M. Phil & Ph. D Coursework Syllabus

Department of Geography and Applied Geography North Bengal University

SEMESTER I: 6 MONTHS DURATION ;TOTAL MARKS:200						
Course	Course Name	Туре	Instruction	Total Marks	Duration of	Credits
Code			Hours/week		Exam	
MGAG101	Research Methodology	Theory	4	50	2 hours	2
MGAG102	Methods and Applications of GIS	Theory	4	50	2 hours	2
MGAG103	Statistics	Theory	4	50	2 hours	2
MGAG104	Research Proposal Writing	Continuous	2	25	Х	1
		Evaluation				
MGAG105	Seminar Presentation	Continuous	2	25	Х	1
		Evaluation				
TOTAL				200		08
	SEMESTER II: 6	MONTHS DURA	TION ;TOTAL	MARKS:200		
		Theory	y	1		
OMGAG106	Environment Geography	Optional	4	50	2 hours	2
		Theory				
OMGAG107	Fluvial Geomorphology	Optional	4	50	2 hours	2
		Theory				
OMGAG108	Population Geography	Optional	4	50	2 hours	2
		Theory				
OMGAG109	Urban Geography	Optional	4	50	2 hours	2
		Theory				
OMGAG110	Agriculture Geography	Optional	4	50	2 hours	2
		Theory				
OMGAG111	Transport and Market	Optional	4	50	2 hours	2
	Geography	Theory				
TOTAL				$2 \ge 50 = 100^*$		04
*N.B:	One candidate will be offered two	of the above optic	onal papers out	of six prescribed as C	DMGAG106-11	1
		Ability Enhancen	nent Course	~ ~ ~		
AECGAG112	Seminar Presentation	Compulsory	1	25	X	l
AECGAG113	Group Discussion	Compulsory	1	25	X	1
AECGAG114	Term Paper 1	Compulsory	1	25	X	1
AECGAG115	Term Paper 2	Compulsory	1	25	X	1
TOTAL						4
SEMESTER	III & IV:12 MONTHS DURATION	N; TOTAL MAR	KS:200		T	
DGAG116	Dissertation Work ^{*1 &*2}	Choice based	8	200	Х	08
		compulsory				

*¹N.B: The choice of the Dissertation work will be decided in consultation with the respective supervisor and will be evaluated as follows: Preparation of the Dissertation 150 marks and Viva-voce: 50 marks

^{*2}<u>Structure of the Dissertation</u>: Literature Review, Statement of Problem, Aims and Objectives, Data Base and Methodology, Chapter Schemes, Needed Footnotes, needed endnotes, Results, Discussions, conclusions, Inference, Index, References (100% cross referred), Bibliography (Preferably APA system/MLA 6th Edition), Hyperlink citations, Symbols and Syntax, Bibliography etc.

