

**MASTER OF ARTS/SCIENCE IN GEOGRAPHY**  
**BODOLAND UNIVERSITY**  
**KOKRAJHAR-783370**  
**BTR, ASSAM**

## **MASTER'S PROGRAMME DETAILS**

### **PROGRAMME OBJECTIVES (POs)**

The 'Master of Arts in Geography' programme offered by the department, "aims at empowering students with knowledge and skills for spatial thinking and analysis, to navigate real world problems, and contribute to society in a meaningful way".

### **PROGRAM OUTCOMES (PO)**

Geography is a diverse discipline that bridges the arts and social and natural sciences, providing a comprehensive education that discusses pressing issues including environmental change, regional and global inequalities and the transmutation of global economy and culture. Geography studies the places and the relationships between people and their environments. Geographers explore both the physical properties of Earth's surface and the human societies spread across it. By studying Geography students obtain a unified view of the rapidly-changing world and how society influences, and is influenced by it.

The Bodoland University Geography focuses on the interrelationship between physical and human environment. The Department was established under the faculty of Environment Studies, in August 2015, and is committed to deliver its curriculum to resume education for the refurbishment of our physical and social environment. Thus anybody wants a career that too takes him outside the walls of an office, or allows solving global problems. The degrees in geography offer concentrations to prepare Post Graduates for multiple career paths.

From the PG teachings students get to know about human and natural system that defines the evolving discipline to answer the fundamental questions of global importance through innovative, engaged and relevant teaching and research.

The PG in Geography of BU disseminate geographical knowledge through mentorship model to graduate master's to meet the challenges associated with the continuing evolution of geographic science and reach the highest international standards.

The programme also provides a learning environment that nourishes knowledge, skills and wisdom with lively educational experiences.

### **PROGRAMME SPECIFIC OUTCOMES (PSOS)**

At the end of the two-year (four-semester) course, students will have comprehensive knowledge about contemporary issues in geography, both physical and human. The M.A. / M.Sc. in geography program offer students the opportunity to advance their career aspirations through advanced study in the classroom and in the field. The programme in geography is tailored to meet the students' specific educational, research and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasizes on human-environment relationship.

## PROGRAMME STRUCTURE

The Master's programme is a two-year course divided into four-semester. A student is required to complete 90 credits for the completion of course and the award of degree.	<b>Year</b>	<b>Semester</b>	<b>Semester</b>
<b>Part – I</b>	First Year	Semester I	Semester II
<b>Part – II</b>	Second Year	Semester III	Semester IV

Semester	Core Courses			Elective Courses / Open Elective Courses (*)			Total No. of Papers	Grand Total Credits
	No. of papers	Credits (per paper)	Total Credits	No. of papers	Credits (per paper)	Total Credits	No. of papers	Total Credits
<b>I</b>	4+1	4 (Theory) 5 (practical)	21	1	2	2	6	23
<b>II</b>	4+1	4 (Theory) 5 (practical)	21	1	2	2	6	23
<b>III</b>	4+1	4 (Theory) 5 (practical)	21	1	3	3	6	25
<b>IV</b>	4+1	4 (Theory) 6 (Dissertation)	22				5	25
<b>Total</b>	<b>20</b>		<b>85</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>23</b>	<b>92</b>

- All courses, whether Core and Elective, will have 5 hours of teaching per week. However, in practical courses, the equivalent of one-hour of lecture/tutorial (L/T) will be two-hours practical (P).
- (\*) In-lieu of up to two Elective courses of the department (in semesters I and/or II), students can offer Open Electives courses of 2 credits from other departments.
- Duration of examination of each course shall be 3 hours (for Theory courses) and 4 hours (for Practical courses).
- Each course will be of 100 marks, out of which 80 marks shall be allocated for semester examination, and 20 marks for internal assessment.

The semester wise details of Master's Course and its outcome are given below.

