

NATIONAL UNIVERSITY



Second Year Syllabus Department of Bachelor of Education (B.Ed.)

Four Year(8 Semester) B.Ed. Honours Integrated Course
Effective from the Session: 2013–2014

NATIONAL UNIVERSITY
Syllabus for Four Year(8 Semester) B.Ed. Honours Integrated Course
Subject: Bachelor of Education (B.Ed.)
Session: 2013-2014

Second Year

Paper Code	Paper Title	Marks.	Credits
	Third Semester		
220301	ICT in Education	100	4
220303	Educational Psychology and Guidance	100	4
Elective Courses (Students will choose three courses from any area of the following Five areas.)			
Area-I:			
220305	Bangla Paper-I	100×3 =300	3×4 =22
220307	English Paper-I		
220309	ICT Education Paper-I		
Area-II:			
220311	Economics Paper-I	100×3 =300	3×4 =22
220313	Political Science Paper-I		
220315	Sociology Paper-I		
220317	Geography and Environment Paper-I		
220319	History Paper-I		
220321	Or Islamic History and Culture Paper-I		
220309	ICT Education Paper-I		
Area-III:			
220323	Physics Paper-I	100×3 =300	3×4 =22
220325	Chemistry Paper-I		
220327	Geography and Environment Paper-I		
220329	Mathematics Paper-I		
220331	Botany Paper-I		
220333	Zoology Paper-I		
220335	Statistics Paper-I		
220309	ICT Education Paper-I		
Area-IV:			
220337	Accounting Paper-I	100×3 =300	3×4 =22
220339	Management Paper-I		
220341	Marketing Paper-I		
220343	Finance and Banking Paper-I		
220309	ICT Education Paper-I		
Area-V:			
220345	Information Science and Library Management Paper-I	100×3 =300	3×4 =22
220347	Home Economics Paper-I		
220309	ICT Education Paper-I		
	Total =	500	20

	Fourth Semester		
220349	Organization and Management of Educational Institutions	100	4
220351	Gender Education	100	4
Elective Courses (Students will choose three courses from any area of the following Five areas.)			
Area-I:			
220353	Bangla Paper-II	100×3 =300	3×4 =22
220355	English Paper-II		
220357	ICT Education Paper-II		
Area-II:			
220359	Economics Paper-II	100×3 =300	3×4 =22
220361	Political Science Paper-II		
220363	Sociology Paper-II		
220365	Geography and Environment Paper-II		
220367	History Paper-II		
220369	Or Islamic History and Culture Paper-II		
220357	ICT Education Paper-II		
Area-III:			
220371	Physics Paper-II	100×3 =300	3×4 =22
220373	Chemistry Paper-II		
220375	Geography and Environment Paper-II		
220377	Mathematics Paper-II		
220379	Botany Paper-II		
220381	Zoology Paper-II		
220383	Statistics Paper-II		
220357	ICT Education Paper-II		
Area-IV:			
220385	Accounting Paper-II	100×3 =300	3×4 =22
220387	Management Paper-II		
220389	Marketing Paper-II		
220391	Finance and Banking Paper-II		
220357	ICT Education Paper-II		
Area-V:			
220393	Information Science and Library Management Paper-II	100×3 =300	3×4 =22
220395	Home Economics Paper-II		
220357	ICT Education Paper-II		
	Comprehensive Viva (Satisfactory/non-satisfactory)		
	Total =	500	20
	Grand Total=	1000	40

Detailed Syllabus

Third Semester

Course Code	220301	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT in Education			

1. Description of the course
2. Objectives of the Course
3. Contents

Unit: one:

Concept, meaning and nature of ICT in Education

Unit: Two:

Importance of ICT in Education:

1. Learning
2. Teaching
3. Education e-Services (e.g. SMS/online result, admission, Edu Boards' services, etc.)
4. Administration/Automation
5. Research and Development (RnD)

Unit: Three

Changes in Education through ICTs reference to Curriculum, Instructional Design, Role of Teacher, Methods of Teaching, ICT-Pedagogy Integration, Classroom Environment, Evaluation procedure, Educational management.

Challenges in integrating Information & Communication Technology in school education of Bangladesh.

Unit: Four

Recent ICT in Education initiatives in Bangladesh:

1. Multimedia Classroom (Objective, importance, changes, etc.)
2. Planning of Digital Content
3. Introduction of Teachers' Portal (Shikkhok Batayon)
4. Education in Television
5. Others

Comparative analysis of ICT in Education: Bangladesh and other developing countries

Unit: Five

Opportunities:

1. E-Learning/online learning (BoU, DU, TTCs, etc.)
2. E-Conferencing
3. Virtual Classroom
4. Virtual University

5. Education TV
6. Others

Policies and strategies for ICT in Education in Bangladesh

1. ICT in Education Master Plan
2. National Education Policy 2011 (ICT in Education parts)
3. National ICT Policy 2009 (Education parts)
4. Others

Unit: Six

Education Tools:

1. Application of MS-Word, PowerPoint, Excel, Access for educational uses
 1. MS Word: Prepare question paper, Class routine, Bio-Data/Resume, Meeting Resolution, assignment, Article
 2. MS Excel: Prepare tabulation sheet of Total Average, Max and Min number, Sort, GPA and grade using formula, graph and chart, school budget
 3. MS Power point: Prepare subject base Digital Content using Image, animation, video, smart art
2. E-book
3. Educational Blog/portal
4. Google Drive
5. Moodle
6. Social Networking (e.g. Facebook, Twitter, etc.)
7. YouTube
8. Skype
9. others

Unit: Seven

Legal & Ethical issues:

10. Managing student's access
11. Gender equity
12. Reduce Digital Divide
13. Safety and Security

Course Code	220303	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Educational Psychology and Guidance			

1. Course Description

This course is designed to assist students and respective teachers to build up insights in to learner's behavior in real life situation. It covers concepts, principles and aims of psychology and educational psychology, influence of heredity and environment of family on learning, influence of motivation, intelligence, and personality on learning. It also covers classroom discipline, learning theories, material and methods, creativity and guidance on education.

2. Course Objectives

Objectives of this course are to-

- a) help learners to understand and realize the need of educational psychology in their real life and build up their career in future
- b) understand why and how they learn, and how their learning can be enhanced
- c) understand them to familiar with some key terms of Education Psychology, and practice it positively in life
- d) help them spot out exceptional learners and be aware of how to educate them
- e) facilitate them identifying creative learners and understand how to foster creativity
- f) assist them how to take help counselor and how guidance can be build up their career.

3. Course Contents

Unit 1: Basic terms and concepts of psychology and Educational Psychology

- a) Concept, nature, scope and branches of Psychology
- b) Concept, nature, scope and branches of Educational Psychology
- c) Aims and objectives of Educational Psychology
- d) Focal areas, importance and needs of Educational Psychology
- e) Educational Psychology in decision making
- f) Methods of Educational Psychology

Unit 2: Heredity & Environment

- a) Concepts of Heredity and Environment
- b) Nature of Heredity-Zane, chromosome, and cell division
- c) Impact of heredity and environment in person's development
- d) Heredity and environment in learning and education

Unit 3: Adolescence

- a) Concept of adolescence-Physical, mental, social and emotional development of adolescence
- b) Problem and needs of adolescence, and its remedies

Unit 4: Learning Theories

- a) Concept and nature of learning
- b) Learning theories-Connectionism(E.L.Thorndike),Classical Conditioning (Pavlov),Operant Conditioning (B.F.Skinner), Constructivism (Vigotosky), and its application to classroom learning
- c) Insightful Learning theories and their application
- d) J.S Bruner's and Piaget's theory of Cognitive Development
- e) Styles of Learning

Unit 5: Motivation, Emotion and Attention in Learning

- a) Concepts of motivation, its characteristics, and motivation cycle
- b) Characteristics of motivated behavior, Motivation techniques in teaching
- c) Concept, nature, characteristics and types of emotion
- d) Influence of anxiety/emotion on learning, positive use of emotion(by teachers)
- e) Concepts of attention, its characteristics,
- f) Causes/conditions of attention,
- g) Creating attention strategies among learners

Unit 6: Personality and

- a) Concept and elements of personality
- b) Measurement of personality, Personality and education

Unit 7: Intelligence

- a) Concept and theory of intelligence
- b) Measurement of intelligences –Scales and importance in education, Individual and group differences in Intelligence
- c) H.Gardners theory of intelligence(MIT)
- d) Gender differences in intellectual functioning

Unit 8: Special Learners

- a) Defining exceptional learners, Types
- b) Concept of Juvenile Delinquency, Causes and remedies
- c) Education for exceptional/special children, and guidelines for teaching
- d) Concept of creativity, characteristics of creative person, way of/role of teacher foster creativity
- e) Autism

Unit 9: Guidance and Counseling

- a) Concept and types of guidance
- b) Principles of guidance, needs of guidance in education/for learners
- c) Concept and types of counseling
- d) Needs and importance of Guidance and Counseling in educational arena
- e) Qualifications and qualities of counselor, techniques of counseling

4. Instructional Strategies

Lecture (using multi-media), Participatory approaches (Discussion, Question-Answer, group work, Observation, Debate, presentation, Field trip).

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

- a) Internal Examinations 15+15=30
- a) External Examination=60
- b) Assignment/action research and class percentage, Performance =10

References:

- ১.মুসলিম হুদা-ফলিত মনোবিজ্ঞান,ঢাকা
- ২.অরুণ ঘোষ-শিক্ষাশ্রয়ী মনোবিজ্ঞান,কোলকাতা
- ৩.ড. ডি.এম. ফিরোজ শাহ্ ও মজিবর রহমান- শিক্ষা মনোবিজ্ঞান, মিতা ট্রেডার্স, ঢাকা
৪. মঞ্জুশ্রী চৌধুরী - শিক্ষা মনোবিজ্ঞানের কথা, ঢাকা
৫. ড. সুলতানা বানু- বিকাশ মনোবিজ্ঞান, ঢাকা

৬. . মঞ্জুরী চেন্দুরী - শিশুর বিকাশ কথা, ঢাকা
 ৭. শাহীন আহমেদ- শিশুর বর্ধণ, বিকাশ ও পরিচালনা
 ৮. সুশীল রায়- শিক্ষা মনোবিদ্যা-কোলকাতা
 ৯. B.F Skinner- *Educational Psychology*
 10. S.k.Mongal- *Educational Psychology*
 11.E.B.Hurlock-*Child Development*
 22. D.Rogers- *Psychology of Adolescences*

Area-I:

Course Code	220305	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Bangla Paper-I: বাঙালি জাতি, বাঙলা ভাষার উৎপত্তি ও বিবর্তন, ভাষা ও ভাষাতত্ত্ব			

1. উদ্দেশ্য
 শিক্ষার্থীরা-

- বাঙালি জাতি ও বাংলা ভাষার উৎপত্তি এবং বিবর্তনের ইতিহাস সম্পর্কে ধারণা অর্জন করবে
- ভাষার তাত্ত্বিক দিক সম্পর্কে ধারণা অর্জন করবে

বাঙালি জাতি, বাঙলা ভাষার উৎপত্তি ও বিবর্তন

2. পাঠ্যসূচি

ক. বাঙালি জাতি ও বাঙলা দেশ

১. দেশ ও দেশের নাম
২. উৎস ও পটভূমি

খ. বাংলা ভাষার উৎপত্তি ও বিবর্তন

১. পৃথিবীর প্রধান ভাষাগোষ্ঠী সমূহ
২. ইন্দো-ইউরোপীয় মূলভাষা থেকে আধুনিক বাংলা পর্যন্ত ক্রমিক ধারা
৩. বাংলা ভাষার উৎপত্তি বিষয়ে বিভিন্ন মত
৪. প্রাচীন বাংলা থেকে আধুনিক বাংলা পর্যন্ত বিভিন্ন স্তর

গ. বাংলা লিপির ক্রমবিকাশ ও পাণ্ডুলিপি পাঠ

ভাষা ও ভাষাতত্ত্ব

ক. ভাষা ও ভাষাতত্ত্ব

১. ভাষা ও ভাষাতত্ত্ব, ভাষাতত্ত্বের পরিধি ও বিবর্তন
২. ভাষাতত্ত্ব চর্চার প্রয়োজনীয়তা

খ. ভাষাতত্ত্বের বিভিন্ন শাখা

১. ধ্বনিতত্ত্ব, রূপতত্ত্ব, বাক্যতত্ত্ব, অর্থতত্ত্ব- সংজ্ঞা, পরিধি, বৈশিষ্ট্য, শ্রেণিকরণ, শনাক্তকরণ
২. বাংলা ভাষায় প্রয়োগ

গ. ভাষাতত্ত্ব চর্চার ইতিহাস ও ভাষাতত্ত্বের বিভিন্ন পদ্ধতি

১. প্রথাগত ব্যাকরণ
২. তুলনামূলক ও ঐতিহাসিক পদ্ধতি
৩. সাংগঠনিক বা বর্ণনামূলক পদ্ধতি
৪. রূপান্তরমূলক- সৃষ্টিশীল পদ্ধতি

সহায়ক গ্রন্থ:

১. নীহাররঞ্জন রায় : বাঙালীর ইতিহাস (আদি পর্ব)
২. সুকুমার সেন : বাংলা সাহিত্যের ইতিহাস (১ম খণ্ড)
৩. সুনীতি কুমার চট্টোপাধ্যায় : বাংলা ভাষাতত্ত্বের ভূমিকা
৪. সুকুমার সেন : ভাষার ইতিবৃত্ত
৫. আবুল কালাম মজুমদার মোরশেদ (সম্পা:) : শহীদুল্লাহ রচনাবলী (৩য় খণ্ড)
৬. গোপাল হালদার : বাংলা সাহিত্যের রূপরেখা (১ম খণ্ড)
৭. সুকুমার সেন : ভাষার ইতিবৃত্ত
৮. রফিকুল ইসলাম : ভাষাতত্ত্ব
৯. আবুল কালাম মজুমদার মোরশেদ : আধুনিক ভাষাতত্ত্ব
১০. মুহম্মদ আব্দুল হাই : ধ্বনি বিজ্ঞান ও বাংলা ধ্বনি তত্ত্ব
১১. হুমায়ুন আজাদ (সম্পা:) : বাংলা ভাষা
১২. মহাম্মদ দানীউল হক : ভাষার কথা: ভাষাবিজ্ঞান
১৩. হুমায়ুন আজাদ : তুলনামূলক ও ঐতিহাসিক ভাষাবিজ্ঞান

১৪. Sunity Kumar Chattarjee : The Origin and Development of Bengali Language

Course Code	220307	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	English Paper-I			

Course Content

Course description

This course is for the students who will choose English as one of the two teaching subjects (TS). This course aims at preparing learners to specialize in language education. They will be familiar with the varieties of methods and approaches of teaching and learning of second and foreign language.

Course objectives

It is expected the course will prepare students

- a) develop listening, speaking, reading, and writing at advanced level
- b) learn and apply communicative grammar in context
- c) experience and apply language and jargons required to work as English language professionals
- d) study and practise different methods and approaches of teaching and learning of English as a foreign or second language
- e) conduct educational research

Unit 1 Developing four skills

- a) English for the Teacher: A Language Development Course by Mary Spratt. Published from Cambridge University Press, UK in 1994 (first published)

Unit 2 Approaches and methods in language teaching

- a. Teaching English as L1, ESL, EFL
- b. Different methods and approaches on English language teaching: Grammar-Translation method, Direct method, Structural approach, Audio-lingual method, Communicative approach
- c. Interlanguage
- d. Different purposes of learning English: ESP (English for Specific Purposes), EAP (English for Academic purposes), EGP (English for general purposes)

Reference books

National Curriculum 1996

National Curriculum 2014

Communicative Language Teaching by William Littlewood from Cambridge University Press 1981

Unit 3 Curriculum, Textbook and ELT in Bangladesh

- a. The National Curriculum 1996
- b. The National Curriculum 2022
- c. English for Today (from 6-22)
- d. Transition from GT to CLT in Bangladesh

Unit 4 English Literature

Poems

- a Robert Frost: Stopping by woods on a snowy evening
- b Shelly: Skylark
- c Wordsworth: Lucy poems
- d John Keats: Ode on a Grecian urn

Essay

Francis Bacon: Of Studies; Of Parents and Children

Short Story

R. K. Narayan: An Astrologer's Day

Reference:

Bacon's Essays; F. G. Selby; Indian Edition, 1985

Prose of our time; Edited by Ahsanul Haque et al, December, 1980

Text books of the selected texts

Course Code	220309	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper-I			

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)	The student will be able to: 1.Explain the concept of ICT and its related terminologies. 2.Describe the information processing cycle. 3. Identify the various devices used in the Information Processing Cycle 4.Analyze the impact of ICT on educational, social and economic development. 5.Identify career opportunities in ICT education.	Definition of ICT, related basic concepts and terminologies e.g. Information and Communications Technology (ICT) Information and Communication Technologies (ICTs) Data Information Information Processing Cycle Stage 1 - Receiving data (Input operation) Stage 2 - Processing data (Processing operation) Stage 3 - Display information (Output operation) Stage 4 - Storing information (Storage operation)
UNIT 2 INTRODUCTION TO COMPUTERS	The student will be able to: 1. describe the uses of the components of computer system 2. Differentiate among the classes of computers. 3. State the uses of computers.	Classification of Computers Capacity and size - Supercomputer, - Mainframe computer - Microcomputer etc. Purpose - General purpose - Specific purpose Type - Digital - Hybrid - Analog Booting, Rebooting and Shutting Down of Computer Booting is the act of putting on the computer. Rebooting is the act of restarting the computer. Shutting down is the act of putting off the computer.
UNIT: 3 NUMBER SYSTEMS	The student will be able to: 1. Describe the history of inventing numbers. 2. Explain the concept and classification of number system. 3. Convert and relate various numbers. 4. Add and subtract binary numbers. 5. Explain the concept Boolean Algebra 6. Prove Boolean Algebra 7. Explain De Morgan's theorem. 8. Explain Logic gates	• History of inventing Numbers • Number System: Classification of Number System, Conversion of Numbers • Addition and Subtraction in Binary System • Code: Concept of Code, BCD, EBCDIC, Alphanumeric code, ASCII, Unicode • Boolean Algebra • Boolean Theorem • De Morgan's Theorem • Truth Table • Logic gates: AND, OR, NOT gate

UNIT 4 COMPUTER HARDWARE	The student will be able to: 1. Identify the vital components of the Systems Unit. 2. Describe the categories of Computer Hardware. 3. Describe the commonly used Input and Output devices 4. Identify the main processing devices 5. Identify the main types of storage devices and media. 6. Identify the main communication devices	The Vital Components of the Systems Unit e.g. Front Side: power switch light indicators, floppy and CD ROM drive etc. Back side: USB ports, serial ports, power socket, Inside: motherboard, CPU, power supply, memory, hard disk, cards e.g. sound, network Categories of the Computer Hardware: Input devices Processing devices Output devices Storage devices. Communication devices Main Processing devices The Processor Control Unit and Arithmetic and Logic Unit
UNIT 5 COMPUTER SOFTWARE	The student will be able to: 1. Identify types of Software packages. 2. Distinguish between Operating System and Application software. 3. Identify different types, examples and uses of Operating System and Application software 4. Distinguish between Open Source and Proprietary Software.	Types of Software Packages System software. e.g. Operating system software Application Software e.g. Word Processing, Spreadsheet Differences between Operating System and Application software Types and uses of Operating System and Application software Operating System .e.g. Operating Systems e.g. DOS, Windows, (windows 98, 2000, ME, XP, Vista, Windows 7) Linux, Unix, Ubuntu, Macintosh etc. Application Software e.g. Word-processing: WORD spreadsheets: EXCEL Databases: Access Presentation: PowerPoint Educational software Games software Browsers: Internet explorer, Google chrome, Mozilla Firefox, Opera, Internet explorer, Mozilla Firefox Authoring: Dream weaver, FrontPage, Graphics software Desktop Publisher – Page Maker, Publisher Differences Between Proprietary and Open Source Software

UNIT 6 INTRODUCTION TO WORD PROCESSING APPLICATION, EDITING TEXT IN WORD PROCESSING DOCUMENT, FORMATTING, INSERTING TABLES AND SYMBOLS IN WORD PROCESSING DOCUMENT, CREATING AND PRINTING EDUCATIONAL DOCUMENTS	The student will be able to: 1. Identify Word Processing packages. 2. Create a document using the Word Processor. 3. Save a document using the „Save As“ command. 4. Edit, and save Word document using common editing tools. 5. Create a document with more sub headings and paragraphs 6. Edit text using variety of options. 7. Format Word document using formatting tools. Demonstrate the ability to perform collaborative editing. 8. Insert tables in Word Processing document. 9. Insert symbols and pictures in Word Processing documents. 10. Use layout techniques in document creation. 11. Inserting headers and footers. 12. Print documents using the various print options.	Word Processing Packages and their Uses Creating Document Using a Word Processor Saving Document Using the ‘Save As’ command Editing Word Document Using Common Editing Tools: Spell check functions Copy/cut and paste facilities Undo and redo keys Search and replace Creating Document with More Sub-Headings and Paragraphs Editing Text Using Variety of Options such as: - Text effects options – superscript, subscript, shadow, strikethrough etc. Text correction option Wrapping options Text orientation Formatting and saving a Word document using the formatting tools: Change font (style, size, colour, etc.) Text alignment Numbers and bulleting Bold Underline Italics Line spacing Collaborative Editing e.g. Using highlighting option to track changes in a document Accepting or rejecting changes Adding text comments: Inserting Tables in Word Document. Inserting Symbols and Pictures in Word Document.
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Area-II:

Course Code	220311	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Economics Paper-I : Principle of Economics			

1. Course Description

The course comprises both the Micro and Macro economic concepts and its relation to other subjects of social sciences including education. Fundamental principles of economics i.e. definitions, scopes, importance of studying economics, theories of demand and supply, factors and costs of production, pricing of factors of production, market structure, national income and education as human resource development constitute the core of this course.

2. Course Objectives

The main objectives of this course are:

- a) To help students understand various concepts of both micro and macro economics.
- b) To make them familiar with various definitions of Economics and their interrelationships with other subjects of social science including education;
- c) To explain to the students the concepts of demand and supply, and laws and factors governing demand and supply;
- d) To enable them to understand how factors of production work, and how prices are determined;
- e) To enable the students differentiate between classification of market;
- f) To make them understand the concepts of National Income, GDP, GNP, NNP, Savings, Investments, Employment and Unemployment and methods of computing national income.

3. Course Contents

Number of Lectures

Unit One:

05

Definition and scope of economics, importance of economics as a social science- Basic concepts in economics, importance of economics: Demand, Supply, Capital, Costs, Land, Labour, Organization, Profits, Saving, fundamental quantitative relationships.

Unit Two:

08

Demand: determinants of demands- law of demand-elasticity of demand-factors determining elasticity of demand- measurement of elasticity-price elasticity, income elasticity and cross elasticity.

Unit Three:

03

Supply: determinants of supply-law of supply- elasticity of supply-Factor determining elasticity of supply.

Unit Four:

08

Factors of production-land, labour, capital and organization. Cost of production money cost and opportunity cost- fixed cost and variable

cost- total, average and marginal costs- short run and long run cost curves of a firm.

Unit Five: 08

Market- Classification of markets- perfect competition, monopoly, monopolistic competition, oligopoly- their distinguishing characteristics.

Unit Six: 08

- National Income Accounting- methods of computing, GNP, GDP, NNP, disposable income, savings, investments, employment and unemployment.

4. Instructional Strategies

- Lecture, Discussion
- Project work/Assessment

5. Evaluation

- Regular attendance and class participation
- Test I, II III, Semester Final
- Written Assignment

Textbooks:

১. মো: আজিজুর রহমান, আধুনিক ব্যষ্টিক অর্থনীতি, বাংলা একাডেমী, ঢাকা, ১৯৯২
২. মো: মাসুম আলী ও মো: নুরুল হক, আধুনিক অর্থনীতি, ঢাকা
৩. লুৎফুল হক ও মোস্তাফিজুর রহমান, আধুনিক অর্থনীতি, বাংলাদেশ বুক কর্পোরেশন, ঢাকা, ১৯৯৮
4. Benham, Economics
5. C.E. Ferguson, Microeconomics Theory
6. Salvatore, D: Economics
7. Samuelson, Paul A., Economics- An Introductory Analysis, Macgraw-Hill
8. Stonier and Hauge, A textbook of Economic theory.
9. R. Bilas, Microeconomics Theory

10. R. G. Liosy, Introduction to Positive Economics

Course Code	220313	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Political Science Paper-I : Political Science Theory			

1. Course Description

The course is designed to provide the students with necessary knowledge and understanding of the scope of political science as a discipline as well as a description of the nature and meaning of political theories, origin of the state, its functions, government and sovereignty.

2. Course Objectives

The main objectives of this course are:

- a. To help the students understand the concepts of political science as a discipline and the nature and the meaning of the concepts of nationalism and internationalism.
- b. To make them understand the theories of the origin state, its functions and the meaning and importance of the concept of government and sovereignty.
- c. To enable them to evaluate the relevance of political theories and principles in particular contexts as citizens of a democratic country.

