

BACHELOR OF HONOURS
ACADEMIC CALENDAR
&
COURSE PLAN
2013-2014



Department of Geography &
Environment
Rajshahi College, Rajshahi

Department of Geography & Environment

Rajshahi College, Rajshahi.

Subject: Geography & Environment

1st Year Honours (2014-15)

Courses and Marks Distribution

Code	Course Title	Marks	Credits
213201	Introduction to Geography & Environment	75	3
213203	Introduction to Physical Geography	75	3
213205	Introduction to Human Geography	75	3
213206	Practical-1	100	4
211501	History of Emergence of Independent Bangladesh	100	4
	For Science Group		
213007	Botany-I	100	4
213008	Botany-I Practical	50	2
213105	Introduction to Zoology: Protozoa and non-chordates, Human Physiology and Applied Zoology	100	4
213106	Zoology Practical-I	50	2
	For Arts Group		
212009 212111	Introductory Sociology Or Introduction to Social Work	100	4
211909	Introduction to Political Theory	100	4
212209	Principles of Economics	100	4

Rajshahi College, Rajshahi.

Course Plan

First Year Honours (2014-15)

Course Code- 213201

Course Title: **Introduction to Geography & Environment**

Marks-100, 4 credits,60Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(25 Lectures)	1 st	Geography as a Discipline as Science, Earth Science and Social Science: Definition, Concepts, Scope and Branches.	ZI	6
	2 nd	Physical and Human basis of Geography: Relation of Geography with other Disciplines.	ZI	6
	5 th	The Concept of Region and Regional Approach to Geography.	ZI	3
	6 th	Environment: Meaning, Structure, Types and Components of Environment; Geography and Environment; Environment and Society.	ZI	10
2 nd In-Course(25 Lectures)	3 rd	A Brief History of the Development of Geographical Knowledge and Concepts: Ancient Geography-Greek and Roman Period; Geography in the Middle Ages-Muslim Period; Renaissance and Modern Geography; Contemporary Geography.	ZI	9
	7 th	Man-environment Relationships: Determinism, Possibilism and Neo-possibilism	RK	4
	8 th	Tools and Techniques in Geography: Maps, Scales, Models, and GIS.	RK	12
Test(10 Lectures)	4 th	Major Views in Contemporary Geography: Regional View, Ecological View, Spatial Organization View, Earth Science View, Behavioral View.	RK	6
	9 th	The Shape and the Basic Dimensions of the Earth: Rotation and Revolution of the Earth and their Effects; Determining Location on the Earth Surface	RK	4

Selected Readings:

- ড. আব্দুর রশিদ ও মোঃ বাহাদুর হোসেন ভূঞা ; ভূগোল ও পরিবেশের সাথে পরিচিতি, স্বজন প্রকাশনী, ঢাকা।
- James, Preston E. *All Possible Worlds: History of Geographical Ideas*
- Chorley, R. and Peter Haggett (ed.) *Models in Geography*
- Hartshome, R. *The Nature of Geography*.
- Unwin, Tim. 1992. *The Place of Geography*, Longman, New York.
- Singh, Savindra, 1991, *Environmental Geography*, Prayag Pustak Bhawan, Allahabad, India.
- Ahmed, Nafis. *Muslim Contributions to Geography*
- Saxena, H.M. 1999. *Environmental Geography*, Rawat Publications, New Delhi.
- De Blij, H.J. and Muller, Peter O. 2004. *Geography: Realms, Regions and Concepts*, 11th edn. John Wiley and Sons, Inc.
- Bharucha, Erach. 2005. *Textbook of Environmental Studies*, University Press Pvt. Ltd. India.
- Haggett, P. *Geography : A Modern Synthesis*.
- Harvey, David. *Explanation in Geography*.
- Islam, M. Aminul 2006. *Bhugoler Dristibhangi o Dashan: Samakalin Probonata*. Bangladesh Geographical Society, Dhaka.
- Encyclopaedia Britannica* ,*Encyclopaedia of Social Sciences*
- Murphy, Rhodes. *An Introduction to Geography*

First Year Honours (2014-15)
Course Code- 213203
Course Title: **Introduction to Physical Geography**
Marks-100, 4 credits, 60Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (25Lectures)	1 st	1. Physical Geography: Nature, Scope and Relation with Other Disciplines of Natural Sciences	MI	7
	2 nd	2. Historical Development of Physical Geography	MI	6
	6 th	6. Atmosphere: Composition of Atmosphere, Elements of Weather and Climate, Temperature, Pressure, Wind Systems and Humidity.	MI	12
2 nd In-Course(25 Lectures)	3 rd	3. Solar System: Theories of Origin, Devolvement and Expansion.	MI	16
	4 th	4. Origin of the Earth-different hypothesis: Earth's Development, Geological Time-scale.	MI	6
	7 th	7. Hydrosphere: Global Distribution of Water; Ocean Shape, Size and Volume; Hydraulic Cycle; Movement, Causes and Effects of Ocean Current.	AH	13
Test(10 Lectures)	5 th	5. Lithosphere: Earth's Crust and Interior, Rocks and Minerals, Weathering and Erosion, Seismology, Isostasy, Earth's Movements-endogenic and exogenic, Continental Drift and Plate Tectonics, Agents of Sculpture (river, glacier wind wave)	AH	16
	8 th	8. Biosphere: Distribution of Plant and Animals and their Related Factors.	AH	4

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Selected Readings:

ড. হ. জ. ম. হাসিবুশ শাহীদ; প্রাকৃতিক ভূগোলের রূপরেখা

James, P.E., *A Geography of Man*, Blaisdall Publishing Company.

Robinson, H., *Physical Geography*, Mac Donald & Evans,

Thornbury, W.D., *Principles of Geomorphology*, John Wile, London.

Holmes, A. *Principles of Physical Geology*.

Cook, Ian et al. *Geography in Focus*, CPL (Causeway Press). For all course

Wadia, D.N., *Geology of India*, Macmillan & Co. London.

Singh, Savindra, 1999, *Physical Geography*, Prayag Pustak Bhawan, Allahabad, India.

Lake, P. *Physical Geography*, Macmillan's & Co., Calcutta.

Monkhouse, F.J. *The Principles of Physical Geography*, University of London Press, London

Course Code -213205
 Course Title: **Introduction to Human Geography**
 Marks-100, 4 credits, 60Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(25 Lectures)	1 st	1. Human Geography: Definition, Concepts, Contents and Scope.	MMI	7
	2 nd	2. Branches or Components of Human Geography.	MMI	5
	6 th	6. Human Population: Size, Structure, Composition, Distribution and Change; Dynamics of Population-fertility, mortality and migration; Population Growth and Projection; Population as Resources.	MMI	9
	7 th	7. Economic Activities of the People: Primary. Secondary, Tertiary and Quaternary.	MMI	4
2 nd In-Course(25 Lectures)	3 rd	3. Historical Development of Human Geography.	MMI	6
	4 th	4. Approaches to the Study of Human Geography.	RK	6
	8 th	8. Transport and Trade: Major Modes of Transport, International Trade and Trade Routes	RK	7
	9 th	9. Human Settlements: Classification, Hierarchy, Forms and Pattern.	RK	6
Test(10 Lectures)	5 th	5. Human Occupancy of the Earth and Man-Environment Relationships.	RK	6
	10 th	10. Society and Culture: Social Stratification, Cultural Elements.	RK	4

Selected Readings:

মোঃ বাহাদুর হোসেন ভূঞা , সেলিনা খাতুন ও শাহান আরা ; মানবীয় ভূগোল
 Emrys, Jones. 1995: *Human Geography*, Chatto and Windus, London
 Chapman, Keith. 1988: *People Pattern and Process: An Introduction to Human Geography*, John Wiley and Sons, New York.
 Cook, Ian et al. *Geography in Focus*, CPL (Causeway Press). For all course
 Brock, J.O. M. & Webb. A. : *Geography of Mankind*, New York.
 Chisholm, M. 1975. *Human Geography: Evolution or Revolution*, Harmonds Worth, Penguin Books.
 Barnes, Trevor and Gregory, Derek ed. 1997. *Reading Human Geography: The Poetics and Politics of Inquiry*, Arnold, London.
 James, P.E. and Martin, G.J. 1981. *All Possible Worlds: A History of Geographical Ideas*, 2nd edn. New York, John Wiley.
 Tidswell, V. 1976. *Patterns and Process in Human Geography*, University Tutorial Press, London.
 Chorley, R.J. and Haggett, P. eds. 1967. *Models in Geography*, London, Methuen.
 Hortshorn, T. A. and J. W. Alexander, J.W. 1988: *Economic Geography*, Prentice-Hall, New Delhi

1st Year Honours (2014-15)

Course Code : **211501**

Course Title : **History of the Emergence of Independent Bangladesh**

Marks 100, 4 Credits, 60 Lectures, Class Duration : 1 Hour

Assigned Course Teacher:

1. Prof. Md. Tanbirul Alam (TA)

2. Dr. Md. Elias Uddin (EU)

Exam.	Chapter	Contents	Teacher	Lectures
1st In-course (25 Lectures)	1 st	Introduction: Scope and description of the emergence of Independent Bangladesh. Writing on this topic. Description of the country and its people. Geographical features and their influence. Ethnic composition, Language. Cultural syncretism and religious tolerance. Distinctive identity of Bangladesh in the context of undivided Bangladesh.	TA EU	4
	2 nd & 3 rd	Proposal for undivided sovereign Bengal and the partition of the Sub Continent, 1947. Rise of communalism under the colonial rule, Lahore Resolution 1940, The proposal of Suhrawardi and Sarat Bose for undivided, Bengal : consequences, The creation of Pakistan 1947 . Pakistan: Structure of the state and disparity. Central and provincial structure, Influence of Military and Civil bureaucracy., Economic , social and cultural disparity	TA EU	6
	4 th	Language Movement and quest for Bengali identity, Misrule by Muslim League and Struggle for democratic politics , The Language Movement: context and phases ., United front of Haque – Vasani – Suhrawardi: election of 1954, consequences.	TA EU	5
	5 th	Military rule: the regimes of Ayub Khan and Yahia Khan (1958-1971) Definition of military rules and its characteristics. Ayub Khan's rise to power and characteristics of his rule (Political repression, Basic democracy, Islamisation) Fall of Ayub Khan and Yahia Khan's rule (Abolition of one unit, universal suffrage, the Legal Framework Order)	TA EU	5
	6 th	Rise of nationalism and the Movement for self determination Resistance against cultural aggression and resurgence of Bengali culture. Sheikh Mujibur Rahman and the six point movement Reactions : Importance and significance The Agortola Case 1968	TA EU	5

2 nd In-course (25 Lectures)	7 th	The mass- upsurge of 1969 and 11 point movement: background, programme and significance.	TA EU	5
	8 th	Election of 1970 and the Declaration of Independence by Bangobondhu Election result and centres refusal to comply, The non co-operation movement, the 7 th March , Address , Operation Searchlight Declaration of Independence by Bangobondhu and his arrest	TA EU	5
	9 th	The war of Liberation 1971 Genocide, repression of women, refugees Formation of Bangladesh government and proclamation of Independence The spontaneous early resistance and subsequent organized resistance (Mukti Fouz, Mukti Bahini, guerillas and the frontal warfare) Publicity Campaign in the war of Liberation (Shadhin Bangla Betar Kendra, the Campaigns abroad and formation of public opinion) Contribution of students, women and the masses (Peoples war) The role of super powers and the Muslim states in the Liberation war. The Anti-liberation activities of the occupation army, the Peace Committee, Al-Badar, Al-Shams, Rajakars, pro Pakistan political parties and Pakistani Collaborators , killing of the intellectuals. Trial of Bangabondhu and reaction of the World Community. The contribution of India in the Liberation War Formation of joint command and the Victory The overall contribution of Bangabondhu in the Independence struggle.	TA EU	15
Test (10 Lectures)	10 th	The Bangabondhu Regime 1972-1975 Homecoming Making of the constitution Reconstruction of the war ravaged country The murder of Bangabondhu and his family and the ideological turn-around	TA EU	5
	1 st - 10 th	Revision	TA EU	5

REFERENCES

১. নীহার রঞ্জন রায়, *বাঙালীর ইতিহাস*, দে' জ পাবলিশিং, কলকাতা ১৪০২ সাল।
২. সালাহ উদ্দিন আহমেদ ও অন্যান্য (সম্পাদিত), *বাংলাদেশের মুক্তি সংগ্রামের ইতিহাস ১৯৪৭-১৯৭১*, আগামী প্রকাশনী, ঢাকা ২০০২।
৩. সিরাজুল ইসলাম (সম্পাদিত), *বাংলাদেশের ইতিহাস ১৭০৪-১৯৭১*, ৩ খন্ড, এশিয়াটিক সোসাইটি অব বাংলাদেশ, ঢাকা ১৯৯২।
৪. ড. হারুন-অর-রশিদ, *বাংলাদেশ: রাজনীতি, সরকার ও শাসনতান্ত্রিক উন্নয়ন ১৭৫৭-২০০০*, নিউ এজ পাবলিকেশন্স, ঢাকা ২০০১।
৫. ড. হারুন-অর-রশিদ, *বাঙালির রাষ্ট্রচিন্ত্র ও স্বাধীন বাংলাদেশের অভ্যুদয়*, আগামী প্রকাশনী, ঢাকা ২০০৩।
৬. ড. হারুন-অর-রশিদ, *বঙ্গবন্ধুর অসমাপ্ত আত্মজীবনী পুনর্পঠ*, দি ইউনিভার্সিটি প্রেস লিমিটেড, ঢাকা ২০১৩।
৭. ড. আতফুল হাই শিবলী ও ড.মোঃ মাহবুবুর রহমান, *বাংলাদেশের সাংবিধানিক ইতিহাস ১৭৭৩-১৯৭২*, সুবর্ণ প্রকাশন, ঢাকা ২০১৩।
৮. মুনতাসির মামুন ও জয়সুন্দর কুমার রায়, *বাংলাদেশের সিভিল সমাজ প্রতিষ্ঠার সংগ্রাম*, অবসর, ঢাকা ২০০৬।
৯. আতিউর রহমান, *অসহযোগ আন্দোলনের দিনগুলি: মুক্তিযুদ্ধের প্রস্তুতি পর্ব*, সাহিত্য প্রকাশ, ঢাকা ১৯৯৮।
১০. ড. মোঃ মাহবুবুর রহমান, *বাংলাদেশের ইতিহাস, ১৯০৫-৪৭*, তাম্রলিপি, ঢাকা ২০১১।
১১. ড. মোঃ মাহবুবুর রহমান, *বাংলাদেশের ইতিহাস, ১৯৪৭-১৯৭১*, সময় প্রকাশন, ঢাকা ২০১২।
১২. সৈয়দ আনোয়ার হোসেন, *বাংলাদেশের স্বাধীনতা যুদ্ধে পরাশক্তির ভূমিকা*, ডানা প্রকাশনী, ঢাকা ১৯৮২।
১৩. আবুল মাল আবদুল মুহিত, *বাংলাদেশ: জাতিরাষ্ট্রের উদ্ভব*, সাহিত্য প্রকাশ, ঢাকা ২০০০।
১৪. শেখ মুজিবুর রহমান, *অসমাপ্ত আত্মজীবনী*, দি ইউনিভার্সিটি প্রেস লিমিটেড, ঢাকা ২০১২।
১৫. সিরাজ উদ্দীন আহমেদ, *একাত্তরের মুক্তিযুদ্ধ: স্বাধীন বাংলাদেশের অভ্যুদয়*, ইসলামিক ফাউন্ডেশন, ঢাকা ২০১১।
১৬. জয়সুন্দর কুমার রায়, *বাংলাদেশের রাজনৈতিক ইতিহাস*, সুবর্ণ প্রকাশন, ঢাকা ২০১০।
১৭. Harun-or-Roshid, *The Foreshadowing of Bangladesh: Bengal Muslim League and Muslim Politics, 1906-1947*, The University Press Limited, Dhaka 2012.
১৮. Rounaq Jahan, *Pakistan: Failure in National Integration*, The University Press Limited, Dhaka 1977.
১৯. Talukder Maniruzzaman, *Radical Politics and the Emergence of Bangladesh*, Mowla, Brothers, Dhaka 2003.
২০. মেসবাহ কামাল ও ঈশানী চক্রবর্তী, *নাচালের কৃষক বিদ্রোহ, সমকালীন রাজনীতি ও ইলা মিত্র*, উত্তরণ, ঢাকা ২০০৮।
২১. মেসবাহ কামাল, *আসাদ ও উনসত্তরের গণঅভ্যুত্থান*, বিবর্তন, ঢাকা ১৯৮৬।

