

NATIONAL UNIVERSITY

BANGLADESH



First Year Syllabus

Department of Home Economics

Four Year B.Sc. (Honours) Program
Effective from the Session: 2024–2025

1. Mission

To promote “Progress for Everyone” by fostering transformative education, conducting pioneering research, and encouraging meaningful collaboration with individuals, communities, and partners both in Bangladesh and around the world.

2. Vision

We expect that on the hundredth anniversary of the National University, our commitment to “Progress for Everyone” will be evident in all areas of our operations and stakeholder engagements.

We leverage our core strength in education, research, and community engagement to address pressing global issues and foster sustainable development.

By 2042, National University aims to strengthen its positions as Bangladesh’s top academic institution and rank among the world’s leading universities. Our focus will be on expanding expertise building strategic partnerships, and increasing our global influence. Our services will be measured by the achievements of the individuals and communities we serve.

3. Name of the Program: B.Sc. (Honours) in Home Economics

4. Program Educational Objectives (PEO)

PEO 1: To equip graduates with comprehensive knowledge and practical skills in core areas of Home Economics—including food and nutrition, clothing and textiles, child development, resource management, art and creative studies, and family relations—enabling them to become competent and competitive professionals.

PEO 2: To apply innovative and effective teaching-learning strategies through a combination of theoretical knowledge, practical exercises, fieldwork, and apprenticeships that support holistic student development.

PEO 3: To foster in students the motivation, critical thinking, and problem-solving abilities necessary to address complex and emerging societal issues with creativity and responsibility.

PEO 4: To promote a research-oriented mindset by engaging students in relevant and impactful research that contributes to peace, development, and societal well-being at both national and international levels.

PEO 5: To create opportunities for students and faculty to engage in meaningful academic and professional programs—individually and collaboratively—with reputed institutions and organizations in relevant fields.

5. Program Learning Outcomes (PLOs)

At the time of graduation, B.Sc. (Honours) in Home Economics students will have achieved the ability to:

PLO 1: Knowledge Mastery: Demonstrate broad and in-depth knowledge in core and interdisciplinary areas of Home Economics including food and nutrition, clothing and textiles, child development, family relations, resource management, and creative arts.

PLO 2: Practical Competence: Apply technical and hands-on skills acquired through practical classes, field exercises, and apprenticeships in professional contexts.

PLO 3: Critical Thinking: Analyze complex and emerging problems related to families, individuals, and communities using logical and evidence-based reasoning.

PLO 4: Research Ability: Design, conduct, and interpret research in relevant areas of Home Economics that contribute to societal transformation and knowledge advancement.

PLO 5: Institutional Collaboration: Participate in collaborative educational or research programs with national and international organizations or institutions in relevant fields.

PLO 6: Communication Skills: Communicate clearly and effectively in academic, professional, and community settings using appropriate oral, written, and visual forms.

PLO 7: Problem Solving: Generate creative and practical solutions to real-world issues affecting individuals and families using interdisciplinary knowledge.

PLO 8: Ethical Reasoning: Demonstrate ethical awareness and socially responsible behavior in decision-making, research, and community work.

PLO 9: Leadership and Initiative: Exhibit leadership and initiative while working independently or collaboratively in educational and professional environments.

PLO 10: Lifelong Learning: Recognize the importance of lifelong learning and actively seek opportunities for self-improvement and skill enhancement.

PLO 11: Civic Engagement: Engage in programs or activities that address social, cultural, or developmental challenges with the intent to improve community well-being.

PLO 12: Digital and Information Literacy: Utilize appropriate digital tools and information resources for academic, research, and professional purposes.

6. Mapping PEO with PLO

PLOs\PEOs	PEO-1	PEO-2	PEO-3	PEO-4	PEO-5
PLO-1	√				
PLO-2		√			
PLO-3			√		
PLO-4				√	
PLO-5					√
PLO-6		√			
PLO-7			√		
PLO-8				√	
PLO-9	√				
PLO-10	√				
PLO-11					√
PLO-12		√			

Course and Marks Distribution

First Year

Course Code	Course Title	Marks	Credits
213501	Basic Nutrition and Nutrition in the Life Cycle	100	4
213503	Philosophy of Management and Entrepreneurship	100	4
213505	Maternal and Child Health	100	4
213506	Practical	100	4
212807	Chemistry-I	100	4
212808	Chemistry-I Practical	50	2
213407	Basic Psychology	100	4
213408	Practical (Basic Psychology)	50	2
219901	History of Bangladesh: Language, Culture and Identity	100	4
219903	Information and Communication and Technology	75	3
219904	Lab: Information and Communication and Technology	25	1
	Total=	900	36

Course Code:	213501	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Basic Nutrition and Nutrition in the Life Cycle			

Course Objectives

This course provides a foundational understanding of human nutrition, covering essential nutrients, energy balance, and major nutritional issues in Bangladesh. It also explores the changing nutritional needs across the life cycle—from pregnancy to old age—emphasizing practical dietary guidelines for each stage to promote health and well-being.

Course Learning Outcomes (CLOs)

CLO Code	Course Learning Outcome
CLO-1	Define key concepts of nutrition, health, and malnutrition, and explain their interrelationships, including major nutritional problems in Bangladesh such as Protein-Energy Malnutrition (PEM) and micronutrient deficiencies.
CLO-2	Describe the classification, chemical nature, sources, and physiological functions of macronutrients—carbohydrates, proteins, and fats—and discuss the health implications of deficiencies and excess intake.
CLO-3	Identify the types, functions, and food sources of essential micronutrients—vitamins and minerals—and recognize common deficiency disorders associated with them.
CLO-4	Explain the role of water and energy in human nutrition, including functions, daily requirements, energy expenditure, Basal Metabolic Rate (BMR), and methods of calculating energy needs.
CLO-5	Analyze the nutritional requirements and dietary modifications needed during different life stages, including pregnancy, lactation, infancy, toddlerhood, and preadolescence.
CLO-6	Evaluate the changing nutritional needs during adolescence, adulthood, and older adulthood, and recommend dietary strategies to support health and prevent chronic diseases.
CLO-7	Apply evidence-based dietary guidelines to promote healthy eating habits and nutrition education across the lifespan.

Mapping of CLOs with PLOs

	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8	PLO-9	PLO-10	PLO-11	PLO-12
CLO-1	√		√			√						
CLO-2	√	√					√					
CLO-3	√		√				√					
CLO-4	√	√		√								
CLO-5	√		√				√					
CLO-6	√							√		√		
CLO-7	√					√			√		√	

Course Contents

Part- A (Basic Nutrition)

	Topic	Teaching Learning Strategy	CLOs
1	Definition of Nutrition, Health, and Malnutrition: Relationship between nutrition and health; Major nutritional problems in Bangladesh- Protein Energy Malnutrition (PEM) and micronutrient deficiencies; Classification and functions of nutrients.	Lecture, Group Discussion	CLO-1
2	Carbohydrates: Classification and chemical nature of carbohydrates; Sources and functions of simple and complex carbohydrates; Role and functions of dietary fiber.	Lecture and Group Discussion	CLO-2
3	Proteins: Classifications, chemical compositions and sources of proteins; Functions of protein and consequences of protein deficiency; Essential amino acids and their importance.	Lecture, Group Discussion, Assignment	CLO-2
4	Fats and Fatty Acids: Classification and chemical nature of fats in the body; Essential fatty acids- Omega-3 and Omega-6 fatty acids and their nutritional roles; Health implications of excessive fat intake.	Lecture, Group Discussion, Assignment	CLO-2
5	Vitamins: Classification, chemical nature and food sources of vitamins; Coenzyme functions of vitamins; Vitamin deficiency disorders.	Lecture, Group Discussion, Assignment	CLO-3
6	Minerals: Macro and micro minerals- Physiological roles, functions and food sources.	Lecture, Group Discussion, Assignment	CLO-3

7	Water: Importance of water as an essential nutrient; Functions of water in the body; Sources and daily requirements.	Lecture, Group Discussion	CLO-4
8	Energy Intake and Expenditure: Measurement of energy expenditure including Basal Metabolic Rate (BMR); Factors influencing individual energy requirements; Calculation methods of estimating energy needs.	Lecture, Group Discussion, Assignment	CLO-4, CLO-7

Part B (Nutrition in the Life Cycle)

