, Mode and Quartiles from grouped and ungrouped data. Measures of Dispersion – Range, Variance, Mean deviation, Quartile deviation, and Standard deviation – Coefficient of Mean Deviation, Coefficient of Variations – Skewness and Kurtosis.

Unit-3:

Correlation – Karl Pearson's Correlation Coefficient – Spearman's Rank Correlation – Significance of 't' Test on Correlation - Regression lines and residuals

Unit-4:

Frequency – Cumulative Frequency – Frequency Distribution – Lorenz Curve – Ternary Diagram – Weaver's Combination Index.

Unit-5:

Bivariate Scatter Diagram and Regression Trend Line, Time Series – Moving average, Semi Average, Least Square Method and drawing of line of best fit.

Reference Books:

1. Gupta, C.B.(1978): An introduction to Statistical Methods, Vikas Pub.House,New Delhi.
2. Elhance, D.N. (1972): Fundamentals of Statistics, Kitab Mahal, Allahabad.
3. Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers (3rd Ed.), The Guilford Press.
4. King, L.J. (1991): Statistical Analysis in Geography. Prentice Hall, Englewood Cliff N.J.
5. Cole, J.P. & King, C.A.M. (1968): Quantitative Techniques in Geography. John Wiley & sons Inc.New York.
6. Gregory, S. (1978): Statistical Methods and the Geographer (4th Ed.), Wiley.
7. Hammond, R., and McCullagh, P.S. (1978): Quantitative Techniques in Geography: An Introduction (2nd Ed.), Oxford University Press, USA.
8. Kothari, C.R. (1996): Research Methodology: Methods and Techniques, Vishwas Prakashan, New Delhi.
9. Mahmood, A. (1977): Statistical Methods in Geographical Studies, Rajesh Pub, New Delhi.
10. Mishra, R.P. (1991): Research Methodology in Geography, Concept Publising, New Delhi.

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SEMESTER – I / PART – III / FIRST ALLIED COURSE – II (PRACTICAL)

STATISTICS – II

Unit-1:

Representation of Geographic Data – Graph: Bar, Line and Trend Line – Diagram: Scatter, Pie, Histograms in MS – EXCEL.

Unit-2:

Computation of Statistical Parameters: Mean, Weighted Mean, Median, Mode, Variance, Mean deviation, Quartile Deviation and Standard deviation.

Unit-3:

Correlation – Karl Pearson's Correlation Coefficient – Spearman's Rank Correlation – Linear Regression.

Unit-4:

Testing of Hypothesis: Student's t- test, F-test and z-test.

Unit-5:

Problems on Probability, Probability Distributions, Simple Random Sampling and Stratified Random Sampling.

Reference Books :

1. Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers (3rd Ed.), The Guilford Press.
2. Gregory, S. (1978): Statistical Methods and the Geographer (4th Ed.), Wiley,
3. Maguire, D.J. (1989): Computers in Geography, Longman, London.
4. Mahmood, A. (1977): Statistical Methods in Geographical Studies, Rajesh Pub, New Delhi.
5. Mather, P.M. (1991): Computer Applications in Geography, Wiley, New York, USA.
6. McFedries, P. (2007): Formulas and Functions with Microsoft Office Excel 2007, Que/Pearson, Indianapolis, Indiana, USA.
7. Miller, M. (2007): Absolute beginner's guide to computer basics (4th Ed.), Que/Pearson, Indianapolis, Indiana, USA.
8. Monmonier, M.S. (1982): Computer Assisted Cartography: Principles and Prospects, Prentice Hall.
9. Sarkar, A. (2009): Practical Geography: A Systematic Approach, Orient BlackSwan, Hyderabad, India.

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Semester – II / Part – III / First Allied Course –III

Statistics – III

Unit-1:

Probability – Law of Multiplication – Probability Distribution – Discrete and Continuous – Binomial Distribution, Normal Distribution and Properties of normal curve.

Unit-2:

Comparisons and Hypothesis – Construction of Hypothesis – Parametric Tests – Student's t- test, F-test and z-test – Properties and Applications – Non-parametric test.

Unit-3:

Sources of Data – Nature of Statistical Data – Methods of Data Collection – Processing and Analysis of Data – Sampling – Fundamentals – Sample size and Estimation from Samples.

Unit-4:

Sampling Techniques – Probability Sampling – Simple Random Sampling and Stratified Random Sampling – Purposive Sampling – Significance of Statistical Techniques in Geography.

Unit-5:

Research – Objectives and Types – Research Approaches – Significance of Research – Selection of Research Topic and Study Area – Research Processes – Research Problem and Research Design – Research Report Writing.

Reference Books:

1. Gupta, C.B.(1978): An introduction to Statistical Methods, Vikas Pub. House, New Delhi.
2. Elhance, D.N. (1972): Fundamentals of Statistics, Kitab Mahal, Allahabad.
3. Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers (3rd Ed.), The Guilford Press.
4. King, L.J. (1991): Statistical Analysis in Geography. Prentice Hall, Englewood Cliff N.J.
5. Cole, J.P. & King, C.A.M. (1968): Quantitative Techniques in Geography. John Wiley & sons Inc.New York.
6. Gregory, S. (1978): Statistical Methods and the Geographer (4th Ed.), Wiley.
7. Hammond, R., and Mc Cullagh, P.S. (1978): Quantitative Techniques in Geography: An Introduction (2nd Ed.), Oxford University Press, USA.
8. Kothari, C.R. (1996): Research Methodology: Methods and Techniques, Vishwas Prakashan, New Delhi.
9. Mahmood, A. (1977): Statistical Methods in Geographical Studies, Rajesh Pub, New Delhi.
10. Mishra, R.P. (1991): Research Methodology in Geography, Concept Publising, New Delhi.

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