First Year Honours (2014-15)
 Course Code -213206
 Course Title: **Practical**
 Marks-100, 4 credits, 60Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(25 Lectures)	1 st	1. Section I: Cartography (Marks 25)	MI	7
		1.1. Definition and Use of Cartography	MI	5
		1.2. Map: Definition, Elements and Importance of Map, Classifications of Maps and their Uses.	MI	9
		1.3. Study of World Physical, Political, Regional and Economic Maps.	MMI	4
2 nd In-Course(25 Lectures)		1.4. Scales: Definition, Representation of Scale, Importance, Classification and there Uses. Draw three from each of the class especially Simple, Diagonal, Comparative, Time, Pace and Unit of Scales.	MMI	6
		1.5. Measurement of Latitudes, Longitudes and Bearings.	RK	6
		1.6. Map, Enlargement, Reduction and Combination.	RK	7
		1.7. Measurement of Area and Distance.	AH	6
	2nd	2. Section II: Application of Cartographic Techniques on Various Statistical Data (Marks 25)		
		2.1 Line Graph, Bar Graph, Climographs.	HAK	
Test(10 Lecturs		2.2 Simple and Compound Bar Graph.	AR	6
		2.3 Log and Semi-log Graph.	NA	4
		2.4 Age-sex Pyramid.	ZI	
		2.5 Pie-Diagram.	AZ	
		2.6 Methods of Drawing Distribution Maps (Choropleth, Isopleth and Dot Methods; Proportional Squares).	AH	

	3rd	3. Section III: Identification of Rocks and Minerals (Marks 20)		
		3.1. Definition, Classification and Comparison of Rocks (Igneous, Sedimentary and Metamorphic) and Minerals.	NA	
		3.2. Hardness Scale.	FH	
		3.3. Physical Identification of Various Types of Rocks and Minerals.	HAK	

Selected Readings:

Marks Distribution:

- (I) Exm. -----70
(II) Lab note book----- 10
(III) Viva Voce-----10
(IV) Field Report-----10

Selected Readings:

ড. মোঃ আব্দুর রশিদ ও মোঃ বাহাদুর হোসেন ভূঞা ; উচ্চতর ব্যবহারিক ভূগোল,
মোঃ আমজাদ হোসেন; সৃজনেষু মানচিত্রাবলী, স্বজন প্রকাশনী, ঢাকা।

Shingh, R.I. 1998: *Elements of Practical Geography*, India.

Keats, J.S. 1985: *Cartography*, Longman, London.

John, Campbell 1999. *Map Use and Analysis*, Wm. C. Brown Publishers.

Monkhouse, F.J. and Wikinson, F.J. 1976: *Maps and Diagrams*, Harper & Row Publishers, USA.

Robinson, A.H *Elements of Cartography*, New York, John Willy and sons.

Rouf, K.A. and Halim A: *Baboharic Bhugol*, Dhaka (in Bangla).

1st Year Honours (2014-2015)
 Course Code : 213007
 Course Title: **Botany-I**
 Marks 100, 4 Credits, 60 Lectures

Exam.	Chapter	Content	Lectures
1 st In-course (25 Lectures)	1 st	Introduction: Origin and evolution of life; differences between plants and animals; modern concepts of classification of living organisms.	5
	2 nd	Microbiology: a) Introduction to Viroids, Prions, Rickettsia and Mycoplasma. b) Virus: Physical and chemical nature of phage, plant and animal viruses, multiplication of HIV virus and economic importance. c) Bacteria: Types, fine structure, reproduction and importance. d) Fungi: Habitat, characteristics, classification up to class (Alexopoulos), reproduction, importance, life history of <i>Saccharomyces</i> . e) Cyanobacteria: Habitat, characteristics, structure, importance of Cyanobacteria . f) Algae: Habitat, characteristics, classification up to class (Fritsch), reproduction, importance; life history of <i>Oeodogonium</i> . g) Phytoplankton: Habitat, characteristics, classification and importance.	15
	3 rd	Lichen: Habitat, characteristics, classification and importance.	5
2 nd In-course (25 Lectures)	4 th	Limnology: Definition, scope, importance and classification of lakes.	3
	5 th	Bryophyta: Habitat, characteristics, classification up to classes and reproduction; life history of <i>Riccia</i> and <i>Anthoceros</i> .	4
	6 th	Pteridophyta: Habitat, characteristics, classification up to classes, importance; life history of <i>Selaginella</i> and <i>Christella</i> .	5
	7 th	Gymnosperms: Habitat, characteristics and importance; life history of <i>Cycas</i> and <i>Gnetum</i> .	5
	8 th	Angiosperms: Habitat, characteristics, ICBN, classification systems of plant kingdom. (Artificial, natural & phylogenetic). Identifying characters and economic importance of the following families: (a) Fabaceae, (b) Solanaceae and (c) Malvaceae and (d) Poaceae.	8
Test (10 Lectures)	9 th	Plant Pathology: Concept of diseases in plants, causes, diagnosis, classification and importance of plant diseases, symptomatology and control measures; forecasting of plant diseases. Causal organisms, symptoms and control measures of brown spot of rice, stem rot of jute, citrus canker and tungro disease of rice.	3
	10 th	Economic Botany: Local and scientific names, parts used and importance of at least 8 prominent plants of each of the following groups: (a) Food, (b) medicine, (c) timber, (d) fibre, (e) oil and (f) vegetables. Cultivation and processing of tea and rubber.	3
	1 st to 10 th	Revision	4

Botany Practical

Practical Code- 213008

50 Marks, 2 Credits

Any five of the following experiments

1. Detail study including dissection (where necessary), mounting, drawing, description and identification with classification of the following genera:..... 10
Cyanobacteria : *Nostoc, anabaena*.
Algae : *Chlamydomonas, Oedogonium* .
Fungi : *Saccharomyces* and *Ascobolus*.
Bryophyte : *Riccia* and *Marchantia*. Pteridophyte : *Selaginella, Christella*.
Gymnosperms : *Cycas*.
Angiosperm : Poaceae and Fabaceae
2. Identification of the following genera with reasons: 06
Algae : *Volvox, Polysiphonea* and *Fucus*.
Fungi : *Rhizopus, Agaricus, Puccinia* and *Penicillium*.
Lichen : Crustose, Foliose and Fructose.
Bryophyte : *Anthoceros, Semibarbula*.
Pteridophyte : *Selaginella, Marsilea, Azolla* and *Pteris*
Gymnosperms : Male and female cones of *Cycas*,
Angiosperms : Scientific names of common plants around the institution.
3. Find out algal specimens from local fresh water sample; draw and describe.05
4. Study of the symptoms and causal organisms of Brown spot of rice and stem rot of Jute.. 05
5. Detailed taxonomic study of the families as included in the theory syllabus..... 08
6. Study of plant and plant parts, and economic uses of angiosperms included in the syllabus.....06
7. Preparation of herbarium specimens of local plants and submission during examination.....05
8. Laboratory Note book. 05

REFERENCES

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2. Bold, H.C. and M.J. Wynne. 1978 : Introduction to the Algae, Prentice Hall, India
3. Hawker, Lilian, E. 1967 : Fungi, Hutchinson Univ. Library, Cambridge Univ. Press, London.
4. Lawrence, G.H.M. 1951 : Taxonomy of Vascular Plants. The Macmillan Co. New York.
5. Pelczar, M.J., E.C.S. Chan : Microbiology: Concepts and Applications. McGraw Hill Book Co. and N.R. Krieg. 1993 Inc. New York.
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7. Mukherji, H. and Ganguly, 2000: Plant Groups, Centrl Book Agency, Calcutta.
8. Hill, F.A. 1972. : Economic Botany, Tata McGraw-Hill Publishin Company, India.
9. রায়, শ্যামল কুমার, পাল, নিশীথ কুমার : অপুষ্পক উদ্ভিদবিজ্ঞান (১ম ও ২য় খন্ড), বাংলা একাডেমী, ঢাকা। পাশা, মোস্তাফিজ কামাল, ১৯৯৫
১০. খান, আজমাজদ আলী এবং : স্নাতক উদ্ভিদ বিজ্ঞান ১ম, ২য় ও ৩য় খন্ড। তরিকুল ইসলাম
১১. খন্দকার মনিরুজ্জামান, ১৯৯৪ : লিমনোলজী, ঢাকা বিশ্ববিদ্যালয় প্রকাশনা, ঢাকা।
১২. বাসার, এম. এ., এম.এ. হাসান এবং ম. রফিকুল ইসলাম. ২০০৪ : উদ্ভিদ বিজ্ঞান, হাসান বুক হাউজ, বাংলা বাজার, ঢাকা।
১৩. হাসান, এম. এ. এবং এম. কে. আলম. ১৯৯৭ : উদ্ভিদ শ্রেণী বিন্যাস তত্ত্ব (৩য় সংস্করণ), হাসান বুক হাউস, ঢাকা।
১৪. খাতুন, রাবেয়া, ২০০২ : উদ্ভিদ শ্রেণীবিন্যাস, ইউরেকা বুক এজেন্সি, রাজশাহী।
১৫. দেবশীল রায়, নন মেজর প্রথম খন্ড, হাসান বুক হাউজ, বাংলা বাজার, ঢাকা।

1st Year Honours (2014-2015)
 Course Code : 213005
 Course Title: **Introduction to Zoology-I**
 Marks 100, 4 Credits, 60 Lectures

Exam	Chapter	Content	Lecture
1 st in-course (25 Lectures)	Group-A		
	2	Protozoa and non-chordates General characteristics Examples: Porifera, Cnidaria, Ctenophora, Phoronida, Brachiopoda, Bryozoa/Ectoprocta, Hemichordata..... Broad Classification: Sarcomastigophora; Animal kingdom.. Gametogenesis classification of animals: Classification up to phyla on the basis of organization, symmetry, coelom and phylogeny;	2 1 2 2
	2	Protozoa and non-chordates General characteristics Examples: Apicomplexa, Ciliophora, Loricifera, Priapulida..... Types study: a. Phylum Sarcomastigophora: <i>Euglena</i> b. Phylum Apicomplexa: <i>Eimeria</i> c. Phylum Ciliophora: <i>Paramecium</i>	1 2 2 2
	2	Definition & Scope of zoology; Foundation of animal life; level of organization (protoplasmic, cellular, tissue, organ, organ system, organism, species, individual, population, community, fauna, biota, ecosystem, biosphere, biodiversity.) Protozoa and non-chordates General characteristics Examples: Platyhelminthes, Gastrotricha, Acanthocephala, Mollusca. Type study: d. Phylum Porifera: <i>Scypha</i> e. Phylum Cnidaria: <i>Obelia</i> g. Phylum Mollusca: <i>Pila</i> j. Phylum Hemichordata: <i>Balanoglossus</i> .	11
2 nd in-course (25 Lecture)	Group-A		
	2	Protozoa and non-chordates Type study: i. Phylum Echinodermata: <i>Astropecten</i> Introduction to Zoology: Cells: Cell and cell theory, structure and functions of cell organelles..... Human physiology: Vitamin.....	3 5 2
	Group-B		
1	Human Physiology: Digestion:, Restriation:..... Circulation:.....	2 2 4	

Exam	Chapter	Content	Lecture
2nd in-course (25 Lecture)	Group-A		
	2	Protozoa and non-chordates General characteristics Examples: Rotifera, Nematomorpha, Broad Classification: Annelida, Arthropoda..... Type study: f. Phylum Nematoda: <i>Ascaris</i> h. Phylum Arthropoda: Prawn.....	2 2 3
	Group-A		
	2	Protozoa and non-chordates: General characteristics Examples: Supuncula, Pogonophora, Tardigrada, Onychophora, Phoronida, Chaetognatha, Echinodermata,.....	2
Test (10 Lectures)	Group-B		
	1	Human Physiology: Excretion, Reproduction & endocrine glands.	4
	2	Applied Zoology: Introduction to the major fields of applied zoology: Entomology, Fisheries Biology, Wildlife Biology, and Parasitology. Agricultural pests: Major pests of rice, jute, sugarcane and stored grains. Integrated fish farming: Types, poultry, livestock and paddy-cum-fish culture. Poultry farming: System of poultry farming, diseases of poultry and their control, economic importance of poultry and their impacts on socio-economic condition of Bangladesh.	4
		Revision: 1 st & 2 nd in-course	

Zoology Practical-I

Course Code : 213106

50 Marks, 2 Credits

1. Study of museum specimens: Representative of all major non-chordate phyla (minimum 20 specimens to be studied).
2. Study of permanent slides: Whole mount, body parts and various cells and invertebrate tissues (at least 10 slides to be studied)
 - a. Whole animals – representatives of protozoans, rotifers and arthropods.
 - b. Mouth parts of arthropods.
 - c. Parasites – nematodes and platyhelminths.
 - d. Different larval forms of invertebrates.
 - e. Histological slides of invertebrates.
3. Preparation and study of whole mounts of different non-chordates.
4. External morphology and dissection of various organ systems of earthworm, cockroach, rawn, *Pila* and *Lamellidens*.
 - a. Digestive system of prawn, *Pila* and *Lamellidens*.
 - b. Circulatory system of earthworm and prawn.
 - c. Nervous system of cockroach, grasshopper, prawn, *Pila* and *Lamellidens*.
5. Temporary mounting –
 - a. Brain of earthworm.
 - b. Salivary gland of cockroach.
 - c. Statocyst of prawn.
6. Study of appendages of prawn.
7. Animal physiology –
 - a. Estimation of blood pressure and pulse rate.
 - b. Determination of blood group.
8. Class records.