	Topic	Teaching Learning Strategy	CLOs
1	Nutrition during Pregnancy: Nutritional requirements and dietary modifications during pregnancy; Key nutrients and trimester-specific needs; General dietary guidelines for pregnant women.	Lecture, Group Discussion, Assignment	CLO-5
2	Nutrition during Lactation and Infancy: Increased nutritional needs of lactating mothers; Benefits and nutritional composition of breast milk; Guidelines for breastfeeding, formula feeding, and introduction of complementary foods.	Lecture, Group Discussion, Assignment	CLO-5
3	Nutrition from Toddlerhood to Preadolescence: Energy and nutrient needs of toddlers and young children; Developing healthy eating habits and importance of school meal programs; Guidance on balanced meals and portion control.	Lecture, Group Discussion, Assignment	CLO-5
4	Adolescent Nutrition: Nutritional demands during puberty and rapid growth; Dietary recommendations to support physical and cognitive development; Promoting balanced diets and healthy lifestyle choices.	Lecture, Group Discussion, Assignment	CLO-6
5	Adult Nutrition: Nutritional requirements to maintain health and vitality; Balanced diet principles for adults in various lifestyles; Role of nutrition in preventing chronic diseases.	Lecture, Group Discussion, Assignment	CLO-6
6	Nutrition in Older Adults: Adjusted nutrient needs due to aging physiology; Importance of hydration, calcium, vitamin D, and B12; Dietary strategies to support healthy aging and independence.	Lecture, Group Discussion, Assignment	CLO-6

List of Books

Boyle, M.A., & Holben, D.H. (2016). *Community nutrition in action: An entrepreneurial approach* (6th ed.). Cengage Learning.

Brown, J.E. (2017). *Nutrition through the life cycle* (6th ed.). Cengage Learning.

Gibney, M.J., Lanham-New, S.A., Cassidy, A., & Vorster, H.H. (2009). *Introduction to human nutrition* (2nd ed.). Wiley-Blackwell.

Grodner, M., Escott-Stump, S., & Dorner, S. (2018). *Nutritional foundations and clinical applications: A nursing approach* (7th ed.). Elsevier.

Gropper, S.S., & Smith, J.L. (2020). *Advanced nutrition and human metabolism* (7th ed.). Cengage Learning.

Sizer, F.S., & Whitney, E. (2021). *Nutrition: Concepts and controversies* (15th ed.). Cengage Learning.

Smolin, L.A., & Grosvenor, M.B. (2018). *Nutrition: Science and applications* (4th ed.). Wiley.

Whitney, E., & Rolfes, S.R. (2019). *Understanding nutrition* (15th ed.) Cengage Learning.

Course Code:	213503	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Philosophy of Management and Entrepreneurship			

Course Objectives

This course aims to provide students with a strong foundation in management principles and entrepreneurial skills. It covers the concept, objectives, importance, principles and various levels of management and managerial responsibilities. The course is designed to provide students with the ability to understand the theory and scope of evolution of entrepreneurship, various characteristics for the entrepreneur and the idea of risk management. Students will also learn about the concept, types, objectives, functions, characteristics, and role of small business management.

Course Learning Outcomes (CLOs)

CLO Code	Course Learning Outcome
CLO-1	Explain fundamental concepts, objectives, and principles of management, including levels, types, and roles of managers
CLO-2	Interpret major motivational theories and apply them to management practices, especially within the context of values, goals, and standards in home management
CLO-3	Describe and analyze the key functions of management—planning, organizing, directing, controlling, and decision-making—and apply them to practical scenarios
CLO-4	Identify the characteristics, functions, and roles of entrepreneurs, and distinguish them from managers, with special focus on the entrepreneurial process, its impact in developing countries, and the role of institutional support and collaboration in entrepreneurship development
CLO-5	Evaluate the challenges, roles, and contributions of women entrepreneurs, and assess strategies and policies to promote women-led enterprises
CLO-6	Demonstrate understanding of small business development, entrepreneurial environments, and opportunity identification using tools such as SWOT analysis and digital resources for market research and business planning

Mapping of CLOs with PLOs

	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8	PLO-9	PLO-10	PLO-11	PLO-12
CLO-1	√					√						
CLO-2	√		√				√					
CLO-3	√	√	√				√					
CLO-4	√				√	√			√			
CLO-5	√							√			√	
CLO-6	√	√					√			√		√

Course Contents

Part -A (Philosophy of Management)

	Topic	Teaching Learning Strategy	CLOs
1	Introduction to Management: Concept, objectives, importance, principles and various levels of management; Types and functions of manager and managerial responsibility.	Lecture, Group Discussion	CLO-1
2	Motivation initiating Management: Circle and different theories of motivation (A.H. Maslow, Herzberg, and Macgregor's theory). Forces motivating management (motivational forces) values, goals and standards -characteristics and classification; Interrelationship of values, goals and standards in home management.	Lecture, Group Discussion, Assignment	CLO-2
3	Functions of Management: Planning- characteristics, types and necessity of planning; Qualities of a good plan; Relational between planning and other functions of making a plan. Organization- characteristics, style, importance and principles of organization. Direction & communication; Controlling- steps and importance of controlling. Utilizing feedback; Goal setting.	Lecture, Group Discussion, Assignment	CLO-3
4	Decision Making: Meaning and process of decision making; Role of decision making in management; Ways to improve decision making skills; Kinds of decision families make; The decision maker.	Lecture, Group Discussion	CLO-3

Part-B (Entrepreneurship)

	Topic	Teaching Learning Strategy	CLOs
1	Introduction to Entrepreneur and Entrepreneurship: Differences between Entrepreneur and Entrepreneurship. Types, characteristics and qualities of an entrepreneur; Causation on success and failure of an entrepreneur; Functions of entrepreneur in developing country; Entrepreneur versus	Lecture, Group Discussion, Assignment	CLO-4

	manager. Types and characteristics of entrepreneurship; Factor influence on entrepreneurship; Ethic and Social responsibility of entrepreneurship; Entrepreneurial process; Entrepreneurship versus Management		
2	Women Entrepreneurship: Concept, characteristics and function of women entrepreneurship; Problems of women entrepreneur; Way of increases women entrepreneur; Importance of women entrepreneur in economic development; Government assistance for women entrepreneur development introducing small business	Lecture, Group Discussion, Assignment	CLO-5
3	Introducing Small Business: Concept, types, objectives, functions and characteristics of small business ; Causes for success and failure of small business ; Means to overcome the causes of failure of small business ; Advantage and disadvantage of small business ; Role of small business in economic development of the country.	Lecture, Group Discussion	CLO-6
4	Entrepreneurial Environment and Business Opportunity Identification: Factors of Entrepreneurial Environment, business environment; Strength, Weakness, Opportunity and Threat (SWOT) analysis.	Lecture, Group Discussion, Assignment	CLO-6

List of Books

Griffin, R. W.(2000). *Management*, A.I.T.B.S. publishers and distributors, New Delhi,India.
Varghese, M.A., Ogale, N.N., Srinivasan, K. (1985). *Home Management*, Willy Eastern, India.
Wehrich, H., & Koontz, H. D. (2003). *Management-A global perspective*, 10th Edition, McGraw- Hill, Inc.
আলম, মো: শাহ্ এবং অন্যান্য (২০১৬) *শিল্পোদ্যোগ*, মিলেনিয়াম পাবলিকেশন্স, ঢাকা।
আলাউদ্দিন, মো: (২০০৯) *ব্যবসায় উদ্যোগ ও ক্ষুদ্র ব্যবসায় ব্যবস্থাপনা*, ঢাকা।
আহমেদ, শহীদ উদ্দিন (১৯৯৭) *ব্যবস্থাপনা ও প্রশাসন*, বাংলা একাডেমি, ঢাকা।
খান, মমতাজ (১৯৯৮) *পারিবারিক জীবন ও গৃহ ব্যবস্থাপনা*, ২য় সংস্করণ, প্রকাশক-আরিফ রশিদ, ঢাকা।
খালেকুজ্জামান, মোহাম্মাদ (২০১৩). *ব্যবস্থাপনা নীতিমালা*, দি যমুনা পাবলিশার্স, বাংলাবাজার, ঢাকা।
রশীদুজ্জামান (১৯৯৫) *আধুনিক ব্যবস্থাপনা*, আইডিয়াল লাইব্রেরী, ঢাকা।
সিদ্দিক, রেজাউল করিম ও সরকার, মো: আকতারুজ্জামান (২০০৬) *ব্যবসায় উদ্যোগ ও ক্ষুদ্র ব্যবস্থাপনা*, দ্বিতীয় সংস্করণ, ন্যাশনাল লাইব্রেরী, মিরপুর, ঢাকা।
সিদ্দিক, রেজাউল করিম ও সরকার, মো: আকতারুজ্জামান (২০২২). *শিল্পোদ্যোগ*, গ্রন্থকুটির, বাংলাবাজার, ঢাকা।
সুলতানা, ফিরোজা (১৯৯৭). *গৃহ ব্যবস্থাপনা ও বাসগৃহ*, ৪র্থ সংস্করণ, সোলার বুকস এন্ড বুকস, বাংলাবাজার, ঢাকা।