3. Course Contents

Number of Lectures

Unit One: Education in the Ancient Period

10

- Definitions and concepts of Political Science
- Nature, scope and method of political science
- Importance of studying political science
- Its relationship to other disciplines of social science

Unit Two: Nation

10

- Concept of Nation
- Nation and Nationalism
- Elements of Nationalism
- Internationalism

Unit Three: State**13**

- Theories of the origin of the state
- State of society
- State of the Individual
- Functions of the state. Concepts of the Welfare State
- Liberalism. Utilitarianism and Totalitarianism
- Socialism and Economy
- Free Market Economy

Unit Four: Sovereignty**07**

- Its nature and characteristics
- Mouistic and Pluralistic theories

4. Instructional Strategies:

- a) Lecture
- b) Group Discussion
- c) Reading
- d) Library work and students' participation in the classes

5. Evaluation

- a. Class attendance
- b. Class participation
- c. Tests and final examination
- d. Written class assignment

Suggested reading:

1. Raymond G. Gettell: Political Science
2. J.W. Garner Political Science and Gvernment
3. Rodu Cariton Clymer and Other, Introduction to Political Science
4. David Easton, The Political System: An Inquiry into the State of Political Science
5. Hans Kohn: Nationalism: Its Meaning and History
6. J.H. Carlton Hayes, Essays on Nationalism
7. Carl J. Freedich and Brezenski: Totalitarian Dictationship Autocracy
8. R.H. Tawney Equality

9. C.D. Burns: Political Ideals
10. MacIver: The Modern State
11. J.A. Schumpeter: Capitalism and Democracy
12. F. Walkins: The Political Tradition of the West
13. Related Websites

Course Code	220315	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Sociology Paper-I			

1. Course Description

The Course is designed to impart knowledge about the basic concepts and theories of Sociology. Focus has been given on the critical exposition of the nature of the social phenomena and processes.

2. Course Objectives

The main objectives of this course are to:

- (a) acquaint students with the definition, nature and scope of Sociology;
- (b) help students understand relationship of Sociology with other disciplines;
- (c) acquaint students with different primary concepts of Sociology;
- (d) help them comprehend various social processes;
- (e) acquaint students with major institutions of society;
- (f) Help them understand social inequality or stratification and social mobility;
- (g) Help them comprehend social structure and analyze various factors responsible for its change.

3. Course Contents

Number of Lectures

Unit 1: Meaning of Sociology

04

1.1 Definition, Nature and Scope of Sociology

1.2 Relation of Sociology with other discipline

Unit 2: Sociology and Scientific Approach

04

2.1 Nature of Sociological Inquiry

2.2 Methods of Sociological Investigations

Unit 3: Primary Concepts of Sociology

06

3.1 Society

3.5 Group

3.2 Community

3.6 Culture

3.3 Association	3.7 Norms	
3.4 Institution	3.8 Values	
Unit 4: Elements of Social Organizations		05
4.1 Role and Status		
4.2 Social Structure		
Unit 5: Social Process and Control		04
3.1 Socialization		
3.2 Social control		
Unit 6: Majors Institutions		06
6.1 Social Institutions: Family and Marriage		
6.2 Economic Institutions: Property and Ownership		
6.3 Political Institutions: State and Government		
6.4 Educational Institutions: School, College and University		
Unit 7: Social Stratification		06
7.1 Major Elements of Social Stratification:		
(a) Property		
(b) Power		
(c) Prestige		
7.2 Main forms of Social Stratification		
(a) Slavery		
(b) Estate		
(c) Caste		
(d) Class		
7.3 Social Stratification and Social Mobility		
Unit 8: Social Change		05
8.1 Major concepts		
(a) Evaluation		
(b) Progress		
(c) Development		
(d) Change		
8.2 Factors responsible for social change		
4. Instructional Strategies		
Lecture, Discussion, Question-answer, Observation, Debate, Students seminars etc.		
5. Evaluation		
b. Tests		

c. Assignments

References:

1. Bottomore T.B (1986), **Sociology – A guide to Problems and Literature**, Bombay, Blackie & Son (India) Ltd.
2. Spencer, Metta (1976), **Foundation of Modern Sociology**, Englewood Cliffs, Prentice Hall.
3. Popenoe, David (1986), **Sociology**, Englewood Cliffs, New Jersey
4. Smelser, Neil (1995), **Sociology**, New Jersey, Prentice Hall.
5. MacIver R. M and Page, Charles H. (1962), **Sociology: An introductory Analysis**, London, Macmillan.
6. Inkeles, Alex (1980), **What is Sociology?** New York, MacGraw-Hill.
7. Rao, C.N Sharkar(2011), **Sociology**, S. Chand & Company Ltd, New Delhi.
৮. করিম, এ.কে. নাজমুল (১৯৯২), **সমাজবিজ্ঞান সমীক্ষণ**, ঢাকা, নওরোজ কিতাবস্থান।
৯. বটোমোর, টম (১৯৯২), **সমাজবিদ্যা** (অনুবাদ: হিমাচল চক্রবর্তী), কলকাতা ও নিউ দিল্লী, কে.পি বাগাচী অ্যান্ড কোম্পানী পাবলিকেশন্স।
১০. রহমান, মুহম্মদ হাবিবুর (১৯৯৫), **সমাজবিজ্ঞান পরিচিতি**, ঢাকা, হাসান বুক ডিপো।
১১. মহাপাত্র, অনাদি কুমার (১৯৯৬), **বিষয় সমাজতত্ত্ব**, কলিকাতা, ইন্ডিয়ান বুক কনসার্ন।
১২. চৌধুরী, আনোয়ার উল-হা এবং অন্যান্য (১৯৮৬), **সমাজবিজ্ঞান শব্দকোষ**, ঢাকা, বাংলা একাডেমী।
১৩. সেন, রংগলাল (১৯৯৭), **সমাজকাঠামো: পুঁজিবাদ ও সমাজতন্ত্র**, ঢাকা নিউওজ পাবলিকেশন্স
১৪. সেন, রংগলাল ও নাথ, বিশ্বম্ভর কুমার (২০০৩), **প্রারম্ভিক সমাজবিজ্ঞান**, ঢাকা নিউওজ পাবলিকেশন্স

Course Code	220317	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Geography and Environment Paper-I: Physical Geography and Climatology			

1. Course Description

The course is design to introduce students to the essentials of Physical Geography and help students understand theoretical concepts in physical geography better by exposing them to practical work.

2. Course Objectives

This course will enable learners to-

- a) Understand the definition, scope and importance of Geography.

- b) Categories the essential features of Physical Geography
- c) Identify and classify climatic features
- d) Analyze the relationship between environment and education
- e) Develop map reading and drawing skills
- f) Develop representation skills of physical and climatic data.

3. Course Content

Unit One: Definition, scope, and Importance of Geography

Definition, scope, and Aims and objectives of Geography, major types of Geography, Importance of Geography with special reference to Physical Geography, Geography in Education.

Unit Two: Solar System

Solar system, shape of the earth, rotation and revolution of the earth, Latitude, Longitude, Local and standard time, International date line.

Unit Three: Geomorphology

Formation of the earth, the earth crust, its composition and structure, Minerals and Rocks, classification of rocks. Major Landforms of the world-Mountains, Plateau, Plain,

Weathering, erosion, denudation, transportation and deposition.

Earth's Organic and eperiogenic movements, Plate tectonic theory, earthquake, volcano.

Works of river, air, and glacier. Cycle of erosion,

Unit Four: Oceans of the World

The Oceans, distribution of land seas, causes of ocean current and effects, brief discussion on ocean current- Pacific, Atlantic and Indian Ocean. Salinity and topography of the Oceans.

Unit Five: Weather and Climate

Definition of weather and climate, its differences. Atmosphere-its formation and layers, air temperature, air pressure, isolation, humidity, precipitation and its types, types of climate, importance of monsoon climate. Tropical and temperate cyclone, Tsunami.

Unit Six: Environment Education

Define Environment, Environmental Pollution and remedies, Climate change and impact on climate, Role of 3R (Reduce, reuse, recycle)

Unit Seven: Practical Geography

Map Scales – Linear and diagonal scales, Enlargement and reduction of maps

Methods of showing relief, drawing of contours and profiles

Representation of economic and climatic data by bar, line and pie chart methods.

6. Instructional Strategies

Lecture (using ICT devices), Discussion, Question-Answer, Participatory Approach, Observation of real objects, Debate, Field trip.

7. Assignment

Students will submit assignments on due date based on contents by the instruction of their relevant teacher.

8. Evaluation

- a) Examinations
- b) Assignments and class percentage

References:

মোয়াজ্জেম হোসেন চৌধুরী-প্রাকৃতিক ভূগোল

মোহাম্মদ নজরুল ইসলাম-প্রাকৃতিক ভূগোল

ড. ডি.এম. ফিরোজ শাহ- ভূগোল শিক্ষণ

ড. শেখ মোঃ রেজাউল করিম, ড. ডি.এম. ফিরোজ শাহ, ও মোঃ এনামুল হক —উচ্চ মাধ্যমিক ভূগোল

রফিক আহমেদ- আবহাওয়া ও জনবায়ু বিজ্ঞান

Trewartha-*Elements of physical Geography*

A Gupta and A.N Das Kapor- *Principles of Physical Geography*

D.M.Preece and HRB Wood-*Foundation of Geography*

A.K Lobeck- *Geomorphology*

Strelher- *Introduction to Physical Geography*

Course Code	220319	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	History Paper-I: Ancient Civilizations			

1. Course Description

The Course is designed to provide knowledge and understanding of the stages of development of human society along with a glimpse of pre-historic age. Focus has been on the nature and changing pattern of Ancient Civilizations.

2. Course Objectives

The main objectives of this course are to:

- (a) To help students know definition, concept, nature and the importance of studying History;
- (b) To provide them knowledge of pre-history and History ages.
- (c) To help them understand the meaning and connotation of civilization.
- (d) To help students acquire knowledge about the rise and fall of different civilizations.

- (e) To help students comprehend the historical events, the consequences and the contributions of these civilizations in the creation and development of human knowledge and culture.

3. Course Contents	Number of Lectures
Unit One: History as a Discipline	03
- Meaning and definition - Importance of studying history	
Unit Two: The Age of Prehistory and History	05
- Palaeolithic Age - Neolithic Age - Age of Metals	
Unit Three: Nature and Development of Civilizations	05
- Egyptian Civilization - Geographical factors for the growth of Egyptian Civilization - Government and people - Religion - Simple polytheism - Monotheism - Polytheism	
Unit Four: Mesopotamian	06
- The Sumerians - The Babylonians	
Unit Five: Persian Civilization	04
- Administration - Religion	
Unit Six: Indian Civilization	06
- Indus Valley Civilization - Aryan Civilization	
Unit Seven: Ancient Civilization of China	04
- Religion, society and economic life - Philosophical achievements	
Unit Eight: Greek Civilization	04
- City states and social classes - The age of Pericles	
Unit Nine: Roman Civilization	04
- Its Origin	

- Political and Social organization
- Its decline

4. Course Requirements:

- a. Class attendance
- b. Class report based on given topic
- c. Term paper
- d. Class participation and discussion
- e. Incourse examinations
- f. Semester final examination

5. Teaching Strategies

- a. Lecture
- b. Class discussion
- c. Class/home assignment

6. Suggested reading

Ellsworth Huntington, Civilization and climate.

Gordon Child, What Happened in History.

H.A.L Fisher, A History of Europe, Ancient to Mediaeval

B. Bury, History of Greece.

Learner, Meacham, Burus, Western Civilization (Twelve Edition), Vol.1
W.W. Norton & Company, New York, London, 1993.

T. Walter Wallbank and others-Civilization Past and Present

অমলেশ ত্রিপাঠী, ইতিহাস ও ঐতিহাসিক, পশ্চিমবঙ্গ রাজ্য পুস্তক পর্ষদ, কলিকাতা, ১৯৮৮

মুসা আনসারী, ইতিহাস: সমাজ ও সংস্কৃতি ভাবনা, বাংলা একাডেমী, ঢাকা, ১৯৯২

আব্দুল হালিম, ইতিহাসের রূপরেখা

এ কে এম শাহনাওয়াজ, বিশ্ব সভ্যতা প্রাচীন যুগ, প্রতীক প্রকাশনা সংস্থা, ঢাকা, ১৯৯৬

নূরুন নাহার বেগম, মানুষের ইতিহাস প্রাচীন যুগ

রেবতী বর্মণ, মানব সভ্যতার ক্রমবিকাশ

Course Code	220321	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Islamic History and Culture Paper-I			

Not Detail Syllabus

Course Code	220309	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper-I			

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)	The student will be able to: 1. Explain the concept of ICT and its related terminologies. 2. Describe the information processing cycle. 3. Identify the various devices used in the Information Processing Cycle 4. Analyze the impact of ICT on educational, social and economic development. 5. Identify career opportunities in ICT education.	Definition of ICT, related basic concepts and terminologies e.g. Information and Communications Technology (ICT) Information and Communication Technologies (ICTs) Data Information Information Processing Cycle Stage 1 - Receiving data (Input operation) Stage 2 - Processing data (Processing operation) Stage 3 - Display information (Output operation) Stage 4 - Storing information (Storage operation)
UNIT 2 INTRODUCTION TO COMPUTERS	The student will be able to: 1. describe the uses of the components of computer system 2. Differentiate among the classes of computers. 3. State the uses of computers.	Classification of Computers Capacity and size - Supercomputer, - Mainframe computer - Microcomputer etc. Purpose - General purpose - Specific purpose Type - Digital - Hybrid - Analog Booting, Rebooting and Shutting Down of Computer Booting is the act of putting on the computer. Rebooting is the act of restarting the computer. Shutting down is the act of putting off the computer.
UNIT: 3 NUMBER SYSTEMS	The student will be able to: 9. Describe the history of inventing numbers. 10. Explain the concept and classification of number system. 11. Convert and relate various numbers. 12. Add and subtract binary numbers. 13. Explain the concept Boolean Algebra 14. Prove Boolean Algebra 15. Explain De Morgan's theorem. 16. Explain Logic gates	• History of inventing Numbers • Number System: Classification of Number System, Conversion of Numbers • Addition and Subtraction in Binary System • Code: Concept of Code, BCD, EBCDIC, Alphanumeric code, ASCII, Unicode • Boolean Algebra • Boolean Theorem • De Morgan's Theorem • Truth Table • Logic gates: AND, OR, NOT gate

UNIT 4 COMPUTER HARDWARE	The student will be able to: 1. Identify the vital components of the Systems Unit. 2. Describe the categories of Computer Hardware. 3. Describe the commonly used Input and Output devices 4. Identify the main processing devices 5. Identify the main types of storage devices and media. 6. Identify the main communication devices	The Vital Components of the Systems Unit e.g. Front Side: power switch light indicators, floppy and CD ROM drive etc. Back side: USB ports, serial ports, power socket, Inside: motherboard, CPU, power supply, memory, hard disk, cards e.g. sound, network Categories of the Computer Hardware: Input devices Processing devices Output devices Storage devices. Communication devices Main Processing devices The Processor Control Unit and Arithmetic and Logic Unit
UNIT 5 COMPUTER SOFTWARE	The student will be able to: 1. Identify types of Software packages. 2. Distinguish between Operating System and Application software. 3. Identify different types, examples and uses of Operating System and Application software 4. Distinguish between Open Source and Proprietary Software.	Types of Software Packages System software. e.g. Operating system software Application Software e.g. Word Processing, Spreadsheet Differences between Operating System and Application software Types and uses of Operating System and Application software Operating System .e.g. Operating Systems e.g. DOS, Windows, (windows 98, 2000, ME, XP, Vista, Windows 7) Linux, Unix, Ubuntu, Macintosh etc. Application Software e.g. Word-processing: WORD spreadsheets: EXCEL Databases: Access Presentation: PowerPoint Educational software Games software Browsers: Internet explorer, Google chrome, Mozilla Firefox, Opera, Internet explorer, Mozilla Firefox Authoring: Dream weaver, FrontPage, Graphics software Desktop Publisher – Page Maker, Publisher Differences Between Proprietary and Open Source Software

UNIT 6 INTRODUCTION TO WORD PROCESSING APPLICATION, EDITING TEXT IN WORD PROCESSING DOCUMENT, FORMATTING, INSERTING TABLES AND SYMBOLS IN WORD PROCESSING DOCUMENT, CREATING AND PRINTING EDUCATIONAL DOCUMENTS	The student will be able to: 13. Identify Word Processing packages. 14. Create a document using the Word Processor. 15. Save a document using the „Save As“ command. 16. Edit, and save Word document using common editing tools. 17. Create a document with more sub headings and paragraphs 18. Edit text using variety of options. 19. Format Word document using formatting tools. Demonstrate the ability to perform collaborative editing. 20. Insert tables in Word Processing document. 21. Insert symbols and pictures in Word Processing documents. 22. Use layout techniques in document creation. 23. Inserting headers and footers. 24. Print documents using the various print options.	Word Processing Packages and their Uses Creating Document Using a Word Processor Saving Document Using the ‘Save As’ command Editing Word Document Using Common Editing Tools: Spell check functions Copy/cut and paste facilities Undo and redo keys Search and replace Creating Document with More Sub-Headings and Paragraphs Editing Text Using Variety of Options such as: - Text effects options – superscript, subscript, shadow, strikethrough etc. Text correction option Wrapping options Text orientation Formatting and saving a Word document using the formatting tools: Change font (style, size, colour, etc.) Text alignment Numbers and bulleting Bold Underline Italics Line spacing Collaborative Editing e.g. Using highlighting option to track changes in a document Accepting or rejecting changes Adding text comments: Inserting Tables in Word Document. Inserting Symbols and Pictures in Word Document.
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Area-III:

Course Code	220323	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Physics Paper-I: Mechanics, Properties of Matter and Waves			

1. Course Description:

This Course is developed for Bachelor of Education (Hons.) students in order to acquaint them with different knowledge, concepts and application of Vector Analysis, Mechanics, Properties of Matter and Waves.

2. Course Objectives

After completion of this course the participants are expected to-

- a) acquaint with basic concepts in science and physics
- b) know the meaning of terms specific facts and laboratory procedures related Mechanics, Properties of Matter and Waves.
- c) understand the concepts and principles of Mechanics, Properties of Matter and Waves.
- d) apply concepts and principles of Mechanics, Properties of Matter and Waves, in daily life Situations.

- e) demonstrate skills and abilities needed to conduct experiments related to Mechanics and Properties of Matter.

3. Course Content

Unit One: Introduction

2 Lectures

What is Science-Process and Product. Ideas about science. Scientific Attitude, Physics and its concept. Scope of Physics. Why should we study Physics, Physics and Technology.

Unit Two: Vector Analysis

6 Lectures

Vectors and scalars, Vector Algebra, Resolution and Addition of Vectors, Unit Vectors, Multiplication of Vectors. The Dot and Cross Product, Vector differentiation. Gradient, Divergence and Curl, Vector integral, Theorem of Gauss, Stokes and Green.

Unit Three: Work Energy and Power

3 Lectures

Kinetic Energy. Work, Work and kinetic energy, Work done by Weight, Work done by a varying force, Work Energy theorem with a Variable Force, Potential Energy, Determining Potential Energy Conservative and non-conservative forces. Work done by non-conservative Forces, Conservation of energy. Power.

Unit Four: Systems of Particles

3 Lectures

Center of Mass-Systems of Particles. Rigid Body, Newton's Second Law For a System of Particles, Linear momentum, Conservation of linear momentum, Systems With Varying Mass: A Rocket. Impulse. Collisions-Elastic and In-elastic.

Unit Five: Rotational Motion

3 Lectures

The Rotational Variables, Torque, Work and Rotational Kinetic Energy, Angular Momentum, Newton's Second Law in Angular Momentum, Rotation of a rigid body about a fixed axis, Conservation of Angular Momentum.

Unit Six: Gravitation

6 Lectures

Historical Introduction, Newton's Law of Gravity, The Universal Gravitational, Inertial and Gravitational Mass. Variations in Acceleration due to Gravity, Effect of a spherical distribution of mass. The motions of planets and satellites. Gravitational field, Gravitational potential energy, Energy considerations in the motions of Planets and Satellites.

Unit Seven: Elasticity

4 Lectures

Elasticity, Stress and Strain. Hooke's Law. Poisson's Ratio, Work done in deforming a body. Twisting Couple on a cylinder (or wire). Bending of beams, Bending Moment, Cantilever Depression of beam.

Unit Eight: Surface Tension

3 Lectures

Molecular Forces, Explanation of Surface Tension. Surface film and Surface Energy, Free Energy of Surface and Surface Tension. Pressure Difference Across a Liquid Surface. Excess Pressure. Curvature Pressure and Surface Tension, Shape of Liquid, Meniscus in a Capillary Tube. Angle of Contact. Rise of Liquid in a Capillary Tube, Surface Tension of Mercury.

Unit Nine: Fluid Dynamics and Viscosity

3 Lectures

Streamline flow, the Equation of Continuity, Energy of the Liquid, Bernoulli's Equation Applications, Torricelli's Theorem, Viscosity. Motion in a Viscous Medium. Terminal Velocity, Poiseuille's Formula.

Unit Ten: Oscillatory Motion

4 Lectures

Simple Harmonic Motion (SHM) and its differential equation, Combination of SHM, Energy consideration in SHM, Lissajou's Figures: Two body Oscillators, Damped SHM, Forced Oscillation. Resonance.

Unit Eleven: Waves

3 Lectures

Wave-an introduction. Differential equation of waves. Types of waves. Superposition and interference of waves. Wave speed, Energy and Power of wave motion, Standing waves and Resonance, Beat, Doppler effect in Sound.

Laboratory Work: Practical (At Least Six)

1. Determination of Young's Modulus and Rigidity Modulus of a short wire by Searle's dynamic method.
2. Determination of the Rigidity Modulus by Static method.
3. Determination of acceleration due to gravity 'g' by a compound pendulum.
4. Determination of acceleration due to gravity 'g' by a Kater's pendulum.
5. Determination of the spring constant and effective mass of a given spiral spring and hence to calculate the rigidity modulus of the material of the spring.
6. Determination of the Moment of Inertia of a fly-wheel about its axis of rotation.
7. Determination of the Surface Tension of water by capillary tube method
8. Determination of the Surface Tension of Mercury and Angle of contact by Quinker's method.
9. Verify the laws of transverse vibration of strings and to determine the frequency of a tuning fork by Melde's experiment.

6. Tutorial/ Assignment:

Students will be given home assignment/ Tutorial which they will be required to submit on due date.

7. Instructional Strategies:

Lecture, Question- answer, Demonstration, Guided discussion, group discussion, Student participation, Review of books, Assignment/ tutorial, Practical work.

8. Assessment

Incourse Test, Assignment, Semester Final Test, Practical Examination

Text and References:

1. Halliday. D., & Resnick. R (2001), **PHYSICS**, Part 1 (5th Ed) New York: Western Willey.
2. Spiegel R. M (1985), **Theory and Problems of Vector Analysis**, Schaum's Outline Series, New York: McGraw-Hill International Book Company.
3. W>Ifo<t>
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12. Ahmed, G. and Shahabuddin M. (1994), *Practical Physics* (2nd ed), Dhaka: Hafiz Book House.
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Course Code	220325	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Chemistry Paper-I: Physical Chemistry			

1. Course Description

This Course on physical chemistry will acquaint pupil with different terms, facts, concepts principles, laws and their applications. The course includes gaseous state, thermodynamics, kinetics and equilibrium, the liquid state, surface chemistry, colloids and electrochemistry.

2. Course Objectives

To help the learners to:

- (a) Know meaning of terms, specific facts and laboratory procedures of physical chemistry;
- (b) Understand concepts, principles and laws of physical chemistry;
- (c) Apply concepts and principles of physical chemistry to new situations; and
- (d) Demonstrate skills and abilities needed to conduct experiments on physical chemistry prescribed in the syllabus.

3. Course Contents

No. of Classes

Unit One : States of Matter

4

Intermolecular forces and states of matter, general properties of gas, liquid and solid, Heat of vaporization of liquids, heating and cooling curves, phase equilibria, phase diagram, boiling point, freezing point, change of state, sublimation, fusion and vaporization.

Unit Two: Gaseous State

5

The gas laws and the ideal gas. Dalton's law of partial pressure. Deviation from ideal behaviour. Real Gases, Vander Waal's equation. Kinetic theory of gases, Critical phenomena. Joule-Thomson's effect, Liquefaction of gases, Determination of molecular weights of gases and volatile liquids.

Unit Three : Solutions

5

Types of solutions, concentration units, heat of solutions, solubility and temperature. Effect of temp. on dissolved Oxygen-Thermal pollution, the effect of pressure on Solubility-application in preparation of carbonated beverages. Henry's law, vapor pressure of solutions, Raoult's law, Fractional distillation, colligative properties, osmotic pressure of electrolytic solution. Dialysis, application of dialysis, artificial kidney, reverse osmosis- application in desalination.

Unit Four: Chemical Thermodynamics**5**

Thermodynamic systems. First law of thermodynamics, Laws of thermo chemistry, Bond energy and bond dissociation, Heats of reaction, formation, solution and neutralization. Chemical energy, Heat capacities, Kirchhoff's equation, Second law of Thermodynamics, Reversible & irreversible, isothermal and adiabatic processes. Concepts of free energy and entropy changes of systems.

Unit Five: Chemical Kinetics**4**

Rate of a chemical reaction, Rate constant. Order, molecularity and examples of reactions of various orders and molecularity. Rate expressions, Integrated rate laws, half life. Activation energy, Effect of temperature on the rates of reactions, Catalysis. Importance of catalysis in industrial production.

Unit Six- Chemical Equilibrium**4**

Equilibrium in Chemical reactions. Law of mass action. Equilibrium constant. Degree of dissociation. The influence of temperature, pressure and concentration changes on the equilibrium. Le Chatelier principle, Applications of Le Chatelier principle in industrial production.

Unit Seven: Aqueous Equilibrium

Ion product of water, Dissociation and strength of acids and bases, Dissociation constant of acids and bases, Oswald's dilution Law, pH, Calculation of solution pH, Acid-base titration, Indicators, Titration curve, Calculations of pH in titration, Buffer solution, mechanism of buffering, pH of a buffered solution. Solubility product, Application in group separation.

Unit Eight: Surface Chemistry and Colloids**4**

Solid surfaces & their characterization, Adsorption on solid surfaces. Adsorption on solid Surfaces from gas and solution, Classification of Colloid, Preparation, purification, properties and importance of colloids.

