

# 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 I

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/T-101	Geotectonics, Geomorphology and Hydrology	Theory	10	40	4	50
GEO/CC/T-102	Climatology	Theory	10	40	4	50
GEO/CC/T-103	Soil and Biogeography	Theory	10	40	4	50
GEO/CC/T-104	Geographical Thought	Theory	10	40	4	50
GEO/CC/P-105	Morphometric Analysis and Surveying	Practical	15	60	6	75
GEO/AECC/P-106	Perception Survey	Practical	5	20	2	25
	<b>Total</b>		<b>60</b>	<b>240</b>	<b>24</b>	<b>300</b>

GEO: Geography, CC: Core Courses, T: Theory, P: Practical, AECC: Ability Enhancement Compulsory Courses

## SEMESTER-I

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/T-101	Geotectonics, Geomorphology and Hydrology	Theory	10	40 (Semester-end Examination)	4	50

**Unit-1:** Plate tectonics as a unified theory of global tectonics

**Unit-2:** Tectonic geomorphology: Influence of tectonics in landscape evolution

**Unit-3:** Concepts in Geomorphology: spatial scale, temporal scale, systems, feedback, equilibrium and threshold

**Unit-4:** Catchment process and fluvial processes; Factors regulating entrainment, transportation and deposition

**Unit-5:** Adjustment of channel forms and patterns to morphodynamic variables

**Unit-6:** Coastal morphodynamic variables and their influence in evolution of landforms

**Unit-7:** Periglacial processes and landforms

**Unit-8:** Elements of slope and different approaches to study slope development

**Unit-9:** Concept of basin hydrology and run off cycle; Unit hydrograph, rating curve and their applications

**Unit-10:** Storm water and flood management: storm water management, design of drainage system, flood routing through channels and reservoir, flood control and reservoir operation

**Unit-11:** Drought management: drought assessment and classification, drought analysis techniques, drought mitigation planning

**Unit-12:** Methods of water conservation: rainwater harvesting and watershed management

**Mode of Internal Evaluation:** Class test

**SEMESTER-I**

<b>Paper Code</b>	<b>Paper</b>	<b>Theory/ Practical</b>	<b>Internal Assessment/ Evaluation</b>	<b>Examination/ Report/ Viva- Voce</b>	<b>Credit</b>	<b>Marks</b>
GEO/CC/T-102	Climatology	Theory	10	40 (Semester-end Examination)	4	50

**Unit-1:** Adiabatic and isothermal processes

**Unit-2:** Atmospheric stability and instability

**Unit-3:** Air-masses

**Unit-4:** Tri-cellular model

**Unit-5:** Atmospheric fronts: classification, formation and characteristics

**Unit-6:** Formation of precipitation; Rainmaking

**Unit-7:** El Nino, Southern Oscillation and La Nina

**Unit-8:** Monsoon: theories of its origin; Recent trends of monsoon in India

**Unit-9:** History of global climate change

**Unit-10:** Climate change: causes and evidences

**Unit-11:** Global warming: consequences and adaptations

**Unit-12:** Weather forecasting: short, medium and long range

**Mode of Internal Evaluation:** Class test

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**SEMESTER-I**

<b>Paper Code</b>	<b>Paper</b>	<b>Theory/ Practical</b>	<b>Internal Assessment/ Evaluation</b>	<b>Examination/ Report/ Viva- Voce</b>	<b>Credit</b>	<b>Marks</b>
GEO/CC/T-103	Soil and Biogeography	Theory	10	40 (Semester-end Examination)	4	50
<b>Unit-1:</b> Soil forming processes with reference to podsolisation, laterisation and calcification <b>Unit-2:</b> Soil system, soil taxonomy and world pattern of soils <b>Unit-3:</b> Soil nutrients <b>Unit-4:</b> Soil organisms <b>Unit-5:</b> Soil degradation and soil conservation <b>Unit-6:</b> Concept of integrated management of soil <b>Unit-7:</b> Plant ecology: concept of adaptation, succession and climax <b>Unit-8:</b> Dispersal and migration of animals: means and barriers <b>Unit-9:</b> Ecological footprint <b>Unit-10:</b> Biodiversity: issues and challenges <b>Unit-11:</b> International Biological Programme; Man and Biosphere Programme <b>Unit-12:</b> Wildlife conservation and management: sanctuaries, national parks and biosphere reserves with reference to India						
<b>Mode of Internal Evaluation:</b> Class test						