সুলতানা, ফিরোজা (২০১৫). *গৃহ সম্পদ ব্যবস্থাপনা ও উদ্যোক্তা*, ৮ম সংস্করণ, ইডেন বুক সেন্টার, ঢাকা।

হক, মীর মাহফুজুল, আহমেদ, মো: ফারুক ও প্রধান, মো: সাইফুল্লাহ (২০০৭). *মৌলিকব্যবস্থাপনা*, বাংলাদেশ বুক কর্পোরেশন
লিঃ, ঢাকা।

Course Code:	213505	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Maternal and Child Health			

Course Objectives

For every country, the most important and valuable asset is its human resources. Students will develop the knowledge and skills to advocate for mothers, children, and their families. They will have the ability to work with children and their families facing various health issues, such as maternal and child health concerns, abuse, neglect, family development, and activity-based interventions. Students will learn to encourage each other to be more resourceful and to use their voices confidently. They will prepare to enter various fields within child care. This course emphasizes applied skills, interventions, and theoretical knowledge. The curriculum supports and helps children and their mothers in their daily lives to promote optimal development and positive change.

Course Learning Outcomes (CLOs)

CLO Code	Course Learning Outcome
CLO-1	Describe the fundamental concepts of mother and child health, including hygiene, pollution, maternal care, prenatal and postnatal development.
CLO-2	Analyze biological, environmental, and lifestyle factors affecting pregnancy outcomes and child development.
CLO-3	Explain antenatal, intra-natal, postnatal care, and neonatal health practices based on evidence and health guidelines.
CLO-4	Identify common child health problems, immunization practices, and preventive healthcare measures for infants and children.
CLO-5	Assess the role of primary healthcare services, welfare agencies, and international organizations in promoting child and maternal welfare.
CLO-6	Demonstrate awareness of ethical issues related to child welfare, including child trafficking and community-based preventive strategies.

Mapping of CLOs with PLOs

	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8	PLO-9	PLO-10	PLO-11	PLO-12
CLO-1	√		√									
CLO-2	√		√				√					
CLO-3	√	√					√					
CLO-4	√	√	√									
CLO-5	√				√						√	
CLO-6								√			√	

Course Contents

	Topic	Teaching Learning Strategy	CLOs
1	Introduction to mother and child health: Health, disease, food hygiene, and food poisoning; Role of the physician in health; Effect of pollution- air, water, and sound pollution	Lecture, Group Discussion	CLO-1
2	The prenatal development: Beginning of life; Stage of prenatal development; Genetic factors in development-heredity and environment controversy; Physical defects and disorders.	Lecture And Assignment	CLO-2
3	Motherhood: Making motherhood safe; Unsafe motherhood; Maternal mortality.	Lecture and Group Discussion	CLO-1, CLO-2
4	Pregnancy and delivery: Signs, symptoms, and diagnosis of pregnancy; Complications and high-risk pregnancy; Factors influencing outcome of pregnancy- (diet, drug, alcohol & nicotine, radiation, maternal disease, age, chemicals, environmental, physical agent, pollution); Stages & types of delivery.	Lecture and Group Discussion	CLO-2
5	Antenatal, Intra-natal, Postnatal care: Antenatal visit and advice; Environmental effects- diet, drug, alcohol, and nicotine, radiation, chemicals; Health effects- maternal disease, age of mother, Rh factors, psychological factors, specific health protection, mental preparation, family planning, pediatric component; Pregnancy care- Domiciliary, Institutional care, and rooming-in; Care of neonate- Immediate care, clearing the airway, APGAR score, care of eyes; Care of skin, maintenance of body temperature, breastfeeding.	Lecture and Group Discussion, Assignment	CLO-3

6	Maternal Attachment: Definition of attachment; Maternal attachment in child development; Lessons from attachment studies.	Lecture and Assignment	CLO-1, CLO-3
7	Child health problem: Preterm baby- low birth weight, birth asphyxia, management of the complications; Factors affecting infant mortality- biological, economic, cultural, and social aspects.	Lecture and Group Discussion	CLO-4
8	Common diseases and immunization: Jaundice, diarrhea, tetanus, poliomyelitis, hepatitis B, hepatitis C; Acute respiratory infection (ARI)- pneumonia, diphtheria, whooping cough, tuberculosis; Activities of EPI in Bangladesh.	Lecture and Group Discussion	CLO-4
9	Primary health care: Community clinic; Health and Family Welfare Centre (H&FWC); Upazilla Health Complex (UHC).	Lecture and Assignment	CLO-5
10	Welfare agencies for the child's: - Child's welfare- city corporation, publicity department, orphanage, voluntary agencies, SOS village homes; Child trafficking and a step to combat crime; Preventive services- play and day care center, foster home, adoption center; Ministry of child and women's welfare in Bangladesh; Activities of international welfare agencies- i) WHO, ii) UNICEF, iii) CARE, iv) UNFPA	Lecture and Group Discussion	CLO-5, CLO-6

List of Books

- Campbell, S., & Less, C. (2000). *Obstetrics by ten teacher*, ELST with Arnold, London.
- Karim, A. K. N. (1976). *Changing society in India, Pakistan & Bangladesh*, Dhaka, Bangladesh.
- Mia, A., & Alauddin, M. (1973). *Problems of children and adolescents in Bangladesh*, Institute of Social Welfare and Research, University of Dhaka, Bangladesh.
- Mia et al. (1975). *Social stratification and social welfare services in emerging urban communities in Dacca*, Dhaka, Bangladesh.
- Park, K. (2011). *Textbook of preventive and social medicine*, M/S Banarsidas Bhanot, India.
- আরা, গাজী হোসনে (২০১৫) *শিশু বিকাশ পরিচিতি, মা ও শিশু স্বাস্থ্য*, ফাহিম প্রকাশন, ঢাকা, বাংলাদেশ।
- আহমেদ, শাহীন (২০১৬) *শিশু বর্ধন, বিকাশ ও পরিচালনা*, ৭ম সংস্করণ, আইডিয়াল বুকস, ঢাকা, বাংলাদেশ।
- জামান, এস এস (১৯৯১) *সমাজকর্ম সমীক্ষণ*, ঢাকা, বাংলাদেশ।
- বানু, সুলতানা (১৯৯২) *বিকাশ মনোবিজ্ঞান*, বাংলা একাডেমি, ঢাকা, বাংলাদেশ।
- বেগম, দরিয়ানুর (১৯৮৯) *শিশু পালন*, দিশা পাবলিকেশন্স, ঢাকা।
- বেগম, দরিয়ানুর (১৯৯০) *শিশুর আচরণ ও ক্রমবিকাশ*, বাংলা একাডেমি, ঢাকা, বাংলাদেশ।
- সুলতানা, কাজী আফিফা (২০০১) *বিকাশ মনোবিজ্ঞান*, পজিট্রন প্রকাশন, ৩৮, বাংলা বাজার, ঢাকা, বাংলাদেশ।

Course Code:	213506	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Practical			

Course Objectives

To equip students with practical skills in entrepreneurship and maternal-child health by engaging them in real-world activities such as fieldwork, case studies, presentations, and project-based learning, fostering both business acumen and public health awareness.

Course Learning Outcomes (CLOs)

CLO Code	Course Learning Outcome
CLO 1	Apply entrepreneurial knowledge and skills to design a socially responsible business venture, including customer analysis, business modeling, and risk evaluation.
CLO 2	Demonstrate practical skills in observing and assessing infant development and maternal health through fieldwork and developmental tools.
CLO 3	Collect, analyze, and report data from health service centers and community settings related to maternal and child health.
CLO 4	Communicate findings and awareness messages effectively through oral, written, and visual presentations on entrepreneurship or public health topics.
CLO 5	Apply ethical reasoning and social responsibility in decision-making processes related to both business and health-related community work.