Unit Nine : Electrochemistry**5**

Electrolytes and non-electrolytes, Metallic and Electrolytic conduction, Conductance measurements and their simple applications, Ionic migration and transference number. Electrochemical cells, batteries, cell reactions, e.m.f. of cells and their measurements. Nernst equation, Potentiometric titration of redox reaction,

Practical

- i. Determination of molecular weight of a volatile liquid by Dumas method,
- ii. Determination of heat of solution of a solid calorimetrically.
- iii. Determination of heat of neutralization of a strong acid by strong alkali calorimetrically.
- iv. Determination of equilibrium constant K_c of the equilibrium $2\text{KI} + 2\text{I}_2 \leftrightarrow 2\text{KI} + \text{I}_2$.
- v. Determination of partition coefficient of iodine between water and dichloromethane. (vi) Determination of solubility product of a sparingly soluble salt, (vii) Determination of strength of a strong acid by conductometric titration. (viii) Determination of heat of solution of a solid by solubility measurements, (ix) Investigation of the effect of reactant concentration on the rate of reaction between thisulphate ion and H^+ ion and determination of the order of reaction.

6. Assignment

An Assignment will be given by the Course teacher which needs to be submitted within the date.

7. Instructional Strategies

- Lecture,- Discussion,- Group work, - Problem solving,- Project work.

8. Assessment

- Regular attendance and participation
- Incourse examination
- Semester final examination
- Writing assignment.
- Practical Examination.

References:

1. S. Glasstone - *A Text Book of Physical Chemistry*.
2. G.W. Castellan - *Physical Chemistry*.
3. M.M. Hoque and M.A. Nawab - *Principles of Physical Chemistry*.
4. A. Findlay - *An Introduction to Physical Chemistry*.
5. P.W. Atkins - *Physical Chemistry*.
6. Daniels and Alberty - *Physical Chemistry*
7. Flicks - *Comprehensives Chemistry*.
8. S. Glasstone and Lewis - *Elements of Physical Chemistry*.
9. Steven S. Zumdahl - *Chemistry*
10. A. Findlay - *Practical Physical Chemistry*.
11. *Experimental Physical Chemistry* - by Daniel, Mathews and William.
12. *Ebbing*- General Chemistry.
13. সিরাজুল ইসলাম- প্রাথমিক ভৌত রসায়ন।
14. নূরুল হক ও মহির উদ্দিন- ভৌত রসায়ন পদ্ধতি।
15. পাল ও চক্রবর্তী- ভৌত রসায়ন।
16. হাজারী, গুপ্ত ও দে- স্নাতক ব্যবহারিক রসায়ন।

Course Code	220327	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Geography and Environment Paper-I: Physical Geography and Climatology			

1. Course Description

The course is design to introduce students to the essentials of Physical Geography and help students understand theoretical concepts in physical geography better by exposing them to practical work.

2. Course Objectives

This course will enable learners to-

- a) Understand the definition, scope and importance of Geography.
- b) Categories the essential features of Physical Geography
- c) Identify and classify climatic features
- d) Analyze the relationship between environment and education
- e) Develop map reading and drawing skills
- f) Develop representation skills of physical and climatic data.

3. Course Content

Unit One: Definition, scope, and Importance of Geography

Definition, scope, and Aims and objectives of Geography, major types of Geography, Importance of Geography with special reference to Physical Geography, Geography in Education.

Unit Two: Solar System

Solar system, shape of the earth, rotation and revolution of the earth, Latitude, Longitude, Local and standard time, International date line.

Unit Three: Geomorphology

Formation of the earth, the earth crust, its composition and structure, Minerals and Rocks, classification of rocks. Major Landforms of the world-Mountains, Plateau, Plain,

Weathering, erosion, denudation, transportation and deposition.

Earth's Organic and eperiogenic movements, Plate tectonic theory, earthquake, volcano.

Works of river, air, and glacier. Cycle of erosion,

Unit Four: Oceans of the World

The Oceans, distribution of land seas, causes of ocean current and effects, brief discussion on ocean current- Pacific, Atlantic and Indian Ocean. Salinity and topography of the Oceans.

Unit Five: Weather and Climate

Definition of weather and climate, its differences. Atmosphere-its formation and layers, air temperature, air pressure, isolation, humidity, precipitation and its types, types of climate, importance of monsoon climate. Tropical and temperate cyclone, Tsunami.

Unit Six: Environment Education

Define Environment, Environmental Pollution and remedies, Climate change and impact on climate, Role of 3R (Reduce, reuse, recycle)

Unit Seven: Practical Geography

Map Scales – Linear and diagonal scales, Enlargement and reduction of maps

Methods of showing relief, drawing of contours and profiles

Representation of economic and climatic data by bar, line and pie chart methods.

6. Instructional Strategies

Lecture (using ICT devices), Discussion, Question-Answer, Participatory Approach, Observation of real objects, Debate, Field trip.

7. Assignment

Students will submit assignments on due date based on contents by the instruction of their relevant teacher.

8. Evaluation

a) Examinations

b) Assignments and class percentage

References:

মোয়াজ্জেম হোসেন চৌধুরী-প্রাকৃতিক ভূগোল

মোহাম্মদ নজরুল ইসলাম-প্রাকৃতিক ভূগোল

ড. ডি.এম. ফিরোজ শাহ- ভূগোল শিক্ষণ

ড. শেখ মোঃ রেজাউল করিম, ড. ডি.এম. ফিরোজ শাহ, ও মোঃ এনামুল হক —উচ্চ মাধ্যমিক ভূগোল

রফিক আহমেদ- আবহাওয়া ও জলবায়ু বিজ্ঞান

Trewartha-*Elements of physical Geography*

A Gupta and A.N Das Kapur- *Principles of Physical Geography*

D.M.Preece and HRB Wood-*Foundation of Geography*

A.K Lobeck- *Geomorphology*

Strelher- *Introduction to Physical Geography*

Course Code	220329	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Mathematics Paper-I: Algebra, Trigonometry and Vector Analysis			

1. Course Description:

This is a basic course in Mathematics which is expected to prepare the students specifically in the areas of higher algebra and analytical algebra and analytical geometry, giving them necessary background and insight for more challenging and deeper work Mathematics.

2. Course Pre-requisite: Must have passed Mathematics at the HSC Level.

3. Course Objectives:

The course has been designed -

to acquaint the students with basic terms, theories, characteristics, analytical geometry in order to enable them (i) to define, explain, describe, and analyze concepts in the theory of sets, functions (or mappings) theory of numbers, inequalities, complex number, summation of algebraic and trigonometric series, theory of equations, matrices and determinants and vectors (ii) to apply the principles and methods in the solution of theoretical as well as problems.

4. Course Contents:

Unit One: Set and Set Operation

- Sets, Representation of Set, Set of numbers, Finite and infinite set, Null set, Equivalent sets, Subset of a set, Equality of two sets, Comparability of two sets, Disjoint set, Family of sets, Power set, Universal set.
- Union of sets, Intersection of sets, Difference of sets, Complement of a set, Properties of set operation.

Unit Two: Function and Relation

- Order pair and Cartesian Product, Relation (or Binary Relation) and equivalence Relation.
- Function (or mapping) and Inverse function, Different types of functions, Inverse function. Composite or product functions. Images and Inverse images of sets

under a mapping.

Unit Three: Inequalities

- Introduction, Properties of inequalities.
- Arithmetic, Geometric and Harmonic means.
- Mean of the m^{th} power of 'a' and 'b' where a and b are unequal positive quantities.
- Mean of the m^{th} power of n positive and unequal quantities.
- Weierstrass's Cauchy's and Tehebychef's Inequallity.

Unit Four: Complex Numbers

- Field properties of real and complex numbers.
- Complex Number System and its Graphical representation.
- Polar from of a complex numbers.
- Cube roots of unity.
- Multiplication and quotient of two complex numbers in polar form

Unit Five: Trigonometry

- De Moiver's theorem and it application, exponential, logarithmic, trigonometric and hyperbolic functions and their expansion.

Unit Six: Summation of Trigonometric Series

- Summation of trigonometric series, summation by the method of difference, sum of sin and cosine of angles in A.P, summation by C+iS method, sum of hyperbolic cosines and hyperbolic sines of n angles in A.P.

Unit Seven: Summation of Algebraic Series

- Summation of Algebraic Series, summation by the method of difference, Summation of series in which U_n is a product of r successive factors in A.P., summation of series in which U_n is the reciprocal of the product of r factors in A.P., (Process,) summation by the method of difference sum of an important type of series, sum of series $S_r = 1^r + 2^r + \dots + n^r$ where r is a positive integer. Recurring series and its scale of relations, sum of n terms of a recurring series, Generating function of the recurring series.

Unit Eight : Theory of equation

- Relation between roots and coefficients, symmetric function of roots, Descrates' rule of signs, rational roots, solution & formation of equation, Multiple roots of the equation.

Unit Nine : Determination

- Definition of determinant, Sarrus diagram for determinant order 3, Minors and cofactors, fundamental properties of determinants, expansion of Determinant (Laplace's expansion), Application of determinants in solving the linear equations (Cramer's rule). Multiplication of determinants, Multiplication of two determinants of same finite order; Multiplication of two determinants of two different order. Adjoint determinant, Multiplication theorem (without Proof), Inverse or reciprocal determinant, symmetric and skew symmetric determinant.

Unit Ten : Matrix

- Definition of Matrix, special types of Matrix, Addition and Scalar multiplication of matrix, Matrix multiplication Adjoint and Inverse Matrices, Solution of liner equation by applying matrices.

Unit Eleven : Vector Analysis

- Vectors and scalars, Scalar and vector products, Resolution and Addition of vectors, Unit vectors, Multiplication of vectors. The Dot and Cross Product.

Course Code	220331	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Botany Paper-I : Microbiology, Mycology, Plant Pathology, Economic Botany and Embryology of Angiosperms			

1. Course Description

This course is designed to introduce students with the basic knowledge of Microbiology, Mycology, Plant Pathology, Economic, Botany and Embryology of Angiosperms. The students will develop skills for studying different plant specimens in the laboratory and in the field. It is expected that Students will develop scientific attitude for studying plants.

2. Course Pre-requisite : Must have passed Biology at the HSC level.

3. Objectives:

The Students are expected to:

- Acquire knowledge of virus, bacteria and fungi, basics of plant pathology, economic botany with special reference to the Bangladesh plants, and embryology of angiosperms;
- Develop skills for studying microbes, for identifying and treatment of plant diseases, and for embryological studies;
- Develop positive attitude for scientific and modern methods for studying plants.

4. Course Content

Number of Classes

Theory

Unit One: Microbiology

08

- Discovery, structure, multiplication of virus and common diseases caused by virus.
- Distribution, structure, Multiplication, sexuality, recombination and death in Bacteria.
- Economic importance of virus and bacteria.

Unit Two: Mycology

08

- General characteristics and classification of the fungi.
- A knowledge of the structure, reproduction and economic importance of the typical members of the genera- *Synchytrium*, *Phytophthora*, *Rhizopus*, *Puccinia*, *Macrophomina*, *Cercospora* and *Colletotrichum*.

Unit three: Plant Pathology

08

- Definition of 'disease' and a 'diseased plant' the causes of plant diseases, phenomenon of host infection (penetration, infection, colonization of the host, exit of the pathogen factors influencing infection), symptoms of plant diseases, the principles of plant disease control.
- Study of symptoms, pathogen and control measures of the following diseases (i) blast disease of rice, (ii) brown spot of rice, (iii) stem red rot of sugarcane
- Impact of plant diseases oil crop production.

Unit Four: Economic Botany

08

- Economic importance of algae, gymnosperms and angiosperms.
- Oil, fibre, timber and medicinal plants with special reference to plants of Bangladesh.
- Extraction and processing of paper pulp, rubber, sugarcane and tea.

4. Food plants of Bangladesh.

Unit Five: Embryology of Angiosperms

08

1. Development of male and female gametophytes.
2. Fertilization and development of seeds and fruits
3. Polyembryony and apomixis.

7. Project/Assignment

1. Assigned class lectures
2. Pot plants
3. Dry and wet collection

8. Practical: Microbiology

1. Study of curd bacteria, root nodule bacteria.
2. Staining of bacteria and bacterial spores.

Mycology and Plant Pathology :

1. Methods of studying fungi in the laboratory, the fungal genera included in the theory.
2. Study of various types of plant disease symptoms.
3. Study of symptoms and pathogens of plant diseases that have been covered in the theory.
4. Methods of isolation of fungal pathogens from diseases plant part, pathogenecity test and in vitro evaluation of fungicides.

Economic Botany and Embryology

1. Examination of common economic products derived from plants.
2. Study of cross section of ovary, anthers, seeds and fruits.

Evaluation: Two incourse tests and the semester final test. Practical examination.

References:

1. Maheshwari P., *An Introduction to the Embryology of Angiosperms*, Tata McGraw-Hill Publishing CO.. Ltd. 1994.
2. Burrows William, *Microbiology*, W.B. Saunders Co. 1961.
3. Pelezer Michael J; Roger D. Reid, *Microbiology* McGraw-Hill Book Co. Ltd. 1958.
4. Walker, Charles. John. *Plant Pathology*, McGraw-Hill Book Co. Ltd. 1950.
5. মুখার্জী, নীলাংশু; মৃণাল দাশ গুপ্ত, *উদ্ভিদ রোগ*, পশ্চিম বঙ্গ রাজ্য পুস্তক পর্ষদ, কলিকতা, ১৯৮৯
6. খান, মাহবুবর রহমান, মোঃ আবুল হাসান, *উদ্ভিদবিজ্ঞান প্রথম খণ্ড*, হাসান প্রিন্টি প্রেস, ঢাকা, ১৯৮৯
7. মিত্র, দেবব্রত, জীবেশ গুহ; সলিল সুমার চৌধুরী, *উদ্ভিদবিজ্ঞান প্রথম খণ্ড*, মৌলিক লাইব্রেরী, কলিকাতা, ১৯৯৩
8. ফাত্তাহ, কাজী আবদুল, মোঃ আবুল হাসান; খুরশীদা বানু, *কলেজ বায়োলজি*, আলতাফ প্রেস, ঢাকা, ১৯৭৮
9. Smith, Gilbert. M., *Cryptogamic Botany, Vol. I, Algae and Fungi*, Tata McGraw-Hill Book Co. Ltd., New Delhi, 1998.
1. Alexopoulos, Constantine. J., *Introductory Mycology*, John Wiley and Sons. Inc., New York. London. 1962.
2. Hill, *Economic Botany*, McGrawHill Book Co. Ltd.

Course Code	220333	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Zoology Paper-I : Diversity of Animals			

1. Course Description:

This course will introduce students to the animal diversity of the world. They will develop skills in studying these animals in the laboratory and in the field. It is expected that students will develop positive attitude towards conservation of animal life.

2. Course Pre-requisite: The student must have passed Biology at the Higher Secondary Level.

3. Objectives

The Students will:

- (a) Acquire knowledge of Non Chordate and Chordate animals,
- (b) Develop skills for Studying these animals in the laboratory and in the field;
- (c) Possess positive attitude towards the conservation of these animals.

4. Course Content

Number of Classes

Theory

- (a) General principles of taxonomy and animal classification 02
- (b) The non-chordates: General characteristics of major phyla, classification up to classes with examples and economic importance 18

Protozoa, Porifera ,Cnidaria Ctenophora,Platyhelminthes,Rotifera

Nematoda

Acanthocephala

Annelida

Arthropoda

Mollusca

Echinodermata

Hemichordata

(c) Concepts on minor phyla

(d) Phylum Chordata: General characteristics, classification and economic importance

Section I: Protochordates

Subphylum 1. Urochordata

Subphylum 2. Cephalochordata

Section II: Lower Vertebrates

Subphylum 3.

Vertebrata Classl.

Cyclostomata Class 2.

Chondrichthyes Class 3.

Osteichthyes Class 4.

Amphibia

Section III. Higher Vertebrates (Amniotes)

Class 5. Reptilia

Class 6. Aves

Class 7. Marnalia

4 Animal diversity in the world and Bangladesh. 02

Practical

Museum Study: Study of museum specimens representing all major phyla, classes (chordates) with special reference to Bangladesh. 06

Study of permanent slides of various non-chordates 02

Preservation technique

7. Assessment

Two in-course tests and a semester final test Assignment, Practical note book preparation

Practical examination

References

1. Ganguly B.B., A.K. Sinha and S. Adhikari, 1996, *Biology of Animals*, '(Vol. 1 & 2) 2nd ed. The New Central Book Agency, India.
2. Hickman, Jr.C.P., Larry Roberts and Allan Larson, 1997. *Integrated Principles of Zoology*, 14th ed. McGraw-Hill Book Company, New York.
3. Hyman, L.H., 1940. *The Invertebrates. (Vol. 1-6)*, McGraw-Hill Book Company, New York.
4. IUCN Bangladesh, 2000, *Red Book of Threatened Animals of Bangladesh*. IUCN The World Conservation Union, Bangladesh.
5. Jordan E.L. and P.S. Verma, 1998, *Invertebrate Zoology*, 4th ed. S.. Chand and company, India.
6. Kotpal. R.L. 2000, *Modern Text Book of Zoology*, Invertebrates, 8th revised ed. Rastog Publication. Meerut, India.
7. Storer Tracy I., Robert L. Usinger, Robert C., Stebbing and James W. Nybakken, 1980), *General Zoology*, TMH ed. Tata, McGraw-Hill Book Company, New Delhi.
1. Parker T.J. and W.A. Haswell (Edited by late A. J. Marshall and W.D. Williams). 1995, *Text Book of Zoology*, (Invertebrates), First Indian Edition, Laxman Chand Arya, Delhi.
2. Parker T.J. and W.A. Haswell (Edited by late A. J. Marshall and W.D. Williams). 1995, *Text Book of Zoology*, (Vertebrates), First Indian Edition, Laxman Chand Arya, Delhi.
3. মো: নাজিম উদ্দিন (সম্পাদিত), ২০০১ স্নাতক প্রাণিবিজ্ঞান প্রোটোজোয়া ও নন কর্ডাটা, নিসর্গ প্রকাশনী, ঢাকা
4. হাবিবুর রহমান, ১৯৮৯, স্নাতক প্রাণিবিজ্ঞান ১ম খণ্ড, অমেরুদণ্ডী, হাসান বুক হাউস, ঢাকা।
5. মাহমুদুল আমীন (সম্পাদিত), ১৯৮২, স্নাতক প্রাণিবিজ্ঞান ২য় খণ্ড, কর্ডাটা, হাসান বুক হাউজ, ঢাকা।

Course Code	220335	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Statistics Paper-I: Theory of Statistics			

Course Description

Objectives of the Course

Contents

Unit 1 : Descriptive Statistics:

History of Statistics, its definitions, nature and characteristics, Methods of statistics, Scope, application and limitations of Statistics. Sources of statistical data, primary and secondary data, Variables, Attributes, Classification, Tabulation, Different types of tables, Frequency distribution, Graphical Presentation of data, Details study of different types of graphs and charts with their relative merits and demerits. Measures of central tendency, Measures of dispersion, Moments, Skewness & Kurtosis and their properties. Bivariate data. Scatter diagram, Simple correlation, Rank correlation, correlation ratio, Simple regression analysis, principles of least squares, Lines of best fit, standard error of estimators of regression coefficients & their properties. Multiple correlation, Partial correlation, Multiple regression, Estimation of Multiple regression coefficients.

Unit 2: Probability

Elements of set theory, Experiment, Random Experiment, Sample Space, Events, Union and Intersection of events, Different types of events. Meaning of probability, Scope of probability, Different approaches of defining probability,. Elementary theorems on probability, Additive & multiplication rule, permutation & combination. Conditional probability, Theorems on conditional probability, Theorem of total probabilities, Bayes theorem and its uses and importance in statistics.

Random variables, Discrete and continuous random variables, Probability density function, Distribution function, Function of random variable and its distribution, Joint distribution, marginal and conditional distributions, Independence of random variables, Mathematical expectation, expectations of sum and products of random variables, Conditional expectation and conditional variance. Moments and moment generating functions, Relation between moments and cumulants.

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

a) Internal Examinations $15+15=30$

b) External Examination=60

c) Assignment/action research and class percentage, Performance =10

References

Subject Code–(Practical Paper–I): Descriptive Statistics & Test of Hypothesis

Marks: 50

Condensation and tabulation of data, Frequency distribution, Graphical representation of data, Measures of location and dispersion. Measures moments, Skewness & Kurtosis. Simple correlation co-efficient and fitting of regression lines. Rank correlation & correlation ratio.

Drawing of commonly used curves: Binominal, Poisson & Normal. Exercises on fittings of Different probability distributions with standard Errors.

Common tests of significance of mean, variance, Proportion, Correlation, coefficient and testing of goodness of fit. Tests of large samples, contingency table test, Exact test, Approximate test. Test of homogeneity.

Course Code	220309	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper-I			

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)	The student will be able to: 1.Explain the concept of ICT and its related terminologies. 2.Describe the information processing cycle. 3. Identify the various devices used in the Information Processing Cycle 4.Analyze the impact of ICT on educational, social and economic development. 5.Identify career opportunities in ICT education.	Definition of ICT, related basic concepts and terminologies e.g. Information and Communications Technology (ICT) Information and Communication Technologies (ICTs) Data Information Information Processing Cycle Stage 1 - Receiving data (Input operation) Stage 2 - Processing data (Processing operation) Stage 3 - Display information (Output operation) Stage 4 - Storing information (Storage operation)
UNIT 2 INTRODUCTION TO COMPUTERS	The student will be able to: 1. describe the uses of the components of computer system 2. Differentiate among the classes of computers. 3. State the uses of computers.	Classification of Computers Capacity and size - Supercomputer, - Mainframe computer - Microcomputer etc. Purpose - General purpose - Specific purpose Type - Digital - Hybrid - Analog Booting, Rebooting and Shutting

		Down of Computer Booting is the act of putting on the computer. Rebooting is the act of restarting the computer. Shutting down is the act of putting off the computer.
UNIT: 3 NUMBER SYSTEMS	The student will be able to: 17. Describe the history of inventing numbers. 18. Explain the concept and classification of number system. 19. Convert and relate various numbers. 20. Add and subtract binary numbers. 21. Explain the concept Boolean Algebra 22. Prove Boolean Algebra 23. Explain De Morgan's theorem. 24. Explain Logic gates	- History of inventing Numbers - Number System: Classification of Number System, Conversion of Numbers - Addition and Subtraction in Binary System - Code: Concept of Code, BCD, EBCDIC, Alphanumeric code, ASCII, Unicode - Boolean Algebra - Boolean Theorem - De Morgan's Theorem - Truth Table - Logic gates: AND, OR, NOT gate
UNIT 4 COMPUTER HARDWARE	The student will be able to: 1. Identify the vital components of the Systems Unit. 2. Describe the categories of Computer Hardware. 3. Describe the commonly used Input and Output devices 4. Identify the main processing devices 5. Identify the main types of storage devices and media. 6. Identify the main communication devices	The Vital Components of the Systems Unit e.g. Front Side: power switch light indicators, floppy and CD ROM drive etc. Back side: USB ports, serial ports, power socket, Inside: motherboard, CPU, power supply, memory, hard disk, cards e.g. sound, network Categories of the Computer Hardware: Input devices Processing devices Output devices Storage devices. Communication devices Main Processing devices The Processor Control Unit and Arithmetic and Logic Unit
UNIT 5 COMPUTER SOFTWARE	The student will be able to: 1. Identify types of Software packages. 2. Distinguish between Operating System and Application software. 3. Identify different types, examples and uses of Operating System and Application software 4. Distinguish between Open Source and Proprietary Software.	Types of Software Packages System software. e.g. Operating system software Application Software e.g. Word Processing, Spreadsheet Differences between Operating System and Application software Types and uses of Operating System and Application software Operating System .e.g. Operating Systems e.g. DOS, Windows, (windows 98, 2000, ME, XP, Vista, Windows 7) Linux, Unix, Ubuntu, Macintosh etc. Application Software e.g. Word-processing: WORD spreadsheets: EXCEL Databases: Access Presentation: PowerPoint Educational software Games software

		Browsers: Internet explorer, Google chrome, Mozilla Firefox, Opera, Internet explorer, Mozilla Firefox Authoring: Dream weaver, FrontPage, Graphics software Desktop Publisher – Page Maker, Publisher Differences Between Proprietary and Open Source Software
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UNIT 6 INTRODUCTION TO WORD PROCESSING APPLICATION, EDITING TEXT IN WORD PROCESSING DOCUMENT, FORMATTING, INSERTING TABLES AND SYMBOLS IN WORD PROCESSING DOCUMENT, CREATING AND PRINTING EDUCATIONAL DOCUMENTS	The student will be able to: 25. Identify Word Processing packages. 26. Create a document using the Word Processor. 27. Save a document using the „Save As“ command. 28. Edit, and save Word document using common editing tools. 29. Create a document with more sub headings and paragraphs 30. Edit text using variety of options. 31. Format Word document using formatting tools. Demonstrate the ability to perform collaborative editing. 32. Insert tables in Word Processing document. 33. Insert symbols and pictures in Word Processing documents. 34. Use layout techniques in document creation. 35. Inserting headers and footers. 36. Print documents using the various print options.	Word Processing Packages and their Uses Creating Document Using a Word Processor Saving Document Using the ‘Save As’ command Editing Word Document Using Common Editing Tools: Spell check functions Copy/cut and paste facilities Undo and redo keys Search and replace Creating Document with More Sub-Headings and Paragraphs Editing Text Using Variety of Options such as: - Text effects options – superscript, subscript, shadow, strikeout etc. Text correction option Wrapping options Text orientation Formatting and saving a Word document using the formatting tools: Change font (style, size, colour, etc.) Text alignment Numbers and bulleting Bold Underline Italics Line spacing Collaborative Editing e.g. Using highlighting option to track changes in a document Accepting or rejecting changes Adding text comments: Inserting Tables in Word Document. Inserting Symbols and Pictures in Word Document.
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Area-IV:

Course Code	220337	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Accounting Paper-I : Basic Accounting			

Course Description

Objectives of the Course

Contents

Unit 1: Introduction

Definition of Accounting, its role and functions, various images of Accounting, users of Accounting information, history of Accounting, generally accepted accounting principles, distinction between Bookkeeping and Accounting, relationship of Accounting with other disciplines, ethical issues,

Unit 2: The Recording Process

Business transaction, steps in the recording process, the accounting equation, the account, the rules of debit and credit, the journal and the ledger, subsidiary ledgers and special journals, the trial balance.