Distribution of Marks for First Year Final Examination

1. Major dissection (dissection 8 + display 2 + drawing and labeling 3) = 13 marks.
2. Temporary mount (staining, mounting and display 3 + drawing and labeling 2) = 5 marks.
3. Spotting of museum specimens – 8 items (identification and classification 1 + diagnostic characteristics 1) = 16 marks.
 - a. Invertebrate specimens (4 items) $2 \times 4 = 8$ marks.
 - b. Whole mount slides (mouth parts, parasites, larvae) (2 items) $2 \times 2 = 4$ marks.
 - c. Histological slides (2 items) $2 \times 2 = 4$ marks.
4. Appendages (detachment, placement and drawing on a paper sheet 3, labeling 2, displaying 1) = 6 marks.
5. Class records = 10 marks.

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1. C.P. Hickman and L.S Roberts. 1995. *Animal Diversity* Wm.C. Brown
2. L.S. Dillon. 1976. *Animal Variety: An Evolutionary Account*: Wm C. brown Company Publishers, Dubuque, Iowa.
3. J.D. Bernal. 1969. *The Origin of Life*. Weidenfeld and Nicolson, London.
4. E.E. Ruppert and R.D. Barnes. 1994. *Invertebrate Zoology* (6th edition). Saunders College Publishing-harcourt Brace College Publishers, New York, London
5. C.P. Hickman. *Integrated Principles of Zoology*, C.V. Morsby Co. Inc., New York
6. A.J. Marshal and W.D. Williams. *Text Book of Zoology Invertebrates*, (edited the 7th edition of Text Book of Zoology, Vol. I, T.J. Parker and W.A. Haswell)
7. N.J. Reigle. *A Synoptic Introduction to the Animal Kingdom*.
8. E.O. Wilson, T. Eisner and W.R. Briggs, *Life: Cells, Organisms Populations*.
9. C.C. Chatterjee Human Physiology Vols. I & II
10. W.H. Davson . *A Text Book of General Physiology*
11. G.L. Presser and P.A. Brown Comparative Animal Physiology
12. B.I. balinsky. *An Introduction of Embryology*
13. D. Dent. Insect Pest Management. Chapman and Hall, London.

1st Year Honours (2014-2015)
 Course Code : 212009
 Course Title: **Introductory Sociology**
 Marks 100, 4 Credits, 60 Lectures

Exam.	Chapter	Content	Lectures
1 st In-course (25 Lectures)	1 st	Definition, Nature & Scope of Sociology: Relationship with other social sciences. Development of Sociology: Contributions of Auguste Comte, Herbert Spencer, Emile Durkheim, Max Weber	8
	2 nd	Culture, Beliefs & Values: Norms, sanctions, symbols, language, subculture, counterculture, hegemony & resistance	5
	3 rd	Globalization, Culture and Society: Globalization and its different dimensions, Cultural globalization, global culture and social change	5
	4 th	Urbanization and Social Formation: Definition of urbanization and urbanism, Process of urbanization in developing societies and social formation, over urbanization, growth of slum & poverty in mega cities	7
2 nd In-course (25 Lectures)	5 th	Gender and Society: Discourse of WID, WAD and GAD, Why gender is important in the discourse of development, Gender inequality & women's subjugation in developing societies.	4
	6 th	Environmental Problems, Natural Disasters and Social Crisis: Climate change and its impact on society, Natural disaster, social crisis and vulnerabilities, Climate change, deforestation and mal- development.	5
	7 th	Social Inequality: Dimensions of social inequality: Class, gender, age, minority group (religious and indigenous), economic vulnerability, Social inequalities in developed & developing countries.	8
	8 th	Types of societies: Marxist view on classifying societies on the basis of type of control over economic resources and Lenski's view on classifying societies by their main means of subsistence.	8
Test (10 Lectures)	9 th	Deviance & Social Control: Definition of deviance, theories of deviance. Crime & justice system, agencies of social control	3
	10 th	Health, Illness and Society: Nature & scope of the problem, Urbanizations, acute, chronic & life style diseases, Social, environmental & behavioural factors affecting health, Communicable & behavioural diseases: STD, HIV/AIDS, TB, Hep-B etc	3
	1 st to 10 th	Revision	4

REFERENCES

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|------------------------------|--|
| 1. R. T. Schaefer (2009) | <i>Sociology</i> |
| 2. Giddens | <i>Sociology</i> |
| 3. Smelser | <i>Sociology</i> |
| 4. Stewart & Glynn | <i>Introduction to Sociology</i> |
| 5. David Jary and Julia Jary | <i>Collins Dictionary of Sociology</i> |

1st Year Honours (2014-2015)
Course Code : 212111
Course Title: **Introduction to Social Work**
Marks 100, 4 Credits, 60 Lectures

Exam.	Chapter	Content	Lectures
1 st In-course (25 Lectures)	1 st	Social Work : Meaning, Characteristics, Scope and Importance Relationship of Social Work with other Sciences-Sociology, Economics, Geography & Environment and Political Science.	8
	4 th	Social Legislations Related to Social Security, Women Welfare, Child Welfare.	8
	7 th	Social Problems and Social Services in Bangladesh.	9
2 nd In-course (25 Lectures)	2 nd	Evolution : Evolution of Social Work in UK, USA, India and Bangladesh.	8
	3 rd	Social Reformers and their Movements in Pre-partition Indian and Bangladesh : Raja Rammohan Ray, Ishwar Chandra Vidysagar, A.K. Fazlul Haque, Sir Syad Ahmed, Begum Rokeya.	8
	8 th	Methods of Social Work : Basic and Auxiliary Methods and their Basic Issues Such as Meaning, Elements, Principles and Area of Use. Importance of Social Work Methods in Bangladesh.	9
Test (10 Lectures)	5 th	Profession and Social Work : Meaning and Characteristics of Profession, Social Work as profession, Philosophical, Religions and Ethical Basis of Social Work.	4
	6 th	Industrial Revolution : Meaning, Impact of Society, Industrialization, Urbanization, Welfare State.	3
	1 st to 8 th	Revision	3

REFERENCES

1. Barker, Robert L: Social Work Dictionary, 3rd ed. NASW, New York, 1995.
2. Coulshed, Veronica Social Work Practice: An Introduction 2nd ed. London. Macmillan, 1991.
3. Friedlander, Walter A.: Introduction to social welfare, Prentice Hall, 2nd ed. New Delhi-1967.
4. Khalid. M: Welfare State, Karachi, Royal Book, 1968.
5. Morales, A. And shaefer, B. Social Work-A Profession of many faees, 4th ed. Allyan and Bacan, Boston. 1986.
6. ইসলাম মো: শহিদুল, সমাজকর্ম পরিচিত, গ্রন্থ কুটির, ২৬ বাংলাবাজার, আলীরেজা মার্কেট (দোতলা), ঢাকা।

1st Year Honours (2014-2015)
Course Code : 211909
Course Title: **Introduction to Political Theory**
Marks 100, 4 Credits, 60 Lectures

Exam.	Chapter	Content	Lectures
1 st In-course (25 Lectures)	1 st	Meaning, Nature, Scope, Methods, Relations to other Social Sciences, Importance of Political Science	9
	2 nd	State: Definition, Elements, State and Government, State and Individual, State and Society, Theories of the Origin of State	8
	3 rd	Sovereignty, Law, Liberty, Equality, Rights and Duties, Nation, Nationalism, Internationalism	8
2 nd In-course (25 Lectures)	5 th	Features of Ancient Era Plato, Aristotle	9
	5 th	Features of Mediaeval Era Saint Augustine, Saint Thomas Aquinas	6
	5 th	Features of Modern Age, Machiavelli, Tomas Hobbes, John Locke, Rousseau	10
Test (10 Lectures)	4 th	Political Culture, Elite Theory, Max Weber and Bureaucracy	6
	1 st to 5 th	Revision	4

REFERENCES

1. R. G. Gettell, *Political Science*
2. J. W. Garner, *Political Science and Government*
3. R. M. MacIver, *The Modern State*
4. G. H. Sabine, *A History of Political Theory*
5. William Ebenstein, *Great Political Thinkers – Plato to Present*
6. H. J. Laski, *A Grammar of Politics*
৭. মুহাম্মদ আয়েশ উদ্দীন, রাষ্ট্রচিন্ত্র পরিচিতি।
৮. এমাজউদ্দীন আহমদ, মধ্যযুগের রাষ্ট্রচিন্ত্র।
৯. মোঃ দরবেশ আলী খান, পেটো ও এরিস্টটলের রাজনৈতিক রাষ্ট্রচিন্ত্র।
১০. সরদার ফজলুল করিম, পেটোর রিপাবলিক।

Paper Code	212209	Marks: 100	Credits: 4	Class Hours: 60
Paper Title:	Principles of Economics			

- 1. Fundamentals of Economics:** Definition, Nature and Scope of Economics, Scarcity of Resources, Various forms of Economic Organization, Three Fundamental Problems of Economics, Production Possibility Frontier, Opportunity Cost, Efficiency and Equity.
- 2. Supply and Demand:** Demand and Quantity Demanded, Demand Schedule, Demand Curve, Supply and Quantity Supplied, Supply Schedule, Supply Curve, Equilibrium of Supply and Demand, Movement along the Supply and Demand Curve and Shift of Supply and Demand Curve and Its Effects on Equilibrium Price and Quantity. Elasticity of Supply and Demand; Determinants of Elasticity of Demand.
- 3. The Theory of Consumer Behavior:** Total and Marginal Utility; Law of Diminishing Marginal Utility, Equi-Marginal Utility; Consumer Surplus.
- 4. Production and Cost:** Production Function and Technology; Production with One Variable Input; Production with Two Variable Inputs; Returns to Scale; Costs in the Short-run; Costs in the Long-run.
- 5. Market Analysis:**
 - A. **Perfect Competition:** Characteristics of Perfect Competition; Average and Marginal Revenue; Individual and Market Supply; Short-run equilibrium of a competitive firm Long run Equilibrium under Perfect Competition.
 - B. **Monopoly:** Average and Marginal Revenue; Supply Curve of the Monopolist; Perfect Competition and Monopoly Compared;
- 6. Overview of Macro Economics:** Objective and Instruments of Macroeconomics, National Income Accounting, Gross Domestic Product, Problem of Double Counting, Net Domestic Product, Gross National Product, From GDP to Disposable Income, Net Economic Welfare (NEW).
- 7. International Trade:** Domestic Vs. International Trade-Balance of Trade Vs. Balance of Payment-Trend of Changes in International Trade of Bangladesh. Free Trade Vs. Protection, Comparative Advantage Theory.
- 8. Growth and Development:** Economic Development and Economic Growth, Measurement of Economic Development, Obstacles to Economic Development.
- 9. Money:** Definition and Functions of Money-Importance of Money in Modern Economy-Different Concepts of Money (M1, M2, M3)-Value of Money. Concept, Causes and Effects of Inflation and Deflation.

10. Government Revenue and Expenditure: Difference between Public Sector and Private Sector finance, Different Sources of Govt. Revenues, Taxation and Different Kinds of Taxes, Definition of Revenue Budget, Development Budget, Revenue Budget Vs. Development Budget, Surplus, Deficit and Balanced Budget.

Books Recommended:

1. N. Gregory Mankiw. **Principles of Economics.** Any Late Edition. South Western College.
2. Michael Parkin. **Economics.** Any Late Edition. Prentice and Hall.
3. Karl Case and Ray Fair. **Principles of Economics.** Any Late Edition. Prentice and Hall.

Department of Geography & Environment
Rajshahi College, Rajshahi.

Course Plan

Second Year Honours (2014-15)

Course Code-3262

Course Title: **Climatology**

Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lec
1 st Incourse (25 Lectures)	1	Climatology: Its Scope and Relation with other related Disciplines; Difference between Climatology and Meteorology.	NA	2
	2	The Atmosphere: Structure and Composition; Climatic Factors and Elements.	NA	4
	3	Heat: Insolation, Radiation and Conduction Processes ; Temperature Factors, Heat Balances, Green House Effect, Annual and Diurnal Variation of Temperature, Horizontal and Vertical Distribution of Temperature.	NA	8
	4	Pressure: Isobar, Isobaric Shapes, Pressure System of the Globe, Thermal and Dynamic Causes of Pressure and Temperature.	NA	6
	5	Circulation of the Atmosphere: Theories and Essential Features of Atmospheric Circulation, Forces and Motion of Wind System, El-nino and La-nina,	NA	5
2 nd Incourse (25 Lectures)	6	Major Wind System: Zonal Wind, Jet Stream, Seasonal Wind, Cyclones and Anticyclones.	NA	5
	7	Local Wind System: Land and Sea Breezes, Mountain and Valley Breezes, Chinook and Other Special Winds.	AR	4
	8	Atmospheric Hydrology: Humidity, Mechanism of Condensation, Precipitation, Frost, Fogs and Mists, Haze, Clouds, Convective Dynamic, Thermal and Mechanical Factors, Rain, Hail and Snow.	AR	9
	9	Air Masses and Fronts: Life History and Classification of the Air Mass, Fronts & Frontogenesis, Classification of Fronts, Frontal Zones.	AR	4
	10	Climatic Types: Kopen's and Thornthwait's Classification, Principal Climatic Types of the World.	AR	3
Test (10 lectures)	11	Climate Change: Meaning, causes and consequences.	AR	5
		Revision	AR +NA	5

Selected Readings:

1. Ahmed, R. Abhaoo O Jalabayu Viggyan (Meteorology and Climatology), Sujenasu Prokashani, Dhaka (in Bangla)
2. Aguado, E. and Burt, James E. *Understanding Weather and Climate*, Prentice Hall.
3. Barry, R.G. and Chorley, R.J. *Atmosphere, Weather, and Climate*, Methuen, London
4. Crithfield, H. *General Climatology*, Prentice Hall, New York.
5. Gates. E.S. *Meteorology and Climatology*. George G. Harrap & Co. Ltd. London.
6. Griffiths, J. F. *Applied Climatology: An Introduction*, O.U.P.
7. Koeppe, C.E. and De Long, G.C. *Weather and Climate*. MaGro Hill, New York
8. Miller, A. *Climatology*,
9. Tarbuck, E.J. and Lutgens. F.K., *The Atmosphere*, Prentice Hall, New Jersey.
10. Trewartha, G.T. *An Introduction to Climate*.