Mapping of CLOs with PLOs

	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8	PLO-9	PLO-10	PLO-11	PLO-12
CLO-1	√	√					√	√				
CLO-2	√	√	√									
CLO-3		√		√	√						√	
CLO-4						√						√
CLO-5								√		√	√	

Course Contents

Part A - Entrepreneurship

	Topic	Teaching Learning Strategy	CLOs
1	Entrepreneurship Guideline: Set up your venture, Analysis of customers and market, Crafting a business model, Sales forecast, Launching a venture, Marketing strategy, Business risk, Find out the ethics and social responsibility of your business.	Lecture, Group Discussion, Assignment, Practical Application (Event)	CLO-1, CLO-4, CLO-5

Part B - Maternal and Child Health

	Topic	Teaching Learning Strategy	CLOs
1	Observation of the all-around development of an infant using developmental screening tools or, Evaluation of the growth and behavior of a neonate	Observation, Field Work, Assignment	CLO-2
2	Prepare a PowerPoint presentation on any topic of child and mother health	Lecture, Assignment, Presentation	CLO-4
3	Report on activities of a Community Clinic / H&FWC / UHC or, Visit and report on Govt. and Non-Govt. organizations working in mother and child health	Field Visit, Assignment, Report Writing	CLO-3
4	Visit at least 3 EPI centers and prepare a summary or, Conduct interviews with mothers about EPI awareness	Field Visit, Interview, Group Discussion	CLO-3
5	Case study report on antenatal, intra-natal, and post-natal care from a mother (esp. rural/low-income)	Case Study, Field Work, Assignment	CLO-3
6	Poster or album presentation on neonatal health in Bangladesh using updated sources	Presentation, Assignment, Visual Work	CLO-4

Course Code:	212807	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Chemistry-I			

Course Objective

The course is designed for the student to impart and improve fundamental knowledge and aspects related to understand the fundamental physical, Organic and Inorganic chemistry topics. To develop and extend student's knowledge on state of matter, structure of atom, radiochemistry, chemical bonding, Liquid and Solution, chemical equilibrium, pH, aliphatic and aromatic hydrocarbons.

Course Learning Outcomes (CLOs)

After completing this course, students will be able to:

CLO1	Explain fundamental concepts of matter & atomic structure to describe the states of matter and their transitions, apply Avogadro's number, mole concept, and stoichiometry in chemical calculations and analyze atomic models and electronic configurations using quantum numbers and Aufbau principle.
CLO2	Understand chemical bonding & molecular structure to classify types of chemical bonds, predict molecular geometry using VSEPR theory and hybridization and compare valence bond theory (VBT) and molecular orbital theory (MOT).
CLO3	Analyze chemical reactions & equilibrium to differentiate between physical and chemical changes, balance redox reactions and determine oxidation states and apply Le Chatelier's principle to predict equilibrium shifts in reactions.
CLO4	Apply principles of physical chemistry to derive and apply gas laws, calculate colligative properties and interpret Raoult's & Henry's laws and determine pH, buffer capacity, and solubility product (K _{sp}) in acid-base systems.
CLO5	Classify & characterize hydrocarbons (aliphatic & aromatic) to name hydrocarbons using IUPAC nomenclature, compare reactivity of alkanes, alkenes, and alkynes and explain aromaticity, electrophilic substitution, and substituent effects in benzene derivatives.

Mapping of CLOs with PLOs

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CLO1	✓	✓	✓		✓							✓
CLO2	✓	✓	✓		✓							✓
CLO3	✓	✓	✓		✓			✓				✓
CLO4	✓	✓	✓	✓	✓			✓		✓		✓
CLO5	✓	✓	✓		✓	✓		✓		✓	✓	✓

Course contents

Module No.	Contents	Teaching-Learning Strategy	CLOs
1.	State of Matter in Chemistry: Nature and classification of matter. Classical states of solid, liquid, gas and Liquid crystals, state of aggregation of matter. Changes of state of matter. Intramolecular and intermolecular force and their role for the determination of state of matter. Modern state as plasma. Avogadro's number with application, Concept of mole: calculation and importance. Stoichiometry.	Lecture, Group Discussion, Assignment	CLO1
2.	Structure of atom: Fundamental particles of atoms, Nucleus and discovery of nucleus, atomic model of Rutherford, Bohr atom model: postulates, limitations and success, Spectrum of atomic hydrogen, Dual nature of electron, Heisenberg uncertainty principle, Quantum numbers, atomic orbitals, Aufbau principle, Pauli exclusion principle, Hund's rule of maximum multiplicity, electronic configuration of atoms.	Lecture, Group Discussion, Assignment	CLO1
3.	Radiochemistry: Atomic number and mass number, atomic mass unit, atomic nucleus, Isotopes, Nuclear stability, natural and artificial radioactivity, half-life and average life of radioelements, radioactive decay, nuclear reactions.	Lecture, Group Discussion, Assignment	CLO1
4.	Periodic table: Periodic law, Periodic table, Periodic properties of the elements such as ionization energies, Electron affinity, Electro negativity, Atomic/ionic radius along a period and down a group, Diagonal relationship.	Lecture, Group Discussion, Assignment	CLO2
5.	Chemical bond: Definition and causes chemical bonds, octet rule and duplet rule, types of chemical bonds: ionic, covalent bond, polar and non-polar bond, Ionic character of covalent compound and covalent character of ionic compounds VSEPR theory, Valence bond theory, Hybridization, σ and	Lecture, Group Discussion, Assignment	CLO2

	π -bonding in compounds, Molecular orbital theory, coordination, metallic, hydrogen bonds.		
6.	Chemical Reactions: Physical change and Chemical change, Methods of bringing about chemical reaction, Redox reactions, oxidizing and reducing agents, oxidation state and oxidation number, redox half reactions, rules for balancing redox reactions, acid base reactions.	Lecture, Group Discussion, Assignment	CLO3
7.	Chemical Equilibrium: Equilibrium in chemical reactions. Stoichiometry, law of mass action, concentration Versus time curves, equilibrium law and equilibrium constant: K_p , K_c , and K_x , effects of temperature, pressure and concentration changes of equilibrium, principle and applications of Le Chatelier and Braun, reaction quotient, extent of reaction, thermodynamic equilibrium constant.	Lecture, Group Discussion, Assignment	CLO3
8.	Gaseous State: Vapour and gas, measurable properties of gases, determination of gas pressure, the gas laws: derivation, molecular explanation and practical applications, effusion, diffusion, osmosis, ideal and real gases, ideal gas equation with applications, kinetic theory of gas, deviation from ideal behaviour, Van der Waals equation, critical constants. Dalton's law of partial pressure.	Lecture, Group Discussion, Assignment	CLO4
9.	Liquids and Solutions: Liquids and their characteristics, evaporation, measurement vapour pressure, dependence of vapour pressure on temperature variation, boiling, distillation, Types of solution, solubility and solubility curve, units of concentration for solution, Raoult's law, ideal and non-ideal solutions. Henry's law. a brief treatment of colligative properties.	Lecture, Group Discussion, Assignment	CLO4
10.	pH and Buffer: Ostwald dilution law, solubility product with principle and applications, common ion effect, ionic product of water (K_w), pH with	Lecture, Group Discussion, Assignment	CLO4

	applications, buffer solution, buffer mechanism, Henderson-Hasselbach equation. Acid-base titrations, Acid-base indicators. Theories of acids and bases, conjugate acids and bases, neutralization reactions, acid-base strength, Salts: Classification and their applications, neutralization reactions.		
11.	Aliphatic hydrocarbons: Organic compounds, homologous series, the causes of diversity of organic compounds, Hydrocarbons: classifications and IUPAC nomenclature. Formation of carbocations, carbanion, free radicals and their stabilities. Sources, properties, general methods of preparation of following hydrocarbons: Alkane, Alkene and Alkynes. Classification of organic compounds based on their functional groups.	Lecture, Group Discussion, Assignment	CLO5
12.	Aromatic hydrocarbons: Definition and classification, nucleus and side chain, Structure, preparation and uses of benzene. Aromaticity, Electrophilic aromatic substitution reactions with reference to nitration, halogenation, sulphonation and alkylation. Orientation of substituents in benzene ring, activating and deactivating group.	Lecture, Group Discussion, Assignment	CLO5