Unit 3: Accounting for Merchandising Operations

Defining Merchandising operations, merchandising transaction, recording of merchandising purchases and sales under perpetual and periodic inventory systems.

Unit 4: The Adjustment Process

Accounting period, accrual vs. cash basis of accounting, revenues (income) and expenses, types of adjusting entries, preparing and posting of closing entries, preparing the adjusted trial balance, preparation of classified income statement and the balance sheet.

Unit 5: Worksheet

Meaning, objects, nature, rules for the preparation of worksheet and preparation of worksheet -8-column and 10-column.

Unit 6: Preparation of Financial Statement

Single and multiple-step income statements, Owner's equity statement, classified balance sheet.

Unit 7: Rectification of Errors

Meaning, types of errors, rectification of errors before preparation of trial balance, after preparation of trial balance, after preparation of financial statements and errors detected in the next accounting year.

Unit 8: Control of Cash

Internal control, controlling cash, the bank checking account, petty cash funds, bank reconciliation statement.

Unit 9: Accounting Information System

Basic concepts, principles of accounting information systems, developing an Accounting system, mechanized accounting systems.

4. Instructional Strategies

Lecture (using multi-media), Participatory approaches (Discussion, Question-Answer, group work, Observation, Debate, presentation, Field trip).

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

a) Internal Examinations 15+15=30

b) External Examination=60

c) Assignment/action research and class percentage, Performance =10

Reference:

Md. Hafiz Uddin: Basic Accounting

M .M. Khan : Advanced Accounting, vol-1

Weggantdt, J.J.Kieso and Kimmel P.O: Principles of Accounting

William W Pyle and Kermit D. Larson: Fundamental Accounting Principles

Course Code	220339	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Management Paper-I: Introduction to Business			

Course Description

Objectives of the Course

Contents

Unit 1 : Basic Concepts

Meaning of Business – Basic elements – features – branches and their place in economy of Bangladesh – Business size – location of business – efficiency of business enterprises – social responsibility of business – society, business and Govt.

Unit 2 : Entrepreneurship and Self Employment

Definition – entrepreneur – success failure – starting a business – meaning of Self employment – various fields of self employment – institutional and technical support for self employment – role of self employment in the economy of Bangladesh.

Unit 3 : Business Environment

Definition – components of external and internal environment – international environment – business environment of Bangladesh.

Unit 4 : Different Forms of Business Organizations:

Characteristics merits and demerits of sole proprietorship, partnership, company, co-operative society and state enterprise.

Unit 5: Joint Stock Company

Definition – features – types – formation – share capital – types of Shares & debentures – premium discount and right issue – management and winding up – management pattern of joint stock company in Bangladesh.

Unit 6 : Capital Market

meaning – importance – produce exchange – Securities and Exchange Commission (SEC) – functions – stock exchange – functions – importance rules of purchase and sale of shares and debentures – listing of security on stock exchange.

Unit 7: Institution for Furtherance of Business

Chambers of Commerce and industries – EPZ – EPB – Port Authority – BGMEA.

Unit 8: Globalization

Argument for and against globalization – related agency – WTO – IMF – SAPTA – ASIAN.

Unit 9: Trade Practice in Bangladesh

Commercial policy – import and export procedures –formalities – problems and measures to overcome problems – documents used in export and import – L.C. – shipping documents – commercial advices.

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

- a) Internal Examinations 15+15=30
- b) External Examination=60
- c) Assignment/action research and class percentage, Performance =10

References:

Course Code	220341	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Marketing Paper-I: Principles of Marketing			

Course Description

Objectives of the Course

Contents

Unit 1 : Introduction

Definition, core concepts, importance, scope and functions of Marketing, Marketing management philosophies, Marketing challenges in the new millennium.

Unit 2: Environment

Definition, influence of micro environment on marketing, Responding to the marketing environment.

Unit 3 : Consumer Buying Behavior

Definition, Characteristics and model of consumer behaviour, Factors affecting consumer behaviour, Types of buying decision behaviour, Stages in the buying decision process.

Unit 4 : Market Segment, Targeting and Positioning

Definition, benefits and bases of market segmentation. Market targeting, Evaluating and selecting target markets. Market positioning, strategies for market positioning, choosing a positioning strategy.

Unit 5 : Marketing Mix

Definition, elements of marketing mix, Factors affecting marketing mix.

Unit 6 : Product

Definition, Levels, Classification, Consumer product and Industrial Product, New product development process, product life cycle.

Unit 7 : Price

Definition, Objectives, Pricing considerations, General approaches of pricing.

Unit 8 : Place/Distribution

Definition, Objectives, Functions, Importance, Types, Channel selection, Retailing, Wholesaling.

Unit 9 : Promotion

Meaning, Importance, Objectives, Promotion mix-advertising, personal selling, sales promotion and public relations.

Unit 10 : Service and Non-profit Marketing

Definition, Characteristics, Importance, Classification, Strategies for service marketing, Profit Vs Non-profit marketing, Strategic programs for non-profit organizations. Non-profit organizations in Bangladesh.

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

a) Internal Examinations 15+15=30

- b) External Examination=60
- c) Assignment/action research and class percentage, Performance =10

References

Course Code	220343	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Finance and Banking Paper-I: Principles of Business Finance			

Course Description

Objectives of the Course

Contents

Unit 1 : Introduction

Definition, functions and Classification of finance, Scope and functions of business finance, Principles of finance, goal of a firm, profit maximization versus wealth maximization.

Unit 2 : Sources of Finance

Internal and External Finance, Short-term financing, characteristics and types, calculation of effective interest rate of different sources of short-term capital.

Unit 3: Intermediate term financing

Definition, characteristics, types and sources, Advantages and disadvantages, cost of term financing, methods of repayment schedule.

Unit 4: Long term financing

Definition, characteristics, importance, sources of long-term finance and methods of raising long term fund, instrument of long term financing – common stock, preferred stock capital, debt capital, Advantages and disadvantages of long term financing.

Unit 5: Time value of money

concept and importance, Time value of money, compounding, discounting present value and terminal value, Use of present value table, Value of an annuity, loan amortization schedule.

Unit 6: Capital budgeting

Importance and application of the concept of capital budgeting, types of investment decisions, steps in capital budgeting – Payback Period method, Average Rate of Return, Net Present Value Method, Internal Rate of Return, Profitability Index method.

Unit 7: Leverage

Concept and Types of leverage, Operating leverage, measurement and interpretation, Financial leverage and capital structure, Impact of financial leverage on cost of capital, Distinguish between financial and capital leverage, Total leverage or mixed leverage.

Unit : 8 Lease financing

Definition, contents, features, types, methods, Advantages and disadvantages, Leasing versus borrowing decision.

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

a) Internal Examinations 15+15=30

b) External Examination=60

c) Assignment/action research and class percentage, Performance =10

References

Course Code	220309	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper-I			

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)	The student will be able to: 1.Explain the concept of ICT and its related terminologies. 2.Describe the information processing cycle. 3. Identify the various devices used in the Information Processing Cycle 4.Analyze the impact of ICT on educational, social and economic development. 5.Identify career opportunities in ICT education.	Definition of ICT, related basic concepts and terminologies e.g. Information and Communications Technology (ICT) Information and Communication Technologies (ICTs) Data Information Information Processing Cycle Stage 1 - Receiving data (Input operation) Stage 2 - Processing data (Processing operation) Stage 3 - Display information (Output operation) Stage 4 - Storing information (Storage operation)
UNIT 2 INTRODUCTION TO COMPUTERS	The student will be able to: 1. describe the uses of the components of computer system 2. Differentiate among the classes of computers. 3. State the uses of computers.	Classification of Computers Capacity and size - Supercomputer, - Mainframe computer - Microcomputer etc. Purpose - General purpose - Specific purpose Type - Digital - Hybrid - Analog Booting, Rebooting and Shutting

		Down of Computer Booting is the act of putting on the computer. Rebooting is the act of restarting the computer. Shutting down is the act of putting off the computer.
UNIT: 3 NUMBER SYSTEMS	The student will be able to: 25. Describe the history of inventing numbers. 26. Explain the concept and classification of number system. 27. Convert and relate various numbers. 28. Add and subtract binary numbers. 29. Explain the concept Boolean Algebra 30. Prove Boolean Algebra 31. Explain De Morgan's theorem. 32. Explain Logic gates	- History of inventing Numbers - Number System: Classification of Number System, Conversion of Numbers - Addition and Subtraction in Binary System - Code: Concept of Code, BCD, EBCDIC, Alphanumeric code, ASCII, Unicode - Boolean Algebra - Boolean Theorem - De Morgan's Theorem - Truth Table - Logic gates: AND, OR, NOT gate
UNIT 4 COMPUTER HARDWARE	The student will be able to: 1. Identify the vital components of the Systems Unit. 2. Describe the categories of Computer Hardware. 3. Describe the commonly used Input and Output devices 4. Identify the main processing devices 5. Identify the main types of storage devices and media. 6. Identify the main communication devices	The Vital Components of the Systems Unit e.g. Front Side: power switch light indicators, floppy and CD ROM drive etc. Back side: USB ports, serial ports, power socket, Inside: motherboard, CPU, power supply, memory, hard disk, cards e.g. sound, network Categories of the Computer Hardware: Input devices Processing devices Output devices Storage devices. Communication devices Main Processing devices The Processor Control Unit and Arithmetic and Logic Unit
UNIT 5 COMPUTER SOFTWARE	The student will be able to: 1. Identify types of Software packages. 2. Distinguish between Operating System and Application software. 3. Identify different types, examples and uses of Operating System and Application software 4. Distinguish between Open Source and Proprietary Software.	Types of Software Packages System software. e.g. Operating system software Application Software e.g. Word Processing, Spreadsheet Differences between Operating System and Application software Types and uses of Operating System and Application software Operating System .e.g. Operating Systems e.g. DOS, Windows, (windows 98, 2000, ME, XP, Vista, Windows 7) Linux, Unix, Ubuntu, Macintosh etc. Application Software e.g. Word-processing: WORD spreadsheets: EXCEL Databases: Access Presentation: PowerPoint Educational software Games software

		Browsers: Internet explorer, Google chrome, Mozilla Firefox, Opera, Internet explorer, Mozilla Firefox Authoring: Dream weaver, FrontPage, Graphics software Desktop Publisher – Page Maker, Publisher Differences Between Proprietary and Open Source Software
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UNIT 6 INTRODUCTION TO WORD PROCESSING APPLICATION, EDITING TEXT IN WORD PROCESSING DOCUMENT, FORMATTING, INSERTING TABLES AND SYMBOLS IN WORD PROCESSING DOCUMENT, CREATING AND PRINTING EDUCATIONAL DOCUMENTS	The student will be able to: 37. Identify Word Processing packages. 38. Create a document using the Word Processor. 39. Save a document using the „Save As“ command. 40. Edit, and save Word document using common editing tools. 41. Create a document with more sub headings and paragraphs 42. Edit text using variety of options. 43. Format Word document using formatting tools. Demonstrate the ability to perform collaborative editing. 44. Insert tables in Word Processing document. 45. Insert symbols and pictures in Word Processing documents. 46. Use layout techniques in document creation. 47. Inserting headers and footers. 48. Print documents using the various print options.	Word Processing Packages and their Uses Creating Document Using a Word Processor Saving Document Using the ‘Save As’ command Editing Word Document Using Common Editing Tools: Spell check functions Copy/cut and paste facilities Undo and redo keys Search and replace Creating Document with More Sub-Headings and Paragraphs Editing Text Using Variety of Options such as: - Text effects options – superscript, subscript, shadow, strikeout etc. Text correction option Wrapping options Text orientation Formatting and saving a Word document using the formatting tools: Change font (style, size, colour, etc.) Text alignment Numbers and bulleting Bold Underline Italics Line spacing Collaborative Editing e.g. Using highlighting option to track changes in a document Accepting or rejecting changes Adding text comments: Inserting Tables in Word Document. Inserting Symbols and Pictures in Word Document.
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Area-V:

Course Code	220345	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Information Science and Library Management Paper-I : Basics of Information Science and Library management			

Course Description

Objectives of the Course

Content

Group-A:

Unit 1 : Library & Society:

It's influences in culture, modern pattern & trends of society. Library's role in education and society

Unit 2 : History of Books and Libraries:

Writing materials, ancient libraries (Assurbanipal, Alexandria and Pergamum library)

Unit 3 : Different Types of Libraries

Types of libraries and their utilities, different departments within a library and their functions, role of academic library, documentation and information institutions, application of modern management ideas and techniques to libraries, national information policy, digital libraries-social, economic and legal issues.

Group-B:

Unit 1 : Acquisition:

aims and objectives, Methods, principles and Importance of collection development in libraries. Principles of book selection in different types of libraries. Acquisition policy, book ordering and subsequent activities of balance book collection ,Role of book selector, qualities of a good book selector and library operator

Unit 2 : Copyright Law

Definition, need and functions, Bangladesh Copyright Law of 2000.

Unit 3 :

Weeding library materials, overview, and criteria of weeding in different types of libraries.

Group-C:

Unit 1 : Management of Information Institutions

- a. Differences in organization, management and administration.
- b. Scientific management: Taylor and Bannt.
- c. Fayol's classical school : Adoption of Fayol's principles of library.
- d. System school: theories of Fayol, Max Weber, Urwick, Luther, Gulick: POSDCORB.
- e. Management by objectives (MBO): Peter Drucker, G. Odiorne.

Unit 2: Organizational Structure

Concepts, different patterns of organizational structure, line organization, staff organization, line and staff organization and functional organization etc.

References:

1. Rowely, J. and Farrow, J. Organizing Knowledge.
2. Johnson, Elmer D. Communication: an introduction to the history of writing, printing, books and libraries.
3. নাসির উদ্দিন আহমেদ, সমাজ, গ্রন্থাগার ও যোগাযোগ
4. শামসুল হক, গ্রন্থাগারের ইতিহাস: মধ্যযুগ
1. Sengupta, Benoyendra, Book Selection, 2nd Rev. ed. Calcutta, World Press.
2. Mukherjee, A.K. Book Selection, principles, practices and tools, Calcutta, World Press.
3. Ranganathan, S.R. library book selection, Bombay, Asia Pub. 2nd ed.
4. Chakrabarty, A.K. A treatise on book selection, Delhi, D.K. Publications.
5. Dhawan, K.S. Multimedia library, New Delhi, Commonwealth Pub.
6. Bangladesh Copyright Law-2000, Govt. Publication.
7. Rahman, Afifa. Library Book Selection, Dhaka, Paragon Pub.
8. Rahman, Afifa, Book Selection and Information Resources Development (Press).
1. Stueart, Robert D. and Moran, Barbara B. Library management.
2. Koontz, Harold and O' Donnell, Gyrill. Principles of management.
3. Gulick, Luther, "Notes on the theory of organization". In: papers on the science of
4. Administration / ed. by Luther Gulick and L. Urwick.
5. Saiful-Islam, K.K. Library organization, management and administration.

Course Code	220347	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Home Economics Paper-I			

SECTION A: PRINCIPLES OF HOME ECONOMICS**1. Home Economics**

- a. Meaning and importance of Home Economics, b. History of Home Economics
- c. Objectives and ideals of Home Economics, d. Scopes of Home Economics
- e. Limitations of Home Economics

2. Career opportunities in Home Economics

- a. Home Economics: Interior decoration, Credit management, Florist, Teaching
- b. Foods and Nutrition: Catering, Dietetics, Nutritionist, Public Health Education
- c. Clothing and Textile: Fashion designing,
- d. Family and Child development: Early and childhood educator, Counseling
- f. Media, g. Research

3. Interrelationship of Home Economics with other subjects

Relation of Home Economics with Social Science, Psychology, Architecture, Management, Finance, Marketing, Textile Engineering, Biology, Geography, Chemistry, Agricultural Science and Fine Arts.

4. Home Economics practices in Bangladesh

a. Nutritionist , b. Catering service ,c. Boutique ,d. Florist ,e. Fashion / Design ,f. Day care
g. Elderly care ,h. Interior decorator ,i. Home maker j. Family planning k. Teaching

SECTION B: EDUCATION IN HOME ECONOMICS

01. Introduction

a. Meaning of Education ,b. Objectives of education , c. Philosophy of education
c. Philosophy of Home Economics to evolve objectives of education.

02. The nature of learners in education

a. Need of the individual in education, b. Process of learning ,c. Transfer of learning.
d. Motivation and incentives in classroom learning ,e. The rapid-learning learner.
f. The slow leaning learner. g. The teacher in a guidance program.
h. Discipline as our aspects of moral and character education.

3. Appropriate Teaching Techniques and Methods in Home Economics Education

a. Planning for effective experience on various areas of Home Economics Curriculum.
Planning of lesson for years months and days.
b. Audio visual aids for teaching Home Economics. c. Discussion techniques-group work,
panel symposium. d. Experience outside the classroom. e. Lecture, laboratory, demonstration,
role playing. f. Use of resource people. g. Organizing Programs for extent: Giving publicity,
Building reports.

Practical:

01. Supervision practice teaching of 10 lessons on Home Economics subject at Secondary School and Higher Secondary level.

02. Visit a Nutritionist or Day Care Centre to know the daily tasks / activities and impact on society.

03. Simulation a day's lesson in the class-room practice (Food & Nutrition/Home Management/ Clothing and Textile/Child Development/Applied Art.)

Note: All assignments and practical reports need to be presented both in PPT and hard copy.

Books Recommended:

01. Home Economics Education, B. Ed Module- TQI- SEP

02. The Teaching of Home Economics-Haryel M. Hatchor Mildred E.

03. Home Making Education in the High School-Mande Wilhumsam, Mary Stewart, Zyle.

04. Student Teaching in Secondary School-Howard T. Batch-elder Manrice Mc Collision Raieigh Schorling.

০৫. গার্হস্থ্য অর্থনীতি শিক্ষা- প্রফেসর করিমা আখতার।

Course Code	220309	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper-I			

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)	The student will be able to: 1.Explain the concept of ICT and its related terminologies. 2.Describe the information processing cycle. 3. Identify the various devices used in the Information Processing Cycle 4.Analyze the impact of ICT on educational, social and economic development. 5.Identify career opportunities in ICT education.	Definition of ICT, related basic concepts and terminologies e.g. Information and Communications Technology (ICT) Information and Communication Technologies (ICTs) Data Information Information Processing Cycle Stage 1 - Receiving data (Input operation) Stage 2 - Processing data (Processing operation) Stage 3 - Display information (Output operation) Stage 4 - Storing information (Storage operation)
UNIT 2 INTRODUCTION TO COMPUTERS	The student will be able to: 1. describe the uses of the components of computer system 2. Differentiate among the classes of computers. 3. State the uses of computers.	Classification of Computers Capacity and size - Supercomputer, - Mainframe computer - Microcomputer etc. Purpose - General purpose - Specific purpose Type - Digital - Hybrid - Analog Booting, Rebooting and Shutting Down of Computer Booting is the act of putting on the computer. Rebooting is the act of restarting the computer. Shutting down is the act of putting off the computer.
UNIT: 3 NUMBER SYSTEMS	The student will be able to: 33. Describe the history of inventing numbers. 34. Explain the concept and classification of number system. 35. Convert and relate various numbers. 36. Add and subtract binary numbers. 37. Explain the concept Boolean Algebra 38. Prove Boolean Algebra 39. Explain De Morgan's theorem. 40. Explain Logic gates	• History of inventing Numbers • Number System: Classification of Number System, Conversion of Numbers • Addition and Subtraction in Binary System • Code: Concept of Code, BCD, EBCDIC, Alphanumeric code, ASCII, Unicode • Boolean Algebra • Boolean Theorem • De Morgan's Theorem • Truth Table • Logic gates: AND, OR, NOT gate

UNIT 4 COMPUTER HARDWARE	The student will be able to: 1. Identify the vital components of the Systems Unit. 2. Describe the categories of Computer Hardware. 3. Describe the commonly used Input and Output devices 4. Identify the main processing devices 5. Identify the main types of storage devices and media. 6. Identify the main communication devices	The Vital Components of the Systems Unit e.g. Front Side: power switch light indicators, floppy and CD ROM drive etc. Back side: USB ports, serial ports, power socket, Inside: motherboard, CPU, power supply, memory, hard disk, cards e.g. sound, network Categories of the Computer Hardware: Input devices Processing devices Output devices Storage devices. Communication devices Main Processing devices The Processor Control Unit and Arithmetic and Logic Unit
UNIT 5 COMPUTER SOFTWARE	The student will be able to: 1. Identify types of Software packages. 2. Distinguish between Operating System and Application software. 3. Identify different types, examples and uses of Operating System and Application software 4. Distinguish between Open Source and Proprietary Software.	Types of Software Packages System software. e.g. Operating system software Application Software e.g. Word Processing, Spreadsheet Differences between Operating System and Application software Types and uses of Operating System and Application software Operating System .e.g. Operating Systems e.g. DOS, Windows, (windows 98, 2000, ME, XP, Vista, Windows 7) Linux, Unix, Ubuntu, Macintosh etc. Application Software e.g. Word-processing: WORD spreadsheets: EXCEL Databases: Access Presentation: PowerPoint Educational software Games software Browsers: Internet explorer, Google chrome, Mozilla Firefox, Opera, Internet explorer, Mozilla Firefox Authoring: Dream weaver, FrontPage, Graphics software Desktop Publisher – Page Maker, Publisher Differences Between Proprietary and Open Source Software

UNIT 6 INTRODUCTION TO WORD PROCESSING APPLICATION, EDITING TEXT IN WORD PROCESSING DOCUMENT, FORMATTING, INSERTING TABLES AND SYMBOLS IN WORD PROCESSING DOCUMENT, CREATING AND PRINTING EDUCATIONAL DOCUMENTS	The student will be able to: 49. Identify Word Processing packages. 50. Create a document using the Word Processor. 51. Save a document using the „Save As“ command. 52. Edit, and save Word document using common editing tools. 53. Create a document with more sub headings and paragraphs 54. Edit text using variety of options. 55. Format Word document using formatting tools. Demonstrate the ability to perform collaborative editing. 56. Insert tables in Word Processing document. 57. Insert symbols and pictures in Word Processing documents. 58. Use layout techniques in document creation. 59. Inserting headers and footers. 60. Print documents using the various print options.	Word Processing Packages and their Uses Creating Document Using a Word Processor Saving Document Using the ‘Save As’ command Editing Word Document Using Common Editing Tools: Spell check functions Copy/cut and paste facilities Undo and redo keys Search and replace Creating Document with More Sub-Headings and Paragraphs Editing Text Using Variety of Options such as: - Text effects options – superscript, subscript, shadow, strikethrough etc. Text correction option Wrapping options Text orientation Formatting and saving a Word document using the formatting tools: Change font (style, size, colour, etc.) Text alignment Numbers and bulleting Bold Underline Italics Line spacing Collaborative Editing e.g. Using highlighting option to track changes in a document Accepting or rejecting changes Adding text comments: Inserting Tables in Word Document. Inserting Symbols and Pictures in Word Document.
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Detailed Syllabus

Fourth Semester

Course Code	220349	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Organization and Management of Educational Institutions			

1. Course Description

The provides an understanding of the concept of organization, educational management, its functions and principles and educational institutions as social organizations. This course also deals with the organization and management of physical and social aspects of schools and colleges, organization and management of curriculum, evaluation and examinations, innovations, co-curricular activities, library and school funds. The course is designed to explore the roles and responsibilities of the heads of the institutions, leadership qualities, human relations, and communications, efficiency, values and ethics in institutional management and administration.

2. Course Objectives:

To assist the students so that they

- (a) Understand the concept, goals and functions of educational institutional management, structures and functions at different levels;
- (b) Acquaint themselves with the concept and practices of educational management, structures and functions at different levels and institutional management,
- (c) Understand the organization and management aspects of physical facilities of schools and colleges,
- (d) Gain experience necessary for developing skills oil institutional planning, curriculum management, time table construction, academic supervision, organization and management of evaluation and examination;
- (e) Develop skills in organizing and managing library services, school health services and co-curricular activities.
- (f) Understand the concept and acquire skills of an effective leader, communicator and human relations.
- (g) Realize that acquisition and application of proper values and ethics in management is vital for organizations and education thus to the nation.