Course Code-3263
 Course Title: **Economic Geography**
 Marks-100, 4 credits, 60 Lectures

Exam	Chapter	Content	Teacher	Lec
1 st Incourse (25 Lectures)	1	Introduction: Defination, scope, objective, approach of economic geography. Relation between economic geography and economics.	FH	3
	2	Nature, Characteristics and Classification of Economic Activities: Primary, Secondary, Tertiary and Quaternary.	FH	2
	2.1	Primary Activities: (a) Gathering, Hunting, Lumbering, Fishing, Mining and Nomadic Herding/Livestock Ranching; (b) Agriculture: General characteristics of various agricultural system and case studies of selected commodities such as Rice, Wheat, Cotton, Jute. Sugarcane, Rubber and Tea	FH	9
	2.2	Secondary Activities: (a) Distribution of Major Non-Renewable Resources of the World; (b) Major Industrial and Manufacturing regions of the world;Case Studies of some Industrial Complexes (e.g. Iron and Steel Industry,Apparel Industry, Textile Industry, Power and Energy Industry, Automobile Industry and Petrochemical Industry.	FH	7
	2.3	Tertiary Activities: (a) Types and means of transportation in developed and developing countries; (b)Transportation and trade: Regional and International; (c) Trade and its effect on the economy of the region; and (d) Globalization and International Business Strategies.	FH	4
2 nd Incourse (25 Lectures)	2.4	Quaternary Activities: (a) Professional and Administrative services; (b) Financial and Health service work: (c) Information Processing, Teaching and Government Services and Entertainment.	AZ	4
	3	Fundamental Concepts of Economic Geography: Space, Location and Interaction; Distribution, Processes and Patterns; Production, Consumption and Exchange; Nature of Changes in Economic Geography: Globalization and Its Impact: Major Economic Blocks of the World (EU, NAFTA, ASEAN etc.).	AZ	8
	4	The Theoretical Approach: Concept of Distance Decay Function; Theories of Economic Growth and Development (e.g. Marx, Rostow); Location Theories (Models) of Economic Activities (e.g. Von Thunen's Agricultural Location Theory, Alfred Weber's Industrial Location Theory, Walter Christaller's Central Place Theory for Tertiary Activities)	AZ	13
Test (10 Lectures)	5	National Income and Product: GDP, NP measuring techniques; Financial Institution and their role in sectoral and overall development with respect to Bangladesh.	AZ	5
		Revision	AZ	5

Selected Readings:

1. Charles, C. Colby & Fasteur, Alie, : *Economic Geography*, USA.
2. Goh, Cheng Leong & Morgan, Gillian, C.: *Human and Economic Geography*
3. Goha, J. I. and Chattaraj, P. R. : *A new Approach to Economic Geography*, India.
4. Hartshorn, A. Trumen and J.W. Alexander J.W. *Economic Geography*, Prentice-Hall.
5. Hugget, P.: *Locational Analysis in Human Geography*, USA.
6. Johns, C.F. and Darkenwald, G.G. 1985: *Economic Geography*, USA.
7. Loyed, P. E. & Dicken, Peter, : *Location in Space: A theoretical Approach to Economic Geography*, USA.

Course Code-3270
 Course Title: **Geography Practical**
 Marks-70 (theory) +30, 4 credits, 42 Lectures for theory

(Exam 70, Lab Notebook 10, Surveying viva-voce 5 and Field Report 15) Day-long fieldwork
Lab Notebook and Field Report must be submitted to the Examination Committee

Exam	Chapter	Content	Teacher	Lec
1 st Incourse (16 Lectures)	1	<p>Section I: Surveying (Marks 30)</p> <p>1.1 Definition of Surveying: Type of Survey (Geodetic, Plane) 1.2 Surveying as the Basis of Large Scale Maps: The Framework of Topographical Maps, Principles of Triangulation, Types of Triangulation (Topographical, Principal, Major & Minor) 1.3 Methods of Surveying: (a) Chain and Tape: Equipments, Drawing Sketch Map, Recording of Field Data, Tie Line- Principles and Uses, Open and Closed Traverse Surveying, Measuring against Obstacles, Drawing Procedures, Advantages and Disadvantages of Chain and Tap Survey (b) Plane Table Surveying: Equipments, Method of Preparation, Drawing Sketch Map, Open and Closed Traverse Surveying, Determining Position by Resection, Determining Position by Adjustment, Advantages and Disadvantages of Plane Table Survey (c) Prismatic Compass Survey: Equipments, Data Recording and Plotting, Advantages and Disadvantages of the Survey. (d) Levels and Leveling: Equipments, Data Recording and Plotting, Advantages and Disadvantages of the Survey. (e) Theodolite and Total Station: Equipments, Data Recording and Plotting, Advantages and Disadvantages of the Survey 1.4 Geo-referencing and Global Positioning System</p>	MI	16
2 nd Incourse (16 Lectures)	2	<p>Section II: Map Projection (Marks 30)</p> <p>2.1 Definition and Uses 2.2 Classification (Perspective, Non-perspective, Conventional, Conical, Zenithal) 2.3 Criteria for Selecting Appropriate Projection 2.4 Major Criteria for the Construction of Projections- Latitude, Longitude, Central Meridian, Standard Parallel, Scale of the Projection. 2.5 Construction of Various Projections (Graphical and Mathematical) along with their Merits and Demerits. a). Conical group of projections b). Cylindrical group of projections c). Zenithal group of projections: Polar, equatorial and oblique d). Conventional projections</p>	AH	16

Test (10 Lecturs	3	<p>Section III: Representation of Relief (Marks 10)</p> <p>3.1 Elevation and Relief: Definition, classification and uses.</p> <p>3.2 Methods of RepresentationRelief: Pictorial, hachure, mathematical, spot height, contours and combination of several methods.</p> <p>3.3 Contour Features: Mountain, knoll, ridge, plateau, valley, gorge, waterfall, cirque, river plain, cliffs, slope and gradients.</p> <p>Revision</p>	NA	5+5
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2nd Year Honours (2013-2014)
 Course Code : 7302
 Course Title: Botany-II
 Marks 100, 4 Credits, 60 Lectures

Exam	Chapter	Content	Lectures
1 st In-course (25 Lectures)	1 st	Cytology: a) Ultra-structure of an eucaryotic cell, differences between procaryotic and eucaryotic cell, physical and chemical composition of cell wall and plasma membrane. b) Chromosome : Physical and chemical nature. c) Cell division: Mitosis and meiosis and its significance.	8
	2 nd	Genetics: a) Mendel's Laws of inheritance. b) Linkage and crossing over and their impact on inheritance. c) Mutation: Definition, point mutation, physical and chemical mutagens and significance of mutation.	8
	3 rd	Plant Breeding and Evolution: Definition and significance of plant breeding. Method of artificial pollination in plants. Selection method. Theories of evolution: Darwin's theory and synthetic theory of evolution.	9
2 nd In-course (25 Lectures)	4 th	Biotechnology: a) Definition and scope. b) Milk products: Technique of production of curd and butter. c) Biogas technology: Production method and uses.	4
	5 th	Plant Ecology and Environmental Science: a) Definition, differences between autecology and synecology. b) Ecological factors: Climatic, edaphic and biotic. c) Ecological adaptation and characteristics of hydrophytes, xerophytes and halophytes. d) Ecosystem: Definition; Pond ecosystem; Food chain; Food web, Ecological pyramids. e) Nitrogen and carbon cycles. f) Pollution: Air and water pollution. g) Green house effects: Definition, sources of green house gases; causes and effects of green house gases; CO ₂ , CFC, CH ₄ and N ₂ O, ozone layer depletion, carbondioxide and the world climate, control of green house effects.	15
	6 th	Conservation: Importance of conservation of plant species. Methods of <i>ex-situ</i> and <i>in-situ</i> conservation.	6
Test (10 Lectures)	7 th	Plant Physiology and Phytochemistry: a) Water relation: Mechanisms of absorption of water and minerals. b) Mineral nutrition c) Photosynthesis: General account and modern concept. d) Respiration: Aerobic and anaerobic. e) Enzymes: Definition and properties. f) Photoperiodism. g) Vernalization: Definition and mechanism. h) Plant hormones: A general account. i) Carbohydrate: Classification with examples, structures of important monosaccharides and oligosaccharides and isomerism. Storage polysaccharides; Starch, enulin, glycogen, structural polysaccharides; cellulose and economic importance of carbohydrate.	8
	1 st to 7 th	Revision	2

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2. Benjamin Lewin. 2000 : Gene 2000. Oxford University Press and Cell Press.
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4. Devlin, M.R. and H.F. Witham. 1986 : Plant Physiology (4th ed.). CBS Publishers and Distributors, New Delhi.
5. Esau, K. 1953 : Plant Anatomy. John Wiley & Sons, Inc., New York.
6. Goodwin, T.W. and E.I. Mereer. 1983 : Introduction to Plant Biochemistry (2nd ed.). Pergamon Press.
7. Hawker, Lilian, E. 1967 : Fungi, Hutchinson Univ. Library, Cambridge Univ. Press, London.
8. Kumar, H.D. 1995 : General Ecology, Vikash Pub. House, India.
9. Lawrence, G.H.M. 1951 : Taxonomy of Vascular Plants. The Macmillan Co. New York.
10. Pelczer, M.J., E.C.S. Chan and N.R. Krieg. 1993 : Microbiology: Concepts and Applications. McGraw Hill Book Co. Inc. New York.
11. Vashista, P.C. 1993 : Botany for Degree Students: Pteridophyta. S.C. Chand & Co. Ltd. Rannagar, New Delhi.
১২. আখতারজ্জামান, ম. : বংশগতি বিদ্যা, হাসান বুক হাউজ, ঢাকা।
১৩. আখতারজ্জামান, ম. ২০০০ : বিবর্তন বাদ, হাসান বুক হাউজ, ঢাকা।
১৪. ইসলাম, এ.এস. ১৯৮৪ : বংশগতি বিদ্যার মূল কথা, বাংলা একাডেমী, ঢাকা।
১৫. কর্মকার, যদুলাল. ২০০০ : উদ্ভিদ শরীর বিজ্ঞান, হাসান বুক হাউজ, ঢাকা।
১৬. খান, আমজাদ আলী এবং তরিকুল ইসলাম : স্নাতক উদ্ভিদ বিজ্ঞান ১ম, ২য় ও ৩য় খন্ড।
১৭. খন্দকার মনিরজ্জামান, ১৯৯৪ : লিমনোলজী, ঢাকা বিশ্ববিদ্যালয় প্রকাশনা, ঢাকা।
১৮. জামান, এম. এ. ১৯৭৫ : কোষবিদ্যা, বাংলা একাডেমী, ঢাকা।
১৯. বাসার, এম. এ., এম.এ. হাসান এবং ম. রফিকুল ইসলাম. ২০০৪ : উদ্ভিদ বিজ্ঞান, হাসান বুক হাউজ, বাংলা বাজার, ঢাকা।
২০. হাসান, এম. এ. ১৯৯৬ : বাংলাদেশের ভেষজ উদ্ভিদ, আশরাফিয়া বই ঘর, বাংলা বাজার, ঢাকা।
২১. হাসান, এম. এ. এবং এম. কে. আলম. ১৯৯৭ : উদ্ভিদ শ্রেণী বিন্যাস তত্ত্ব (৩য় সংস্করণ), হাসান বুক হাউস, ঢাকা।
- ২২.

Botany Practical-II

Practical Code-7306

50 Marks, 2 Credits

1. Detail study including dissection (where necessary), mounting, drawing, description and identification with classification of the following genera:
 - Algae : *Chlamydomonas*, *Oedogonium* and *Vaucheria*.
 - Fungi : Yeast and *Ascobolus*
 - Bryophyte : *Riccia* and *Marchantia*
 - Pteridophyte : *Selaginella*
 - Gymnosperms : *Cycas*
 - Angiosperm : Poaceae and Fabaceae
2. Identification of the following genera with reasons:
 - Algae : *Volvox*, *Polysiphonea* and *Fucas*
 - Fungi : *Agaricus*, *Puccinia* and *Penicillium*
 - Lichen : Crustose, Foliose and Fructose
 - Bryophyte : *Anthoceros*
 - Pteridophyte : *Psilotum*, *Azolla* and *Pteris*
 - Gymnosperms : Male and female cones of *Cycas*
 - Angiosperms : Scientific names of common plants
3. Plant Physiology: Setting up of the following experiments including procedure and precaution:
 - (a) Demonstration of plasmolysis
 - (b) Demonstration of osmosis
 - (c) Evolution of O₂ during photosynthesis.
4. Cytology: Different stages of mitosis in root tip of onion
5. Ecology:
 - (a) Morphological and anatomical studies of hydrophytic and xerophytic plants.
 - (b) Ecological identification of plants with their scientific names.
6. Laboratory note book
7. *Viva-voce*

2nd Year Honours (2013-2014)
 Course Code : 7312
 Course Title: Zoology-II
 Marks 100, 4 Credits, 60 Lectures

Exam	Chapter	Content	Lecture
1 st in-course (25 Lectures)	Group-A		
	1	Broad classification Chondriththyes, Osteichthyes, Amphibia,	4
	2	Type Study d. Chondrichthyes : <i>Scoliodon</i> e. Osteichthyes : <i>Labeo rohita</i> f. Amphibia : <i>Bufo/Rana</i>	3 3 3
	Group-B		
	1	Palaeontology Geological time table; palaeontological history of Horse & Man.	3
	2	Zoogeography Zoogeographical regions and sub-regions of the world: Nearctic Region, Ethiopian Region, Neotropical Region-their boundaries, physical characteristics, climatic conditions, vegetation and fauna.	4
	3	Animal Genetics & Animal Breeding Modification of Mendelian ratio with animal examples; multiple alleles and pseudoalleles; mutation; chromosomal inheritance of sex determination.	5
2 nd in-course (25 Lectures)	Group-A		
	1	Broad classification Reptilia, Aves and Mammalia.	4
	2	Type Study g. Reptilia : <i>Hemidactylus</i> h. Aves : <i>Columba livia</i> i. Mammalia : <i>Cavia porcellus</i> .	3 3 3
	Group-B		
	4	Ecology: Marine ecology; Zonations and Animal Adaptation to Different Zonations; Concept of Biodiversity; Conservation of Natural Resources; Concept and Classification of Resources; Renewable and Non-Renewable Resources.	5
5	Applied Zoology 1. Introduction to the major fields of Applied Zoology: Entomology, Fisheries, Wildlife Biology, Parasitology and others. 2. Agricultural Pests: Major Pests of Rice, Jute, Sugarcane & stored grain. 3. Integrated Fish Farming: Types; Poultry, Livestock and Paddy-cum -Fish Culture.	7	
Test (10 Lectures)	Group-A		
	2	Type study a. Urachordata : <i>Ascidia</i> b. Cephalochordata : <i>Branchiostoma</i> c. Cephalaspimorpha: <i>Petromyzon</i>	6
	Group-B		
5	Applied Zoology Poultry farming : System of poultry farming, diseases of poultry and their control, economic importance of poultry and their impacts on socio-economic condition of Bangladesh.	1	
Total Chapter	Revision		3

