1st Semester

CSE-1101: Introduction to Computer Systems [2.0 credit, 30 Hours Lecture]

Introduction to computations; Early history of computing devices; Computers; Major components of a computer; Hardware: processor, memory, I/O devices; Software: Operating system, application software; Basic architecture of a computer; Basic Information Technology; The Internet; Number system: binary, octal, hexadecimal, binary arithmetic; Basic programming concepts; Program development stages: flow charts; Programming constructs: data types, operators, expressions, statements, control statements, functions, array.

CSE-1103: Programming Fundamentals [3.0 credits, 45 Hours Lecture]

Structured programming language: data types, operators, expressions, control structures; Functions and program structure: parameter passing conventions, scope rules and storage classes, recursion; Header files; Preprocessor; Pointers and arrays; Strings; Multidimensional array; User defined data types: structures, unions, enumerations; Input and Output: standard input and output, formatted input and output, file access; Variable length argument list; Command line parameters; Error Handling; Graphics; Linking; Library functions.

Reference language: C

CSE-1104: Programming Fundamentals Lab I [1.5 credits, 45 Hours Lecture]

Laboratory works based on CSE-1103.

CHEM-1105: Chemistry [3.0 credit, 45 Hours Lecture]

Atomic structure, quantum numbers, electronic configuration, periodic table; Properties and uses of noble gases; Different types of chemical bonds and their properties; Molecular structure of compounds; Selective organic reactions; Different types of solutions and their compositions; Phase rule, phase diagram of monocomponent system; Properties of dilute solutions; Thermochemistry, chemical kinetics, chemical equilibria; Ionization of water and pH concept; Electrical properties of Solution.

CHEM-1106: Chemistry Lab [1.5 credit, 45 Hours Lecture]

Laboratory works based on CHEM-1105. **Volumetric analysis:** acid-base titration, oxidation-reduction titration, determination of Fe, Cu, Ca volumetrically.

ENG-1107: English [3.0 Credits, 45 Hours Lectures]

English phonetics: the places and manners of articulation of the English sounds; Vocabulary;
English grammar: construction of sentences, some grammatical problems; Comprehension; Paragraph writing; Precis writing; Amplification; Report writing; Business communication and tenders; Short stories written by some well-known classic writers.

ENG-1108: English Communication Skills Lab. [1.5 Credits, 45 Hours Lectures]

Grammar: Tense, article, preposition, subject-verb agreement, clause, conditional and sentence structure.
Vocabulary building: Correct and precise diction, affixes, level of appropriateness. Colloquial and standard, informal and formal.
Developing reading skill: Strategies of reading, skimming, scanning, predicting, inferring; analyzing and interpreting variety of texts; practicing comprehension from literary and nonliterary texts.
Developing writing skill: Sentences, sentence variety, generating sentences; clarity and correctness of sentences, linking sentences to form paragraphs, writing paragraphs, essays, reports, formal and informal letters.
Listening skill and note taking: Listening to recorded texts and class lectures and learning to take useful notes based on listening.
Developing speaking skill: Oral skills including communicative expressions for personal identification, life at home, giving advice and opinion, instruction and directions, requests, complaints, apologies, describing people and places, narrating events.

MATH-1109: Differential Calculus and Co-ordinate Geometry [3.0 credit, 45 Hours Lecture]

Differential Calculus: Limits, continuity and differentiability; Successive differentiation of various types of functions; Leibnitz Theorem; Rolle's Theorem; Mean value Theorem in finite and infinite forms; Lagrange form of remainders; Cauchy form of remainder; Expansion of functions; Evaluation of indeterminate forms by L Hospital rule; Partial differentiation; Euler Theorem; Tangent and Normal, Subtangent and subnormal in cartesian and polar co-ordinates; Maximum and minimum values of functions of single variable; Points of inflexion; Curvature, radius of curvature, center of curvature; Asymptotes, curve

tracing.

Co-ordinate Geometry: Transformation of co-ordinates axes and its uses; Equation of conics and its reduction to standard forms; Pair of straight lines; Homogeneous equations of second degree; Angle between a pair of straight lines; Pair of lines joining the origin to the point of intersection of two given curves, circles; System of circles; Orthogonal circles; Radical axis, radical center, properties of radical axes; Coaxial circles and limiting points; Equations of parabola, ellipse and hyperbola in cartesian and polar co-ordinates; Tangents and normals, pair of tangents; Chord of contact; Chord in terms of its middle points; Pole and polar parametric co-ordinates; Diameters; Conjugate diameters and their properties; Director circles and asymptotes.

GEN-1111: Bangladesh Studies [2.0 credits, 30 Hours Lecture]

Introduction: Historical Background of Bangladesh, Ancient Bengal, the Medieval Bengal, Moghal Period, British rule in Bangladesh, Pakistan Period, Emergence of Bangladesh.

Cultural development: Development of Bengali cinema, Drama, Literature movement, Socio-cultural development in recent Bangladesh.

Liberation War and Emergence of Bangladesh: Primary stage of liberation, language movement, Declaration of Independence, Freedom fighting, Genocides during Liberation period, Freedom fighters and their contributions for Independence, Birshresto and other award winners during Liberation time, Day of Independence and Bijoy Dibash, Rule of Foreign for Independence of Bangladesh, Legislature, Judiciary system.

Structure of activity of government, constitution of Bangladesh, Reconstructions and rehabilitations works, Economic constrains during early days, Rule of Donors to activate country's economic and other development activities.

Geophysical condition: Position of Bangladesh in Global map, Current District and Thana administrations and locations, Rivers in Bangladesh and their importance, flood situation and waterflow system.

Industrial Development: Introduction of Industries, structure of Industries, success and failure history, development of manufacturing sector, export development, developing agencies, Industrial export-import policies of Bangladesh.

Educational Development: Education structure in primitive and present situation, educational policies, crisis of implementation, literacy rate, current situation of educational environment in Bangladesh, human resource development trends and manpower export from Bangladesh, computer literacy.

Rural and Urban Development: Rural situation during early days and latest condition, migration of rural people to urban area, economic and other gaps of rural and urban peoples, rural and urban communications, minimization gaps of rural and urban peoples, sanitation system, health care and education level, economic and manufacturing levels and life style of urban and rural area, religious activities in Bangladesh and the moral values.

Economic activities: Major economic sectors, trends of economic growth, recent development in various sectors, rule agricultural sector, RMG sector, leather sector, frozen foods and other potential sectors in Bangladesh, transport and port facilities.