MGAG101: Research Methodology (Theory) Total Marks: 50. Total Credit: 2

	Total Walks. 50, Total Cledit. 2
Unit I	Introduction to Research Methodology: Scope, meanings, objectives, significance, Design
	Research Problem: Definition, techniques of problem identification
	Data Inventory: Sources and Types, Length of Quotations, Direct and Short Direct Quotations,
	Long Quotations, Cross references, Quotation of Footnotes, Quotation in Quotation, Ellipse,
	Interpolation, Footnote, Endnote, Correction, Footnote Numbering, Cataloging, Citations
Unit II	Methods of Data Collection
	Tables and Tabulation
	Research Types: Normative, Experimental, Historical, Case-study based, Comparative, Empirical
	Definitions: Thesis, Dissertation, Term Paper, Project, Assignment, Periodicals, Memoires,
	Reference, Citation, Bibliography, Card Cataloging and preparation of sample Card Catalog,
X X	Concept of Universal Decimal System of Dewey
Unit III	Sampling Techniques: Concepts, classifications, use
	Hypothesis: Definition, testing and procedures
	I hesis Organization and Arrangements, Sample Research Proposal and their features,
	Different tensor of Operationary in the Advantage of State Advantage of Markov and Michael Mic
Unit IV	Different types of Questionnaires and Schedules, Field notes, Photographic and Video-graphic
	survey, Flot survey, Focus Oloup survey, Conventions, Interview, Sample Questionnane for conducting Physical and Socia aconomic Pasaarch, Pasaarch Ethics: Concept and significance
	Report Writing: Meaning Interpretation Significance Steps of writing
	Sample Referencing by Oxford APA and MI A 6 th Edition System (cases: Books, Article, Reports
	one two and multi authors, cases of similar surnames of authors)
	MGAG102: Methods and Applications of GIS (Theory)
	Total Marks: 50. Total Credit: 2
Unit I	Data Format and Types: Concepts, Components, types, and advantages
	Geo-referencing, Assigning, Projection, Re-projection, concepts of band combinations, CRS,
	Custom CRS definition
Unit II	R2V conversion, Creating shape-files, Points, Lines, Polygons, Handling Attribute Tables, Joining
	data layers, Preparation of Choropleth maps, Chorochromatic maps, Digital Cartographics,
	Attribute Tables and Layout of Thematic Mapping
Unit III	Extraction and preparation of DEM from SRTM (Free sourced) and other soft data
	Semi-automatic digital image classification, Preparation of digital thematic maps, concepts of
	Supervised and Unsupervised Image Classification, NDVI
Unit IV	Publishing Interactive Web maps, Mosaicing of Images, Working with point data
	MGAG103: Statistics (Theory)
	Total Marks: 50, Total Credit: 2
Unit I	Methods of making Indicators scale free, Introduction to Matrix, Probability, Skewness and
	Kurtosis, Basic-data input-plotting, Charting and descriptive statistics
Unit II	Correlation and Bi-Variate analysis, Comparing means, t and F test, Co-efficient of Determination,
	Multiple Linear Regression, Analysis of Variance (One and two way ANOVA) and repeated
	measure of ANOVA analysis, Nearest Neighbor Analysis
Unit III	Multivariate Analysis, Distance between Multivariate Population, Multivariate analysis of ANOVA
	(MANOVA), Mann-Whitney U Test, Weaver's crop Combination, Z-score, Residual Mapping,
	Chi-square Test, Principal Component Analysis (Less than 6 component case), Factor Analysis and
	F statistics
Unit IV	Cluster Analysis, Canonical correlation (Finding of latent Variables), Correspondence Analysis,
	Categorical Data analysis (qualitative), Concepts of Logistic Regression, Time series Analysis and
	Analysis of Experimental Design, Data analysis by Online package sources Analog and Digital
	platform (Using suitable Software)

MGAG104: Research Proposal Writing (Theory)

Total Marks: 50, Total Credit: 2

With consultation of the supervisor the candidate will prepare 'A Research Proposal' in view of her/his upcoming Research Interest within 5000-7000 word limit, Times New Roman as font Style, title Case:14 font, text case:12 font, Foot running Figure captions, citations of Scopus literatures, APA/MLA (6th Edition) system of referencing,100% cross reference and standard structure as specified for Dissertation Work coded above as DGAG 116

MGAG105: Seminar Presentation (Continuous Evaluation)

Total Marks: 25, Total Credit: 1

One Topic on consultation of the supervisor and candidate will be selected followed by the average structure Abstract, Keywords (at least 5), Introduction, Statement of Problem, Aims and Objectives, Study Area, Database and Methodology, Literature Review, Results, Analysis and Discussion, Summery and conclusions, and References (100% cross referred)