REFERENCES

1. D. Webster and M. Webster. 1974. *Comparative Vertebrate Morphology*, Academic Press New York.
2. I. Young. 1981. *Life of Vertebrates*. OUP, USA
3. K.V. Kardong. 1997. *Vertebrates: Comparative Anatomy, Function, Evolution* Wm. C. Brown
4. S. Stearus and R. Hoekstra. 2000. *Evolution An Introduction* OUP USA
5. A.J.Cain 1996. *Animal Species and Their Evolution* Princeton UP. USA
6. A.M. Davis. *An introduction to palacontology*
7. S. Bengtson. 1995 *Early Life on Earth* Columbia UP, USA
8. R.S. Lull. 1976. *Organic Evolution* Seema Publishing Delhi 11007
9. P.J. Darlington. 1998. *Zoogeography. The Geographical Distribution of Animals*. Krieger. USA
10. M. Begon J.L. Harper and C.R. Townsend. 1996. *Ecology. Individuals Populations*.
11. E.P. Odan *Fundamentals of Ecology*. Saunders. Philadelphia
12. E.W. Sinnott. L.C. Dunn and Dobzhansky *Principles of Genetics*. McGraw Hill Book Co. New York
13. R.E. Weaver and P.W. Hedrick 1995. *Basic Genetics* Wm. C. Brown Publisher. Dubuque. Iowa.
14. E. Mayr and P.D. Ashlock. 1997. *Principles of Syatematic Zoology* McGraw Hill
15. Kapoor. *Taxonomy*
16. Dennis S. Hill 1997. *The economic importance of insects* (1st edition) Chapman and Half. London
17. D. Dent. *Pest Management* Chapman & Hall London
18. P. Southgate and J. Lucas (Editors), 1998. *Aquaculture: Fish and Shellfish Farming* Fishing News.
19. A Midlen and T.A. Reading 1998. *Pollution Control and Environmental Management for Aquaculture*. Chapman & hall
20. M.R. Ross. 1996. *Fisheries Conservation and Management* Prentice Hall
21. R. Wall and D. Shearer, 1997 *Veternary Entomology* Chapman & Hall
22. V.G. Jhingran and R.S.V. Pullin 1985. *A Hatchery Manual for the Common Chinese and Indian Major Carps*. ADB/ICLARM
23. T.V.R Pillay. 1993. *Aquaculture Principles and Practices* Fishing News Books.
24. J.E. Bardach J.H. Ryther and W.O. McLarncy. 1972. *Aquaculture The Farming and Husbandry of Freshwater and Marine Organisms*. John Wiley & Sons.
25. B. Groombridge (Editor). *Global Biodiversity-status of the Earth's Living Resources*. Chapman and Hall London.
26. K.J. Gaston and J.I. Spicer. 1998 *Biodiversity An Introduction* Blackwell Science.
27. M. Jeffries. 1997. *Biodiversity and Conservation*. Routledge
28. O.S. Owen, Natural Resource Conservation. *An Ecological Approach* Macmillan Publishing Co. Inc.
29. P. Wathern (Editor). 1990. *Environmental Impact Assessment: Theory and Practice*, Routledge.
30. P.S. Maitland and N.C. Morgan. 1997. *Conservation Management of Freshwater Habitats: Lakes. Rivers and Wetlands*. Chapman & Hall
31. S.M. Manton and M.E. Brown 1969. *A Manual of Practical Vertebrate Morphology*. Oxford Univ. Press, London
32. W.F Walker. 1980. *Vertebrate Dissection*. W.B. Saunders Co. London.

Zoology Practical

Course Code : 7316

50 Marks, 2 Credits

1. Study of Museum Specimens: Representative of all major Non-Chordate and Chordate phyla (at least 25+25 = 50 specimens to be studied)
2. Study of Permanent Slides: Whole mount, body parts, various cells & tissues and different larvae (at least 20 slides to be studied).
3. Study of Bones: Comparative study of the skeleton of an amphibian, reptile, a bird and a mammal.
4. External morphology and Dissection of various organ systems of Non Chordates - Earthworm, Cockroach, Prawn and *Pila*:
 - a. Circulatory system of Earthworm and Prawn.
 - b. Nervous system of Earthworm, Cockroach, Prawn.
 - c. Reproductive system of Earthworm, Cockroach and Prawn.
5. Dissection: Dissection of the following Chordate Specimens-
 Bufo/ any Carp - Brain and Cranial Nerves.
 Lata fish-Afferent and Efferent Blood Vessels
 Lizard - Circulatory System.
6. Fresh Water Studies: Identification of plankton and benthic microfauna in fresh water samples.

Distribution of Marks for the Final Examination

1. Dissection : One item (Non Chordate) 1 item x 9 = 09 Marks
(Dissection – 4, display – 2, drawing & labeling - 3)
2. Dissection : One item (Chordate) 1x 9 = 09 Marks
(Dissection – 4, display – 2, drawing & labeling – 3)
3. Spotting of Museum Specimens : 9 items 9x2 = 18 Marks
(Invertebrate Museum Specimen – 3 items x2 = 06,
Vertebrate Museum Specimen – 3 items x2 = 06,
Histological Slides – 2 slides x2 = 04 (1 from Protozoa, Non-Chordates Bones 1 bone x2 = 02) and 1 from Chordates
4. Fresh Water Studies: 2 specimens x 2 marks for each = 04Marks
(2 micro species to be shown – Identification and 1, characters 1 mark)
5. Class Records: = 06 Marks
6. An extensive oral test will be taken during practical examination session: = 04 Marks

2nd Year Honours (2013-2014)

Course Code : 7203

Course Title: Sociology of Bangladesh

Marks 100, 4 Credits, 60 Lectures

Exam.	Chapter	Content	Lectures
1 st In-course (25 Lectures)	1 st	The Sociology Background of Bangladesh Society: The Ecological Background Context-The Nature of Village Society-Religion, Culture & Ethnicity-The British Colonialism and its impact-Pakistan era: the internal colonialism-emergence of Bangladesh: Language Movement-Historic speech of Sheikh Mujib on 7 th March 1971-Liberaton War.	8
	2 nd	Population and Ethnicity: Population composition: age-sex-marital status-literacy-labor force- Population change: fertility-mortality-migration and population control- Ethic groups in Bangladesh.	7
	3 rd	Marriage, Family and Socialization: Changing pattern of marriage and divorce-Changing patterns of family and kinship –Cultural change and nature of socialization.	5
	4 th	Economy of Bangladesh: Real economy: farm and non-farm activities-problems of agrarian transformation-Urban Economy: industrial growth-working class-underclass- Informal economy. Problems of industrialization-Migration: Rural-urban migration. International migration: remittance economy.	5
2 nd In-course (25 Lectur	5 th	Social Inequality and Poverty: Nature of social inequality in Bangladesh-Income inequality, gender inequality, ethic inequality, status inequality-Growth and nature of middle class-Poverty tends.	7

	6 th	Politics: Nature of the state, bureaucracy and political parties in Bangladesh-Political culture-governance problems in Bangladesh-Local governments in Bangladesh.	6
	7 th	Rural Society and Urbanization: Agrarian structure: Land tenure and class structure-Community and power structure: samaj- salish- patron- client relationship.	7
	8 th	Crime and Deviance: Pattern and forms of crime in Bangladesh-Penology and correctional methods in Bangladesh-Policy, Civil Society and prevention of crime in Bangladesh.	5

Exam.	Chapter	Content	Lectures
Test (10 Lectures)	9 th	Culture: Pattern of religious beliefs and rituals in Bangladesh-Social groups and language-Pattern of cultural change: modernization-Problems of cultural identity: role of language, religion and ethics-Globalization of culture: cultural dependency-local culture.	3
	10 th	Education: Structure of education: Primary-Secondary-Higher Education and social structure: differential access to education-class and social mobility-socialization and social control-Changing pattern of education: Institutional expansion-changes in curriculum-enrollment-dropout-Education policy: problems and prospects.	3
	1 st to 10 th	Revision	4

REFERENCES

1. Nazmul Karim, Dynamics of Bangladesh Society
2. A. M. Chowdhury and Fakrul Alam (eds.), Bangladesh at the Threshold of the Twenty-first Century, Dhaka: Asiatic Society, 2002
3. Anwarullah Chowdhury, Agrarian Social Relations and Rural Development in Bangladesh, New Delhi, Oxford/IBH
4. Kamal Siddiqui, Jagatpur, Dhaka:UPL, 2000
5. Ashabur Rahman, Bangladesher Krishi Kathamo, UPL, 1986
6. Akbar Ali Khan, Discovery of Bangladesh, Dhaka, UPL, 1996.

2nd Year Honours (2013-2014)

Course Code : 7192

Course Title: Political Organization and the Political System of UK and USA

Marks 100, 4 Credits, 60 Lectures

Exam.	Chapter	Content	Lectures
1 st In-course (25 Lectures)	1 st	Constitution: Meaning and Significance, Classification, Methods of Establishing Constitution, Requisites of a Good Constitution	5
	2 nd	Forms of Governments: Democracy, Dictatorship, Parliamentary and Presidential, Unitary and Federal	6
	6 th	British Political System: Nature, Features and Sources of the Constitution, Conventions; Monarchy	7
	7 th	USA Political System: Natures and Features of the Constitution, Congress; The Executive	7
2 nd In-course (25 Lectures)	3 rd	Organs of the Government: Legislature, Executive, Judiciary; Public Opinion	9
	4 th	Theory of Separation of Power: Meaning, Significance and Working	2
	6 th	Parliament; Prime Minister; Cabinet; Political Party System	7
	7 th	USA Political System: Judiciary; The System of Checks and Balance; Political Parties	7
Test	5 th	Political Behaviour: Political Party; Pressure Groups; Public Opinion.	6

	1 st to 7 th	Revision	4
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REFERENCES

1. K.C Wheare, *Modern Constitution*
2. K.C Wheare, *Federal Government*
3. W.F. Willoughby, *The Government of Modern State*
4. C.F. Strong, *Modern Constitution*
5. R.M. MacIver, *The Web of Government*
6. ড. মোঃ মকসুদুর রহমান, রাষ্ট্রীয় সংগঠনের রূপরেখা
৭. ড. ওদুদ ভূইয়া, রাষ্ট্রবিজ্ঞান
৮. বিপুল রঞ্জন নাথ, রাষ্ট্রীয় সংগঠন
৯. নির্মল কান্দিড ঘোষ, আধুনিক রাষ্ট্রবিজ্ঞানের ভূমিকা
১০. ড. এমাজউদ্দীন আহমদ, রাষ্ট্রবিজ্ঞানের কথা

2nd Year Honours (2013-2014)
Course Code : 9999
Course Title: Compulsory English
Marks 100, No Credits, 60 Lectures

Exam.	Chapter	Content	Lectures
1 st In-course (25 Lectures)		Understanding different purposes and types of readings Guessing word-meaning in context. Understanding long sentences Recognizing main ideas and supporting ideas. Answering comprehension questions. Writing summaries.	05
		Writing correct sentences, completing sentences and combining sentences.	02
		Situational writing : Posters, notices, slogans, memos, advertisements etc.	04
		Paragraph writing : Structure of a paragraph; topic sentences; developing ideas; writing a conclusion; types of paragraphs (narrative, descriptive, expository, persuasive); techniques of paragraph development (such as listing, cause and effect, comparison and contrast).	02
		Word order of sentences.	02
		Framing questions.	02
		Tenses, articles, subject-verb agreement, noun-pronoun agreement, verbs, phrasal verbs, conditionals, prepositions and prepositional phrases, infinitives, participles, gerunds. (Knowledge of grammar will be tested through contextualised passages).	08
2 nd In-course (25 Lectures)		Newspaper writing : Reports, press releases dialogues etc.	04
		Writing resume@s.	02
		Writing letters : Formal and informal letters, letters to the editor, request letters, job applications, complaint letters etc.	05
		Punctuation.	03
		Developing vocabulary : Using the dictionary, suffixes, prefixes, synonyms, antonyms, changing word forms (from verb to noun etc.) and using them in sentences.	06
	Translation from Bengali to English.	05	
Test (10 Lectures)		Essay : Generating ideas; outlining; writing a thesis sentence; writing the essay: writing introductions, developing ideas, writing conclusions; revising and editing.	05
		Revision of 1 st and 2 nd in-course	05

Course Plan



for
B.Sc Honours (3rd year) Course
Session : 2014–2015

Third Year Honours

Course Code-3272

Course Title: Geomorphology

Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (25Lectures)	1 st	1. Introduction: Definitions, concepts, scope and methods of explanation in Geomorphology; Form, process and pattern; Application of geomorphological knowledge to study environmental problems.	AH	7
	2 nd	2. Development of Geomorphological Thoughts: Pre-Davisian Geomorphology; Davisian Cycle of Erosion; Penck's and King's concepts; Morphometric and morphoclimatic regions.	AH	6
	3 rd	3. Geomorphological Processes and Landforms: Development of slope, Mass wasting, Landslides, Transportation of eroded materials; Folding and faulting, Volcanoes and volcanic landform, Earthquake.	AH	6
	4 th	4. The Humid Geomorphic Environment: Characteristics of humid environment; Stream process; Origin & evolution of rill, gullies, drainage pattern; Channel types; Erosion, transportation and deposition; Stream flow, velocity and discharge; Floods; Floodplain.	AH	6
2 nd In-Course (25 Lectures)	5 th	5. The Arid and Semi-arid Geomorphic Environment: Desert or arid and semi-arid environments; Fluvial process in arid /semi-arid environment; Wind and aeolian landforms.	AH	6
	6 th	6. The Glacial and Periglacial Geomorphic Environments: Glacial and periglacial environments; Process and products; Erosional and depositional features.	AZ	6
	7 th	7. Karst Topography: Conditions for karst development; Karst features.	AZ	4
	8 th	8. The Coastal Geomorphic Environment: Classification and delineation of coast; Geomorphic processes and products; Waves, tides, winds, and ocean current; Coastal landforms; Deltas.	AZ	9
Test(10 Lectures)	9 th	9. Palaeo-Geomorphology: Definition, concept, scope and importance; Methods of reconstruction.	AZ	5
	10 th	10. Geomorphology of Bangladesh: Geomorphological evolution of Bangladesh; Quaternary sedimentary sequences; Geomorphology and human settlement.	AZ	5

Selected Readings:

Thornbury, W. D. *Principles of Geomorphology*

Sharma, V. K., *Geomorphology: Earth Surface, Process and Forms.*

Small, R. J., *The Study of Landforms.*

Sparks, B. W., *Geomorphology.*

Chorley et. al., *Geomorphology.*

Embleton, C & Thomas J., *Process in Geomorphology.*

Islam. M.S. *Sea Level Changes in Bangladesh: Last Ten Thousand Years*, Asiatic Society of Bangladesh, Dhaka.