3. Course Contents Classes

No. of

Unit One: Organization as Social System

9

- Meaning, definitions, types & functions of organization,
- Principles of organizational climate, organization as social system
- Educational institutions (School & Colleges) as social organizations
- Structure, objectives and programmes of educational institutions

Unit Two: Management Structure of Educational Institutions (Schools & Colleges)

8

- Meaning of administration and management, school and college administration

- Process, functions and general/basic principles, styles of management
- Types of administrative and management structure of schools and colleges
- Functions and responsibilities of the Ministries of Education and line Directorates in relation to schools and colleges
- School management committee and governing body

First Incourse Examination

Unit Three: Role of Heads as Leaders 10

- Roles and Responsibilities of the head master/principal
- Role of Head as Leaders
- Meaning and concepts and styles of leadership
- Attributes of a successful leader
- Human relations in schools and college – staff, pupil, community, parent, government officers

Unit Four: Management of Curricular Activities 3

- Time-table, academic supervision, staff development program
- Examination and evaluation
- Library services
- Co-curricular Activities

Second Incourse Examination

Unit Five: Management of School Funds & Other Resources 15

- Budget, maintenance of account and audit
- Institutional plant facilities (site, building, furniture, equipment's, library, laboratory, workshop, play-ground, recreational facilities)
- School improvement programs: Institutional planning

Unit Six: Practicum 5

- a. Development of an institutional plan
- b. Construction of time-table
- c. Case-Study, Role-playing

4. Instructional Strategies

- Lecture, discussion
- Students report – presentation & discussion
- Practicum
- Library work, reading assignment
- Observation/attachment
- Case Study role-playing

5. Evaluation:

- Regular attendance and participation
- Tests – I, II, III and final
- Assignment
- Pracitcum

References:

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2. Bhatt, B.D. & Sharma, S.R, (1992), *Educational Administration: Emerging Trends*, New Delhi, Kanishkha Publishing House.
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5. Handy C.S. & Aitken R. *Understanding School as Organization*, Hamondworth, Penguin, 1986.
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8. Relevant Govt. Documents & Reports, Acts, Regulations and Kegal Paul, London, 1976.
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10. গৌরদাস হালদার, *শিক্ষা সংগঠন পদ্ধতি ও পরিবেশ*, কলকাতা
11. কামরুন্নেসা বেগম ও সালমা আখতার (২০০০), *প্রাথমিক শিক্ষা: বাংলাদেশ*, ঢাকা, ১৯৯৯
12. রওশন আরা চৌধুরী (১৯৮৭), *শিক্ষা প্রশাসনের মূলনীতি*, ঢাকা
13. আজহার আলী ও হোসনে আরা বেগম (১৯৯৩), *প্রাথমিক শিক্ষা*, বাংলা একাডেমী, বাংলাদেশ, ঢাকা, ১৯৯৩
14. বাংলাদেশ উন্মুক্ত বিশ্ববিদ্যালয়: *বাংলাদেশের শিক্ষা প্রশাসন ও ব্যবস্থাপনা*
15. অরুণ ঘোষ, *বিদ্যালয় সংগঠন এবং পদ্ধতি বিজ্ঞান*, এডুকেশন এন্টারপ্রাইজ, ১৯৯২
16. হোসনে আরা বেগম ও মোঃ জাকির হোসেন: *শিক্ষা ও প্রশাসন ও ব্যবস্থাপনা*, ঢাকা, ১৯৯৮
17. Related Websites

Course Code	220351	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Gender Education			

1. Course Description

Now-a-days Gender is a burning issue in education sector. This course is designed to assist students and respective teachers to concern about gender and build up insights in to learner's behavior on it. It covers concepts, principles and aims of Gender and as well as life skills in education, its influence on family and the society. It also covers role of students, teachers, parents and relevant stakeholder's awareness to create a gender biasness society.

2. Course Objectives

- g) To help learners to understand and realize the need of Gender Education in their real life and build up their career in future
- h) To understand them to familiar with some key terms of Gender Education , and practice it positively in life
- i)To help them to create a gender friendly environment and aware them about their own roles

- j) To facilitate them to identify life skills, gender related laws and acts, and practice it in life
- k) To assist them how to take help from NGO's and development partners, and able to build up their career.

3. Course Contents

Unit 1: Gender-Concept, Significance, Application

- g) Concept, origin and development of gender; gender and sex comparison
- h) Aims and objectives of Gender Education
- i) Concept of- Gender equity, gender equality, gender mainstreaming, gender analysis, gender sensitiveness, gender role and gender division of labor
- j) Identify the wrong concept of gender- causes, impact and remedies
- k) Mass media and women
- l) Approaches to women- valuation and devaluation of women

Unit 2: Gender disparities, Consciousness and Women empowerment

- e) Concept of gender disparities, causes and remedies; nature and statistics of torture to women
- f) Women-men situation in Bangladesh and the world
- g) Need of gender consciousness in socio-economic development, create gender friendly environment
- h) Concept of women empowerment; familial, social, political, administrative and economical , decision making empowerment
- i) Security of women, women and children **pacher**

Unit 3: Secondary Education- Learners and gender

- f) Role of gender education in learners development
- g) Influences of teacher to generate positive approaches and behavior to female learners- in-house, school and on the way to school and home
- h) Gender consciousness areas of learners in familial social life
- i) Role of family and society on learners skill development; equal distribution of fundamental rights of daughter and son for all round development; reforms of traditional approaches to work distribution of male and female
- j) School management and gender- ensure women representation in SMC, PTA, Participating attempts and encouragement

- k) Gender equality in secondary education- role of government and other institutions, Impact and results of female stipend; Impact of PROMOTE; Increase of female teachers in secondary level
- l) Gender sensitiveness in classroom activities- seating arrangement, equal participation into class, enhance female learners participation in classroom activities

Unit 4: Professionalism in teaching and Gender

- h) Role of teacher to established social justice- concept of social justice, Globalization and social justice, teacher and social justice
- i) Gender sensitiveness in teaching- observation of teaching of teacher, demonstration teaching competencies and classroom management
- j) Gender consciousness strategies- number of students, socio-economic conditions, merits, school environment, learners behavior in house and in school
- k) Challenges to implementation gender education in school- rural and urban learners, forward and backward learners, meritorious and non-meritorious learners, majority and minority, guardians and school authority, social custom and religion, big class vs small class of learners, and political impact

Unit 5: Gender- National and International perspectives

- c) Gender in- Human rights, Rights of male, female and children, development and poverty, employment, violence, women pacher, sexuality, HIV/AIDS, Child abuse, domestic violence
- d) Gender in national policies, and plans- the constitution of Bangladesh, Women in Development(WID), Gender and Development(GAD), Poverty Reduction Strategy Paper(PRSP), National Policy for Women Affairs(NPWA)-2008, National Policy for Women Development
- e) Gender sensitive laws in Bangladesh
- f) Role of NGO's and Development Partners(DP) in gender development

Unit 6: Life skills and Gender

- f) Concept life skills, 10 life skills by WHO
- g) Aims and objectives of life skills education
- h) Introducing life skills- Role play and discussion
- i) Sub skills and micro skills of life skills, ways of achieving life skills

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17. UNICEF, The situation of Women in Bangladesh, Dhaka
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19. UNESCO (2002), Gender In Education Network in Asia (GENIA)
২০. কাহীন রহমান, (১৯৯৮), জেন্ডার প্রসঙ্গ, স্টেপস টুয়ার্ডস ডেভেলপমেন্ট, ঢাকা
২১. শ্যামলী আকবর ও সৈয়দা তাহমিনা আখতার, জাহান আরা বেগম (১৯৯৮), নারী শিক্ষা উদ্ভব ও বিকাশ, স্টুডেন্ট ওয়েজ, ঢাকা
২২. সেলিনা হোসেন ও মাসুদজ্জামান (২০০৩), নারীর ক্ষমতায়ন রাজনীতি ও আন্দোলন (সম্পাদিত), ঢাকা: মাওলা ব্রাদার্স
২৩. মাহমুদা ইসলাম (২০০২), জীবনিক নির্মাণ, কলকাতা: আনন্দ পাবলিশার্স প্রাইভেট লিমিটেড
২৪. উর্মি রহমান (২০০০), পাশ্চাত্য নারী আন্দোলন, ঢাকা: সাহিত্য প্রকাশ
২৫. সোনিয়া নিশাত আমিন (২০০২), বাঙালি মুসলিম নারীর আধুনিকায়ন, ঢাকা: বাংলা একাডেমী
২৬. গোলাম মুরশিদ (১৯৯৩), রাসসুন্দরী থেকে রোকেয়া, ঢাকা: বাংলা একাডেমী
২৭. শ্বাস্বতী ঘোষ (১৯৯৭), অর্ধেক অর্থনীতি, কলকাতা: আনন্দ পাবলিশার্স প্রাইভেট লিমিটেড
২৮. কমলা ভাসিন ও নিঘাত সাইদ খান (২০০২), নারীবাদ বিষয়ে কিছু প্রশ্ন, ঢাকা: প্রশিকা মানবিক উন্নয়ন কেন্দ্র
২৯. মালেকা বেগম (২০০২), নারী আন্দোলনের পাঁচ দশক, ঢাকা: অন্যপ্রকাশ
৩০. জাতিসংঘ (১৯৯৭), জাতিসংঘ চতুর্থ বিশ্ব নারী সম্মেলন, ঢাকা: রাজকীয় ডেনমার্ক দূতাবাস
৩১. শাহনীর রহমান (২০০০), নারীর অগ্রযাত্রা: রেইজিং তেকে নিউইয়র্ক (সম্পাদনা), ঢাকা: স্টেপস টুয়ার্ডস ডেভেলপমেন্ট
৩২. Bhasin, Kamala (1993), What is Patriarchy, New Delhi: Kali for Women.
৩৩. Millett, Kate (1990), Sexual Politics, New York: Touchstone.
৩৪. সেলিনা হোসেন ও মাসুদজ্জামান (সম্পাদিত) ২০০৬, জেন্ডার বিশ্বকোষ
৩৫. সেলিনা হোসেন, সালমতা আখতার ও মাসুদজ্জামান (২০০৭), পুরুষতন্ত্র, নারী ও শিক্ষা, মাওলা ব্রাদার্স, ঢাকা
৩৬. Related Websites.

Area-I:

Course Code	220353	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Bangla Paper-II : বাংলা সাহিত্যের রূপ ও রীতি			

1. উদ্দেশ্য

শিক্ষার্থীরা-

১. বাংলা সাহিত্যের বিভিন্ন শাখা এবং তার রচনারীতি ও পদ্ধতির সাথে পরিচিত হবে
২. ছন্দ ও ছন্দোবিশে-ষণ সম্পর্কে ধারণা অর্জন করবে
৩. সাহিত্যে অলংকার - এর প্রয়োগ সম্পর্কে ধারণা অর্জন করবে
৪. সাহিত্যের বিভিন্ন শাখার রচনাকৌশল সম্পর্কে ধারণা অর্জন করবে।

৪। পাঠ্যসূচি

সাহিত্যের রূপ ও সাহিত্যের তত্ত্ব

ক. সাহিত্যের রূপ: সংজ্ঞার্থ, উৎপত্তি, ক্রমবিকাশ, স্বরূপ ও শ্রেণিকরণ

----কবিতা, মহাকাব্য, গীতিকবিতা, ছড়া

---- গদ্য, সংবাদপত্রের গদ্য, প্রবন্ধ, নিবন্ধ

----- কথাসাহিত্য: উপন্যাস, ছোটগল্প, রম্যরচনা

----- নাটক, প্রহসন, কাব্য নাটক, নাট্যকাব্য, রূপক নাটক, পথ নাটক

খ. সাহিত্যতত্ত্ব:

প্রপদীবাদ (ক্লাসিজম), রোমান্টিকতাবাদ (রোমান্টিসিজম), প্রতীকবাদ (সিম্বলিজম), আধুনিকতাবাদ (মডার্নিজম), উত্তর- আধুনিকতাবাদ (পোস্টমডার্নিজম)

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ছন্দ ও অলংকার; রচনা ও বিরচন

ক. ছন্দ ও ছন্দোবিশে-ষণ: স্বরবৃত্ত, মাত্রাবৃত্ত, অক্ষরবৃত্ত ও গদ্যছন্দ

খ. অলংকার: শব্দালংকার ও অর্থালংকার

গ. সাহিত্য সমালোচনা : রীতি ও পদ্ধতি

-সাহিত্যের বিভিন্ন শাখার সমালোচনার রীতি ও পদ্ধতি

ঘ. রচনা ও বিরচন (ব্যবহারিক)

- প্রতিবেদন লিখন রীতি ও পদ্ধতি

- কথিকা লিখন কৌশল

- প্রবন্ধ লিখন কৌশল

- কবিতা ও গল্প রচনা

সহায়ক গ্রন্থ:

- | | |
|--------------------------|-----------------------------|
| ১. শ্রীশ চন্দ্র | : সাহিত্য সন্দর্শন |
| ২. গুরুদাস ভট্টাচার্য | : সাহিত্যের কথা |
| ৩. অলোক রায় | : সাহিত্যকোষ |
| ৪. মাহবুবুল আলম (সম্পা:) | : সাহিত্যতত্ত্ব |
| ৫. অতুলচন্দ্র গুপ্ত | : বাক্যবিজ্ঞান |
| ৬. ক্ষুদিরাম দাস | : বাংলা কাব্যের রূপ ও রীতি |
| ৭. দেবীপদ ভট্টাচার্য | : উপন্যাসের কথা |
| ৮. সরোজ বন্দ্যোপাধ্যায় | : বাংলা উপন্যাসের কালান্তর |
| ৯. নারায়ণ গঙ্গোপাধ্যায় | : সাহিত্যে ছোটগল্প |
| ১০. শিশির কুমার দাশ | : বাংলা ছোটগল্প |
| ১১. দীপ্তি ত্রিপাঠী | : আধুনিক বাংলা কাব্য পরিচয় |
| ১২. রবীন্দ্রনাথ ঠাকুর | : ছন্দ |

১৩. আব্দুল কাদির	: ছন্দ সমীক্ষণ
১৪. মো: মনিরুজ্জামান	: বাংলা কবিতায় ছন্দ
১৫. দিলীপ কুমার রায়	: ছান্দসিকী
১৬. নরেন বিশ্বাস	: অলংকার অন্বেষণ
১৭. মাহবুবুল আলম	: বাংলা ছন্দের রূপরেখা

Course Code	220355	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	English Paper- II			

Course Content

Unit 1. Introduction to linguistics 1

- Phonetics and phonology
- Semantics

Introduction to linguistics II

- Sociolinguistics
- Psycholinguistics

Unit 2. Mechanics of writing

Paragraph writing by compare and contrast, cause and effect, argumentative writing, persuasive writing,

Writing notes, emails, formal and informal writing such as CV, application, notice, rejoinder, responding to formal /informal letters, analyzing and interpreting graphs and charts

Report writing (official and newspaper), composition

Cohesion, coherence

Punctuation

Bibliography and referencing following APA style

Unit 3. Appreciation of literature

Genre, style, mood and tone, rhetoric and prosody, scansion,

Literary terms: simile, metaphor, irony, imagery, allegory, pun, illusion, transferred epithet, metonymy, synecdoche, paradox, alliteration, epigram, conceit, satire

Discourse analysis

Unit 4. Reading

Jonathon Swift : Gulliver's Travels-Voyage to Lilliput

Unit 5. Writing

Critical Appreciation: short/broad questions, explanations

Unit 6. Teaching and learning of language skills

Teaching and learning of Listening skills: stages of a listening lesson, techniques of effective listening

Teaching and learning of Speaking skills: involving students in speaking through pairwork, groupwork, simulation, role play, play, guided and free speaking

Teaching and learning of Reading skills: stages of a reading lesson, advantages and disadvantages of loud reading and silent reading, scanning, skimming, inferencing, guessing from the context, different techniques of effective reading.

Teaching and learning of writing skills: stages of a writing lesson; guided, semi-guided and free writing; product approach and process approach

Integrating skills in a lesson (PPP model)

Reference books

How to Teach English: Jeremy Harmer. Published from Longman in 1988

A Course in Language Teaching: Practice and Theory by Penny Ur. Published by Cambridge University Press, UK, 1996

Teach English: A training course for teachers By Adrian Doff. Cambridge University Press, UK 1988 (first published)

Literary Terms: J. A. Cuddon

Gulliver's Travels: Voyage to Lilliput; Jonathon Swift

Course Code	220357	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper- II			

SPREADSHEET APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO SPREADSHEET APPLICATION, CREATING AND SAVING WORKBOOK, APPLICATION OF SELECTED FORMULA AND FUNCTIONS, FORMATTING WORKSHEET, EDITING AND PRINTING WORKSHEET,	The student will be able to: 1. Identify Spreadsheet Packages. 2. Explain the importance of Spreadsheet application in data management. 3. Explain related concepts and terminologies in Spreadsheet. 4. Identify features in Spreadsheet application window. 5. Identify types of data and state their uses. 6. Create and save Workbook. 7. Construct and insert simple formulae and functions. 8. Format worksheet using formatting tools. 9. Demonstrate skills in editing and printing a worksheet. 10. Demonstrate skills in previewing and printing a worksheet.	Spreadsheet Packages e.g. Excel, Importance of Spreadsheet application in Data Management Related Concepts and Terminologies e.g. cell(s) rows columns worksheet workbook Features in the Spreadsheet Window Tool Bars: formatting bar standard bar formulae bar Types of Data and Their Uses e.g. number, date, text, currency Creating and Saving Workbook Constructing and Inserting Simple Formulae and functions Formatting Worksheet Using Formatting Tools. Editing and Printing Worksheet

PRESENTATION APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
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UNIT 2 INTRODUCTION TO PRESENTATION APPLICATION, CREATING A PRESENTATION, EDITING AND FORMATTING TEXT INPUT IN SLIDES, WORKING WITH OBJECTS, IMAGES AND PICTURES IN A PRESENTATION, RUNNING A SLIDE SHOW, DEVELOP PRESENTATION ON A GIVEN TOPIC, CUSTOMISING PRESENTATION AND PRINTING PRESENTATION	The student will be able to: 1. State the importance of Presentation application. 2. Identify the commonly used features of a Presentation application in development of presentations. 3. Create and save presentations using a template. 4. Add new slide(s) to presentation. 5. Edit text input in slides. 6. Format text input in slides. 7. Insert objects, images and pictures into a presentation. 8. Edit inserted objects, images and pictures in a presentation. 9. Run slide show. 10. Format text input in master slides. 11. Insert and edit pictures, images and draw objects on a Master slide. 12. Remove pictures, images, draw objects from a Master slide. 13. Apply preset text, image animation effects to slides. 14. Apply transition effects between slides. 15. Apply animation effect to slides in the normal view. 16. Select print option for printing.	Importance of Presentation Application Principles for Designing Presentations Terminologies in Presentation Application eg. Master slide Slide transitions Slide show etc. Identification of Commonly Used Features of Presentation Application Window Toolbars Different presentation view modes, views – slide, slide sorter, outline Creating and Saving a Presentation, adding new Slide(s) to an Existing Presentation Editing Text Input in Slides Changing text appearance: e.g font sizes, font types etc. Applying text formatting such as: bold, italic, underline and case changes to text. Applying different colours and shadow to text. Aligning text: left, centre, right in a slide. Adjusting line spacing before and after bulleted and numbered points. Inserting Objects, Images and Pictures into a Presentation. Editing Inserted Objects, Images and Pictures in a Presentation. Running a Slide Show. View different presentation Applying Transition Effects Between Slides. Change slide transition effects between slides. Applying Animation Effect to Slides in the Normal View Animation – entrance etc. Applying Animation in the Slide Sorter View Animation – entrance Customs, emphasis, exit, motion paths. Selection of Print Option Entire presentation, Specific slides, Handouts, Notes pages, Outline view of slides, Number of copies
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DATABASE MANAGEMENT SYSTEM AND APPLICATION

UNIT 3 DATABASE MANAGEMENT SYSTEM, DATABASE APPLICATION	The student will be able to: 1. Describe the concept of Data Base Management System ((DBMS) 2. Analyze the function of DBMS 3. State the concept of Relational DBMS 4. Explain the Relational DBMS 5. Create and use a database file. 6. Manipulating a database file. 7. Listing records	Function of DBMS Characteristics of relational DBMS Uses of relational DBMS Basic concepts of database, file, record, and field. Students should be able to create and use a single database related to their experience, such as file of student records or library book records. save and retrieve a database file, display and edit records, add and delete records, query, sort, database relation and search records. display or print a list of selected data, such as a list of records of all boys in a class or geography books in library
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USE AND APPLICATION OF INTERNET

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 4 THE INTERNET	The student will be able to: 1. Explain basic concepts, requirements and terminologies of internet. 2. Discuss the basic requirements for internet connectivity	Concept, Requirements and Terminologies chats discussions boards www (world wide web) html (hypertext Markup Language) http (hypertext transfer protocol) ftp (file transfer protocol), URL (Uniform Resource Locator) Search engines Download/Upload etc Basic Requirement for Internet Connectivity e.g. Computer, Mobile phone Telephone line and Modem- (if dial-up) Internet Service Provider (ISP)
UNIT 5 USING THE INTERNET TO COMMUNICATE	The student will be able to: 1. Identify the features of browser window 2. Browse the internet with the help of some features of the Browser window. 3. Apply the rules and regulations in the use of the internet. 4. Create e-mail account 5. Send and access e-mail messages 6. Attach documents to e-mail messages 7. Use internet social network to communicate.	Features and Uses of Browser Window: Address bar History Bookmarks/Favorites Standard bar etc. Browsing the internet with the help of some features of browser window e.g. Address, standard and formatting bars, URLs Rules and regulations in the use of the internet (Netiquette) – spam- unsolicited mails, people's privacy, intellectual property rights etc. Creating E-mail Account Sending, Accessing e-mail Messages Attaching documents to e-mail messages Using Internet Social Network to communicate e.g Facebook, Skype, LinkedIn.

UNIT 6 ACCESSING INFORMATION FROM THE INTERNET	The student will be able to; 1. Use Uniform Resource Locators (URLs) to access Information. 2. Use search engines to access information 3. Download information from the internet. 4. Transfer information from internet to a different Application e.g. Word Processing. 5. Upload files to virtual drives	Using Uniform Resource Locators (URLs) to access Information Using Search Engines to access Information. e.g. google search yahoo search ask search Wikipedia Search Downloading Information From the Internet. Transferring information from the Internet to a Different Application e.g. Word. Processing application Using Google drive, sky drive, dropbox etc.
UNIT 7 INTERNET AS A LEARNING RESOURCE	1. Explore internet for personal enrichment and professional learning, for teaching-learning ideas and creation of multiple learning spaces. 2. Identify appropriate resources for specific learning needs. 3. Organize the identified resources. 4. Evaluate resources for use in specific contexts.	• Different types of websites to show the possibilities for personal learning. • Web-based learning objects, simulations and tutorials. • MOOCs as a space for continuous learning.

Area-II:

Course Code	220359	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Economics Paper- II			

Not details syllabus

Course Code	220361	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Political Science Paper- II: Political Organizations and Systems			

1. Course Description

The course is designed to provide the students with knowledge of political organizations with special reference to the political systems of UK, USA and India.

2. Course Objectives

The main objectives of this course are:

- e. To help the students realize the concept of political organization, nature, scope and importance for a political system.
- b) To acquire them with the political systems of the UK, USA and India.

- c) To engage them in critical analysis of the differences in the political systems of those countries.

3. Course Contents of Lectures	Number
Unit One: Constitution	04
- Its meaning and significance - Constitution making processes - Requisites of a good constitution	
Unit Two: Forms of Government	05
- Democracy and Dictatorship, Civil & Millitary - Unitary and Federal Government - Cabinet and presidential forms of Government	
Unit Three: Organs of Government	07
- Legislation, Executive and Judiciary - Separation of Power, Bureaucracy - Electorate - Political Parties and Pressure groups - Public Opinion	
Unit Four: British Political System	08
- Features of the British Constitution - Conventions - Monarchy - Parliament - Cabinet, Civil Service & Local government - Political perties	
Unit Five: American Political System	08
- Characteristics of the US Constitution - President - Congress - Judiciary, Federal and State government - Pressure group	
Unit Six: Indian Political System	08

- Nature of the Indian Constitution
- Parliament
- Cabinet
- Judiciary, Federal and State Government
- Legislature, Executive and Judiciary
- Political parties and pressure group, Local govt. and Bureaucracy
- Civil administration/nation building

4. Instructional Strategies

The duration of the course will be six months. During this period each of the courses will be taught using suitable methods of teaching.

Participation of the students will be invited to make teaching more meaningful and interesting to the students.

5. Evaluation

1. Class attendance
2. Class participation
3. Tests and final examination
4. Written class assignment

Suggested reading:

5. Raymond G. Gettell: Political Science
6. K.C. Wheare: Modern Constitution.
7. Rodin, Carlton Clymer and Others: Introduction to political science.
8. A.D. Lindsay: The Essentials of Democracy
9. H.J. Laski: Parliamentary Government.
10. Sir, Ivor Jennings: Cabinet Government.
11. R.J. Mackenzie: British Political System
12. C.A. Beard: American Government and Politics
13. C.F. Strong: Modern Political Constitution.
14. Munro: Government of USA
15. Related Websites

Course Code	220363	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Sociology Paper- II : Sociological Theories			

1. Course Description

The Course deals with major sociological theories. In this regard, emphasis has been given on classical theories as well as on contemporary theories and schools of sociology. The main purpose of the course is to create a wide outlook among the students about the historical development of sociological thoughts and theories. In this context, sociological thoughts and theories on education have taken into especial consideration.

2. Course Objectives

The main objectives of this course are to:

- a) acquaint students with the historical development and dimensions of sociological theories ;
- b) help them to make analytical explanation of different social phenomena applying multidimensional approaches ;
- c) help them able to analyze educational phenomena applying sociological approaches;

3. Course Contents of Lectures

Number

Unit 1: Sociological Theory

03

1.1 Meaning

1.2 Characteristics

Unit 2: Classical Theories

25

2.1 Auguste Comte: Positivism- Law of Three Stages- Development of the Science.

2.2 Karl Marks: Dialectical and Historical Materialism- Alienation- Class and Class Struggle- Labour- Surplus Value.

2.3 Herbert Spencer: Social Darwinism- Functionalism- Evolution.

2.4 Emile Durkheim: Division of Labour -Social Solidarity-Suicide- Religion-Methodology-Education.

- 2.5 Max Weber: Methodology- Power and Authority- Rationalization- Economy- Society- Religion.
- 2.6 Velfredo Pareto: Elite & Circulation of Elites-Psychoanalysis- Logico- Experimental Method.
- 2.7 Karl Mannheim: Sociology of Knowledge-Ideology & Development of Social Thought.
- 2.8 Talcott Parsons: Social Action-Social Systems- Structure- Functionalism.

Unit 3: Contemporary Sociological Theories and Schools 22

- 3.1 Frankfurt School: Herbert Marcuse, Habermas
- 3.2 Exchange Theory: Blau-Homans
- 3.3 Antipositivism: Phenomenology-Ethnomethodology-Dramaturgy- Goffman
- 3.4 Crisis in Sociology

4. Instructional Strategies

Lecture, Discussion, Question-answer, Observation, Debate, Students seminars etc.

5. Evaluation

- a) Tests
- b) Assignments

6. References

1. Abrahamson, Mark (1991), Sociological Theory, Englewood Cliffs. Prentice- Hall
2. Coser, Lewis, A. and Rosenberg, Bernard (1976), Sociological Theory, New York, Macmillan.
3. Johnson, Doyle Paul (1981), Sociological theory: Classical Founders and Contemporary Perspectives, New York, John Wiley & Sons.
4. Schroeder, Ralph (1992), Max Weber and the Sociological of Culture, London, SAGE Publications.
5. Ritzer, Gorge (1996), Sociological Theory, London, McGraw-Hill.
6. Timasheff, N.S. (1967), Sociological Theory: Its Nature and Growth, New York, Random.