OMGAG106: Environment Geography (Theory) Total Marks: 50, Total Credit: 2

Unit I	Scope ,Content and Recent dimensions of Environment studies in Geography, Environmental	
	Ethics and their application in environmental management, Symbiosis between man and	
	environment, Effects of environment on man : Bio-physical, Perceptional, Behavioral ,Resource	
	development and Management, Environmental movements, perspectives and Concept of Non-	
	formal Resource Conservation, Concept of physical, ecological and Human ecological issues,	
	Holistic and Reductionist approaches to environment	
Unit II	Climatic factor Shaping the geographical Zoning and its Periodicity, Changing Climate of the	
	World, Climatic Hazards and Management, Social response to Climate hazard, Biomass and their	
	relationships to Climate and Hydrological Cycle	
Unit III	Eco-system Approach in Environmental Studies, Bio- geochemical Cycles, and their significance,	
	Flow, Fixation and Balance of Energy in the biosphere, Energy and Biomass Pyramid, Exchanges	
	among ecosystem and changes of Ecosystem	
Unit IV	Water, Air and Noise problems in urban-industrial environment, water and soil pollution in rural	
	landscape, Problems of solid waste and nuclear fall-out, Flood, Landslide and Riverbank erosion,	
	Earthquake and Cyclones and their Management, Disaster and Environmental Management:	
	Environmental Laws, EIA (Environmental Impact Assessment) and EMP(Environmental	
	Management Plan) procedure	

OMGAG107: Fluvial Geomorphology (Theory) Total Marks: 50 Total Credit: 2

	Total Marks: 50, Total Credit: 2
Unit I	Mechanics within the Fluid (Open Channel), Forces acting in the Open Channel, Types of Flow,
	Channel Competency and Capacity, Continuity equation of the channel, Velocity distribution
	within the Channel
Unit II	Longitudinal and cross profiles within the channel, Channel Hydraulics and pair-wise relations,
	Progressive change detection of channel hydraulics and Bar morphology, Types of load and their
	distribution, Channel aggradation and degradation, Wolman's method of load classification on
	open channel beds
Unit III	Channel Characteristics: Cases of Tidal Channels, Foothill Channels, Decaying and degenerating
	channels, Channel Morphometry: Conventional and advanced techniques (Linear, Areal and
	relief), Utility of GIS and Remote Sensing in open Channel studies, Types of Hydrographs in
	relation to channel regime
Unit IV	National Water Policy, Irrigational Strategies, Post Independence Hydro power generation in
	India, Watershed Approach in Fluvial Geomorphology, Sedimentological Studies in Fluvia
	Geomorphology, Run off: Concept and estimation methods

OMGAG108: Population Geography (Theory) Total Marks: 50, Total Credit: 2

Unit I	Factors affecting Population Density and Distribution, Sources of Population data, Geographic	
	distribution of population, Contemporary factors of Population Growth and Distribution	
Unit II	Demographic Transition and population dynamics, Fertility, Mortality and migration differentials,	
	theories of population growth, theories of migration	
Unit III	Population displacement, Identity crisis, Types and Factors affecting Sex Ratio, Analysis of age-	
	structure and Dependency Ratio, Marital status, Literacy and Educational attainment	
Unit IV	Population problems of the third world: Backwardness, Poverty, Unemployment problems, Infant	
	and Maternal Mortality, Quality of Human Resource in India, UNO's World Population plan of	
	action	

OMGAG109: Urban Geography (Theory) Total Marks: 50, Total Credit: 2

Unit I	Emergence of Urban Geography as a discipline: Changing approaches and methodological		
	functions, Behavioral, Structural and demographic concept of Urbanization, Urbanization and		
	Industrialization, Slums and Urban Poverty: Salient Characteristics, Globalization and Third		
	World Urbanization		
Unit II	Urban Morphology: Land Use and the Economy of LULC, Urban Explosion in Developing		
	Countries, Age, Sex and Occupational structure in cities, Process of Sub- Urbanization, Peri-		
	Urban Interface, Sprawl vs. compact city, Urban renewal-gentrification,		
Unit III	Model of Spatial structures: Pre-industrial (Sjoberg) and industrial city(Marx, Fordist),Urban-		
	Social Space and Polarization, Concept of Urban space differentiation, Congestion and		
	Segregation, Social Justice and the City		
Unit IV	The Physical Environment: Pollution and Degradation, The Social Environment: Poverty and		
	Crime, Urban Land Price, Horizontal and Vertical growth of Cities, Scarcity of Housing,		
	Problems of Civic Amenities and Transport, Urban Ecology: Concept and Implications,		
	Sustainable Urban Planning: Policy and Practice		