Third Year Honours
Course Code-3273
Course Title: Soil and Biogeography
Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(25 Lectures)	1 st	1. Soils: Definition and components.	NA	4
	2 nd	2. Physical Properties of Soils: Texture, structure, porosity, colour and permeability.	NA	5
	3 rd	3. Chemical and Mineralogical Properties of Soils: Weathering and mineralogical Composition; Soil PH; Soil water; Soil chemistry.	NA	9
	4 th	4. Organic Properties of Soils: Components of organic matter; Flora & fauna; Humus formation and characteristics.	NA	7
2 nd In-Course (25 Lectures)	5 th	5. Soil Genesis: Factors of soil forming process; Horizons and profile.	NA	6
	6 th	6. Soils Classification and Conservation: Classification of world soils; Seventh Approximation; Soil erosion, stalinization, pollution and soil conservation.	NA	6
	7 th	7. Geography of Plant Communities: Evolution of plants; Classification; Plant communities and succession.	NA	7
	8 th	8. Plant and their Environment: Biotic, habitat, climatic, edaphic and anthropogenic factors for the growth of vegetation.	NA	6
Test (10 Lectures)	9 th	9. Major Biomes of the World Forest: Tropical, equatorial, temperate, grassland, deserts.	NA	3
	10 th	10. Zoo-geographical Regions of the World.	NA	3
	11 th	11. Biodiversity: Concepts and importance; Ecosystem and biodiversity; Assessment and conservation; Biodiversity of Bangladesh.	NA	4

Selected Readings:

- Brammer, H. The Geography of the Soils of Bangladesh, UPL, Dhaka.
 Bridges, E. M. Principles and Applications of Soil Geography, Halsted PressBrikeland, P. W. *Soils and Geomorphology*, Oxford University Press.
 Buckman, H.O. and Brady, N.C. *The Nature and Properties of Soil*, Eurasia publishing House, New Delhi.
 Bunting, B. T. *The Geography of Soils*, Hutchinson, London
 Densveau, P. *Biogeography: An Ecological Perspective*, Ronald Press.\n
 Daji, J. A. A Textbook of Soil Science, Asia Pub. House
 Darlington P. J. *Zoogeography: The Geographic Distribution of Animals*, Wiley and Sons, New York
 Haroun-er-Rashid, *Geography of Bangladesh*, UPL, Dhaka
 Mather, Alexander S. *Global Forest Resources*, Pinter
 Mathur, H. S. *Essentials of Biogeography*, Pointer Publishers, Jaipur
 Miller, R. W. and Donahue, R. L. *Soils*, Prentice-Hall of India

Pears, Nigel, *Basic Biogeography*, Longman, London, New York
 Pitty, A. F. *Geography and Soil Properties*, University Press
 Robinson H. *Biogeography*, Mac Donald and Evans, London
 Sedden, Brian. *Introduction to Biogeography*, Duckworth, London

Third Year Honours
 Course Code - 3274

Course Title: Geography of Bangladesh

Marks: 100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(25 Lectures)	1 st	1. Introduction: Geo-physical location and its Importance; Boundary characteristics and problems; Geopolitical emergence of Bangladesh; Position of Bangladesh in regional and global context.	MI	9
	2 nd	2. Physical Structure and Environmental Settings: Geological background including formation and characteristics of Bengal Basin; Relief and physiography; River systems and wetlands; Coastal environment; Weather and climate; Soils.	MI	10
	3 rd	3. Geographic Study of Natural Resources: Land, water, minerals, fuel and energy, agriculture including fisheries, forestry and livestock.	MI	6
2 nd In-Course (25 Lectures)	4 th	4. Geographic Study of Population and Settlement: Anthropological origin of the people; Population distribution and dynamics; Population density and growth; Population as human resource; Urban and rural settlements of Bangladesh.	MI	12
	5 th	5. Geographic Study of Major Economic Activities: Primary activities; Secondary activities; Tertiary activities.	MI	6
	6 th	6. Major Regions of Environmental Concern: Coastal belt, Hilly region, Char areas, Haor areas, Barind and Modhupur Tracts, Megacity regions	MI	7
Test (10 Lectures)	7 th	7. Major Challenges and Issues of Sustainable Development: (1) Acute population pressure and its impacts, (2) Skewed distribution of resources and income, (3) Poverty alleviation, (4) Regional inequality and development, (5) Strengthening human resource development and exporting man-power; (6) Developing disaster and environment friendly physical infrastructure, (7) Protecting biodiversity and environment from natural and man-made hazards, and (8) Haphazard growth of cities and rising risks of disasters.	MI	10

Selected Readings:

Ahmad, Q.K., Ahmad, N, and Rasheed, K.B.S. (eds) (1994) *Resources, Environment and Development in Bangladesh*. Dhaka: Academic Publishers.

Asiatic Society of Bangladesh, *Banglapedia*, Dhaka.

Bangladesh Bureau of Statistics, *Bangladesh Population Census Reports*.

Bangladesh Bureau of Statistics, *Bangladesh Census of Agriculture and Livestock*.

Bangladesh Bureau of Statistics, *Statistical Yearbook of Bangladesh*, Published annually by (BBS).
 Bangladesh Centre for Advanced Studies, *Wetlands of Bangladesh*, Dhaka
 Brammer, Hugh 2012), *The Physical Geography of Bangladesh*, UPL, Dhaka
 Brammer, H. *The Geography of the Soils of Bangladesh*, UPL, Dhaka.
 Haroun-er-Rashid, *Geography of Bangladesh*, UPL, Dhaka
 Imam, B. Bangladesher Khanis shompod, Bangla Academym, Dhaka (in Bangla).
 Islam M.A. *Environment; Land use and Natural Hazards in Bangladesh*, University of Dhaka.
 Islam, Nazrul *Dhaka from City to Mega City: Perspectives on People, Places, Planning and Development Issues*, USP, Department of Geography, DU.
 Islam, Nazrul and Ahsan, Rosie Majid eds. *Urban Bangladesh : Geographical Studies*, USP, Department of Geography, Dhaka University.
 IUCN/GOB, *Water Resources, Flood Control, National Conservation Strategy Report*, Dhaka.
 Rahman A. Atiq et al. *Environment and Development in Bangladesh Vol.1-2*, UPL Dhaka
 Rasheed, K.B.Sajjadur, *Bangladesh: Resource and Environmental Profile*, AHDPH, Dhaka.
 Rasheed, K.B.Sajjadur, *Water Resource Management with example from Bangladesh*, A.H. Development Publishing House, Dhaka.

Third Year Honours

Course Code - 3275

Course Title: Urban Geography

Marks: 100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(25 Lectures)	1 st	1. Introduction to Urban Geography: Definition, scope and methodology; concept of urbanization, urbanism, urban centre, city, central place, metropolis, megalopolis.	AR	7
	2 nd	2. Origin and History of Urbanization: Urbanization in the ancient period; urbanization in the middle ages; Modern urbanization; Contemporary urbanization.	AR	6
	3 rd	3. Urbanization and Urban Growth (Macro System): Level of urbanization; Factors of urbanization and urban growth; Process of urbanization; Systems of cities/Central Place Theory/Urban hierarchy, Ranks size rule; Urbanization and urban growth in Bangladesh.	AR	12
2 nd In-Course (25 Lectures)	4 th	4. Urbanization --The City System (Micro System): Factors of city/urban growth; Stages and processes in urban/city growth; Internal structure of city (Land use and transport network; Central Business District (CBD); Location of retail business, residential and manufacturing areas in a city; Sub-urban and urban fringe area)	AR	15
	5 th	5. Economic Base of Cities: Basic non-basic concept; Formal/informal sector.	AR	10
Test (10 Lectures)	6 th	6. Classification of Cities: Needs and purposes; Early examples of classification: Harris, Nelson and Smales; Classification of Bangladesh cities.	AR	10

Selected Readings:

Mayer H. M. And C. F. Kohn, 1978: *Readings in Urban Geography*, London.
 Hortshone, H. H. 1991: *Urban Geography*.
 Crter, Harold, : *Urban Geography*, NY

Giibs, J.P.: *Urban Research Method*, NY
 Jones, Emerys, *Readings in Social Geography*
 Yeates and Gamer, *North American Cities*,
 Knox, Paul 1998: *Social Geography*
 Islam, N. and Baqee A. (edited) 1996: *Nogorayone Bangladesh, Urban Studies Program, Centre for Urban Studies, Dhaka* (in Bangla)
 Islam, N. 2001. *Urbanization, Urban Planning and Development and Urban Governance*.
 Bmjvg, bRi“j (2013) *XvKv GLb I AvMvgxžZ, XvKvt bMi MželYv †K>`a|*
 Murtaza, G. (2013) *A Gloosary of Terms of Urban, Rural and Regional Planning Dhaka: Centre for Urban Studies*

Third Year Honours
 Course Code-3276

Course Title: Cultural Geography

Marks-50, 2 credits, 30 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (12 Lectures)	1 st	1. Introduction: Definition of culture and Cultural Geography, scope, themes and methods of Cultural Geography.	AZ	3
	2 nd	2. Culture: Nature, types and traits.	AZ	3
	3 rd	3. Man-Environment Interaction: Environmental determinism and possibilism	AZ	3
	4 th	4. Processes of Culture Change: Invention/innovation, Diffusion and integration, Assimilation and Acculturation.	AZ	3
2 nd In-Course (13 Lectures)	5 th	5. Overview of Evolution of Human Race and Culture: Evolution of Mankind (Australopithecus to Homo Sapiens), Evolution of material culture and livelihood patterns (Stone ages, Ages of metals, Domestication of plants and animals, agricultural livelihood, industrial revolution and urbanization, globalization and e-culture.)	AZ	6
	6 th	6. Major Old and Extinct Cultural Hearths: Babylonian/Mesopotamian, Nile Valley, Indus Valley, Chinese/Hwang Ho Valley; Maya, Inca).	AZ	3
	7 th	7. Geographic Dimensions of Race, Religion and Language.	AZ	2
	8 th	8. Cultural Heritage and Conservation.	AZ	2

Test(5 Lectures)	9 th	9. Origin and Evolution of the People of Bangladesh: Anthropological origin of the people, including major ethnic groups; Archeological sites.	AZ	5
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Selected Readings:

Bateman, *How Man Began*

Birdshell, *Human Evolution*

Foster, *World Civilization*

Griffith Taylor; *Geography in the 20th Century*, London

Hoebel, *Anthropology: The Study of Man*, N.Y.

Leakey, *Stone Age*

Perpellese, A.V. *Human Geography*, London

Russell, *Culture Worlds*

Simmons, *Change the Face of the Earth Culture Environment*

Spencer, J. E. & Thomas (Jr.) W.L. *Cultural Geography*, N.Y.

Spencer, J. E. *Introduction to Cultural Geography*, N.Y.

Starr, *Early Man Prehistory and the Civilization of the Near East*.

Schenk, *The History of Man*

Wagner & Mikesell (eds), *Readings in Cultural Geography*, Chicago

Wallbank, Walter and Others, *Civilization Past and Present*

রশীদ, কে. বি. এস. সাংস্কৃতিক ভূগোল, ঢাকা : বাংলা একাডেমী

দাস গুপ্ত, অমল, মানুষের ঠিকানা, কলিকাতা : রাখাল সেন, কলিকাতা

Third Year Honours

Course Code-3277

Course Title: Population Geography

Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (25Lectures)	1 st	1. Introduction: Definition and concepts, Scope and development of Population Geography, Approaches of studying Population Geography.	MMI	7
	2 nd	2. Population Data Sources: Population census and sample survey, Registration systems (Vital Registration System, Population Registers, International Migration Statistics, Other sources of data-especially in Bangladesh).	MMI	6
	3 rd	3. Population Distribution and Redistribution: Geographical distribution of global and Bangladesh population, Population density, Determinants or Factors affecting population distribution and density, Population	MMI	6

		redistribution.		
	4 th	4. Patterns of Population Composition: Biological (age and sex), Social (language, religion and education), Occupation and income, Rural and urban.	MMI	6
2 nd In-Course (25 Lectures)	5 th	5. Population Growth: Theories of population growth (Malthus, Optimum Population, Demographic Transition Theory), Patterns of population growth (global, developed and developing countries and Bangladesh).	MMI	12
	6 th	6. Population Dynamics along with their Determinants and Measures: Fertility, Mortality and Migration.	MMI	6
	7 th	7. Techniques of Population Analysis: Life table analysis, Age-sex structure analysis, Population projection, Migration estimates.	MMI	7
Test(10 Lectures)	8 th	8. Population Policy: Population policy of Bangladesh and some other countries relevant to Bangladesh.	MMI	10

Selected Readings:

Beaujeu, G. J. *Geography of Population*
 Bogue, D.J., 1978: *Principles of Demography*, NY
 Clark, J.J. 1978: *Population Geography*, London.
 Demko, G.J., H.M. Rose, and A.A. Schnell 1986: *Population Geography: A Reader*, NY
 Ehrlich, P.R. and A.H. Ehrlich 1991: *Population, Resources and Environment*, NY.
 ESCAP, 1981: *Population of Bangladesh: Country Monograph Series 8*, United Nations. NY.
 Lucas, D. et al 1990: *Beginning Population Studies*, ANU, and Canberra.
 Shryock, H.S. and Jacob S Siegel., *The Methods and materials of Demography*, Academic Press Inc.
 Trewartha, G.T. *A Geography of Population: World Patterns*
 Woods, R. *Population Analysis in Geography*
 Zilensky, W. 1984: *A Prologue to Population Geography*, UK.