## SEMESTER– I

Paper code	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks	Paper Name	Course Outcome
GGY T-101	4	3+1+0	80	20	100	Geomorphology	<p>CO1 Explaining the Fundamentals of Geotectonics and Geomorphology</p> <p>CO2 Understanding crustal mobility and tectonics; with special emphasis on their role in landform development</p> <p>CO3 Establishing the relationships between landforms, processes and underlying structure</p> <p>CO 4 Overview and critical appraisal of landform development and climate change</p>
GGY T-102	4	3+1+0	80	20	100	Climatology	<p>CO 1 - Understanding the dynamics of the Earth's atmosphere and global climate</p> <p>CO 2 - Explaining process of heat energy transfer and its effect on sea level, biodiversity, migration and human health.</p> <p>CO3 concept and measurement of atmospheric moisture, condensation and assessment of global distribution of moisture content</p> <p>CO 4 - Assessing the climatic disturbances and interpretation and generation of climatic information</p>
GGY T-103	4	3+1+0	80	20	100	Geographic Thoughts	<p>CO1 Place of Geography in the classification of knowledge</p> <p>CO2 Contribution of Mediaeval period in geographical knowledge and role of discoveries and renaissance on emergence of modern Geography</p> <p>CO3 Foundation of modern Geography</p> <p>CO4 Evolution of Geographic thought</p>
GGY T-104	4	3+1+0	80	20	100	Cartographic Methods and Quantitative techniques	<p>CO1 This paper will provide knowledge on the fundamental concepts of cartography, preparation of map with the concept of scale, symbols and map designs.</p> <p>CO2 The paper provides the knowledge and abilities to understand the basic principles of map projection and its importance in mapping a particular region in two dimensional sheet of paper.</p>

							<p>CO3 The paper also describes about the various methods of surveying and its use in present day context.</p> <p>CO4 It also helps to learn the various quantitative techniques and helps to resolve various socio-cultural issues.</p> <p>CO5 Overall the paper enhances the learner to resolve various issues relating to spatial attributes.</p>
GGY P-105	5	1+0+3	80	20	100	Practical on Geomorphology Climatology and Cartographic Methods	<p>CO 1 – Interpreting, reading, analyzing and determination of slope, relative relief etc together with watershed study using Topographical Maps</p> <p>CO 2 – Analysis of climatic data using geographical data through Cartograms</p> <p>CO 3 – Drawing of maps with the help of map projections</p> <p>CO 6 – Using statistical techniques in order to summarize, represent, analyze and interpret data</p>
Department will choose one of the following three elective papers							
GGYT-106 (OE)	2	2+0+0	50	0	50	<p>1. Environment and Sustainable Development</p> <p>2. Basics of Cartography and GIS</p> <p>Natural Hazards and Disaster</p>	<p>1. Course Outcome of T-106 (ENVIRONMENT AND SUSTAINABLE DEVELOPMENT)</p> <p>CO1 Describe developmental history and concept of sustainability and its importance towards environment, economy and environment</p> <p>CO2 Describe concept of resource, resource management and sustainability</p> <p>CO3 Describe concept of develop and developing countries, development parameters</p> <p>CO4 Describe and classify global income inequality, measuring inequality and wellbeing within countries</p> <p>CO5 Describe environmental strategies towards human</p>

							<p>population and sustainability, ecology, economy and sustainable development</p> <p>CO6 Describe various sustainable development goals</p> <p>CO7 Understand and describe climate change, sustainable development and adaptive strategies</p> <p>CO8 Describe energy and sustainable development, clean energy and sustainable development economic and social impact of energy</p> <p>CO9 Able to describe policy and politics of energy, international politics of climate change</p>
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### SEMESTER-II

Paper code	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks	Paper Name	Course Outcome
GGY T-201	4	3+1+0	80	20	100	Geography of India	<p>CO1 Physical background of India as a geographical entity</p> <p>CO2 Understanding of demography and its socio-economic, cultural implication; factors and processes of location of industries</p> <p>CO3 India's geopolitical and economic position in Asia and India</p> <p>CO4 Unity in diversity of North East India</p>