List of Books

- Bahl, B. S., & Bahl, A. (2024). *Text- Book of organic chemistry*. S. Chand & Company Ltd Ram Nagar, New Delhi-11005S
- English, J., Cassidy, H.G., & Baird, R. I. (1949). *Principles of organic chemistry: An Introductory Text in Organic Chemistry*. McGraw Hill.
- Finar, I. L. (1973). *Organic chemistry, Vol. I*. Pearson Education, India.
- Griffin, R. W. (2024). *Modern organic chemistry*. McGraw Hill.
- Morrison, R.T. & Boyd, R. N. (1992). *Organic chemistry*. Benjamin-Cummings Pub Co
- Muny, J. Mc. (2010). *Organic chemistry*. Thomson Brooks-Cole.
- Roberts, J. D., & Caserio, M. C. (1977). *Basic principles of organic chemistry*. W. A. Benjamin, Inc., Menlo Park, CA.
- Skoog, D. A., & West, M. D. (2022). *Fundamentals of analytical chemistry*. Publisher, Cengage Learning.
- Solomons, T. W. G. (2008). *Fundamental of organic chemistry*. Wiley.

Course Code:	212808	Marks: 50	Credits: 2	Class Hours: 30
Course Title:	Chemistry-I Practical			

Course Objectives

To gain a fundamental knowledge on laboratory safety policy, some inorganic salts and radical analysis, preparation of solution with standardization, titration and precipitation.

Course Learning Outcomes (CLOs)

After completing this course, students will be able to:

CLO1	Discuss about the general laboratory safety policy, rules and regulations and chemical management process.
CLO2	Explain the applications of apparatus and reagents in various experiments, different laboratory glassware and chemicals.
CLO3	Prepare standard solution and pH- neutralization curves
CLO4	Qualitative analysis of mixtures of inorganic salts consisting of up to five different radicals
CLO5	Explain the determination of Fe^{2+} , copper (II), nickel as Ni (HDMG) 2 complex 7 using difference methods.

Mapping of CLOs with PLOs

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CLO1	✓	✓			✓	✓		✓				✓
CLO2	✓	✓	✓		✓	✓					✓	✓
CLO3	✓	✓	✓		✓							✓
CLO4	✓	✓	✓	✓	✓						✓	✓
CLO5	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓

Course contents

Module No.	Contents	Teaching-Learning Strategies	CLOs
1	Safety: Introduction of chemical, equipment's and safety in the laboratory.	Lecture, Experimental, Assignment	1-5
2	Preparation: Preparation of $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ Mohr's salt and potash alum.	Lecture, Experimental, Assignment	1-5

3	Separation and identification: Separation and identification of four radicals from a mixture of anions and cations. The cations are Pb^{2+} , Cu^{2+} , Cd^{2+} , Al^{3+} , Fe^{2+} , Fe^{3+} , Co^{2+} , Ni^{2+} , Zn^{2+} , Ca^{2+} , Ba^{2+} , Na^+ , K^+ , and NH_4^+ , the anions are NO_3^- , CO_3^{2-} , S^{2-} , SO_4^{2-} , Cl^- , Br^- and I^- .	Lecture, Group Discussion, Experimental, Assignment	1-5
4	Standardization: Standardization of NaOH solution using standard oxalic acid solution.	Lecture, Experimental, Assignment	1-5
5	Determination: Determination of Fe^{2+} using standard permanganate solution.	Lecture, Experimental, Assignment	1-5
6	Iodometric method: Iodometric determination of copper (II) using standard Na_2SO_3 solution.	Lecture, Experimental, Assignment	1-5
7	Gravimetric Method: Gravimetric determination of nickel as $\text{Ni}(\text{HDMG})_2$ complex.	Lecture, Experimental, Assignment	1-5
8	pH-Neutralization Curves: Determination of the pH-neutralization curves of a strong acid by a strong base.	Lecture, Experimental, Assignment	1-5

List of Books

Alexeyev, V. (2024). *Qualitative analysis*. Mir Publishers.

Braun, D. R. (2024). *Introduction to chemical analysis*. McGraw Hill International.

Christian, G. D. (2023). *Analytical chemistry*. John Wiley & Sons.

Vogel, A. I. (2017). *A Text-Book of macro and semimicro qualitative inorganic analysis*. Longmans, Green and Co. Ltd.

Welcher, F. J., & Hahn, R. B. (2024). *Semimicro qualitative analysis*. D. Van Nostrand Co. Inc.

Course Code:	213407	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	Basic Psychology			

Course Objective

This course provides an introduction to psychology, covering the various approaches, subfields, and methods in the discipline. Students will explore the biological foundations of behavior, sensation and perception, learning, memory, language, and problem-solving. The course also delves into theories of motivation, emotion, personality, and intelligence, providing a broad understanding of psychological concepts and processes. It will offer a foundation for understanding human behavior from both a scientific and practical perspective.

Course Learning Outcomes (CLOs)

CLO1	Define the key concepts of psychology, including its nature as a science, and explain the different approaches to the study of psychology (neurobiological, behavioral, cognitive, psychoanalytic, and humanistic approaches)
CLO2	Analyze the biological bases of behavior, including the structure and function of the nervous system, neural transmission, and the major divisions of the nervous system.
CLO3	Apply principles of sensation and perception to real-world scenarios, understanding sensory thresholds, attention, and depth perception.
CLO4	Demonstrate an understanding of the learning process, including classical and operant conditioning, and apply these theories to human behavior and cognitive development.

Mapping CLOs with PLOs

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CLO1	√	√	√			√		√	√			
CLO2	√	√	√		√			√	√			
CLO3	√	√		√	√			√		√		
CLO4	√	√	√			√		√	√		√	

Course Contents

Module No.	Contents	Teaching Learning Strategies	CLOs
1	Introduction to Psychology: Definition and nature of psychology, Psychology as a science, Approaches to the study of psychology: neurobiological approach, behavioral approach, cognitive approach, psychoanalytic approach, humanistic approach, The subfields of psychology: experimental and physiological psychology, clinical and counseling psychology, industrial, personnel and engineering psychology, school and educational psychology, social psychology, developmental psychology, personality psychology; The methods of psychology: experimental method, observational method, archival research, case history, survey method	Lesson plans, class lectures, handouts, power point presentations, seminar presentation	CLO1
2	Biological Bases of Behavior: Cells, tissues, organs and systems of the body, Basic units of nervous system: neurons, structure and connectors, Transmission of neural impulses, The major divisions of nervous system: the central nervous system, brain and spinal cord, the peripheral nervous system-somatic and autonomic system, Glands: exocrine and endocrine glands; genetic influences of behavior.	Multimedia lecture, group activity on cosmic timeline, guided Q&A	CLO1
3	Sensation and Perception: What is sensation? Measuring sensory experience- absolute, differential, and terminal thresholds, Visual auditory and other senses, The nature of perception, Selectivity in perception: selective attention, determiners of stimulus selection, Form perception: figure and ground, contour perceptual organization, Perceptual constancy- size and brightness constancy, Depth perception-monocular and binocular cues to depth perception.	PPT-based lecture, discussion, solar system model interpretation, visual quiz	CLO2

4	Learning: Definition of learning, Classical conditioning: processes in classical conditioning, classical conditioning and human behavior, Operant conditioning: processes on operant conditioning, types of reinforcement, schedules of reinforcement, shaping, Cognitive mapping: latent learning, insight learning, observational learning.	Diagram demonstration, 3D globe activity, interactive lecture, problem-solving	CLO2
5	Memory and Forgetting: Defining memory, Types of memory: sensory memory, short-term memory, long term memory, Memory dysfunction, Improving memory, The physiology of memory, Why do we forget? interferences, decay, retrieval failure, repression.	Lesson plans, class lectures, handouts, PowerPoint presentations, seminar presentations	CLO2
6	Language, Thinking and Problem Solving: The structure and rules of language, How language is learned, Language and concepts, The thinking process, Problem solving.	Lecture with animation, diagram- based demonstration, almanac analysis, class discussion	CLO3
7	Motivation: Defining motivation, Theories of motivation: instinct theory, drive theory, arousal theory, opponent process theory, incentive theory, cognitive theory, Maslow's Hierarchy Theory of motivation, Classification of motives: biological motives, social motives, Activity and stimulation needs, Motivation and behavior.	Timeline construction, comparative charting, calendar workshop, case-based learning	CLO3