Third Year Honours
Course Code-3278

Course Title: Quantitative Geography

Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
Course (12 Lectures)	1 st	1. Introduction: Basic statistical concepts in Geography and Environment.	ZI	4
	2 nd	2. Data Sources, Types and Measurements: Sources (primary and secondary); Types (continuous and discontinuous, integer and real number, individuals	ZI	15

		and variables, Discrete and non-discrete); Levels of Measurement (nominal, ordinal, interval and ratio).		
	3 rd	3. Uses of Statistics: Description, inference, significance and prediction.	ZI	6
2 nd In-Course (13 Lectures)	4 th	4. Data Summarization: Frequency table; Techniques of graphical representation (histogram, polygons, relative and cumulative graphs, ogive); Measures of central tendency (mean, median and mode); Measures of dispersion (absolute measures – range, mean deviation, standard deviation- variance, quartile deviation; relative measures -- coefficient of variation, coefficient of quartile and mean deviation); Nature of dispersion (skewness and kurtosis).	MI	15
	5 th	5. Correlation and Regression: Linear correlation (Pearson's Product Moment correlation and Spearman's Rank Correlation); Simple linear regression analysis (regression by the Least-Squares Method, Multiple regressions and Residuals Analysis).	MI	5
	6 th	6. Hypothesis Testing: Definition and concept of hypothesis, Levels of significance, Student's t-test and Chi-square test, Analysis of variance.	MI	5
Test(5 Lectures)	7 th	7. Sampling: Concept of population, sample and sampling; Types of sampling in geographical and environmental research (random, systematic; stratified; cluster; hierarchical or multistage); Sample size determination.	AH	5
	8 th	8. Probability: Empirical definition of probability, Elementary probability theory, Probability distributions and properties (binomial, normal and Poisson).	AH	5

Selected Readings:

- Cole, J.P. & King C.A. M. *Quantitative Geography - Techniques and Theories in Geography*, Johns Wiley & Sons Ltd. USA.
- Elahi, K. 1991, *Porishonkhan Poddhoti ebong Sthanik Bisleshion*; Academic Publishers: Dhaka (in Bangla).
- Gregory, S. *Statistics Methods and Geography*.
- Hammond, R. and McCullagh, 1990, *Quantitative Techniques in Geography: An Introduction*, Oxford, UK.
- Johnston, R.J. 1990: *Multivariate Statistical Analysis in Geography*, Longman: USA
- Lippman, *Elements of Probability and Statistics*
- Mahmood, A. 1985, *Statistical Methods in Geographical Studies*, Regesh Publications, New Delhi: India.
- Mia, M.A. and Mian, M.a. 1988: *Porishonkhan Porichiti*; Idean Library, Dhaka (in Bangla)
- Taylor, P. J. *Quantitative Methods in Geography*. Houghton Mifflin Company, London.
- Yeates, M. 1985, *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill Inc: USA.

Third Year Honours
Course Code-3279
Course Title: Rural Geography
Marks-50, 2 credits, 30 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (12 Lectures)	1 st	1. Introduction: Definition, scope and approaches of studying Rural Geography.	ZI	3
	2 nd	2. Population distribution And Dynamics (fertility, mortality, migration); Rural population growth and change; Factors and consequences of rural population change;	ZI	4
	2 nd	3. Overview of the evolution of settlements; Classification and characteristics of rural settlements; Geographical and cultural factors influencing the formation and spacing of settlements; Rural housing (house types, functionality and durability); Rural settlement patterns of Bangladesh.	ZI	5
2 nd In-Course (13 Lectures)	3 rd	4. Geographical Study of Rural Physical Infrastructure: Transport and communication systems; State of and access to utility services (electricity, water supply and sanitation).	ZI	3
	4 th	5. Economic structure or base and its changing nature; Major economic activities (primary, secondary and tertiary sectors, formal and informal sectors); Geographical influence on diversity and development of economic activities;	ZI	5
	4 th	6. Rural economic infrastructure (growth centres or market centres; financial institutions and market facilities; rural-urban linkage; irrigation, transport and electricity facilities); Impacts of globalization on rural economy.	ZI	5
Test(5 Lectures)	5 th	7. Rural Development Models: Rural central development, BARD/ Comilla model, Micro-credit and Grameen Model, Rural development models from other countries relevant for Bangladesh.	ZI	2
	6 th	8. Major Challenges and Issues: (1) Unemployment, under-employment and low wage; (2) Lack of quality education and health facilities; (3) Poverty alleviation; (4) Diversification of non-farm activities and women employments; (5) Livelihood threats from natural hazards and polluted environment, especially soil and water pollution; and (6) In search of sustainable rural development model.	ZI	3

Selected Readings:

Asiatic Society of Bangladesh, *Banglapedia*, Dhaka

Baqee, A. *Grameen Bashati*, Bongo Prokashoni, Dhaka (in Bangla).

Brammer, Hugh, *Land use and Land Use Planning in Bangladesh*, UPL, Dhaka

Brammer, Hugh, *Agricultural Development Possibilities in Bangladesh*, UPL, Dhaka

Cloud, H.D. *Rural Geography and Introductory Survey*.

Hamid, A. *Palli Unnayan Bangladesh* (in Bangla).

Hroun-er-Rashid: 1995: *Geography of Bangladesh*, UOL, Dhaka.

Perpillou, A.V.: *Human Geography*

Rasheed, KB Sajjadur (2008), *Bangladesh: Resource and Environmental Profile*, AH Development Publishing House, Dhaka.

Rasheed, KB Sajjadur (2008), *Water Resources Management with Examples from Bangladesh*, AH Development Publishing House, Dhaka.

Sultana, S.: *Settlement Pattern of Bangladesh*

University Press Limited, *Report of the Task Forces on Bangladesh Development Strategies for the 1990's Vol. 1-4*, UPL, Dhaka.

Third Year Honours
Course Code-3278
Course Title: Practical III
Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (12 Lectures)	1 st	1. Introduction: Basics of maps and map reading (elements of map, understanding cartographic illustrations and symbols); Concepts and scope of map analysis and interpretation.	ZI	4
	2 nd	2. Understanding and Interpretation of Topographical Maps: The language of maps (conventional signs and symbols; contours and cross sections); Understanding and interpretation of physical features (relief, slopes, drainage system, water bodies, physiographic regions); Understanding and interpretation of human/cultural features (settlement patterns, transport network); Understanding and interpretation of different types of land use (major land use patterns, analysis of physical and anthropogenic factors which influence the development of different land uses).	AZ	15
	3 rd	3. Understanding and Interpretation of Weather Maps: The language of weather and climatic maps and their types and differences; Nature and types of data required for weather maps; Analysis and interpretation of daily weather maps broadcasted by radio and TV media.	MI	6
		4. Understanding and Interpretation of Geological Maps: Folding, faults, lineament, seismic.	NA	
2 nd In-Course (13 Lectures)	4 th	5. Introduction: Definition, concept and types of scientific research; Nature and types of research in Geography and Environment.	RK	
	5 th	6. Familiarity with Geographical Data and Publications: Nature, types and sources of data; Geographical publications by national and international organizations.	ZI	15
	6 th	7. Methods and Techniques in Geographical Research: Techniques of information collection and documentation (observation methods, case study, PRA, RRA, RGA, FGD; Style of writing references and bibliography, footnotes, quotations; Writing reviews (book, articles) and abstracts; Techniques of library research or literature survey.	MI	5
	7 th	8. Preparation of Research Proposal: Selecting and defining research problem or topic; A complete outline and methods of writing a research proposal, term paper, report, journal article and thesis.	AR	5
Test(5 Lectures)		9. Conducting Field Research: Selection of study area; Hypotheses formulation; Sampling design; Preparation of questionnaire or checklist and base maps; recording field information and conducting field survey; Monitoring and evaluation field survey.	AH	
	8 th	10. Data Processing, Analysis and Presentation: Scientific way of processing of secondary and primary data; Analysis and interpretation of processed data and maps using various statistical, cartographic, graphic and GIS techniques; Organization and drafting of research report; Dissemination or presentation of research findings to a seminar or meeting.	MI	5

Selected Readings:

Ajaegbu, H.I. and Faniran, A. *A New Approach to Practical Work in Geography*.

Alam, M.S. and Rashid, 2000: *Manchitra Pronoyan O Manchitra Bisleshan*; Oxfam, Dhaka (in bangla).

Avery, T.E. 1965: *Interpretation of Aerial Photographs*, Burgess: Mimmepolis.

Black, James A. & Dean, A. Champion, 1987: *Methods and Issues in Social Research*.

Course Plan



for
B.Sc Honours (4th year) Course
Session : 2014–2015

Department of Geography and Environment
Rajshahi College, Rajshahi
Department of Geography and Environment
Rajshahi College, Rajshahi

Fourth Year Honours
Course Code-
Course Title: Geographical Thoughts & Concepts
Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (25Lectures)	1 st	1. Definition of Geography: Changing nature of geographical concepts & ideas; Scope & its subject matter.	ZI	7
	2 nd	2. Geography in-pre modern times: Brief study of pre-Greek, Classical (Greek-Roman), Dark and Arab (Medieval) periods, Impacts of exploration and discoveries.	ZI	6
	3 rd	3. Modern Geographical Thoughts: Founders of modern geographical Thought: Alexander Von Humbolt, Carl Ritter.	ZI	6
	4 th	4.1 Schools of Geography: The French School of Geography, The British School of Geography,	ZI	6
2 nd In-Course (25 Lectures)		4.2 The American School of Geography,	ZI	6
		The Former Soviet and Chinese School of Geography.	ZI	6
	5 th	4.3 Dichotomies in Geography: Regional versus Systematic Geography; Determinism versus Possibilism; Theoretical versus Applied geography	ZI	4
	6 th	6. Geography in 20th Century: Quantitative Revolution, Spatial Analysis, Paradigms, System Analysis and Models in geography	ZI	9
Test(10 Lectures)	7 th	7. Introduction to Major Approaches in geography: Regional Approach; Cultural Landscape and Ecological Approach	ZI	5
	8 th	8. Development of geography in South Asian with special reference to Bangladesh	ZI	5

Suggesting Readings:

Thornbury, W. D. *Principles of Geomorphology*
 Sharma, V. K., *Geomorphology: Earth Surface, Process and Forms.*
 Small, R. J., *The Study of Landforms.*
 Sparks, B. W., *Geomorphology.*
 Chorley et. al., *Geomorphology.*
 Emblemton, C & Thomas J., *Process in Geomorphology.*
 Islam. M.S. *Sea Level Changes in Bangladesh: Last Ten Thousand Years*, Asiatic Society of Bangladesh, Dhaka.

Forth Year Honours
Course Code-
Course Title: Environmental Geography
Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(2.5 Lectures)	1 st	1. Environmental Geography: Meaning and Definition, Scope of Environmental Geography, Geography and Ecology, Basic concepts of Ecology, Environmental geography and related sciences	AZ	5
	2 nd	2.Environment: meaning, structure, types and components of environment ; Geography and environment; environment and resources, environment and society.	AZ	5
	3 rd	3.Human- Environmentsn relationships: Major approaches, Environment and human, Man's interaction with the environment	AZ	9
	4 th	4.1.Ecosystem: Meaning and concept, Types of components of ecosystem; functioning of ecosystem; Energy flow in the ecosystems; Concepts	AZ	8
2 nd In-Course (2.5 Lectures)		4.2, principles and types of biogeo-chemical cycles, ecological production; Topics level,	AZ	4
		4.3 Food chains and food webs; Ecological pyramids, Biomes; meaning and types, Major ecosystem of the World.	AZ	5
	5th	5.Human impact on natural environment.	AZ	8
	6th	6. Degradation of environment: Meaning, Types, causes, and process..	AZ	6
Test (10 Lectures)	7th	7.Environmental Pollution: Meaning, sources types, pollution of Air, water, soil, Noise, World distribution of major pollution areas..	AZ	3
	8th	8. Global environmental issues	AZ	3
	9th	9. Management of environment: Approaches and issues	AZ	4

Selected Readings:

Brammer, H. The Geography of the Soils of Bangladesh, UPL, Dhaka.
 Bridges, E. M. Principles and Applications of Soil Geography, Halsted Press, Birkeland, P. W. *Soils and Geomorphology*, Oxford University Press.
 Buckman, H.O. and Brady, N.C. *The Nature and Properties of Soil*, Eurasia publishing House, New Delhi.
 Bunting, B. T. *The Geography of Soils*, Hutchinson, London
 Densveau, P. *Biogeography: An Ecological Perspective*, Ronald Press.
 Daji, J. A. A Textbook of Soil Science, Asia Pub. House
 Darlington P. J. *Zoogeography: The Geographic Distribution of Animals*, Wiley and Sons, New York
 Haroun-er-Rashid, *Geography of Bangladesh*, UPL, Dhaka
 Mather, Alexander S. *Global Forest Resources*, Pinter
 Mathur, H. S. *Essentials of Biogeography*, Pointer Publishers, Jaipur
 Miller, R. W. and Donahue, R. L. *Soils*, Prentice-Hall of India
 Pears, Nigel, *Basic Biogeography*, Longman, London, New York
 Pitty, A. F. *Geography and Soil Properties*, University Press
 Robinson H. *Biogeography*, Mac Donald and Evans, London
 Sedden, Brian. *Introduction to Biogeography*, Duckworth, London

Fourth Year Honours
Course Code -
Course Title: Oceanography
Marks: 100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (25 Lectures)	1 st	1. Oceanography: Introduction, Definition, Scope, relation with other subjects.	AH	5
	2 nd	2. Distribution of Ocean over the Globe	AH	5
	3 rd	3. Relief of the Ocean: Continental Shelves & slope, Ocean floor, coral reef, relief of the Atlantic, Pacific & Indian Ocean	AH	7
2 nd In-Course (25 Lectures)	4 th	4. Ocean sediments: Source of sediments, types, characteristic, depositional environments,	AH	8
	5 th	5. Ocean temperature: Temperature change, Cause, vertical and horizontal distribution, implication.	AH	6
	6 th	6. Salinity: Salinity change, cause, distribution and implication.	AH	7
	7 th	7. Ocean currents: Causes, types, ocean current in Atlantic, Pacific & Indian ocean.	AH	10
	8 th	8. Tide: Tide generating forces, time & tide, tidal bores, and impact of tides.	AH	3
	9 th	9. Waves: Components and characteristics, classification of waves, causes of wave,	AH	4
	10 th	10. The study of Bay of Bengal: Physical, Economic, Resources, and biological aspects	AH	5

Selected Readings:

- Ahmad, Q.K., Ahmad, N, and Rasheed, K.B.S. (eds) (1994) *Resources, Environment and Development in Bangladesh*. Dhaka: Academic Publishers.
- Asiatic Society of Bangladesh, *Banglapedia*, Dhaka.
- Bangladesh Bureau of Statistics, *Bangladesh Population Census Reports*.
- Bangladesh Bureau of Statistics, *Bangladesh Census of Agriculture and Livestock*.
- Bangladesh Bureau of Statistics, *Statistical Yearbook of Bangladesh*, Published annually by (BBS).
- Bangladesh Centre for Advanced Studies, *Wetlands of Bangladesh*, Dhaka
- Brammer, Hugh (2012), *The Physical Geography of Bangladesh*, UPL, Dhaka
- Brammer, H. *The Geography of the Soils of Bangladesh*, UPL, Dhaka.
- Haroun-er-Rashid, *Geography of Bangladesh*, UPL, Dhaka
- Imam, B. *Bangladesher Khanis shompod*, Bangla Academym, Dhaka (in Bangla).
- Islam M.A. *Environment; Land use and Natural Hazards in Bangladesh*, University of Dhaka.
- Islam, Nazrul *Dhaka from City to Mega City: Perspectives on People, Places, Planning and Development Issues*, USP, Department of Geography, DU.
- Islam, Nazrul and Ahsan, Rosie Majid eds. *Urban Bangladesh : Geographical Studies*, USP, Department of Geography, Dhaka University.
- IUCN/GOB, *Water Resources, Flood Control, National Conservation Strategy Report*, Dhaka.
- Rahman A. Atiq et al. *Environment and Development in Bangladesh Vol.1-2*, UPL Dhaka
- Rasheed, K.B.Sajjadur, *Bangladesh: Resource and Environmental Profile*, AHDPH, Dhaka.
- Rasheed, K.B.Sajjadur, *Water Resource Management with example from Bangladesh*, A.H. Development Publishing House, Dhaka.