OMGAG110: Agriculture Geography (Theory)

Total Marks: 50, Total Credit: 2

Unit I	Agricultural Geography: Aims, objectives and scope, Historical Perspectives, Development and recent trends of World and Indian Agriculture, Approaches for agricultural geography: Regional		
	and Systematic approach, Ecological and Commodity approach, Empirical and Normative, Origin		
	of World Agriculture: Major Genecentres		
	Diffusion of Crop practice: Prehistoric, Medieval and Modern period, Introduction to major		
	agricultural systems of the world (Whittlessey's Scheme)		
Unit II	Problems and prospects of Indian Agriculture, Delimitation of Agricultural Regions: Empirical,		
	Single Element, Multi-Element, Statistical Techniques, Quantitative cum Qualitative Techniques		
Unit III	Land use Land Cover: Concept and techniques of measurement, Land Capability, Land suitability		
	and land use planning as indicator of Agricultural development. Agricultural Regionalization		
	Theory: Von Thunen's and Jonasson's Model : Conventional and Modified, Location Quotient		
	Method of Crop Concentration, Crop Combination: Weaver's and Doi's Siddiqui's scheme, Crop		
	Diversification of Bhatia's scheme, Agricultural Efficiency: Ranking Co-efficient Method		
Unit IV	Green Revolution: Background, performance, problems and prospects in India, Green Revolution		
	and regional imbalances. Problems of Indian Agriculture, Indian Agriculture and Rural		
	Development Programmes, Agricultural Regions of India: NSSO's scheme		

OMGAG111: Transport and Market Geography (Theory) Total Marks: 50, Total Credit: 2

Unit I	An introduction to the Transport Geography, Historical Development of Transport systems,		
	Structural Analysis of Transport Network, Measurement of Transport Connectivity, Accessibility,		
	Congestion Index, Centrality pattern, Nodality Index, Transport Economies		
Unit II	Transport and Environmental Degradation, Role of Transport in Regional Development,		
	International and National Transport Policy Planning, Hierarchical pattern of Transport network		
	in India		
Unit III	Marketing Geography: Definition, scope and significance, Growth and development Approaches		
	of study: Commodity, Spatial, Social, Economic, Behavioural, Application of Planning: Market,		
	Urban, Agriculture		
Unit IV	Classification of Market, structure and hierarchy of Markets participants, Market Channel and		
	Trade Area of Market, Market Centres: Christaller's and Losch's Model of Location, B.J. Berry's		
	Model and Reilly's Models of interaction and delimitation of trade area, Periodic Markets and		
	Fairs, Profile of Industrial and Agricultural Markets in India		

AECGAG 112 Seminar Presentation

The Candidate in consultation with the supervisor will decide a topic of choice and will follow the standards as specified for DGAG 116, Word Limit: Less than 5000, Presentation time: 6-8 minutes, Interaction: 2-4 minutes, No. of slides.: Less than 15, prior submission of the pdf. *dox.* format of the presentation may be done.

AECGAG 113 Group Discussion

Selection of candidates in group under supervision of a faculty member will discuss one topic based on lottery selection for 10-15 minutes followed by interaction for 2-3 minutes.

AECGAG 114 and 115 Term Paper 1 & 2

1. A term paper will be a small research paper written by candidate over an academic term i.e. semester end and **directly focused to her/his syllabus**, accounting to her/his knowledge propagation and may be representative of candidates learning, thoughts and achievement during a term

2. The Candidate in consultation with the supervisor will decide a topic of choice and will follow the standards as specified for DGAG 116,Word Limit: Less than 5000