GGY T202	4	3+1+0	80	20	100	Economic Geography	<p>CO1 Able to describe the fundamentals of economic geography; scope, recent trends, relation of economic geography with economics and other branches of social sciences</p> <p>CO2 Classify economies sectors (primary, secondary and tertiary), classification and evolution of resources, Functional theory of resources</p> <p>CO3 Describe place of agriculture in global economy, model of agricultural land use, large scale and small-scale agriculture, world distribution factors and patterns of location of different agricultural products.</p> <p>CO4 Describe place of Industries in global economy, industrial location theory, classification of industries: Resource based and footloose industries, world distribution factors and patterns of location of different industries.</p> <p>CO5 Describe the economic geography of international trade; Special Economic Zones (SEZ); regional trade blocs of the world: WTO, BRICS, ASEAN, SAARC and EU, levels of economic Development globally.</p>
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GGY T-203	4	3+1+0	80	20	100	Population and Settlement Geography	<p>CO1 Defining the field of Population Geography; population- resource regions; Conceptual bases of under population, optimum population, over population, population explosion and population pressure</p> <p>CO2 Components of population growth: fertility, mortality and migration; Population composition; Demographic Transition theory, Global and local food security issues</p> <p>CO3 Defining the field of settlement of geography; origin of settlement growth of rural and urban settlements; Tribal settlements of North East India</p> <p>CO4 Function and morphology of rural and urban settlements;</p>
GGY T-204	4	3+1+0	80	20	100	Social, Cultural and Political Geography	<p>CO1 Fundamentals of social geography, element and components of culture; cultural changes: perception, Diffusion of ethnic traits in world as well as India; ethnic landscape and economy of the area, Patterns of livelihood: various economic activities &amp; cultural adaptations</p> <p>CO2 Nature and development of social geography; Space and society: Understanding society and its structure and process; geographical bases of</p>

							social formations; CO3 Emergence and development of political geography; approaches to study; major schools of thought, Geographic CO4 Themes in Political Geography: State, Nation, Nation-State and Nation-building, Frontiers and boundaries
GGY P-205	5	1+0+3	80	20	100	Quantitative Techniques in Geography	CO1 Measures of central tendency: mean, median, mode; Measure of dispersion Elementary matrix algebra: addition, multiplication and determinants of matrix CO2 Correlation and Regression, regression residual Lorenz curve, Gini's Coefficient CO3 Crop intensity Pie chart Histogram and bar graph Moving average CO4 Study of population settlement and preparation of field study report
Department will choose one of the following two elective papers							
GGY206(OE)	2	2+0+0	50		50	1.Agricultural Geography 2.Climate Change and Adaptations	Climate Change and adaptation CO1 science of climate change; Approaches of Climate Change; Measuring Climate Change: risk and vulnerability related to climatic hazards and disasters. CO2 Assessment in fragile ecosystems; Mountain, Desert and Coastal CO3 Role of Indigenous Traditional Knowledge



							(ITK) and Resilience for Future Sustainability CO4 SDGs Approach, International Climate Change Agreements and Local Governance
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### SEMESTER-III

Paper code	Credit	Credit Distribution (L+T+P)	End Semester Marks	Internal Marks	Total Marks	Paper Name	
GGY T-301	4	3+1+0	80	20	100	Regional Planning and Development	<p>CO1 This paper explains about the concepts of region, development of the concept and the process of regionalization.</p> <p>CO2. The paper provides knowledge on the various processes of regionalization and its implication for the country like India.</p> <p>CO3. It thoroughly analyze the various planning approaches adopted in the country like India and its outcomes.</p> <p>CO4 The paper helps the learner to understand the various methods of regional planning.</p> <p>CO5. Overall this paper helps to understand the need and importance of regional geographic studies and various development strategies.</p>
GGY T-302	4	3+1+0	80	20	100	Basics of Remote Sensing And GIS	<p>CO1 Able to describe various aspects of remote sensing like development of remote</p>

							<p>sensing, various space programmers, basic concept, principles, and systems of remote sensing</p> <p>CO2 Describe various aspects of satellites and orbital characteristics</p> <p>CO3 Describe principle of aerial photography and image generation and processing techniques</p> <p>CO4 Describe principal characteristics and functional mechanism of microwave remote sensing</p> <p>CO5 Describe geographic information system and global positioning system</p> <p>CO5 Able to classify types of satellite data, field of application and its characteristics</p> <p>CO6 Able to classification land use and land cover mapping</p> <p>CO7 Describe concept of resource management, hazard and environment management</p>
GGY T-303	4	3+1+0	80	20	100	Research Methodology	<p>After completion of this course the student will be able to:</p> <p>CO1 Understand what research is, formulate hypothesis, set objectives and design a study.</p> <p>CO2 Differentiate between inductive and deductive approach of research.</p> <p>CO3 Distinguish among various tools and techniques of data collection.</p>

							CO4 Understand plagiarism and structure of a research report.
GGY T-304	4	3+1+0	80	20	100	Environmental Geography	<p>CO1 Describe meaning, scope, and approaches of environmental geography</p> <p>CO2 Classify types of environment, differences between environment and society, relationship between environment and development</p> <p>CO3 Describe and understand environmental perception and cognitive maps; biogeography definition, meaning, concept of bio-diversity; ecosystem and plant-animal association in varying habitats and environments, biome types, and concept of biodiversity</p> <p>CO4 Describe environmental pollution: pollutants, sources and types of pollution; Water, soil, air, and noise pollution; solid waste disposal; environmental pollution and health; environmental education; environmental impact analysis; environmental monitoring and standards; environmental policy and legislation; environmental management</p> <p>CO5 Describe soil formation factors: parent material, organic, climatic,</p>