7. Blalock, Hubert M. (1980), Sociological Theory and Research- A Critical Appraisal, New York, The Free Press.
8. Weber, Max (1967), Essays in Sociology, London, Routledge and Kegan Paul.
9. Weber Max (1950), General Economic History, Glencoe, The Free Press.
10. Weber Max (1962), The Protestant Ethics and the Spirit of Capitalism, London. Allen and Unwin.
11. Weber Max (1963), The Sociology of Religion, London, Methuen & Co.
12. Weber Max (1983), On Capitalism, bureaucracy and religion (a selection of texts ed. By Stanislaw Andreski), London, George Allen.
13. Marx, Karl (1967), The Communist Manifesto (1848), Hammondsworth, Penguin Books.
14. Marks, Karl (1975), Capital, Vols. 1 & 3, Moscow, Progress Publishers.
15. Durkheim, Emile (1965), Education and Sociology, New York, The Free Press.
16. Rao, C.N Shankar (2011), Sociology, S. Chand & Company Ltd, New Delhi.
17. আলম, মো} খুরশীদ (), সমাজবিজ্ঞানের আধুনিক তত্ত্ব
১৮. হোসেন, মোকাররাম সম্পা. (১৯৯৭), সমাজ: চিন্তা ও মতবাদ, ঢাকা, বাংলাদেশ বইঘর।
১৯. সেন, রংগলাল ও নাথ, বিশম্ভু কুমার (২০০৩),

Course Code	220365	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Geography and Environment Paper- II: Economic and Human Geography			

1. Course Description

The course is design to provide students to the essentials of economic and human aspects and activities in local and spatial perspectives.

2. Course Objectives

This course will enable learners to-

- a) understand the definition, scope and importance of economic Geography.
- b) Explain the essential features of Human Geography
- c) Analyze the relationship of man, environment and economic activities
- d) Develop skills on Map projection
- e) To develop representation skills human and economic data.

3. Course Content

Unit One: Economic Geography

Definition, scope, and approaches of economic of Geography, Classification of economic activities-primary, secondary, tertiary, quaternary.

Unit Two: Human Geography

Definition, scope and methods of human geography, Man-environment-society relationship, possibilism and determinism

Unit Three: Economic Resources (World context)

Rice, Wheat, jute, tea,
Forestry, fishing, mining, power resources
Coal, petroleum, Iron ore,
Iron and steel, textile, chemical industries
World trading, transportation and communication patterns

Unit Four: Population Geography

Definition of population, history of population growth, causes of increase population, world population distribution, characteristics of population.
Migration and immigration, Push-Pull theory.

Unit Five: Settlement Geography

Definition of settlement, types/forms of settlement, characteristics of settlement, settlement pattern of the world.

Unit Six: Practical Geography

Identification, uses, merits, and demerits of map projections
Map Projections- Simple cylindrical, Equatorial, Marcators's, conical with one and two standard parallels;
Zenithal equal area and Equidistance(polar), Gnomonic, Stereographic, Orthographic.
Identification, Uses, Merits and demerits of map projections.

6. Instructional Strategies

Lecture (using ICT devices), Discussion, Question-Answer, Participatory Approach, Observation of real objects, Debate, Field trip.

7. Assignment

Students will submit assignments on due date based on contents by the instruction of their relevant teacher.

8. Evaluation

- a) Internal Examinations
- b) External Examination
- c) Assignments and class percentage

References:

মোয়াজ্জেম হোসেন চৌধুরী-অর্থনৈতিক ও আঞ্চলিক ভূগোল
য়াবু তাহা- মানবিক ভূগোল
য়াবু তাহা- জনসংখ্যা ও জনপদ ভূগোল
সিরাজুল ইসলাম চৌধুরী-আর্থনীতিক ভূগোল

আব্দুল বাকী- গ্রামীণ বসতি

মওদুদ ইলাহি ও কামরুজ্জামান- জনসংখ্যা ও শব্দকোষ

Harun –or –Rashid -*Economic Geography of Bangladesh*

A W Alexander – *Economic Geography*

Thomas S Richard and Peter B Corbin--*The Geography of Economic Activities*

H.A Hregeh- *Geography of World Economy*

Course Code	220367	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	History Paper- II: History of Bangladesh			

1. Course Description

The course deals with the socio-economic, political and cultural history of Bangladesh from the earliest time down to the present (1971). The course starts with the Pala and Sena rules in Bengal and then proceeds to the medieval period. But the focus is given on British rule in India, the socio-political, cultural and economic situation of the division of Indian subcontinent leading to emergence of Bangladesh.

2. Course Objectives

The main objectives of this course are to:

- Acquire knowledge about the Pala and Sena Rules in Bengal.
- Understand the nature and characteristics of the Muslim rule of Bengal in the medieval period.
- Comprehend the factors responsible for the establishment of British Colonial power in Bengal.
- Know the East India Company's assumption of direct control of administration.
- Acquaint them with the economical and social developments and religious reform movements under the Company rule.
- Know administrative and constitutional reforms and the socio-political, cultural and economic events during 1935.
- Understand political developments of Bengal leading to the partition of the subcontinent.
- Comprehend socio-political, cultural movements and economic factors for the liberation war of Bangladesh

3. Course Contents

Unit One: Pala and Sena Rule in Bengal

Number of Lectures

07

- Establishment of Pala rule and its expansion
- Sena rule and its decline

Unit Two: Bengal in the Medieval Period 05

- Muslim conquest of Bengal and consolidation of their rule
- Golden period of Hussain Shah
- Bengal under the Mughals
- Mughals conquest of Bengal
- The rule of Shaista Khan
- The Nawabi rule in Bengal (Murshid Kuli to Mir Zafar Ali Khan)

Unit Three: Colonial Power in Bengal, (1756-65) 02

- Coming of the Europeans and their establishment in Bengal till the acquisition of Dewani.

1st Incourse Examination

Unit Four: Bengal under Dewani Administrative (1765-1772) 02

- Dual Government
- The famine of 1769-70 and its effect.

Unit Five: The East India Company's Assumption of Direct Control of Administration (1772-1793) 02

- Warren Hastings and Cornwallis: Administrative, revenue and reforms.

Unit Six: Economic and Social Developments and Religious Reform Movements under the Company Rule 07

- Industrial decline of Bengal
- Reform movements in the early 19th century
- Lord William Bentinck and his social, economic and financial reforms
- Raja Ram Mohon Roy and his contributions
- Bengal Renaissance
- Young Bengal movement
- Haji Shariatullah- The Faraizi Movement and the agrarian unrest
- Indigo Cultivation and the Blue Mounting

Unit Seven: Administrative Reforms 03

- The partition of Bengal 1905

- Development of local government and constitutional reforms leading to the Act of 1935

Unit Eight: Political Development of Bengal (1919-47) 04

- Bengal Pact
- Formation of Krishak-Praja Party
- Working of Providential autonomy
- The communal problem and the Lahore Resolution
- Political developments leading to the partition of the sub-continent

Unit Nine: East Bengal from 1947 to 1971 08

- Land Reform and the Abolition of the Permanent Settelement
- Foundation of the Awami League
- Language Movement 1952
- United Front and the failing of the Muslim League Govt.
- Promulgation of Martial Law in 1958
- The rule of Ayub Khan
- The 1965 mass movement
- Rule of Yahya Khan
- Liberation war and the emergence of Bangladesh

4. Course Requirements:

- Class attendance
- Class report based on given topic
- Term paper
- Class participation and discussion
- Incourse examinations
- Semester final examination

5. Teaching Strategies

- Lecture
- Class discussion
- Class/home assignment

6. Suggested reading

A.C. Roy, Bengal Under the Nawabs
 A.M Muhith, Bangladesh-Birth of a New Nation
 A.M Chowdhury, Dynasty History of Bengal

A. Poddar, Renaissance in Bengal. Quest and Confrontation
 B.B. Misra, The Central Administration of the East India Company, 1773
 B.K. Gupta, Siraj-ud-Daullah and the East India Company.
 Bazlur Rahman Khan, Politics in Bengal, 1927-1936
 J.N. Sarkar (ed.) History of Bengal, Voll II
 Moudud Ahmed, Political and Democracy in Bangladesh
 Percival Spear, Oxford History of Modern India
 P.E. RDBers, History of British India
 Sirajul Islam (editor), History of Bengal 1704-1971, Vol-I, H & III,
 Asiatic Society of Bangladesh, 1997
 অক্ষয় কুমার মৈত্রেয়, সিরাজউদ্দৌলা
 আবুল কালাম সামসুদ্দিন, পলালী থেকে পাকিস্তান
 আবদুল করিম, বাংলার ইতিহাস সুলতানী আমল, বাংলা একাডেমী, ঢাকা, ১৯৮৭
 আবদুল করিম, বাংলার ইতিহাস মুসলিম বিজয় থেকে সিপাহী বিপ্লব পর্যন্ত (২২০০-১৮৫৭ খ্রি:),
 বড়াল প্রকাশনী, ঢাকা, ১৯৯৯
 এম. এ. রহিম. বাংলার মুসলমানদের ইতিহাস (১৭৫৭-১৯৪৭ খ্রি:), প্রকাশক: নূরজাহান রহিম, ঢাকা,
 ১৯৭৬
 সিরাজুল ইসলাম, উপনিবেশিক শাসন কাঠামো
 মওদুদ আহমদ, শেখ মুজিব আমল

Course Code	220369	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Islamic History and Culture Paper- II			

Syllabus Not Submitted

Course Code	220357	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper- II			

SPREADSHEET APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO SPREADSHEET APPLICATION, CREATING AND SAVING WORKBOOK, APPLICATION OF SELECTED FORMULA AND FUNCTIONS, FORMATTING WORKSHEET, EDITING AND PRINTING WORKSHEET,	The student will be able to: 11. Identify Spreadsheet Packages. 12. Explain the importance of Spreadsheet application in data management. 13. Explain related concepts and terminologies in Spreadsheet. 14. Identify features in Spreadsheet application window. 15. Identify types of data and state their uses. 16. Create and save Workbook. 17. Construct and insert simple formulae and functions. 18. Format worksheet using formatting tools. 19. Demonstrate skills in editing and printing a worksheet. 20. Demonstrate skills in previewing and printing a worksheet.	Spreadsheet Packages e.g. Excel, Importance of Spreadsheet application in Data Management Related Concepts and Terminologies e.g. cell(s) rows columns worksheet workbook Features in the Spreadsheet Window Tool Bars: formatting bar standard bar formulae bar Types of Data and Their Uses e.g. number, date, text, currency Creating and Saving Workbook Constructing and Inserting Simple Formulae and functions Formatting Worksheet Using Formatting Tools. Editing and Printing Worksheet

PRESENTATION APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 2 INTRODUCTION TO PRESENTATION APPLICATION, CREATING A PRESENTATION, EDITING AND FORMATTING TEXT INPUT IN SLIDES, WORKING WITH OBJECTS, IMAGES AND PICTURES IN A PRESENTATION, RUNNING A SLIDE SHOW, DEVELOP PRESENTATION ON A GIVEN TOPIC, CUSTOMISING PRESENTATION AND PRINTING PRESENTATION	The student will be able to: 17. State the importance of Presentation application. 18. Identify the commonly used features of a Presentation application in development of presentations. 19. Create and save presentations using a template. 20. Add new slide(s) to presentation. 21. Edit text input in slides. 22. Format text input in slides. 23. Insert objects, images and pictures into a presentation. 24. Edit inserted objects, images and pictures in a presentation. 25. Run slide show. 26. Format text input in master slides. 27. Insert and edit pictures, images and draw objects on a Master slide. 28. Remove pictures, images, draw objects from a Master slide.	Importance of Presentation Application Principles for Designing Presentations Terminologies in Presentation Application eg. Master slide Slide transitions Slide show etc. Identification of Commonly Used Features of Presentation Application Window Toolbars Different presentation view modes, views – slide, slide sorter, outline Creating and Saving a Presentation, adding new Slide(s) to an Existing Presentation Editing Text Input in Slides Changing text appearance: e.g font sizes, font types etc. Applying text formatting such as: bold, italic, underline and case changes to text. Applying different colours and shadow to text. Aligning text: left, centre, right in a slide.

	29. Apply preset text, image animation effects to slides. 30. Apply transition effects between slides. 31. Apply animation effect to slides in the normal view. 32. Select print option for printing.	Adjusting line spacing before and after bulleted and numbered points. Inserting Objects, Images and Pictures into a Presentation. Editing Inserted Objects, Images and Pictures in a Presentation. Running a Slide Show. View different presentation Applying Transition Effects Between Slides. Change slide transition effects between slides. Applying Animation Effect to Slides in the Normal View Animation – entrance etc. Applying Animation in the Slide Sorter View Animation – entrance Customs, emphasis, exit, motion paths. Selection of Print Option Entire presentation, Specific slides, Handouts, Notes pages, Outline view of slides, Number of copies
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DATABASE MANAGEMENT SYSTEM AND APPLICATION

UNIT 3 DATABASE MANAGEMENT SYSTEM, DATABASE APPLICATION	The student will be able to: 8. Describe the concept of Data Base Management System ((DBMS) 9. Analyze the function of DBMS 10. State the concept of Relational DBMS 11. Explain the Relational DBMS 12. Create and use a database file. 13. Manipulating a database file. 14. Listing records	Function of DBMS Characteristics of relational DBMS Uses of relational DBMS Basic concepts of database, file, record, and field. Students should be able to create and use a single database related to their experience, such as file of student records or library book records. save and retrieve a database file, display and edit records, add and delete records, query, sort, database relation and search records. display or print a list of selected data, such as a list of records of all boys in a class or geography books in library
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USE AND APPLICATION OF INTERNET

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 4 THE INTERNET	The student will be able to: 3. Explain basic concepts, requirements and terminologies of internet. 4. Discuss the basic requirements for internet connectivity	Concept, Requirements and Terminologies chats discussions boards www (world wide web) html (hypertext Markup Language) http (hypertext transfer protocol) ftp (file transfer protocol), URL (Uniform Resource Locator) Search engines Download/Upload etc

		Basic Requirement for Internet Connectivity e.g. Computer, Mobile phone Telephone line and Modem- (if dial-up) Internet Service Provider (ISP)
UNIT 5 USING THE INTERNET TO COMMUNICATE	The student will be able to: 8. Identify the features of browser window 9. Browse the internet with the help of some features of the Browser window. 10. Apply the rules and regulations in the use of the internet. 11. Create e-mail account 12. Send and access e-mail messages 13. Attach documents to e-mail messages 14. Use internet social network to communicate.	Features and Uses of Browser Window: Address bar History Bookmarks/Favorites Standard bar etc. Browsing the internet with the help of some features of browser window e.g. Address, standard and formatting bars, URLs Rules and regulations in the use of the internet (Netiquette) – spam- unsolicited mails, people's privacy, intellectual property rights etc. Creating E-mail Account Sending, Accessing e-mail Messages Attaching documents to e-mail messages Using Internet Social Network to communicate e.g Facebook, Skype, LinkedIn.
UNIT 6 ACCESSING INFORMATION FROM THE INTERNET	The student will be able to; 6. Use Uniform Resource Locators (URLs) to access Information. 7. Use search engines to access information 8. Download information from the internet. 9. Transfer information from internet to a different Application e.g. Word Processing. 10. Upload files to virtual drives	Using Uniform Resource Locators (URLs) to access Information Using Search Engines to access Information. e.g. google search yahoo search ask search Wikipedia Search Downloading Information From the Internet. Transferring information from the Internet to a Different Application e.g. Word. Processing application Using Google drive, sky drive, dropbox etc.
UNIT 7 INTERNET AS A LEARNING RESOURCE	5. Explore internet for personal enrichment and professional learning, for teaching-learning ideas and creation of multiple learning spaces. 6. Identify appropriate resources for specific learning needs. 7. Organize the identified resources. 8. Evaluate resources for use in specific contexts.	• Different types of websites to show the possibilities for personal learning. • Web-based learning objects, simulations and tutorials. • MOOCs as a space for continuous learning.

Area-III:

Course Code	220371	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Physics Paper- II: Heat, Thermodynamics and Optics			

1. Course Description:

This course is designed to acquaint students with Heat, Thermodynamics and Optics. It helps students understand basic laws, applications of Heat, Thermodynamics and Optics.

2. Objectives:

Following are the objectives of the course. The students are expected to:

- (a) Acquire knowledge of different terms and facts, regarding Heat, Thermodynamics and Optics;
- (b) Understand the basic concepts of Heat, Thermodynamics and Optics-;
- (c) Apply knowledge and understanding of the above in new and unfamiliar situations; and
- (d) Develop skills in practical aspects like observation, performance, recording, setting while performing the practical experiments of physics.

3. Course Content:

Unit One: Nature of Heat

6 Lectures

A new way to look at gases, An ideal gas -macroscopic and microscopic definition, Kinetic calculation of pressure, Translational kinetic energy, Specific heat of ideal gas, Degrees of freedom and equipartition of energy, Mean free path, Distribution of molecular speeds, The Van der Waals equation of state, Critical Constants.

Unit Two : Thermodynamics

8 Lectures

Macroscopic and Microscopic description, The Zeroth law of thermodynamics-Thermal Equilibrium and Concept of Temperature, Measuring temperature, Concept of heat, A close look at heat and work, The first law of thermodynamics, Applications of 'the first law of thermodynamics, Reversible, and irreversible processes, The Carnot cycle, The second law of thermodynamics, Carnot theorem, entropy in the real world, Change in Entropy, Engine Refrigeration, entropy and disorder, Third law of Thermodynamics, Maxwell's Thermodynamic Relations, Helmholtz Function, Gibbs's Function, Enthalpy,

Unit Three : Transmission of Heat

5 Lectures

Heat conduction mechanisms. Properties and Application of heat Radiation, Black body Radiation, Kirchhoff's Laws of heat Radiation, Stefan - Boltzmann Law, Wien's Displacement law, Rayleigh Jeans Radiation Formula, Planck's Quantum Theory, Solar Constant Temperature of the Sun.

Unit: Four: Nature and Propagation of Light

2 Lectures

Nature of Light, Electromagnetic Spectrum, Poynting Vector, Energy and Momentum, Radiation pressure. Moving sources and observers, Doppler effects in light, Sources of light.

Unit Five: Reflection and Refraction

3 Lectures

Reflection and Refraction, Total Internal Reflection-Fibre optics, Huygen's and Fermat's Principle. Geometrical optics.

Unit Six: Interference

5 Lectures

Interference, Condition for interference. Young's experiment, Intensity distribution, Phase addition of waves, Change of phase due to Reflection, Interference in thin films, Newton's rings, Michelson interferometer.

Unit Seven: Diffraction

5 Lectures

Introduction to diffraction, classifications, Single slit diffraction, Fraunhofer diffraction at double slit, diffraction grating, dispersive power of a grating, resolving power of a grating.

Unit Eight: Polarization

2 Lectures

Polarization of light, Production of polarized light, Plane circular and elliptically polarized light, Optical activity.

Unit Nine : X-rays and Laser

4 Lectures

X-rays, Properties of X-rays, Production of X-rays, Origin of X-rays, Types of X-rays- Soft and Hard. Application of X-Rays. Laser, Basic Principle, Spontaneous Emission, Stimulated Emission. Absorption, Population Inversion, properties of Laser beam, application of Laser, Helium-Neon Laser.

Laboratory Work: Practical (At Least Six)

1. Determination of the specific heat of a liquid by the method of colling.
2. Determination of the thermal conductivity of a bad conductor by Lee and 'Chorlton's method.
3. To determine the specific heat of a solid by the method of mixture with radiation correction.
4. To determine the value of J, mechanical equivalent of heat by electrical method.
5. Determination of the refractive index of a liquid by plane mirror and pin method using a convex lens.
6. Determination of the refractive index of the material of a convex lens by a telescope and sphenometer.
7. Termination of the angle of a prism and the refractive index of the material of a pri'sm (by rotation of the telescope).
8. Determination of the radius of curvature of a lens by Newton's ring.
9. Determination of wavelength of monochromatic light by Newton's ring.
10. Determination of specific rotation of sugar solution by means of polarimeter.

6. Tutorial/ Assignment:

Students will be given home assignment/ Tutorial which they will be required to Submit on due dates.

7. Instructional strategies :

Lecture, Question- answer, Demonstration, Guided discussion, group discussion. Student participation, Review of books, Assignment/ tutorial, Practical work.

8. Assessment-In-course Test, Assignment. Semester Final Test, Practical Examination

Text and References:

1. Serway Raymond. *Physics for the Scientists and Engineers with Modern Physics*, 2nd ed. Saunders Golden Sunburst Series, 1986.
2. Freedman Young, *University Physics*, Ninth Edition, addition-Wisely Series Publishing Company.] 996.
3. Halliday D., Resnick R., and Walker J., *Fundamentals of Physics*, Fifth ed. New York, John Wisely and Sons. 2000.
4. Benson Harrish, *University Physics*, Revised Edition, Addition - Wisely, New York.
5. রেসনিক, রবার্ট হ্যালিডে ও ডেভিড, (অনুবাদ অজয় রায় প্রমুখ), *পদার্থবিদ্যা*, ১ম ও ২য় খণ্ড, ঢাকা, বাংলা একাডেমী, ১৯৮৮।
6. Subrarnanyam N., Brij Lai, *A. Text book of Optics*: S Chand and Company (Pvt.) Ltd. New Delhi.

7. Ahmed Giasuddin and Shahabuddin Md. *Practical Physics*, 2nd ed. Hafiz Book House. Dhaka.
8. Besier Arthur. *Perspectives of Modern Physics*, Fifth Edition. McGraw-Hill, Inc., New York.
9. Search www.google.com with specific key word from relevant topics of physics.
10. Nave, C.R (2005), Hyperphysics-Georgia State University Retrieved July 7, 2008 from <http://hyperphysics.phy-astr.asu.edu/hbase/hframe.html>.
11. Jones, A.Z (2008): About.com:Physics Retrieved July7, 2008 from [http://physics: about.com/](http://physics.about.com/)

Course Code	220373	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Chemistry Paper- II : Organic Chemistry			

1. Course Description: Organic Chemistry.

This course will acquaint pupil with different terms, facts, concepts, principles, laws and their application. It includes bonding and structures, preparation, properties and, uses of organic compounds such as aliphatic hydrocarbons, aromatic compounds, alcohol and phenols, alkyl and aryl halides, aldehydes and ketones, carboxylic acids and their derivatives.

2. Course Objectives

To help the learners to:

- (a) Know the meaning of terms, specific facts and concepts of organic chemistry,
- (b) Know the preparations, properties and uses of different organic compounds;
- (d) Apply concepts and principles of organic chemistry to new situations; and
- (e) Demonstrate skills and abilities needed to conduct experiments on organic chemistry prescribed in the syllabus.

3. Course Contents

No. of Classes

Unit One : Atomic Structure and Bonding

3

Bonding and structure in organic compounds, Orbitals and their hybridisation, Shapes of molecules, Polarity of bond. Bond lengths, bond angles and bond energies, Fundamentals of organic reactions and their mechanism.

Unit Two : Aliphatic Hydrocarbons

22

(a) Saturated hydrocarbons: Alkanes

Structure, nomenclature, preparation, properties and uses, Reactions, Mechanism of halogenation reaction. Petroleum refining, Petro-chemicals. Natural gas in Bangladesh, composition, refining, uses, CNG.

(b) Unsaturated hydrocarbons

(i) Alkenes

Orbital Picture of double bond, Nomenclature, Preparation,. Properties and uses. Electrophilic addition reactions and their mechanism. Geometric isomerism.

(ii) Alkynes

Orbital picture of triple bond, Nomenclature, preparation, properties and uses, oxyacetylene flame.

Unit Three : Aromatic Hydrocarbons	5
Aromaticity and delocalization in benzenes, pyrroles, furan and thiophen. Sources of benzene and other aromatic compounds.	
Electrophilic substitution in aromatic compounds : nitration, sulphonation, halogenation, alkylation and acylation.	
Unit Four: Halogen Derivatives of Alkane and Benzene	4
Nomenclature, General methods of preparations, Properties and Uses. Nucleophilic Substitution and Elimination reaction.	
Unit Five: Alcohols and Ethers	4
Sources, Nomenclature, Industrial and Laboratory Preparations, Properties and Uses.	
Unit Six: Aldehydes and Ketones	6
Nomenclature, Carbonyl group, General methods of Preparations, Properties and Uses.	
Unit Seven: Carboxylic Acids and their Derivatives	3
Nomenclature, Preparations, Properties and Uses of carboxyl acids and their derivatives.	
Unit Eight: Study of Some Aromatic Compounds	3
Phenols, alkyl derivatives of benzene, Nitro benzene, Aniline, Diazonium salts, Azo dye, Uses of azo dye in Textile industry.	

Practical

(i) Simple Laboratory techniques:

Determination of melting points and mixed melting points.

Purification of organic compounds by recrystallisation.

Determination of boiling point. ,Purification by distillation.

(ii) Identification of simple organic compounds containing one functional group out of the following compounds:

I-Butanol, 2-butanol, 2-methyl-2-propanol, phenol, propanone, acetophenone, benzophenone. methanal, ethanal, benzaldehyde, methanoic acid, ethanoic acid, benzoic acid, phenylamine, phenyl methyl amine, diphenyl amine, nitrobenzene, dichlorobenzene, urea and naphthalene.

Tests for Identification of Organic Compounds

(a) Detection of elements (N,S and halogen) in organic compounds

(b) Solubility test with water, 5% aqueous sodium hydrogen carbonate, sodium hydroxide, hydrochloric acid, cone, sulfuric acid.

(c) Detection of functional groups

(d) Specific test (if any).

6. Assignment-An Assignment will be given by the course teacher which needs to be submitted within due date.

7. Instructional Strategies: - Lecture,- Discussion ,- Group work - Problem solving - Project work.

8. Assessment: - Regular attendance and participation ,- Incourse examination ,- Semester final examination,- Writing assignment. - Practical Examination.

