

University of Kalyani



Department of Geography

SYLLABUS

M.A. / M.Sc. COURSE IN GEOGRAPHY

2 Year PG Course (Semester System with Credit and Course)

(With Effect From: 2021-2022)

Department of Geography

University of Kalyani

Kalyani, Nadia-741235, West Bengal

M.A. / M.Sc. COURSE IN GEOGRAPHY

SEMESTER II

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voice	Credit	Marks
GEO/CC/T-207	Population and Settlement Geography	Theory	10	40	4	50
GEO/CC/T-208	Research Methodology	Theory	10	40	4	50
GEO/CC/T-209	Cartography and Geoinformatics	Theory	10	40	4	50
GEO/CC/P-210	Remote Sensing and GIS	Practical	15	60	6	75
GEO/CC/P-211	Project using Remote Sensing and GIS	Practical	5	20	2	25
GEO/GEC/T-212	Elements of Geography (Open Course)	Theory	10	40	4	50
	Total		60	240	24	300

GEO: Geography, CC: Core Courses, T: Theory, P: Practical, GEC: Generic Elective Courses

SEMESTER-II

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/T-207	Population and Settlement Geography	Theory	10	40 (Semester-end Examination)	4	50

Unit-1: Changing scope and approaches to Population Geography; Population Geography as distinct from Demography

Unit-2: Sources of population data

Unit-3: Theories of population growth: Malthusian, Marxian, Neo-Malthusian

Unit-4: Factors controlling fertility, mortality and migration

Unit-5: Demographic Transition Model; Stable Population Growth and Equilibrium Population

Unit-6: Population policies – Pro and Anti Natal, Comparative study of population policies between India and China

Unit-7: Concept of Ekistics; Study on settlement hierarchies

Unit-8: Theories and models of settlement study: Central Place Theory, Rank-size Rule and concept of Primacy

Unit-9: Census categories of settlements in India; Rural-urban dichotomy and interaction

Unit-10: Types, pattern and segregation of rural settlements in India

Unit-11: Urbanization in India as multi-dimensional process; Urban Renewal in Indian context

Unit-12: Megalopolis and Ecumenopolis; Urban Green Space

Mode of Internal Evaluation: Class test

SEMESTER-II

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/T-208	Research Methodology	Theory	10	40 (Semester-end Examination)	4	50

Unit-1: Spectrum of Geographical Research and its approaches: Inductive and Deductive

Unit-2: Perspectives of Geographical Research: Objective and Subjective

Unit-3: Methodological orientation: Quantitative and Qualitative

Unit-4: Literature Review and identification of Research Gap

Unit-5: Identification of Research Problem

Unit-6: Preparation of Survey Questionnaire and Schedule

Unit-7: Formulation of Research Questions and Hypothesis Building

Unit-8: Methods of Sampling; Sample Size and Sample Design

Unit-9: Methods of data collection, acquisition and treatment of data

Unit-10: Research Ethics with special reference to Plagiarism

Unit-11: Abstract, Summary and Synopsis: their differences

Unit-12: Referencing style and preparation of Bibliography

Mode of Internal Evaluation: Preparation of Reference and Bibliography on any field of Geographical research

SEMESTER-II

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/T-209	Cartography and Geoinformatics	Theory	10	40 (Semester-end Examination)	4	50

Unit-1: Cartography and Geoinformatics: nature and scope

Unit-2: Concept of Geoid

Unit-3: Spheroids with special reference to Everest and WGS-84

Unit-4: Principles and properties of UTM Projection

Unit-5: Nature of EMR, EMS, and interaction with atmosphere and surface materials

Unit-6: Resolution of satellite data: types and significance

Unit-7: Remote Sensing Platforms and Sensors: Landsat, IRS and Sentinel series

Unit-8: Digital Image Processing – Radiometric correction, Georeferencing and mosaicking

Unit-9: FCC preparation and Image Classification

Unit-10: Digital Elevation Model: types and sources

Unit-11: Analytical Modelling in GIS, GNSS-GIS integration

Unit-12: Concept of bigdata, machine learning and deep learning

Mode of Internal Evaluation: Class test

SEMESTER-II

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/P-210	Remote Sensing and GIS	Practical	15	60 (Semester-end Examination = 50; Laboratory Note Book + Viva Voce = 5+5=10)	6	75

Unit-1: Basics of principles of visual interpretation of satellite images

Unit-2: Visual image interpretation: identification and delineation of physical features and cultural features from satellite images

Unit-3: Radiometric correction of satellite data

Unit-4: Georeferencing of maps and images

Unit-5: Preparation of Standard and Non-Standard FCC

Unit-6: Identification of landuse and landcover using digital numbers

Unit 7: Image classification (un-supervised and supervised)

Unit-8: Features digitization from maps and images

Unit-9: Analysis of relief characteristics using digital elevation model – relief; slope; aspect; contour

Unit-10: Extraction of drainage from DEM

Unit-11: Calculation of indices: NDVI and NDWI

Unit 12: Integration of spatial and non-spatial data and preparation of thematic maps using software

Mode of Internal Evaluation: Continuous assessment based on class/laboratory performance

SEMESTER-II

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/P-211	Project using Remote Sensing and GIS	Practical	5	20 (Project Report Writing = 15+ Viva Voce = 5)	2	25

- Each student will prepare an individual Project using Remote Sensing and GIS techniques following broad areas:

i) Physical Environment

ii) Socio-cultural Environment

Individual Project Report should not exceed 5000 words.

Mode of Internal Evaluation: Continuous assessment based on class/laboratory performance

SEMESTER-II

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/GEC/T-212	Elements of Geography (Open Course)	Theory	10	40 (Semester-end Examination)	4	50

Unit-1: Layering of the earth with special reference to crust

Unit-2: Fluvial processes and landforms

Unit-3: Indian Monsoon

Unit-4: Soil Profile development; physical and chemical properties of soil

Unit-5: Factors of population growth; Types of migration

Unit-6: Rural and urban settlements and its classification

Unit-7: Major economic activities- primary, secondary and tertiary

Unit-8: Types of agriculture

Unit-9: Indian industries: Iron and Steel and Tourism

Unit-10: Crisis, conservation and management of resource; Sustainable development

Unit-11: Concept and types of scale and map; Land survey instruments and their uses

Unit-12: Concept and classification of hazards; Natural hazards in West Bengal: Flood and Landslide

Mode of Internal Evaluation: Class test