## SEMESTER-I

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/T-104	Geographical Thought	Theory	10	40 (Semester-end Examination)	4	50

**Unit-1:** Contributions of Greek, Roman, Indian scholars during the ancient period and Arab scholars during the medieval period

**Unit-2:** Contributions of Humboldt and Ritter in Geography

**Unit-3:** Social Darwinism and its importance in Geography; Morphology of cultural landscape (Carl O. Sauer)

**Unit-4:** Major paradigms in Geography and their shift

**Unit-5:** Dualism and Dichotomies in Geography: Physical and Human Geography, Regional and Systematic Geography, Ideographic and Nomothetic approach

**Unit-6:** Positivism and Quantitative revolution in Geography

**Unit-7:** System approach in Geography

**Unit-8:** Critical revolution in Geography; Humanistic Geography; Radical Geography; Behavioural Geography

**Unit-9:** Welfare Geography

**Unit-10:** Feminism and Feminist Geography

**Unit-11:** Postmodernism and Postmodern Geography

**Unit-12:** Subaltern studies in Geography

**Mode of Internal Evaluation:** Class test

## SEMESTER-I

Paper Code	Paper	Theory/ Practical	Internal Assessment/ Evaluation	Examination/ Report/ Viva- Voce	Credit	Marks
GEO/CC/P-105	Morphometric Analysis and Surveying	Practical	15	60 (Semester-end Examination = 50; Laboratory Note Book + Viva Voce = 5+5=10)	6	75

**Unit-1:** Principle of SOI topographical map numbering systems: old and open series

**Unit-2:** Profile drawing and analysis: serial, superimposed, projected and composite, longitudinal or valley thalweg

**Unit-3:** Interpretation: structure, relief, drainage, vegetation, transport and settlement from topographical maps (Plateau and Plain)

**Unit-4:** Application of fluvial morphometric techniques on drainage basins demarcated on the topographical map-  
Linear aspect

**Unit-5:** Application of fluvial morphometric techniques on drainage basins demarcated on the topographical map-  
Aerial aspect

**Unit-6:** Application of fluvial morphometric techniques on drainage basins demarcated on the topographical map-  
Relief aspect

**Unit-7:** Slope analysis (Wentworth)

**Unit-8:** Nearest Neighbour Analysis of settlement distribution

**Unit-9:** Introduction to surveying and levelling

**Unit-10:** Determination of distance by Transit Theodolite

**Unit-11:** Determination of height by Transit Theodolite (level ground base accessible case, base inaccessible case)

**Unit-12:** Survey using GNSS; Principles of Total Station survey

**Mode of Internal Evaluation:** Continuous assessment based on class performance

**SEMESTER-I**

<b>Paper Code</b>	<b>Paper</b>	<b>Theory/ Practical</b>	<b>Internal Assessment/ Evaluation</b>	<b>Examination/ Report/ Viva- Voce</b>	<b>Credit</b>	<b>Marks</b>
GEO/AECC/P-106	Perception Survey	Practical	5	20 (Report Writing = 15; Viva Voce = 5)	2	25

- Each student will prepare an individual Perception Survey Report based on primary survey related to the following broad areas:
  - i) Physical Environmental Issues
  - ii) Socio-cultural Environmental issues
- Perception Survey Report should not exceed 5000 words.

**Mode of Internal Evaluation:** Continuous assessment based on class performance