References :

3. R.T. Morrison and R.N. Boyd - *Organic Chemistry (5th ed.)*
4. Handrickson and Pine - *Organic Chemistry*
5. I.L. Finar - *Organic Chemistry Vol. I & II (5th ed.)*.
6. M.U. Ahmed and A. Jabbar Mian - *A Text Book of Organic Chemistry*.

7. T.W. Solomons - *Fundamentals of Organic Chemistry*.
8. A. Streitweiser and C.H. Heathcock - *Introduction to Organic Chemistry. 1. J.C. Roy - Advanced Organic Chemistry (Bengali)*
9. J. Conant - *Organic Chemistry*.
10. Bahl & Bahl - *Advanced Organic Chemistry* (S. Chand & co. Ltd. 1997)
11. A. I. Vogel - *A Textbook of Practical Organic Chemistry (5th ed.)*. 11. E. A. Clarke - *A Hand Book of Organic Analysis*.
12. নূরুল হক ও মহির উদ্দিন- জৈব রসায়ন পরিচিতি।
13. পাল ও চক্রবর্তী- জৈব রসায়ন।

Course Code	220375	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Geography and Environment Paper- II: Economic and Human Geography			

1. Course Description

The course is design to provide students to the essentials of economic and human aspects and activities in local and spatial perspectives.

2. Course Objectives

This course will enable learners to-

- a) understand the definition, scope and importance of economic Geography.
- b) Explain the essential features of Human Geography
- c) Analyze the relationship of man, environment and economic activities
- d) Develop skills on Map projection
- e) To develop representation skills human and economic data.

3. Course Content

Unit One: Economic Geography

Definition, scope, and approaches of economic of Geography, Classification of economic activities-primary, secondary, tertiary, quaternary.

Unit Two: Human Geography

Definition, scope and methods of human geography, Man-environment-society relationship, possibilism and determinism

Unit Three: Economic Resources (World context)

Rice, Wheat, jute, tea,
Forestry, fishing, mining, power resources
Coal, petroleum, Iron ore,
Iron and steel, textile, chemical industries
World trading, transportation and communication patterns

Unit Four: Population Geography

Definition of population, history of population growth, causes of increase population, world population distribution, characteristics of population.
Migration and immigration, Push-Pull theory.

Unit Five: Settlement Geography

Definition of settlement, types/forms of settlement, characteristics of settlement, settlement pattern of the world.

Unit Six: Practical Geography

Identification, uses, merits, and demerits of map projections

Map Projections- Simple cylindrical, Equatorial, Marcators's, conical with one and two standard parallels;

Zenithal equal area and Equidistance(polar), Gnomonic, Stereographic, Orthographic.

Identification, Uses, Merits and demerits of map projections.

6. Instructional Strategies

Lecture (using ICT devices), Discussion, Question-Answer, Participatory Approach, Observation of real objects, Debate, Field trip.

7. Assignment

Students will submit assignments on due date based on contents by the instruction of their relevant teacher.

8. Evaluation

- a) Internal Examinations
- b) External Examination
- c) Assignments and class percentage

References:

মোয়াজ্জেম হোসেন চৌধুরী-অর্থনৈতিক ও আঞ্চলিক ভূগোল

য়াবু তাহা- মানবিক ভূগোল

য়াবু তাহা- জনসংখ্যা ও জনপদ ভূগোল

সিরাজুল ইসলাম চৌধুরী-আর্থনীতিক ভূগোল

আব্দুল বাকী- গ্রামীণ বসতি

মওদুদ ইলাহি ও কামরুজ্জামান- জনসংখ্যা ও শব্দকোষ

Harun –or –Rashid -*Economic Geography of Bangladesh*

A W Alexander – *Economic Geography*

Thomas S Richard and Peter B Corbin--*The Geography of Economic Activities*

H.A Hregeh- *Geography of World Economy*

Course Code	220377	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Mathematics Paper- II: Calculus and Coordinate Geometry			

1. Course Description:

This is also a basic course in higher mathematics involving the concepts of calculus, dealing specifically with the derivative of a function and its geometric interpretation, differentiation, higher order derivative, increasing and decreasing functions etc. integration: indefinite and definite, the fundamental theorems of differentiations and integration, application of the principles for solution of

geometric problems, infinite and power series, multiple integrals, differentiation of vector valued functions and coordinate geometry.

2. Course Description

The course has been designed to help the participants to:

- define explain, analyse, and describe the basic concepts of calculus.
- apply the theorems, principles and methods for solution of theoretical as well as practical problems.
- differentiate and to integrate different types of functions.
- apply the methods for solution of relevant problems.
- Apply the concepts of coordinate geometry in daily life situations.

Pre-requisite: Successful Completion of Previous Course

3. Course Contents:

No of Classes

Unit One: Functions

03

Review of previous concept definition of a function single valued and many valued function. Even and odd functions, into and one-one function, Monotonic function, Bounded function, Inverse function, Graph of a function, Continuity of graphs of functions.

Unit Two: Limit

03

Concept of limit, limit of a variable. Geometrical idea of the limit of a variable, limiting value of a function, right hand and left hand limit of a *function*, *existence of a limit*. *Analytical definition of limit of a function*, fundamental theorems on limit.

Unit Three: Continuity

Definition of continuity, relation between limit and continuity, discontinuity at a points, classification of discontinuity (ordinary and removal), infinite discontinuity, oscillatory discontinuity, Z8 definition of continuity, continuity of some elementary functions.

Unit Four: The Derivative of a function of one Variable

03

Geometric interpretation of the derivative, differential coefficient of some *Elementary functions (differentiation formula)*, the chain rule, implicit differentiation, derivatives from parametric equations.

Unit Five: Successive Differentiation

03

- Higher Order Derivatives, Leibnitz's Theorem

Unit Six: General Theorems and Expansion

- Roll's theorem, Mean value theorem and Taylor's theorem

04

Unit Seven: Partial Differentiation

- Function of several variables, limit and continuity: Partial derivatives, the chain rule, directional derivatives, total differential, Jacobean. Homogeneous function.

Unit Eight: Maxima a& Minima

Increasing & decreasing functions, extreme function. Concavity, Concavity of Inflexion, Application of maxima & minima.

Unit Nine: Indefinite Integrals

05

- Elementary integration formulas, integration by parts, integration by substitution, Integration of rational functions.

Unit Ten: The Definite Integral

03

- The fundamental theorem of integral calculus, properties of definite integrals, graphical representative of $f(x)dx$ Evaluation of definite integrals, simple reduction formulas. Properties of Improper integrals.

Unit Eleven: Beta and Gamma Functions

04

- Definition of Beta and Gamma functions, relation between Beta and Gamma functions, different forms of Beta functions, reduced formula in the value of 5 and graph of Gamma function, transformation of Gamma functions, reduction of definite integral to Beta and Gamma functions.

Unit Twelve: Application of Integration

- Area, Arc length, Volumes & Surface of solids of revolution, Ideas of multiple integral.

UnitThirteen: Coordinate Geometry

- Review the basic concept of straight lines, circle, tangent & normal.
- Change of coordinates, pair of straight lines. General Equations of second degree.

6. Evaluation

1. Examination
2. Presence and Participation

7. Text and References

1. Das and Mukherjee, *Differential Calculus*
2. Das and Mukherjee, *Integral Calculus*
3. Edwards, *J An elementary Technique on the differential Calculus*
4. Narayan, Shanti, *Differential Calculus*, Chand and Co. Ltd. Ram Nagar, New Delhi, 110055
5. Conrant R. *Differential and Integral Calculus (Vol. I)*
6. Courant B. *Differential and Integral Calculus (Vol. II)*
7. Modes *E.E. Calculus*
8. martin & Chakraborty, *Differential Calculus*
9. S.L. Longel. *The Elements of Coordinate Geometry.*
10. Bell, J.T.R., *Coordinate Geometry of three Dimension*
11. Lang, Serge, *A First Course in Calculus*
12. Lang, Serge, *A Second Course in Calculus*
13. A.A Blank, *Calculus II*
14. Mayor, H. *Introduction to Modern Calculus*
15. Rossi, H. *Advanced calculus.*
16. Kaplar, W. *Advanced Calculus*
17. Maxwell, E.A. *An Analytic Calculus (Vol.I)*
18. Maxwell, E.A. *An Analytic Calculus (Vol.II)*
19. P.K Bhattaharjee, Md. Khosh and Latif, M. A., *Differential Calculus.* S. Rhattacharjee, 2234, Chandan Para, Chittagong.
20. P.K. Bhattacharjee, Md. Khosh, and Latif. Md. Abdul, *Integral Calculus.* S. Tripali, 224 Chandan Para, Chittagong.

21. Johnson, B. E. and Kiokemeisler, *Calculus*.

Course Code	220379	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Botany Paper- II: Physiology, Limnology, Lichens, Cryptogams, Gymnosperms, Palaeobotany and Anatomy			

1. Course Description

This Course will introduce students to the basic knowledge of Physiology, Limnology, Lichens, Higher Cyptogams, Gymnosperms and Plant Anatomy. The students will also develop necessary skills for studying these plants in the laboratory and in the field. It is also envisaged that Students will develop positive attitude toward scientific study of plants.

2. Course Pre-requisite : Should have successfully completed previous course: Botany-One

3. Objectives

The students will:

- Acquire knowledge of Phycology, Limnology, Lichens, Higher Cryptogams, Gymnosperms and Plant Anatomy,
- Develop skills for study of Phycology, Limnology, Lichens, Higher Cryptogams, Gymnosperms and Plant Anatomy in the laboratory and in the field.
- Develop scientific attitude towards study of plants.

6. Course Contents

Number of Classes

Theory

Unit One: Phycology

10

- Classification, life history and general characteristics of major groups of algae - Cyanophyta, chlorophyta, Phaeophyta, Rhodophyta, Euglenophyta, Pyrrophyta and their ecology and economic importance.
- Algae as (a) primary food producer, (b) producer of water bloom, (c) indicator of water conditions and (d) source of food, medicine, fodder and other economic and industrial products.
- Fresh water and marine phytoplankton and their biological importance.

Unit Two: Limnology

10

- Definition and importance of Limnology
- Scope of limnology, types of aquatic habitats and origin of lakes, classification of lakes and ponds on the basis of basin shape and productivity.
- Study of ecosystem, food-chain, biogeochemical cycles and water pollution.
-

Unit Three: Lichens

04

- Classification, general characteristics and economic importance of lichens.

Unit Four: Higher Cryptogams and Gymnosperms

08

- Systematic position and classification of the group, study of the life histories of *Riccia*, *Marchantia*, *Anthoceros* and *Sphagnum*.
- Phylogenetic significance and classification and vascular systems in Pteridophyta. Study of the life histories of *Psilotum*, *Selaginella*, *Lycopodium*, *Equisetum* and *Sphagnum*,
- Characteristics and Phytogeny of gymnosperms, Distribution, characteristics, life history and phytogeny of *Cycas*, *Pinus* and *Genetum*.

Unit Five: Anatomy

10

1. Tissues and tissue system.
2. Secondary growth in stems and roots of selected plants
3. Root stem transition
4. Structure and use of wood with reference to *Tectona grandis*, *shorea robusta*, *Rentiera.fomes*.

7. Project/Assignment

1. Assigned class lectures
2. Pot plants
3. Dry and wet collection

8. Practical

Phycology, Limnology and Lichens

1. Representative types of the major groups from different, ecological habitats (aquatic, terrestrial, subaerial, marine, brackish and fresh water)!
2. Study of phytoplankton and water bloom forming algae.
3. Study of the lotic and lentic environments with their characteristic algal flora.
4. Study of the following in the laboratory and in the field : (a) chemical and physical factors (e.g. temperature, turbidity, water colour, dissolved O₂, CCb, temperature water current and movement), (b) Fish and their food habit (analysis of some commercial fish guts).
5. Study of some common lichens available in Bangladesh.

Higher Cryptogams and Gymnosperms:

1. External and internal morphology including the reproductive structures of the living species covered in the theory.

Anatomy:

1. Study of different types of cells and their wall structure in macerated tissue.
2. Study of Secondary growth in the stems of jute and Boerhaavia.
3. Transverse, tangential and radial section of *T. Grandis*, *S. robusta* and *H. fomes*.

9. Evaluation:

Two incourse tests one after and the semester final test. Practical examination.

Reference:

1. Pandey B.P.- *Plant Anatomy*, S. Chand and Company Ltd. 1994
2. Smith Gilbert M., *Cryptogamic Botany, Vol. I*, Tata McGraw-Hill, Book Co. Ltd. 1971.
3. Smith Gilbert M., *Cryptogamic Botany, Vol. II*, Tata McGraw-Hill Book Co. Ltd, 1955
4. Eames, Arthur, J; Laurence H. MacDaniels, *An Introduction to Plant Anatomy*, McGraw-Hill Book Co. Ltd, New York, London, 1947
5. Smith, Gilbert M., *Manual of Phycology*, The Ronald Press Co. New York, 1951.
6. খান, মাহবুবুর রহমান; মো: আবুল হাসান, *উদ্ভিদবিজ্ঞান, প্রথম খণ্ড*, হাসান প্রিন্টিং প্রেস, ঢাকা, ১৯৮৯

Course Code	220381	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Zoology Paper-II: Comparative Anatomy			

1. Course Description:

This Course will introduce students to anatomical peculiarities in different animals sequentially. They will acquire skills for study of these animals, in the laboratory and in the field. It is expected that students will develop a positive attitude towards environment and conservation of animal life.

2. Course Pre-requisites : The student should have successfully completed Zoology One.

3. Objectives; The Students will:

- (a) Acquire knowledge of anatomical peculiarities in different animals to reflect the evolutionary trends in animal kingdom
- (b) Develop skills for studying these animals in the laboratory and in the field
- (c) Posses positive attitude towards conservation of animals

4. Course Content

Number of classes

Theory:

(a) Introduction to comparative anatomy	01
(b) Comparative invertebrate anatomy: General account; Symmetry; Polymorphism	02
(c) Comparative vertebrate anatomy and evolutionary trends in/of: Integumentary System Skeletal System Digestive System Respiratory System Excretory System Circulatory System Reproductive System	28

7. Practical: **09**

Prawn: Appendages and other external characters, statocyst. digestive and nervous system

Snail: Shell, digestive and nervous system

Lata fish: External characters, scales, digestive and circulatory system

Assessment

Two in-course tests and a semester final test

Assignment, Practical note book preparation

Practical examination

References:

- Coleman, J. Goin and Olive, B. Goin, (1970), *Comparative Vertebrate Anatomy*. Barnes & Noble Inc., New York.
- Eaton. T.H.Jr. (1960), *Comparative Anatomy of the Vertebrates*. Haper, New York.
- Kent. G.C'.Jr. (954). *Comparative Anatomy of the Vertebrates*. Blakisto. USA.
- Kenneth. V.K, (2002), *Vertebrate, Comparative Anatomy, Function, Evolution*, Tata McGraw-Hill Publ. Comp. Ltd.. India
- Kotpal, R.L. (2000). *Modern Text Book of Zoology, Vertebrates, 8th revised ed.* Rastogi Publ, Merrut, India

Course Code	220383	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Statistics Paper- II: Methods of Statistics			

Course Description

Objectives of the Course

Contents

Unit 1 : Probability Distributions

Details study of binomial, Poisson, Negative binomial, Geometric, Hypergeometric, Uniform, Normal, Exponential, Beta, Gamma, Lognormal, Cauchy, Pareto distributions and their properties.

Unit 2: Sampling Distribution

Distribution of sample mean and variance and their independence, Detailed study of χ^2 , t and F distributions, Standard errors of statistics and their large sample approximations. Fisher's Z transformation, Distribution of sample correlation coefficient when population correlation coefficient is zero.

Unit 3 : Estimation

Concept of Estimation and problem of estimation, Estimator and Estimate. Properties of good Estimator: Unbiasedness, Consistency, Efficiency, Sufficiency, Minimum Variance, Best asymptotically normal, Consistent asymptotically normal. UMVUE, Rao-black Well Theorem, Cramer-Rao Inequality, MVB estimator, use of Cramer-Rao inequality in finding UMVUE.

Unit 4 : Point Estimation

ML method of estimation, Methods of moments, Method of Least Square, Method of minimum chi-square, Bayesian Method of Estimation.

Unit 5: Interval Estimation

Concept of interval Estimation, Confidence interval, Confidence limit, Confidence bound, Confidence coefficients, Methods for finding confidence interval, Confidence interval for mean, variance, difference of means, ratio of variance.

Unit 6: Test of hypothesis

Concept of test of hypothesis, Logic behind tests of hypothesis, Neyman-Pearson's approach of testing hypothesis, Preliminaries of test: Hypothesis, simple and composite hypotheses. Null and alternative hypothesis, Concept of test of significance, Procedures of testing a hypothesis, Test errors, Level of significance, One-tailed and two-tailed tests, P-value, Concept of test Statistics: Normal, χ^2 , t and F statistics.

Testing the significance of a single mean, Single variance, Single proportion, Difference of two means and proportions, Ratio of two variances and their confidence intervals. Paired t-test. Testing the homogeneity of several population means, Variance and proportions, Test of goodness of fit.

Subject Code–(Practical Paper–I): Descriptive Statistics & Test of Hypothesis

Marks: 50

Condensation and tabulation of data, Frequency distribution, Graphical representation of data, Measures of location and dispersion. Measures moments, Skewness & Kurtosis. Simple correlation co-efficient and fitting of regression lines. Rank correlation & correlation ratio.

Drawing of commonly used curves: Binominal, Poisson & Normal. Exercises on fittings of Different probability distributions with standard Errors.

Common tests of significance of mean, variance, Proportion, Correlation, coefficient and testing of goodness of fit. Tests of large samples, contingency table test, Exact test, Approximate test. Test of homogeneity.

Course Code	220357	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper- II			

SPREADSHEET APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO SPREADSHEET APPLICATION, CREATING AND SAVING WORKBOOK, APPLICATION OF SELECTED FORMULA AND FUNCTIONS, FORMATTING WORKSHEET, EDITING AND PRINTING WORKSHEET,	The student will be able to: 21. Identify Spreadsheet Packages. 22. Explain the importance of Spreadsheet application in data management. 23. Explain related concepts and terminologies in Spreadsheet. 24. Identify features in Spreadsheet application window. 25. Identify types of data and state their uses. 26. Create and save Workbook. 27. Construct and insert simple formulae and functions. 28. Format worksheet using formatting tools. 29. Demonstrate skills in editing and printing a worksheet. 30. Demonstrate skills in previewing and printing a worksheet.	Spreadsheet Packages e.g. Excel, Importance of Spreadsheet application in Data Management Related Concepts and Terminologies e.g. cell(s) rows columns worksheet workbook Features in the Spreadsheet Window Tool Bars: formatting bar standard bar formulae bar Types of Data and Their Uses e.g. number, date, text, currency Creating and Saving Workbook Constructing and Inserting Simple Formulae and functions Formatting Worksheet Using Formatting Tools. Editing and Printing Worksheet

PRESENTATION APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 2 INTRODUCTION TO PRESENTATION APPLICATION, CREATING A PRESENTATION, EDITING AND FORMATTING TEXT INPUT IN SLIDES, WORKING WITH OBJECTS, IMAGES AND PICTURES IN A PRESENTATION, RUNNING A SLIDE SHOW, DEVELOP PRESENTATION ON A GIVEN TOPIC, CUSTOMISING PRESENTATION AND PRINTING PRESENTATION	The student will be able to: 1. State the importance of Presentation application. 2. Identify the commonly used features of a Presentation application in development of presentations. 3. Create and save presentations using a template. 4. Add new slide(s) to presentation. 5. Edit text input in slides. 6. Format text input in slides. 7. Insert objects, images and pictures into a presentation. 8. Edit inserted objects, images and pictures in a presentation. 9. Run slide show. 10. Format text input in master slides. 11. Insert and edit pictures, images and draw objects on a Master slide. 12. Remove pictures, images, draw objects from a Master slide. 13. Apply preset text, image animation effects to slides. 14. Apply transition effects between slides. 15. Apply animation effect to slides in the normal view. 16. Select print option for printing.	Importance of Presentation Application Principles for Designing Presentations Terminologies in Presentation Application eg. Master slide Slide transitions Slide show etc. Identification of Commonly Used Features of Presentation Application Window Toolbars Different presentation view modes, views – slide, slide sorter, outline Creating and Saving a Presentation, adding new Slide(s) to an Existing Presentation Editing Text Input in Slides Changing text appearance: e.g font sizes, font types etc. Applying text formatting such as: bold, italic, underline and case changes to text. Applying different colours and shadow to text. Aligning text: left, centre, right in a slide. Adjusting line spacing before and after bulleted and numbered points. Inserting Objects, Images and Pictures into a Presentation. Editing Inserted Objects, Images and Pictures in a Presentation. Running a Slide Show. View different presentation Applying Transition Effects Between Slides. Change slide transition effects between slides. Applying Animation Effect to Slides in the Normal View Animation – entrance etc. Applying Animation in the Slide Sorter View Animation – entrance Customs, emphasis, exit, motion paths. Selection of Print Option Entire presentation, Specific slides, Handouts, Notes pages, Outline view of slides, Number of copies

DATABASE MANAGEMENT SYSTEM AND APPLICATION

UNIT 3 DATABASE MANAGEMENT SYSTEM, DATABASE APPLICATION	The student will be able to: 1. Describe the concept of Data Base Management System ((DBMS) 2. Analyze the function of DBMS 3. State the concept of Relational DBMS 4. Explain the Relational DBMS 5. Create and use a database file. 6. Manipulating a database file. 7. Listing records	Function of DBMS Characteristics of relational DBMS Uses of relational DBMS Basic concepts of database, file, record, and field. Students should be able to create and use a single database related to their experience, such as file of student records or library book records. save and retrieve a database file, display and edit records, add and delete records, query, sort, database relation and search records. display or print a list of selected data, such as a list of records of all boys in a class or geography books in library
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USE AND APPLICATION OF INTERNET

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 4 THE INTERNET	The student will be able to: 5. Explain basic concepts, requirements and terminologies of internet. 6. Discuss the basic requirements for internet connectivity	Concept, Requirements and Terminologies chats discussions boards www (world wide web) html (hypertext Markup Language) http (hypertext transfer protocol) ftp (file transfer protocol), URL (Uniform Resource Locator) Search engines Download/Upload etc Basic Requirement for Internet Connectivity e.g. Computer, Mobile phone Telephone line and Modem- (if dial-up) Internet Service Provider (ISP)
UNIT 5 USING THE INTERNET TO COMMUNICATE	The student will be able to: 15. Identify the features of browser window 16. Browse the internet with the help of some features of the Browser window. 17. Apply the rules and regulations in the use of the internet. 18. Create e-mail account 19. Send and access e-mail messages 20. Attach documents to e-mail messages 21. Use internet social network to communicate.	Features and Uses of Browser Window: Address bar History Bookmarks/Favorites Standard bar etc. Browsing the internet with the help of some features of browser window e.g. Address, standard and formatting bars, URLs Rules and regulations in the use of the internet (Netiquette) – spam- unsolicited mails, people's privacy, intellectual property rights etc. Creating E-mail Account Sending, Accessing e-mail Messages Attaching documents to e-mail messages Using Internet Social Network to communicate e.g Facebook, Skype, LinkedIn.

UNIT 6 ACCESSING INFORMATION FROM THE INTERNET	The student will be able to; 11. Use Uniform Resource Locators (URLs) to access Information. 12. Use search engines to access information 13. Download information from the internet. 14. Transfer information from internet to a different Application e.g. Word Processing. 15. Upload files to virtual drives	Using Uniform Resource Locators (URLs) to access Information Using Search Engines to access Information. e.g. google search yahoo search ask search Wikipedia Search Downloading Information From the Internet. Transferring information from the Internet to a Different Application e.g. Word. Processing application Using Google drive, sky drive, dropbox etc.
UNIT 7 INTERNET AS A LEARNING RESOURCE	9. Explore internet for personal enrichment and professional learning, for teaching-learning ideas and creation of multiple learning spaces. 10. Identify appropriate resources for specific learning needs. 11. Organize the identified resources. 12. Evaluate resources for use in specific contexts.	• Different types of websites to show the possibilities for personal learning. • Web-based learning objects, simulations and tutorials. • MOOCs as a space for continuous learning.

Area-IV:

Course Code	220385	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Accounting Paper- II : Banking and Insurance			

Course Description

Objectives of the Course

Contents

Par- A : Banking Marks: 50

Unit 1 : Evolution of Banking Institutions

Classification of Banks, Commercial Banks – Investment or Industrial banks – Exchange banks – Co-operative Banks – Land mortgage banks – Saving banks – Central Banks – Deposit Banking versus mixed banking.

Unit 2 : Functions of Commercial Banks and the Service Rendered by them

Current deposits – Saving Deposits – Fixed Deposits – Agency Service – General ability Service – overseas trading services – Information and other services – Bank and Economic development.

Unit 3 : Credit Management Policies: Demand deposits as money – Primary and derivative deposits – The process of multiple credit expansion: Do banks really create credit?

Unit 4 : Development Bank

Origin, functions and role of development bank in Bangladesh.

Unit 5 : Central Banking

Nature and functions of Central Bank, Relationship between central commercial banking and central banking, The clearing House System, Credit Control of Central Bank. Effectiveness of monetary policy and central banking, Bangladesh bank as the regulator of monetary and financial system.

Part – B: Insurance

Marks: 50

Unit 1: Introduction

Definition, Risk and Uncertainty, Measurement of Risk and Hazard, importance, Types of Insurance, Reinsurance and Double Insurance, Wagering Contract.

Unit 2 : Insurance Contracts

Essential elements of Insurance Contract, principles of Insurance-Insurable Interest, Utmost Good Faith, Indemnity, Proximate cause, Subrogation, Contribution.

Unit 3 : Life Assurance

elements of Life Insurance Contract, Types of policies, Settlement of claims, problems of Life Insurance business in Bangladesh.