Fourth Year Honours
Course Code -
Course Title: Political Geography
Marks: 100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course(25 Lectures)	1 st	1. Introduction to political Geography: Definition, scope, nature and onject of political geography, Historical development of political geography, Apporaches to political geography,	RK	7
	2 nd	2. Concept of geopolitics : Ancient and Modern thinkers, Powre concepts, Great power special relationship, The balance of power of piower conflicts and current affairs, Geo- Stragetic pacts Mac Kinder Heartland and Spikeman’s Rimland Theory, Geopolitical importance of Bangladesh	RK	6
	3 rd	3. Concept of state: Definition of elements of state, Territorial concept of the state, Location, Shape, Size, Boundary, Administrative structure, government system and local government. Election and Transfer of power, The capital and core	RK	12
2 nd In-Course (25 Lectures)	4 th	4. Frontiers & Boundaries: Definition delineation and Demarcation, Deference between frontiers and boundaries, Classification and explain of boundaries enclaves, Refugee problems, Ocean Economic zone and Buffer xone/state, Boundary problem and solution	RK	15
	5 th	5. International Co-operation: EU, Commonwealth, NON Aligned Movement, SAARC, ASEAN, OIC, NAFTA, CIRDAP, BISMTEC, WTO, APEC, Military Alliances,	RK	10
Test (10 Lectures)	6 th	6. The United Nation and the world peace. Te formation and the organization of the UNO, Objective od the UNO, Inter governmental organizations related to UNO, Conflict Resolution and the world peace of the UNO	RK	10

Selected Readings:

- Mayer H. M. And C. F. Kohn, 1978: *Readings in Urban Geography*, London.
Hortshone, H. H. 1991: *Urban Geography*.
Crter, Harold, : *Urban Geography*, NY
Giibs, J.P.: *Urban Research Method*, NY
Jones, Emerys, *Readings in Social Geography*
Yeates and Gamer, *North American Cities*,
Knox, Paul 1998: *Social Geography*
Islam, N. and Baaee A. (edited) 1996: *Nogorayone Bangladesh, Urban Studies Program*, Centre for Urban Studies, Dhaka (in Bangla)
Islam, N. 2001. *Urbanization, Urban Planning and Development and Urban Governance*.
Bmjvg, bRi“j (2013) *XvKv GLb I AvMvgxžZ, XvKvt bMi MželYv †K>`a|*
Murtaza, G. (2013) *A Gloosary of Terms of Urban, Rural and Regional Planning* Dhaka: Centre for Urban Studies

Fourth Year Honours
Course Code-
Course Title: Geography of Disaster
Marks-50, 2 credits, 30 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (12 Lectures)	1 st	1. Definition and concept of natural hazard and disaster,	AR	4
	2 nd	2. Terms and concepts used in hazard and disaster studies/management	AR	4
	3 rd	3. Topology or Classification of hazards and disasters;	AR	6
		3.1 Natural: extra terrestrial, geological/seismic, metirollogical,atmospheric or climatic, hydro meteorological, biological,etc.	AR	6
2 nd In-Course (13 Lectures)		3.2 Human induced (anthropogenic): War, fire,industrial pollution, HYV, accidents, industrial, technological,etc.	AR	8
		3.3 Mixed (natural and human induced together): Bird-flu, water logging, landslide,etc.	AR	6
	4 th	4. Genesis, nature, special distribution and consequences of major hazards.	AR	4
	5 th	5. Interaction between hazard, disaster, Risk and vulnerability.	AR	4
Test(5 Lectures)	6 th	6. Natural hazards in Bangladesh: type nature, geographical extent, intensity and impacts.	AR	10
	7 th	7. Disater management: Conceptual frame work, objektivies and scope.	AR	4
	8 th	8. Disaster management system in Bangladesh.	AR	4

Selected Readings:

Bateman, *How Man Began*

Birdshell, *Human Evolution*

Foster, *World Civilization*

Griffith Taylor; *Geography in the 20th Century*, London

Hoebel , *Anthropology: The Study of Man*, N.Y.

Leakey, *Stone Age*

Perpellese, A.V. *Human Geography*, London

Russell, *Culture Worlds*

Simmons, *Change the Face of the Earth Culture Environment*

Spencer, J. E. & Thomas (Jr.) W.L. *Cultural Geography*, N.Y.

Spencer, J. E. ,*Introduction to Cultural Geography*, N.Y.

Starr, *Early Man Prehistory and the Civilization of the Near East.*

Schenk, *The History of Man*

Wagner & Mikesell (eds), *Readings in Cultural Geography*, Chicago

Wallbank, Walter and Others, *Civilization Past and Present*

রশীদ, কে. বি. এস. সাংস্কৃতিক ভূগোল, ঢাকা : বাংলা একাডেমী

দাস গুপ্ত, অমল, মানুষের ঠিকানা, কলিকাতা : রাখাল সেন, কলি

Fourth Year Honours
Course Code-
Course Title: Agriculture Geography
Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (25 Lectures)	1 st	1.agricultural Geography:definition,Scope and Significance.	MI	7
	2 nd	2.Origin,development and Diffusion of Agriculture:Major Theories.	MI	6
	3 rd	3.Agricultural System of the world:Whittlesey's Classification;Classification of world agriculture	MI	6
	4 th	4.Models of Agricultural Regionalization:Methodology for Agricultural Regionalization;Crop Cmbination Regions(Weaver Model).	MI	6
2 nd In-Course (25 Lectures)	5 th	5.Agricultural in Bangladesh:Issues and Challengens.	MI	12
	6 th	6.Land Utilisation,Cropping pattern and cropping intensiry in Bangladesh.	MI	6
	7 th	7.Food grain production,supply and diversification:constraints and potential.	MI	7
Test(10 Lectures)	8 th	8.Food security in Bangladesh:problems and prospects.The National food policy-2006 and National Food Policy Plan of action(2008-2015)	MI	10

Selected Readings:

- Beaujeu, G. J. *Geography of Population*
 Bogue, D.J., 1978: *Principles of Demography*, NY
 Clark, J.J. 1978: *Population Geography*, London.
 Demko, G.J., H.M. Rose, and A.A. Schnell 1986: *Population Geography: A Reader*, NY
 Ehrlich, P.R. and A.H. Ehrlich 1991: *Population, Resources and Environment*, NY.
 ESCAP, 1981: *Population of Bangladesh: Country Monograph Series 8*, United Nations. NY.
 Lucas, D. et al 1990: *Beginning Population Studies*, ANU, and Canberra.
 Shryock, H.S. and Jacob S Siegel,. *The Methods and materials of Demography*, Academic Press Inc.
 Trewartha, G.T. *A Geography of Population: World Patterns*
 Woods, R. ***Population Analysis in Geography***
 Zilensky, W. 1984: *A Prologue to Population Geography*, UK.

Fourth Year Honours
Course Code-
Course Title: Natural Resource Management
Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (12 Lectures)	1 st	1.Introducation to resource studies:definition,concept and development.	MMI	4
	2 nd	2.Resource:nature,characteristics,and types;natural,cultural and economic identification of resource components and formation for resource system.	MMI	15
	3 rd	3.Resource appraisal and resource allocation.	MMI	6
2 nd In-Course (13 Lectures)	4 th	4.Carrying capacity and sustainability.	MMI	15
	5 th	.Evaluation of resources. 6	MMI	5
	6 th	.Development of resource and resource conservation.	MMI	5
Test(5 Lectures)	7 th	7.Resource Management:techniques of resource of resource management;energy resource management,	MMI	5
		forestry and wildness management and water management reference to Bangladesh.	MMI	5

Selected Readings:

- Cole, J.P. & King C.A. M. *Quantitative Geography - Techniques and Theories in Geography*, Johns Wiley & Sons Ltd. USA.
- Elahi, K. 1991, *Porishonkhan Poddhoti ebong Sthanik Bisleshion*; Academic Publishers: Dhaka (in Bangla).
- Gregray, S. *Statistics Methods and Geography*.
- Hammond, R. and McCullagh, 1990, *Quantitative Techniques in Geography: An Introduction*, Oxford, UK.
- Johnston, R.J. 1990: *Multivariate Statistical Analysis in Geography*, Longman: USA
- Lippman, *Elements of Probability and Statistics*
- Mahmood, A. 1985, *Statistical Methods in Geographical Studies*, Regesh Publications, New Delhi: India.
- Mia, M.A. and Mian, M.a. 1988: *Porishonkhan Porichiti*; Idean Library, Dhaka (in Bangla)
- Taylor, P. J. *Quantitative Methods in Geography*. Houghton Mifflin Company, London.
- Yeates, M. 1985, *An Introduction to Quantitative Analysis in Human Geography*, McGraw Hill Inc: USA.

Fourth Year Honours

Course Code-3279

Course Title: Geography of South Asia

Marks-50, 2 credits, 30 Lectures

Exam.	Chapter	Content	Teacher	Lectures
1 st In-Course (12 Lectures)	1 st	1.History of south Asia and geogographical region.	NA	3
		1.1Geographical Locatin	NA	4
		1.2Member countries:national boudaries,Basic Demographic and socio-Economic Data Bases	NA	5
2 nd In-Course (13 Lectures)	2th	2.Physical Environment setting of South Asia:geomorphic feature,drainage system,soil,vegetation	NA	3
	3th	3.Cultural Environment of South Asia	NA	5
		3.1 Population Dynamics and distribution	NA	5
Test(5 Lectures)		3.2 Economy:Types of Economy,economic activities,Per capita and GDP	NA	2
		3.3Agricultural:agricultural system, Major crop products,Geographical distribution	NA	3
		3.4Industry:large scale industry,small Scall Industry,Distribution of Large scale Industry,Industrial policies.	NA	
		3.5 settlement:rural settlement,Urban settlement.	NA	
		3.6 Transportation and communication	NA	
		3.7 Trade and commerce:internal and external trade.	NA	
	4th	4.Regional Connectivity and prospect	NA	
	5th	5.Major problems and co-operation of south Asia:Water sharing,energy resource and SAARC.	NA	
	6th	6.Bangladesh and status of South Asia.	NA	

Selected Readings:

- Asiatic Society of Bangladesh, *Banglapedia*, Dhaka
 Baqee, A. *Grameen Bashati*, Bongo Prokashoni, Dhaka (in Bangla).
 Brammer, Hugh, Land use and Land Use Planning in Bangladesh, UPL, Dhaka
 Brammer, Hugh, Agricultural Development Possibilities in Bangladesh, UPL, Dhaka
 Cloud, H.D. *Rural Geography and Introductory Survey*.
 Hamid, A. *Palli Unnayan Bangladesh* (in Bangla).
 Hroun-er-Rashid: 1995: *Geography of Bangladesh*, UOL, Dhaka.
 Perpillou, A.V.: *Human Geography*
 Rasheed, KB Sajjadur (2008), *Bangladesh: Resource and Environmental Profile*, AH Development Publishing House, Dhaka.
 Rasheed, KB Sajjadur (2008), *Water Resources Management with Examples from Bangladesh*, AH Development Publishing House, Dhaka.
 Sultana, S.: *Settlement Pattern of Bangladesh*
 University Press Limited, *Report of the Task Forces on Bangladesh Development Strategies for the 1990's* Vol. 1-4, UPL, Dhaka.

Fourth Year Honours

Course Code-3278

Course Title: Practical- IV

Marks-100, 4 credits, 60 Lectures

Exam.	Chapter	Content(Land use & Socio-Economic survey) 50	Teacher	Lectures
1 st In-Course (12 Lectures)	1 st	1. Land use survey:		
		Definition ,Historical Back ground and objective & types	AH	4
		1.2 Methods of land use survey	AH	4
		1.3 Some examples of successful major land use projects; land utilization survey of Great Britain, TVA of USA	AH	3
2 nd In-Course (13 Lectures)		1.4 Concept of land use capability & suitability survey and land cover survey	MMI	
	2 nd	2. Data collection from the field	MMI	5
		2.1 Land use data collection through fractional code method	MMI	3
		2.2 Socio- Economic data collection	MI	3
5 Lect	3rd	3. Preparation of various physical and land use map	MI	4

	4 th	4. Analysis of data and report preparation	MI	4
		Section II: GIS Practical-50		
	1st	Introduction to hardware and software of GIS	ZI	3
	2nd	Basic component of GIS software: Views, Theme, data table, layout etc.	ZI	4
	3 rd	Data entry techniques in GIS: Scanner, digitizer, key board, mouse etc.	ZI	4
	4 th	Digital mapping elements; Adding legend, Scale, Charts, Table, North line in map	ZI	4
	5 th	Handling primary and secondary GIS data available in Bangladesh.	ZI	4
	6 th	Integration and Geo- processing of GIS data	AZ	3
	7 th	Analysis of GIS data: Coverage and attribute	AZ	3
	8th	Analysis of RS data: Hard image and digital image	AZ	3
	9th	Project work based on GPS data or other available field data sources.	AZ	2

Selected Readings:

Ajaegbu, H.I. and Faniran, A. *A New Approach to Practical Work in Geography*.

Alam, M.S. and Rashid, 2000: *Manchitra Pronoyan O Manchitra Bisleshan*; Oxfam, Dhaka (in bangla).

Avery, T.E. 1965: *Interpretation of Aerial Photographs*, Burgess: Mimmepolis.

Black, James A. & Dean, A. Champion, 1987: *Methods and Issues in Social Research*.