8	Emotion: Defining emotion, Theories of emotion: James-Lange Theory of emotion, Cannon-Bard Theory of emotion and Schachter- Singer Theory of emotion, Physiological correlates of emotion, The brain and emotions, Primary emotions	Case studies (real-life emotional responses), video-based observation and analysis of emotions, role-play to demonstrate theories, group discussion on emotional experiences, lecture with multimedia animation	CLO3
9	Personality: Defining personality, Determinants of personality, Approaches to personality: Freud and Neo-Freudians, Allport-identifying basic characteristics, Cattle & Eysenck: factoring out personality, are we born with personality? Measuring personality.	Interactive lectures, personality test demonstrations, group discussions, case study analysis, self-reflection exercises	CLO4
10	Intelligence and Creativity: Definition of intelligence, Measurement of intelligence, Representative intelligence tests, Creativity and intelligence.	Demonstration of IQ tests, group problem- solving tasks, creative thinking workshops, case studies on giftedness, interactive lectures, brainstorming sessions	CLO4

List of Books

Crider, A.B., Goethals, G.R., Roberts, D. Kavanaugh, R.D., & Solomon, P.R. (1993). *Psychology*. Harper Collins college publishers, New York.

Coon. D., & Martini, T. S. (2018). *Introduction to psychology: Gateways to mind and behavior*. Cengage Learning.

Feldman, R. S. (2019). *Understanding psychology*. McGraw Hill Education, New York. Morgan, C.T. (2007).

Introduction to psychology. McGraw-Hill Publishing Company Limited, New York.

উদ্দিন, আফসার (২০০২) সাধারণ মনোবিজ্ঞান / রাজশাহী: রাজশাহী বিশ্ববিদ্যালয় প্রকাশন বোর্ড।

ছিদ্দিক (২০২৩) সাধারণ ও পরীক্ষণ মনোবিজ্ঞান / ঢাকা: প্রত্যয় পাবলিকেশন্স।

মন্ডল, যোগেন্দ্র কুমার (২০০৮) সাধারণ মনোবিজ্ঞান / ঢাকা: হাসান বুক হাউস।

সাইফুদ্দীন, কাজী (২০০৭) সাধারণ মনোবিজ্ঞান / ঢাকা: আবির পাবলিকেশন্স।

সরকার, নিহাররঞ্জন (১৯৯০) মনোবিজ্ঞান ও জীবন / ঢাকা: জ্ঞানকোষ প্রকাশনী।

হক, মো: আমিনুল (২০১৯) সাধারণ মনোবিজ্ঞান ও পরীক্ষণ / ঢাকা: হাসান বুক হাউস।

Course Code:	213408	Marks: 50	Credits: 2	Class Hours: 30
Course Title:	Practical: Basic Psychology			
Marks Distribution:	Laboratory Note Book	5x1=	5	
	Conduction	10x1=	10	
	Report/Script	25x1=	25	
	Viva	10x1=	10	

Course Description:

This course provides hands-on experience in designing, conducting, and analyzing psychological experiments. Students will explore foundational psychological processes through laboratory-based activities focusing on learning, memory, reaction time, attention, motor performance, and sensory perception. The course aims to develop students' practical skills in applying experimental methods and using scientific techniques to study human behavior.

Course Learning Outcomes (CLOs):

After going through the course, students will be able to learn the following outcomes:

CLO1	Understand and apply the principles of estimating time under both filled and unfilled conditions in experimental settings
CLO2	Identify and classify different types of variables used in psychological research
CLO3	Investigate the role of stimulus orientation in visual short-term memory and its impact on memory retention
CLO4	Design and conduct basic psychological experiments using appropriate tools and methods

Mapping CLOs with PLOs

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CLO1	√	√			√			√				
CLO2	√	√	√		√			√	√	√	√	√
CLO3	√	√	√		√			√	√			√
CLO4	√	√	√		√	√		√			√	√

Course Contents:

Module No.	Contents	Teaching-Learning Strategies	CLOs
1	Estimation of time under filled and unfilled conditions	Lecture with Demonstration, Guided Drawing Practice, Q/A Session, Class Discussion	CLO1, CLO2, CLO3
2	Effect of feedback on sensory motor performance	Group Work, Hands-on Exercise, Field Demonstration, Use of Graph Paper	CLO2, CLO4
3	Effect of stimulus orientation on visual short-term memory	Lecture, Group Discussion, Experimental, Assignment	CLO1, CLO3
4	To study the retention as a function of time	On-site Task, Visual Demonstration, Manual Exercise, Observation Task	CLO3, CLO4
5	To study the effect of division of attention on learning /performance	Experimental, Hands-on Activities, Group Discussions	CLO2, CLO4
6	To investigate the phenomenon of bilateral transfer of learning	Lecture, Experimental, Class Discussion	CLO4

List of Books

Baddeley, A. D. (1986). *Working memory*. Oxford: Oxford University Press.

Baddeley, A. D. (2000). *The episodic buffer: A new component of working memory?* Trends in Cognitive Science 4, 417-423.

Ebbinghaus, H. (1985). *Memory: A contribution to experimental psychology*. New York: Colombia University

Hull, G. L. (1933). *The meaningfulness of 320 selected nonsense syllables*. Amer J. Psy 45, 730- 734.

রহমান, মো: আবদুর (২০১৪)। উচ্চতর ব্যবহারিক মনোবিজ্ঞান / বগুড়া: প্রকাশিকা সা. রহমান।

সাহা, নিতাই কুমার (২০১৯)। হাতে কলমে মনোবিজ্ঞান প্রথম খণ্ড / ঢাকা: হাসান বুক হাউস।

Course Code:	219901	Marks: 100	Credits: 4	Class Hours: 60
Course Title:	History of Bangladesh: Language, Culture and Identity			

Course Objective

This course is designed to help undergraduate students from diverse academic backgrounds develop a comprehensive and nuanced understanding of the historical development of Bangladesh, with a particular focus on its language, culture, and identity. By critically examining a variety of historical events, socio-political movements, and cultural shifts from ancient times to the contemporary period, students will have the opportunity to trace the evolution of the Bengali nation. The course aims to foster informed citizenship through an exploration of the Liberation War, identity formation processes, cultural heritage, the lives and contributions of key political figures, and the roles of ethnic minorities. Ultimately, the objective is to equip learners with the intellectual tools necessary to contextualize current national debates and to recognize the role of

youth and globalization in shaping the future of Bangladesh.

Course Learning Outcomes (CLOs)

At the end of the course, learners will be able to:

CLO 1: Recall key historical events, dates, movements, personalities, and cultural developments that contributed to the emergence of Bangladesh from the pre-colonial period to the present day.

CLO 2: Demonstrate an understanding of the socio-political, linguistic, and cultural influences that shaped Bengali identity and nationalism, emphasizing the Language Movement, Liberation War, and subsequent democratic uprisings.

CLO 3: Apply their historical and cultural understanding to interpret contemporary national issues and debates relating to identity, political reform, and cultural transformation in Bangladesh.

CLO 4: Analyze how historical events, political ideologies, and social changes are interconnected in shaping the current socio-political landscape of Bangladesh, with a particular emphasis on the roles of movements, minorities, and the youth.