Unit 4: Fire Insurance Contract

Elements and Types of fire insurance.

Unit 5 : Marine Insurance

Marine Insurance Contract, Types of Policies, Marine Losses, Settlement of Claims, Act of God.

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

a) Internal Examinations $15+15=30$

b) External Examination=60

c) Assignment/action research and class percentage, Performance =10

References:

Course Code	220387	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Management Paper- II: Fundamentals of Management			

Course Description

Objectives of the Course

Contents

Unit 1 : Basic Concepts

Meaning – Scope – Importance – Principles – Functions, Management a Science or Art? Management as a profession – Basic Managerial Roles and skills – Managers at different levels of the organization – Management as a career.

Unit 2 : Contribution of Selected Management Scholars

F.W. Taylor , Henry Fayol and Elton Mayo.

Unit 3: Planning

Meaning – importance – Types – Steps – Factors affecting planning – Planning techniques – Limits to Planning – Making Planning effective – Decision Making Process – Nature of managerial decision making – Steps in Decision making.

Unit 4: Organization

Meaning – importance – Types of organization structure – Line organization – Functional organization – Committee-Span of management – Authority – Delegation of Authority – Centralization and decentralization or authority – Co-ordination – meaning-importance-principles and procedure of co-ordination.

Unit 5: Leading

Direction – Importance and principles of direction – advantages and disadvantages – Consultative direction – Communication and its importance – main elements and process of communication – requirements for effective communication – Motivation: Meaning – importance-theories of motivation – Financial and non-financial motivation – Leadership and its importance – Leadership styles – Qualities of a good leader.

Unit 6: Controlling

Meaning-Nature-Importance-Control process – Requirements of an effective control system – Control techniques – Budgetary control – Meaning and process of budgetary control.

Unit 7: Staffing

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

- a) Internal Examinations 15+15=30
- b) External Examination=60
- c) Assignment/action research and class percentage, Performance =10

References:

Course Code	220389	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Marketing Paper- II			

Subject Code---(Paper-II): Export–Import Management

Marks: 100

Course Description

Objectives of the Course

Contents

Unit 1 : Introduction to Export –Import Management

Meaning, features, scope, functions of export and import management, Factors affecting export and import management, Export management versus import management, Export management versus Export marketing, Problems and remedies in export and import management.

Unit 2: International Trade Theory

Meaning of international trade, Historical perspective of international trade theory, The absolute cost advantage theory, the theory of comparative cost and modern theory of international trade, Comparison of modern theory with classical theory of international trade.

Unit 3: Terms of Trade, Balance of Trade and Balance of Payment

Meaning and analysis of terms of trade, Factors influencing the determination of terms of trade, Methods of determining the terms of trade, Meaning of balance of trade, Meaning and nature of balance of payments, Distinction between balance of payments, Classification of balance of payments, Causes of disequilibrium in balance of payments, Measures for correcting adverse balance of payments.

Unit 4 : Export policy decision of a firm

Export policy decisions, Areas of export policy and decisions, Factors influencing export business, Market selection, Mode of entry.

Unit 5 : Export Costing and Export Pricing

Meaning, objectives & importance of export costing & export pricing, Methods of export costing and export pricing, Factors determining export pricing.

Unit 6 : Export Finance

Meaning and need for export finance, Pre-shipment finance or packing credit, Procedures of obtaining pre-shipment credit, Post-shipment finance, Procedures of obtaining Post-shipment finance.

Unit 7 : Export Procedure and Documentation

Registration Procedure, Procedure in export trade, Export documentation, Procedure for realization of export incentives.

Unit 8: Export Marketing in Bangladesh

Features, Pre-requisites, and importance of export marketing in Bangladesh, Size of export sector, Traditional and non-traditional export items, Export marketing problems, future

Prospects in Export sector, Export processing zone in Bangladesh, Role of EPB, FBCCI, BGMEA, BSC, TCB, ICCI, CCIE and Sea-air-land port. Export marketing environment around the world, Review of Export import policy (current policy).

Unit 9 : Import Procedure

Registration procedure, Procedure in import trade. Steps involved in opening L/C. Retirement of documents. Steps involved in clearing goods, Back to back L/C. Import procedure of industrial goods and commercial goods.

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

- a) Internal Examinations 15+15=30
- b) External Examination=60
- c) Assignment/action research and class percentage, Performance =10

References:

Course Code	220391	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Finance and Banking Paper- II: Banking and Insurance			

Course Description

Objectives of the Course

Contents

Par- A : Banking

Marks: 50

Unit 1 : Evolution of Banking Institutions

Classification of Banks, Commercial Banks – Investment or Industrial banks – Exchange banks – Co-operative Banks – Land mortgage banks – Saving banks – Central Banks – Deposit Banking versus mixed banking.

Unit 2 : Functions of Commercial Banks and the Service Rendered by them

Current deposits – Saving Deposits – Fixed Deposits – Agency Service – General ability Service – overseas trading services – Information and other services – Bank and Economic development.

Unit 3 : Credit Management Policies: Demand deposits as money – Primary and derivative deposits – The process of multiple credit expansion: Do banks really create credit?

Unit 4 : Development Bank

Origin, functions and role of development bank in Bangladesh.

Unit 5 : Central Banking

Nature and functions of Central Bank, Relationship between central commercial banking and central banking, The clearing House System, Credit Control of

Central Bank. Effectiveness of monetary policy and central banking, Bangladesh bank as the regulator of monetary and financial system.

Part – B: Insurance

Marks: 50

Unit 1: Introduction

Definition, Risk and Uncertainty, Measurement of Risk and Hazard, importance, Types of Insurance, Reinsurance and Double Insurance, Wagering Contract.

Unit 2 : Insurance Contracts

Essential elements of Insurance Contract, principles of Insurance-Insurable Interest, Utmost Good Faith, Indemnity, Proximate cause, Subrogation, Contribution.

Unit 3 : Life Assurance

elements of Life Insurance Contract, Types of policies, Settlement of claims, problems of Life Insurance business in Bangladesh.

Unit 4: Fire Insurance Contract

Elements and Types of fire insurance.

Unit 5 : Marine Insurance

Marine Insurance Contract, Types of Policies, Marine Losses, Settlement of Claims, Act of God.

5. Assignment/action research and class percentage

Students will submit assignment/action research on due date based on contents by the instruction of their relevant teacher. Assignment and class percentage belongs to 10 marks.

6. Evaluation

a) Internal Examinations $15+15=30$

b) External Examination=60

c) Assignment/action research and class percentage, Performance =10

References:

Course Code	220357	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper- II			

SPREADSHEET APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO SPREADSHEET APPLICATION, CREATING AND SAVING WORKBOOK, APPLICATION OF SELECTED FORMULA AND FUNCTIONS, FORMATTING WORKSHEET, EDITING AND PRINTING WORKSHEET,	The student will be able to: 1. Identify Spreadsheet Packages. 2. Explain the importance of Spreadsheet application in data management. 3. Explain related concepts and terminologies in Spreadsheet. 4. Identify features in Spreadsheet application window. 5. Identify types of data and state their uses. 6. Create and save Workbook. 7. Construct and insert simple formulae and functions. 8. Format worksheet using formatting tools. 9. Demonstrate skills in editing and printing a worksheet. 10. Demonstrate skills in previewing and printing a worksheet.	Spreadsheet Packages e.g. Excel, Importance of Spreadsheet application in Data Management Related Concepts and Terminologies e.g. cell(s) rows columns worksheet workbook Features in the Spreadsheet Window Tool Bars: formatting bar standard bar formulae bar Types of Data and Their Uses e.g. number, date, text, currency Creating and Saving Workbook Constructing and Inserting Simple Formulae and functions Formatting Worksheet Using Formatting Tools. Editing and Printing Worksheet

PRESENTATION APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 2 INTRODUCTION TO PRESENTATION APPLICATION, CREATING A PRESENTATION, EDITING AND FORMATTING TEXT INPUT IN SLIDES, WORKING WITH OBJECTS, IMAGES AND PICTURES IN A PRESENTATION, RUNNING A SLIDE SHOW, DEVELOP PRESENTATION ON A GIVEN TOPIC, CUSTOMISING PRESENTATION AND PRINTING PRESENTATION	The student will be able to: 17. State the importance of Presentation application. 18. Identify the commonly used features of a Presentation application in development of presentations. 19. Create and save presentations using a template. 20. Add new slide(s) to presentation. 21. Edit text input in slides. 22. Format text input in slides. 23. Insert objects, images and pictures into a presentation. 24. Edit inserted objects, images and pictures in a presentation. 25. Run slide show. 26. Format text input in master slides. 27. Insert and edit pictures, images and draw objects on a Master slide. 28. Remove pictures, images, draw objects from a Master	Importance of Presentation Application Principles for Designing Presentations Terminologies in Presentation Application eg. Master slide Slide transitions Slide show etc. Identification of Commonly Used Features of Presentation Application Window Toolbars Different presentation view modes, views – slide, slide sorter, outline Creating and Saving a Presentation, adding new Slide(s) to an Existing Presentation Editing Text Input in Slides Changing text appearance: e.g font sizes, font types etc. Applying text formatting such as: bold, italic, underline and case changes to text. Applying different colours and shadow to text. Aligning text: left, centre, right in a slide.

	slide. 29. Apply preset text, image animation effects to slides. 30. Apply transition effects between slides. 31. Apply animation effect to slides in the normal view. 32. Select print option for printing.	Adjusting line spacing before and after bulleted and numbered points. Inserting Objects, Images and Pictures into a Presentation. Editing Inserted Objects, Images and Pictures in a Presentation. Running a Slide Show. View different presentation Applying Transition Effects Between Slides. Change slide transition effects between slides. Applying Animation Effect to Slides in the Normal View Animation – entrance etc. Applying Animation in the Slide Sorter View Animation – entrance Customs, emphasis, exit, motion paths. Selection of Print Option Entire presentation, Specific slides, Handouts, Notes pages, Outline view of slides, Number of copies
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DATABASE MANAGEMENT SYSTEM AND APPLICATION

UNIT 3 DATABASE MANAGEMENT SYSTEM, DATABASE APPLICATION	The student will be able to: 8. Describe the concept of Data Base Management System ((DBMS) 9. Analyze the function of DBMS 10. State the concept of Relational DBMS 11. Explain the Relational DBMS 12. Create and use a database file. 13. Manipulating a database file. 14. Listing records	Function of DBMS Characteristics of relational DBMS Uses of relational DBMS Basic concepts of database, file, record, and field. Students should be able to create and use a single database related to their experience, such as file of student records or library book records. save and retrieve a database file, display and edit records, add and delete records, query, sort, database relation and search records. display or print a list of selected data, such as a list of records of all boys in a class or geography books in library
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USE AND APPLICATION OF INTERNET

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 4 THE INTERNET	The student will be able to: 7. Explain basic concepts, requirements and terminologies of internet. 8. Discuss the basic requirements for internet connectivity	Concept, Requirements and Terminologies chats discussions boards www (world wide web) html (hypertext Markup Language) http (hypertext transfer protocol) ftp (file transfer protocol), URL (Uniform Resource Locator) Search engines Download/Upload etc

		Basic Requirement for Internet Connectivity e.g. Computer, Mobile phone Telephone line and Modem- (if dial-up) Internet Service Provider (ISP)
UNIT 5 USING THE INTERNET TO COMMUNICATE	The student will be able to: 22. Identify the features of browser window 23. Browse the internet with the help of some features of the Browser window. 24. Apply the rules and regulations in the use of the internet. 25. Create e-mail account 26. Send and access e-mail messages 27. Attach documents to e-mail messages 28. Use internet social network to communicate.	Features and Uses of Browser Window: Address bar History Bookmarks/Favorites Standard bar etc. Browsing the internet with the help of some features of browser window e.g. Address, standard and formatting bars, URLs Rules and regulations in the use of the internet (Netiquette) – spam- unsolicited mails, people's privacy, intellectual property rights etc. Creating E-mail Account Sending, Accessing e-mail Messages Attaching documents to e-mail messages Using Internet Social Network to communicate e.g Facebook, Skype, LinkedIn.
UNIT 6 ACCESSING INFORMATION FROM THE INTERNET	The student will be able to; 16. Use Uniform Resource Locators (URLs) to access Information. 17. Use search engines to access information 18. Download information from the internet. 19. Transfer information from internet to a different Application e.g. Word Processing. 20. Upload files to virtual drives	Using Uniform Resource Locators (URLs) to access Information Using Search Engines to access Information. e.g. google search yahoo search ask search Wikipedia Search Downloading Information From the Internet. Transferring information from the Internet to a Different Application e.g. Word. Processing application Using Google drive, sky drive, dropbox etc.
UNIT 7 INTERNET AS A LEARNING RESOURCE	13. Explore internet for personal enrichment and professional learning, for teaching-learning ideas and creation of multiple learning spaces. 14. Identify appropriate resources for specific learning needs. 15. Organize the identified resources. 16. Evaluate resources for use in specific contexts.	• Different types of websites to show the possibilities for personal learning. • Web-based learning objects, simulations and tutorials. • MOOCs as a space for continuous learning.

Area-V:

Course Code	220393	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Information Science and Library Management Paper- II: Organization of Knowledge (Classification & Cataloging)			

Full Marks: (Theory-50+Practical-40+Viva-10)=100, Credit hours 4 ,

Group-A: Classification (Theory) Marks: 50

Course Description

Objectives of the Course

Content

Unit 1 : Library Classification

1. Definition, Principles of Classification, criteria of good classification, Knowledge classification and book classification.
2. Basics of major schemes of classification: Dewey decimal classification, universal decimal classification, library of congress classification, colon classification, bibliographical classification

Unit 2 : Library Catalogue

1. Definition, Purpose and functions, features of catalogue, forms and types of catalogue, technical reading of a book, Classified vs. dictionary catalogue, construction, appropriateness of classified and dictionary catalogues to different types of libraries, online catalogue(computerized cataloging), union catalogue, accession register.
2. Computer and its various uses in a library, library automation, computer applications in the libraries of Bangladesh.

Subject Code &Title: Organization of Knowledge (Classification & Cataloging): practical
Marks (20+20): 40

Group-A: Classification (practical)

Marks: 20

Dewey Decimal Classification: Subject Determination, Number Building Process using Auxiliary Tables of DDC 22nd Edition, Number Building Process using DDC Main Classes.

Group-B: Cataloging (practical)

Marks: 20

Manual and automated practical cataloguing: Single author, Double authors, Triple authors, More than three authors, Shelf list entry, Title as main entry, Encyclopedias and dictionaries, Call number.

References

1. Rowley, Jeffery E. Computers for libraries. London: Clive Bingley.
2. Rice, James. Introduction to library automation. Littleton, Colo: Libraries Unlimited.
3. Saffady, William. Introduction to automation for librarians. Chicago: ALA.
4. Tedd, Lucy A. An introduction to computer-based systems. New York: John Wiley.
5. Saiful-Islam, K.M. The Union catalogue (Departmental occasional papers, 2006). Dhaka:
6. Mann, Margaret. Introduction to cataloguing and classification. Chicago : ALA.
7. Dewey, Melvil. Decimal classification. 19th and 20th eds.
8. Maltby, Arthur Sayers' manual of classification for librarians.
9. Marcella, Rita and Newton, Robert, A new manual of classification.
10. Mills, J.A. modern outline of library classification.
11. Saiful-Islam, K.M. Number building in Dewey decimal classification: 19th and 16th eds.
12. Sayers, W.C. Berwick. A manual of classification for librarians and bibliographers.
13. Maxwell, Margaret F. Handbook for AACR2 explaining and illustrating Anglo-American cataloguing rules second edition. Chicago: ALA.
14. Saiful-Islam, K.M. Basic cataloguing: practical aspects (Departmental occasional papers). Dhaka: University of Dhaka, Department of Information Science and Library Management, 2006.
15. Cutter's two-figure author table.
16. Dewey Decimal Classification and Relative Index, 22nd edition. Dublin, OCLC: 2003
17. Universal Decimal Classification, 3rd revised edition.
18. আবদুস সালাম, ব্যবহারিক শ্রেণিকরণ।

Course Code	220395	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Home Economics Paper- II			

SECTION A: FOODS & NUTRITION**1. Foods and Nutrition:**

- a. Definition of food and nutrition, relation of food and nutrition to health, classification of food, sources and functions, deficiency diseases
- b. The digestive system c. Nutrition for special groups e.g. infants, adolescents, elders and patients.

2. Basic food group and planning of balanced diet:

- a. Concept and importance of balanced diets; principles of planning balanced diets

- b. Factors to consider sample of meal plan for different ages and special occasions/groups
- c. Meal planning for institutions-planning menu and serving-hostels, hospitals, school Tiffin etc
- d. Table setting, table manners and entertainment/ hostessing.

3. Buying, storage and preservation of foods:

- a. General rules for buying foods b. Process of sorting of perishable and non-perishable foods
- c. Causes of food spoilage d. Meaning and purpose of preservation
- e. Concept of different methods of food preservation.

4. Safety and hygiene:

- a. Common accidents, causes of accidents at home and preventive measures
- b. First Aid; definition/components of a first aid kit -simple first aid for burns, scalds, cuts bruises, bleeding, electric shock, poisoning, choking and bites
- c. Sense organs: Exercise and cosmetics care of sense organs.

SECTION B: CLOTHING &TEXTILE

01. Introduction:

- a. Definition of cloth and dress, b. Classification of fibers
- c. Study of textile fibers-Making cotton, Linen, Wool, Silk, Asbestos, Nylon, Rayon, and Polyester. d. Identification of fibers: Physical, Chemical & Microscopic test
- e. Recognition of washing, cleaning and ironing symbols, wool symbols.

02. Selection of clothing:

- a. Process of decision making to select cloths b. Influencing factors in decision making
- c. Factors to select cloths for family

03. Social significance of fashion on clothing:

- a. Fashion concept , b. Changes in fashion, c. Factors influencing fashion
- d. Fashion cycle ,e. Effect of fashion and advertisement in the development of garments industry.

04. Hand-loom industry in Bangladesh economy:

- a. Monipuri Textile, b. Zamdhani Saree c. Saree of Tangail d. Silk and Benarashi Saree
- e. Rajshahi Silk f. Comilla Khaddar.

Practical: Marks: 25 (Class work-10, Examination-15)

- 01. Food preservation by different methods: Pickles using vinegar, fruit, jelly, squash etc. **or** Visit nearest restaurants to observe environment, cleanliness, and nutrition values of food.
- 02. Planning menu and food list for different ages, diet planning for different deceases, planning menus for hostels. 03. Handloom factory visit.

Note: All assignments and practical reports need to be presented both in PPT and hard copy.

Books Recommended:

Bogarl Briggess and Callouay	: Nutrition and Physical Fitness
Devidson and Passmore	: Human Nutrition and Dieteties
ড. মুহাম্মদ আবদুর রহমান	: মানব শরীর বিদ্যা
দেবজ্যোতি দাস	: পরিপাক, বিপাক ও পুষ্টি
সৈয়দা হালিমা রহমান	: খাদ্য ও পুষ্টি
সৈয়দা হালিমা রহমান	: খাদ্য ও পথ্য
শাহীন আহমেদ	: খাদ্য ও পুষ্টি বিজ্ঞান
সিদ্দিকা কবীর	: পুষ্টি ও খাদ্য ব্যবস্থা
সৈয়দা হালিমা রহমান	: বিপাক ও পুষ্টি বিজ্ঞান

Course Code	220357	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	ICT Education Paper- II			

SPREADSHEET APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 1 INTRODUCTION TO SPREADSHEET APPLICATION, CREATING AND SAVING WORKBOOK, APPLICATION OF SELECTED FORMULA AND FUNCTIONS, FORMATTING WORKSHEET, EDITING AND PRINTING WORKSHEET,	The student will be able to: 11. Identify Spreadsheet Packages. 12. Explain the importance of Spreadsheet application in data management. 13. Explain related concepts and terminologies in Spreadsheet. 14. Identify features in Spreadsheet application window. 15. Identify types of data and state their uses. 16. Create and save Workbook. 17. Construct and insert simple formulae and functions. 18. Format worksheet using formatting tools. 19. Demonstrate skills in editing and printing a worksheet. 20. Demonstrate skills in previewing and printing a worksheet.	Spreadsheet Packages e.g. Excel, Importance of Spreadsheet application in Data Management Related Concepts and Terminologies e.g. cell(s) rows columns worksheet workbook Features in the Spreadsheet Window Tool Bars: formatting bar standard bar formulae bar Types of Data and Their Uses e.g. number, date, text, currency Creating and Saving Workbook Constructing and Inserting Simple Formulae and functions Formatting Worksheet Using Formatting Tools. Editing and Printing Worksheet

PRESENTATION APPLICATION

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 2 INTRODUCTION TO PRESENTATION APPLICATION, CREATING A PRESENTATION, EDITING AND FORMATTING TEXT INPUT IN SLIDES, WORKING WITH OBJECTS, IMAGES AND PICTURES IN A PRESENTATION, RUNNING A SLIDE SHOW, DEVELOP PRESENTATION ON A GIVEN TOPIC, CUSTOMISING PRESENTATION AND PRINTING PRESENTATION	The student will be able to: 33. State the importance of Presentation application. 34. Identify the commonly used features of a Presentation application in development of presentations. 35. Create and save presentations using a template. 36. Add new slide(s) to presentation. 37. Edit text input in slides. 38. Format text input in slides. 39. Insert objects, images and pictures into a presentation. 40. Edit inserted objects, images and pictures in a presentation. 41. Run slide show. 42. Format text input in master	Importance of Presentation Application Principles for Designing Presentations Terminologies in Presentation Application eg. Master slide Slide transitions Slide show etc. Identification of Commonly Used Features of Presentation Application Window Toolbars Different presentation view modes, views – slide, slide sorter, outline Creating and Saving a Presentation, adding new Slide(s) to an Existing Presentation Editing Text Input in Slides Changing text appearance: e.g font sizes, font types etc. Applying text formatting such as:

	slides. 43. Insert and edit pictures, images and draw objects on a Master slide. 44. Remove pictures, images, draw objects from a Master slide. 45. Apply preset text, image animation effects to slides. 46. Apply transition effects between slides. 47. Apply animation effect to slides in the normal view. 48. Select print option for printing.	bold, italic, underline and case changes to text. Applying different colours and shadow to text. Aligning text: left, centre, right in a slide. Adjusting line spacing before and after bulleted and numbered points. Inserting Objects, Images and Pictures into a Presentation. Editing Inserted Objects, Images and Pictures in a Presentation. Running a Slide Show. View different presentation Applying Transition Effects Between Slides. Change slide transition effects between slides. Applying Animation Effect to Slides in the Normal View Animation – entrance etc. Applying Animation in the Slide Sorter View Animation – entrance Customs, emphasis, exit, motion paths. Selection of Print Option Entire presentation, Specific slides, Handouts, Notes pages, Outline view of slides, Number of copies
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DATABASE MANAGEMENT SYSTEM AND APPLICATION

UNIT 3 DATABASE MANAGEMENT SYSTEM, DATABASE APPLICATION	The student will be able to: 15. Describe the concept of Data Base Management System ((DBMS) 16. Analyze the function of DBMS 17. State the concept of Relational DBMS 18. Explain the Relational DBMS 19. Create and use a database file. 20. Manipulating a database file. 21. Listing records	Function of DBMS Characteristics of relational DBMS Uses of relational DBMS Basic concepts of database, file, record, and field. Students should be able to create and use a single database related to their experience, such as file of student records or library book records. save and retrieve a database file, display and edit records, add and delete records, query, sort, database relation and search records. display or print a list of selected data, such as a list of records of all boys in a class or geography books in library
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USE AND APPLICATION OF INTERNET

UNIT	SPECIFIC OBJECTIVES	CONTENT
UNIT 4 THE INTERNET	The student will be able to: 9. Explain basic concepts, requirements and terminologies of internet. 10. Discuss the basic requirements	Concept, Requirements and Terminologies chats discussions boards www (world wide web) html (hypertext Markup Language)

	for internet connectivity	http (hypertext transfer protocol) ftp (file transfer protocol), URL (Uniform Resource Locator) Search engines Download/Upload etc Basic Requirement for Internet Connectivity e.g. Computer, Mobile phone Telephone line and Modem- (if dial-up) Internet Service Provider (ISP)
UNIT 5 USING THE INTERNET TO COMMUNICATE	The student will be able to: 29. Identify the features of browser window 30. Browse the internet with the help of some features of the Browser window. 31. Apply the rules and regulations in the use of the internet. 32. Create e-mail account 33. Send and access e-mail messages 34. Attach documents to e-mail messages 35. Use internet social network to communicate.	Features and Uses of Browser Window: Address bar History Bookmarks/Favorites Standard bar etc. Browsing the internet with the help of some features of browser window e.g. Address, standard and formatting bars, URLs Rules and regulations in the use of the internet (Netiquette) – spam- unsolicited mails, people's privacy, intellectual property rights etc. Creating E-mail Account Sending, Accessing e-mail Messages Attaching documents to e-mail messages Using Internet Social Network to communicate e.g Facebook, Skype, LinkedIn.
UNIT 6 ACCESSING INFORMATION FROM THE INTERNET	The student will be able to; 21. Use Uniform Resource Locators (URLs) to access Information. 22. Use search engines to access information 23. Download information from the internet. 24. Transfer information from internet to a different Application e.g. Word Processing. 25. Upload files to virtual drives	Using Uniform Resource Locators (URLs) to access Information Using Search Engines to access Information. e.g. google search yahoo search ask search Wikipedia Search Downloading Information From the Internet. Transferring information from the Internet to a Different Application e.g. Word. Processing application Using Google drive, sky drive, dropbox etc.
UNIT 7 INTERNET AS A LEARNING RESOURCE	17. Explore internet for personal enrichment and professional learning, for teaching-learning ideas and creation of multiple learning spaces. 18. Identify appropriate resources for specific learning needs. 19. Organize the identified resources. 20. Evaluate resources for use in specific contexts.	• Different types of websites to show the possibilities for personal learning. • Web-based learning objects, simulations and tutorials. • MOOCs as a space for continuous learning.