						<p>topographic, Spatio-temporal; processes of soil formation and soil development: physical, biotic and chemical; soil profile: different layers of soil and soil types</p> <p>CO6 Describe physical properties of soil morphology, texture, structure, water, air, temperature and other properties of soil</p> <p>CO7 Describe chemical Properties of soil and soil reaction</p> <p>CO8 Describe concepts of soil erosion, degradation, and conservation</p>
GGY P-305	5	1+0+3	80	20	100	<p>Digital Cartography and Survey</p> <p>CO1 Describe GIS data types, data structure, geo-referencing; editing and output; overlays</p> <p>CO2 Describe mapping and ground truth verification</p> <p>CO3 Write about different thematic maps and represent socio-economic data (Choropleth, isopleths method)</p> <p>CO4 Describe bar graph, pie graph, sphere diagram, flow chart, isolines and transect chart</p> <p>CO5 Write and describe land use and land cover, urban sprawl, forests monitoring, flood monitoring</p> <p>CO6 Describe traversing and topographic surveying</p>

							<p>with the help of Plane tabling (radiation, intersection and resection)</p> <p>CO7 Describe traversing and topographic surveying with the help of prismatic compass (Open and Closed traversing)</p> <p>CO8 Describe traversing and topographic surveying with the help of theodolite (traversing and height determination)</p> <p>CO9 Describe topographic surveying with the help of dumpy level (leveling and contouring)</p>
Department will choose one of the following two elective papers							
GGY306 (DSE)	3	3+0+0	80	20	100	<ol style="list-style-type: none"> <li>1. Population Data and its use in social Geography</li> <li>2. Environment and Ecology</li> </ol>	<p>After completion of Population Data and its use in social Geography student will be able to:</p> <p>CO1 Know nature and different sources of population data and their use in social geography and problems associated with them.</p> <p>CO2 Get familiar with national level surveys like National Family Health Survey (NFHS), India Human Development Survey (IHDS), National Sample Survey Organization Surveys, etc., besides Census, VRS and SRS.</p> <p>CO3 Understand dynamics of age-sex structure and ageing.</p>

**SEMESTER– IV**  
**SPECIAL PAPERS FOR GEOMORPHOLOGY**

Paper code	Credit	Marks	Paper Name	
GGY T-401	4	100	Advance Geomorphology	<p>CO1 Able to describe fundamental concepts and development of geomorphology and thoughts during 20th Century</p> <p>CO2 Able to describe major contemporary methodologies: morphology based, climate based, process based, and geotechnical science based</p> <p>CO3 Able to understand and describe concept of time and space in geomorphology, nature of time, sampling of time, entropy and equilibrium, nature of space, scale , distance and correctness</p> <p>CO4 Able to describe different theories of landform evolution and development propounded by G.K.Gilbert, W.M.Davis, W.Penck, L.C.King, J.T.Hack, M.Morisawa, and S.A. Schumm, significance and need of theories in geomorphology</p> <p>CO5 Able to describe evolution of landforms hill slope development, earthquake and earth interior, tectonic geomorphology, karst topography Range of</p>

				<p>coastal landforms, marine sediments and the ocean floor, atoll formation, periglacial geomorphology, vulcanicity and landforms denudation chronology, erosion and peneplains drainage system, patterns and evolution of landforms and drainage in domal, faulted and folded structure</p> <p>CO6 Able to describe regional geomorphology of north east India, mountain building and orogenic belts, the evolution of fold mountains in the world.</p> <p>CO7 Able to describe the morphometry and geomorphology of continents and escarpment study</p> <p>CO8 Able to describe emergence of applied geomorphology, application of spatial technology in geomorphological studie; process, landform, land use and settlement, transport and communication, and environmental problems</p>
GGY T-402	4	100	Environmental Geomorphology	<p>CO1 Emergence of environmental geomorphology; Geomorphology and environmental management;</p>