Course Contents

Contents	Teaching Learning Strategy	CLOs
1. Pre-colonial Era - Life and Culture of the People in Ancient Bengal - Bengal Under Muslim Rulers: Society, Culture, and Religion - Role of the Sufis in Preaching Islam and Impacts of Sufism on the Bengali Society - Bengali Society and Culture in the Writings of Foreigners	Interactive lectures	CLO 1-2
2. Colonial Era (18th and 19th Century) - The Battle of Plassey (1757) and the Beginning of British Colonialism - Bengal Renaissance - Reforms in Hindu Society - New Forms in Bengali Literature and Culture - The Muslim Response to Western Education	Interactive lectures, reading, and assignments	CLO 1-2
3. Colonial Era (First Half of the 20th Century) - Partition of Bengal (1905) - Hindu-Muslim Disagreements - Formation of the All-India Muslim League (AIML) - Muslim Shahitya Samaj - Buddhir Mukti Andolan: The Urge for Rational Thinking in Bengali Muslim Society - Growth of Religion-based Identity - Politics of Hindutva and the Two-Nation Theory - Spread of Communalism in Society - The Partition of India and Bengal	Interactive lectures and group discussions	CLO 2-3
4. Post-Partition Era (1947-1971) - Language Movement - Political, Economic, and Cultural Aspects - Growth of Vernacular Nationalism - Cultural Activism	Interactive lectures and group discussion	CLO 2-3

5. Changing Bengali Identity • The Evolution of Bengali Identity in the Context of Language, Culture, and Religion • From Ancient Times to the Present • The Role of the Bengali Language in Shaping Identity • The Language Movement of 1952 and Its Long-term Impact on National Consciousness • The Influence of Religion on Bengali Identity • The Impact of Socio-political Movements on Identity Formation • The Liberation War of 1971 • Contemporary Debates on Bengali Identity • The Role of Youth in Redefining Identity • The Influence of Globalization	Interactive lectures and thematic assignments	CLO 2-3
6. Liberation Movement of 1971 and Mass Uprising till 2024 • The Political and Economic Exploitation of East Pakistan by West Pakistan • Six (6) Points Movement, Uprising of 1969 • The 1970 General Elections • The Non-cooperation Movement and the Declaration of Independence • The Role of AK Fazlul Haque, Huseyn Shaheed Suhrawardy, Maulana Bhashani, Sheikh Mujibur Rahman and Ziaur Rahman • The Liberation War of 1971 • Genocide and Resistance • The Role of the Mukti Bahini • Post-independence Challenges • Nation-building • Political Instability • Mass Uprisings and Democratic Movements • The Anti-autocracy Movement of the 1980s • The 1990s Movement for Democracy and Afterwards • The 2024 Movements for Political and Social Reforms	Interactive lectures, group discussions, and thematic assignments	CLO 1 CLO 3-4

7. History of Other Ethnic Groups • The Indigenous Communities of Bangladesh • Historical Presence • Cultural Practices • Land Rights and Cultural Assimilation • Contributions and Sacrifices • Political Representation of Ethnic Minorities	Interactive lectures and group discussions	CLO 4
8. Cultural Heritage and Modern Transformations • The Evolution of Bengali Culture • From Ancient Traditions to Modern Expressions • The Role of Literature, Music, and Art in Shaping Bengali Identity • Contributions of Rabindranath Tagore, Kazi Nazrul Islam, and Other Cultural Icons • The Impact of Globalization on Bengali Culture • The Revival of Traditional Arts • The Role of Youth in Cultural Innovation Urbanization • Environmental Changes • The Commodification of Culture	Interactive lectures, documentary screening, and thematic assignments	CLO 1-4

List of Books

Ahmed, M. (1979). *Bangladesh: The constitutional quest for autonomy*, Dhaka: University Press Limited.

Ahmed, R. (1981). *The Bengal Muslims 1871-1906: A quest for identity*. Oxford University Press.

Alavi, H. (1972). *The state in post-colonial societies: Pakistan and Bangladesh*. In K. Gough & I. P. Sharma (Eds.), *Imperialism and revolution in South Asia* (pp. 145-178). New York, NY: Monthly Review Press.

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Course Code	219903	Marks: 75	Credits: 3
Course Title:	Information and Communication Technology		

Course Objectives:

The main objective of the course is to develop students' understanding and skills in using, managing, and applying technology to solve problems and enhance various aspects of life and work. Key areas of focus include understanding ICT systems, software, hardware, networks, and their applications.

Course Learning Outcomes: The student will be able to:

CLO 1	Explain foundational ICT concepts, including the information processing cycle.
CLO 2	Operate standard computer hardware and software systems effectively.
CLO 3	Use office productivity tools (Word, Excel, PowerPoint) for academic and professional tasks.
CLO 4	Apply safe internet practices and use internet tools for communication and information retrieval.
CLO 5	Understand and explain the concepts of Data Analytics, Artificial Intelligence (AI), and Machine Learning (ML)
CLO 6	Understand the concept of free-lancing

Course Contents:

Unit	Specific Objectives	Content	Teaching and Learning Approach
Unit 1: Introduction to Information and Communications Technology (ICT) and Computer System	The student will be able to: • Explain the concept of ICT and its related terminologies. • Describe the information processing cycle. • Analyze the impact of ICT on educational, social and economic development. • Identify career opportunities in ICT education. • Differentiate among the	Definition of ICT, basic concepts and terminologies. Data, Information Application of ICT, Advantages and Disadvantages of ICT, Impact of ICT Career opportunities in ICT education Information Processing Cycle. Classification of Computers The Vital Components of the Systems Unit.	Classroom Lectures

	classes of computers and the usages of them. Identify the vital components of the Systems Unit.		
Unit 2: Computer Hardware and Software	The student will be able to: - Describe the categories of Computer Hardware. - Describe the commonly used Input and Output devices - Identify the main processing devices, storage devices and media. Identify the main communication devices. - Identify types of Software packages. - Distinguish between an Operating System and Application software. - Identify different types, examples and uses of Operating Systems and Application software - Distinguish between Open Source and Proprietary Software.	Categories of Computer Hardware: Input devices, Processing devices, Output devices, Storage devices Communication devices, Main Processing Devices: The Processor, Control Unit and Arithmetic and Logic Unit Software Packages, Operating Systems, Types and uses of Operating Systems, Types and uses Application Software: Educational software, Games software, Graphics software Browsers: Internet explorer, Google chrome, Mozilla Firefox, Opera, Internet explorer, Mozilla Firefox; Proprietary and Open Source Software	Classroom lectures and Lab
Unit 3: Introduction to Word Processing Application	- The student will be able to: - Identify Word Processing packages. - Create and save a document using the Word Processor. - Format a Word document using formatting tools. Demonstrate the ability to perform collaborative editing. - Insert tables in a Word Processing document. - Insert symbols and pictures in Word Processing documents. - Use layout techniques in document creation.	Word Processing Packages and Their Uses. Introduction of Microsoft Word Software. File creation and saving: New, Save, Open, Save As. Editing: Copy/Cut, Paste, Undo, Redo, Find, Replace, Clipboard, Sub-Headings And Paragraphs, Text Correction, Wrapping Text, Text Orientation Formatting: Font: Style, Size, Color, Bold, Underline, Italic, Superscript, Subscript, Shadow, Strikeout.	Classroom Lectures, Lab, and Hands-on Practice

	• Inserting headers and footers. • Print documents using the various print options.	Paragraph: Alignment, Bullet & Numbering, Indent, Line Spacing, Table Border Insert: Table, Picture, Shape, Smart Art, Chart, Header, Footer, Page Number, WordArt, Drop Cap, Symbols, Equations, Hyperlink, Comment. Page Design: watermark, page border Layout: Page setup, print	
Unit 4: Spreadsheet Application	• The student will be able to: • Identify Spreadsheet Packages. • Explain the importance of the Spreadsheet application in data management. • Explain related concepts and terminologies in the Spreadsheet. • Identify features in the Spreadsheet application window. • Create and save a Workbook. • Construct and insert simple formulae and functions. • Format the worksheet using formatting tools. • 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) Excel Tool Bars: Formatting Bar, Standard Bar, Formula Bar. Types of Data and Their Uses (e.g., number, date, text, currency), Creating and Saving a Workbook, Formula and Functions, Sorting, filtering, validation, creating pivot table. Formatting Worksheet Using Formatting Tools. Draw Graph/chart, Printing Worksheet.	Classroom Lectures, Lab and Hands-on Practice
Unit 5: Presentation Application	• The student will be able to: • State the importance of the Presentation application. • Identify the commonly used features of a Presentation application while prepare a presentation. • Create and save presentations using a template, Add new slide(s).	Presentation Applications Packages, Devices used for Presenting, Importance of Presentation Application, Principles for Designing Presentations, Terminologies in Presentation Application (eg;, Slide transitions, Slide show, etc.),	Classroom Lectures, Lab and Hands-on Practice

	Edit text, Format text, Insert objects, images and pictures, Run slide show, Apply transition, animation effects to slides • Select the print option for printing. • Prepare a presentation on a selected topic and present it.	Commonly Used Features of Presentation Application Window: Toolbars, Different presentation view modes Prepare a Presentation: Slide creating, editing, theme, background, inserting elements (image, audio, video hyperlink, table, smart art, graph, etc.) and formatting slides, Slide Layout, slide Show, slide transition, animation Effects. Selection of Print Option: Entire presentation, Specific slides, Handouts, Notes pages, outline view of slides.	
Unit 6: Privacy and Security	The student will be able to: • Understand the basics of digital security • Use some security tools. • Understanding digital ethics.	Introduction to Information Security, cybercrime, DoS and DDoS Attack, Key Management, Digital Signature and Certifications, privacy, Data Security, Vulnerability, Threat and Risk, Malware, Social Engineering, Hacking, Plagiarism, Fishing, Software Piracy, Worms and Viruses, Spam, Adware, Malware, Spyware, Antivirus Software Ethics in the digital world	Classroom Lectures, Lab and Hands-on Practice
Unit 7: Using The Internet to Communicate and Accessing Information	• The student will be able to: • Explain basic concepts, requirements, and terminologies of the Internet • Apply the rules and regulations in the use of the internet. • Using email • Use the internet social network to communicate. • Use Uniform Resource Locators (URLs) to access Information. Use search engines to access	Internet, Intranet, Extranet, IP Address, Masking, MAC Address, Internet Services, OSI Reference Model, TCP/IP protocol stack, IPv4, IPv6, subnet Masking, MAC Address, Internet Services, Network Configuration and Troubleshooting, Wi-Fi, Broadband, Email Usage. Rules and Regulations in the Use of the Internet: Spam- Unsolicited Emails, People's Privacy, Intellectual Property Rights, etc. E-mail: Creating an Email Account, Sending, Accessing	Classroom Lectures, Lab and Hands-on Practice

	information • Upload files to virtual drives and work on it.	Email Messages, Attaching Documents to Email Messages, Using the Internet: Social Networks to Communicate, Uniform Resource Locators (URLs) to Access Information, Using Search Engines, Downloading Information from the Internet. Transferring Information from the Internet to a Different Application Intellectual Property Rights, ICT Policy, Software Piracy etc. Using Cloud Space: Google Drive, Google Workspace, OneDrive, Dropbox, etc.	
Unit 8: Emerging Technologies: Data analytics, Artificial intelligence, Machine learning	• Define Data Analytics, Artificial Intelligence (AI), and Machine Learning (ML). • Understand how data is collected, processed, and used for decision-making. • Recognize the role of AI and ML in everyday life. • Explain basic differences between AI and ML. • Discuss benefits and challenges of these technologies. • Recognize current trends and career opportunities in these fields.	Introduction to Data Analytics: Define Data, Types of Data, Define Data Analytics, Basic Steps in Data Analytics, Applications of Data Analytics, Common Tools of Data Analytics (Excel, Tableau, Power BI, Python, SQL, etc.). Artificial Intelligence (AI): Define AI, Objectives of AI, AI capabilities, AI applications (NLP, Image Recognition, Predictive Analytics, Recommender Systems, Robotics, etc.); AI Tools: OpenAI GPT, TensorFlow, PyTorch, Keras, Scikit-learn, etc.), AI in daily life (Voice assistants, facial recognition, GPS route suggestions, chatbots, etc.) . Machine Learning (ML): Define Machine Learning (ML), How It Works, Classification of ML, applications of ML, and common ML platforms (Teachable Machine, TensorFlow, PyTorch, Microsoft Azure Machine Learning, etc.).	Classroom Lectures, Lab and Hands-on Practice

		Relationship Between Data Analytics, AI, and ML Benefits & Challenges of Data Analytics, AI, and ML. Future Trends & Career Paths.	
Unit 9: Introduction to Freelancing	The student will be able to: • Define and explain the fundamental concept and significance of freelancing in the global context. • Identify and categorize various online marketplaces and professional fields. • Develop professional profiles, portfolios, and proposals suitable for freelancing platforms. • Demonstrate the use of online payment systems and financial transaction methods. • Analyze and evaluate strategies for career development and effectively apply techniques to overcome freelancing challenges.	Introduction and Basic Concepts, Fields of Freelancing, Essential Skills and Preparation, Introduction to Freelancing Marketplaces, Creating Profile and Portfolio, Earning and Transaction Process, Building a Freelancing Career, Challenges and Solutions.	Classroom Lectures, Practical Demos, Assignments, Discussions

List of Books:

Norton, P. (2008). *Introduction to computers* (9th ed.). The McGraw-Hill.

Comer, D. E. (2018). *The internet book: Everything you need to know about computer networking and how the internet works* (5th ed.). Chapman and Hall/CRC Press.

Lambert, J., & Frye, C. (2015). *Microsoft Office 2016 step by step*. Microsoft Press.

Hassan, N. A., & Hijazi, R. (2017). *Digital privacy and security using Windows: A practical guide*. Apress.

Maheshwari, A. (2024). *Data analytics made accessible*. Jay Cobb.

Russell, S. J., & Norvig, P. (2020). *Artificial intelligence: A modern approach* (4th ed.). Pearson.

Alpaydin, E. (2020). *Introduction to machine learning* (4th ed.). MIT Press.

Course Code	219904	Marks: 25	Credit: 1
Course Title:	Lab: Information and Communication Technology		

Course Objectives:

The main objective of the course is to teach the students' understanding and skills in using, and applying technology to solve problems and enhance various aspects of life and work. It includes assembling hardware, installing software, preparing PPT slides, and producing Word and Excel documents.

Course Learning Outcomes:

The student will be able to:

CLO 1	Learn assembling hardware
CLO 2	Prepare, edit and print Word documents and excel
CLO 3	Prepare Power Point presentation.
CLO 4	Access information from Internet, e-mail
CLO 5	Installation of anti-virus software
CLO 6	Data collection, Prediction, Pattern recognition, classification
CLO 7	Exploring markets, Proposal writing, Simulation strategies

List of Experiments

CLO Addressed	Unit	Experiments	Teaching Learning Approach
CLO1	1-4	- Assemble different hardware - Install different software - Operate the computer - Drive, folder and file management - Maintenance	Lab and Hands-on Practice
CLO 2	3	Word - Prepare a Word document on a specific topic (e.g, routine, question paper, CV, reports, applications) - Formatting the document (Alignment, table, border, watermark, etc.), e.g., newspaper article, academic report, or documentation used in daily life, book, poster - Print documents with different paper and printers	Lab and Hands-on Practice

CLO 2	4	• Excel • Prepare a grade sheet • Prepare a family expenditure • Prepare a business expenditure report • Prepare payroll management, with a report • Create graphs on the given data • Print Excel files	Lab and Hands-on Practice
CLO 3	5	Power point • Prepare an academic presentation on a specific topic. • Formatting the slides & using different tools. • Apply animation and transition • Print PPT files in different modes: Hand note, Slides shorter, outline	Lab and Hands-on Practice
CLO4	6	• Install antivirus software, e.g., Norton Antivirus, McAfee, Kaspersky, Avast.	Lab and Hands-on Practice
CLO5	7	• Use of email • Access information from the internet, use a search engine. • Use of virtual drive for collaboration • Google Meet	Lab and Hands-on Practice
CLO6	8	• Data Collection and Visualization (Excel) • Simple Prediction (Excel) • Pattern recognition (Teachable Machine) • Classification (Teachable Machine)	Lab and Hands-on Practice
CLO7	9	Free lancing • Marketplace exploration and portfolio creation • Proposal writing • Payment simulation	Lab, Hands-on, Group Work, Discussion

Instructions for the Lab:

1. Lab sessions should be hands-on, with students engaging in tasks like assembling hardware, installing software, and using office tools.
2. Software like Microsoft Word, Excel, PowerPoint, and Teachable Machine will be used for document creation, data analysis, and basic machine learning.
3. Labs also include antivirus installation, email use, and online collaboration via Google Meet and Drive, emphasizing teamwork and problem-solving.

Instructions for the Lab exam:

1. The lab exam is individual. Students must answer two out of seven questions.
2. Marks distribution: Experiment (20 marks, 10 for each) for practical tasks, Viva-Voce (5 marks) for oral assessment. Total: 25 marks.

List of Books:

Comer, D. E. (2018). *The internet book: Everything you need to know about computer networking and how the internet works* (5th ed.). Chapman and Hall/CRC Press.

Lambert, J., & Frye, C. (2015). *Microsoft office 2016 step by step*. Microsoft Press