				<p>Climate change and environmental geomorphology, past and present</p> <p>CO2 Environmental Hazards: Classification, Causes and Distribution</p> <p>CO3 Human and ecological impacts; Risk assessment and vulnerability analysis; National preparedness and adaptation strategies</p> <p>CO4 Concept and History of tropical Geomorphology The tropical environment, Climatic elements and its effects</p>
GGY T-403	4	100	Fluvial Geomorphology	<p>CO1 evolution of fluvial geomorphology; Relation between fluvial geomorphology and hydrology</p> <p>Drainage basin as a fluvial system</p> <p>CO2 Channel process: forces acting in channel, velocity distribution, flow types and water and sediment discharge in channel, channel erosion and deposition</p> <p>CO3 Fluvial –geomorphic hazards: flood and bank erosion</p> <p>CO4 Human impact on river basins and fluvial systems: effects of basin, land-use and land cover changes, hydrology and channel morphology. Modern methods and techniques in fluvial geomorphological studies</p>



GGY P-404	4	100	Geomorphological Techniques	<p>CO1 Able to describe river basin and stream ordering, bifurcation ratio, length ratio, basin circularity ratio, laws of stream number, stream length and drainage basin area, etc</p> <p>CO2 Able to describe drainage density, drainage frequency and drainage texture map</p> <p>CO3 Able to write on grain-size characteristics of alluvial sediments</p> <p>CO4 Able to describe the results of basin area and stream discharge, and flood frequency</p> <p>CO5 Able to describe hypsometric curve and integral, altimetric frequency curve and histogram, longitudinal profile and cross section</p> <p>CO6 Able to describe rock characteristics, identification and Stratigraphy, ground water and site suitability mapping river braiding, tectonic and river valley development (William B. Bull's method) rose diagram in geomorphology</p>
GGY 405	6	100	Dissertation	<p>After completion of this course the student will be able to:</p> <p>CO1 Formulate research problem, set objectives, and prepare study design.</p> <p>CO2 Distinguish between tools and techniques of data collection and prepare data collection tools and implement them in real world situation.</p> <p>CO3 Analyze data in software package and draw policy oriented conclusions.</p> <p>CO4 Take up any research in the field of Geomorphology</p>

**SPECIAL PAPER FOR POPULATION GEOGRAPHY**

<b>Paper code</b>	<b>Credit</b>	<b>Marks</b>	<b>Paper Name</b>	
GGY T-401	4	100	Dynamics of Fertility and Mortality	<p>After completion of this course the student will be able to:</p> <p>CO1 Understand fertility and mortality transitions around the globe.</p> <p>CO2 Understand the concept of below replacement level fertility and its implications.</p> <p>CO3 Critically evaluate various theories of fertility and relate with the real world situation.</p> <p>CO4 Know leading causes of deaths</p> <p>CO5 Understand ageing and demographic dividend.</p>
GGY T-402	4	100	Migration and Related Issues	<p>After completion of this course student will be able to:</p> <p>CO1 Understand causes and consequences of internal and International migration, and migration related problems in North-East India.</p> <p>CO2 Identify sources of migration data and related problems.</p> <p>CO3 Critically evaluate various migration related theories and understand their applicability in real</p>

				<p>world situation.</p> <p>CO4 Calculate and interpret different measures of migration.</p>
GGY T-403	4	100	Population, Resource and Development	<p>CO1 The paper describes about the various views regarding the population growth and helps to learn the concepts of various theories and its basis of postulation.</p> <p>CO2 The paper helps to cater knowledge on population and its relation with the resources.</p> <p>CO3 It helps to discuss about the various population policies adopted and its relevance to the country like India.</p> <p>CO4 It critically analyse the National Population Policy 2000, National Health Policy 2002, and National Rural Health Mission 2005 etc.</p>
GGY P-404	4	100	Practicing Population Geography (Practical)	<p>After completion of this course the student will be able to:</p> <p>CO1 Calculate and interpret different indicators of fertility and mortality.</p> <p>CO2 Calculate and interpret different indicators of human development indicators.</p> <p>CO3 Analyze large</p>

				scale data using Statistical Package for Social Sciences (SPSS) and draw meaningful conclusions based on the results.
GGY405	6	100	Dissertation	<p>After completion of this course the student will be able to:</p> <p>CO1 Formulate research problem, set objectives, and prepare study design. CO2 Distinguish between tools and techniques of data collection and prepare data collection tools and implement them in real world situation.</p> <p>CO3 Analyze data in software package and draw policy oriented conclusions.</p> <p>CO4 Take up any research in the field of Population Geography with minimum guidance.</p>