1st YEAR ODD SEMESTER

CSE 1100 **Contact hours/week: 3**
Computer Fundamentals and Ethics **Credits: 1.50**
Prerequisite: None

Computer Fundamentals: Introduction to Computer Basics, Types and Generation of Computers; Basic Organization and Functional Units.

Hardware: Basic Units of Computer Hardware; Processors; Input, Output and Memory Devices; Keyboard; Mouse; OMR; OCR; MICR; CD-ROM; Printers; CRT; LCD; LED; Microfilm; Floppy.

Software: Types of Software; System Software: Familiarization with Various Operating Systems (Windows, DOS, UNIX, Android, IOS Etc.); Application Software: Text Processing (MS-WORD, etc); Spread Sheet (MS-EXCEL etc).

Language: Machine Language; Assembly Language; High Level Language; Assembler;
Translator; Interpreter and Compiler.

Database Management: Introduction of Data, Information and Management; Studying Various Tools like Foxpro, MS Access, Oracle etc; Mathematical and Simulation (Math Cad, Matlab etc.); Data Communications and Internet.

Computer Ethics: Computers in the Workplace; Computer Crime; Rules of Communications; Privacy; Intellectual Property; Impact on Employment; Professional Responsibility; Globalization.

CSE 1101 **Contact hours/week: 3**
Computer Programming **Credits: 3.00**
Prerequisite: None

Introduction to Computer Programming: Algorithm, Writing, Debugging and Running Programs using C/C++ Compiler.

C/C++ Basics: Different Data Types and their Range, Operator and Operands and its Precedence, Input/Output, Conditional Operators, Loops Nested Structure, Error Handling, Built-in Functions.

Functions and Arrays: Writing & Calling of User–defined Functions, Recursive Functions, Scope of Variables, Introduction to One-Dimensional Arrays, Multi-Dimensional
Arrays and Array Manipulation.

Pointers and Strings: Introduction to Pointers, Pointers and Array, Pointers and Functions, String I/O, String-based Built-in Functions, String Operations, Pointer and String.

Files: Introduction to Files in C/C++, Opening, Closing and Updating Binary and Sequential Files.

Advanced Topics: Operations on Bits, Register Variable, Pre-Processors and Graphics
in C/C++.

CSE 1102 **Contact hours/week: 3**
Sessional based on CSE 1101 **Credits: 1.50**
Prerequisite: None
Sessional based on the theory course CSE 1101.

EEE 1151 **Contact hours/week: 3**
Basic Electrical Engineering **Credits: 3.00**
Prerequisite: None
Basics of Electrical Circuit: Electrical Units and Standards. Electrical Circuit Elements and Models. Signal and Waveforms. Fourier Representation of Non-Sinusoidal Waveforms. RMS and Average Value of Sinusoidal Waveforms. Introduction to Phasor Algebra. DC & Steady State AC Circuit Solutions: Series, Parallel, Series-Parallel Networks, Loop and Nodal Methods, Delta-Wye Transformations.
Circuit Theorems: KVL, KCL, Thevenin, Norton, Super-position, Reciprocity and Maximum Power Transfer Theorems, Resonance. Circuit Analysis using Popular Simulation Tools.

EEE 1152 **Contact hours/week: 3/2**
Sessional based on EEE 1151 **Credits: 0.75**
Prerequisite: None
Sessional based on the theory course EEE 1151.

Math 1113 **Contact hours/week: 3**
Differential and Integral Calculus **Credits: 3.00**
Prerequisite: None
Differential Calculus: Limit, Continuity and Differentiability. Differentiation of Explicit and
Implicit Function and Parametric Equations. Significance of Derivatives, Differentials, Successive Differentiation of Various Types of Functions. Leibnitz's Theorem. Rolle's Theorem, Mean Value Theorems. Taylor's Theorem in Finite and Infinite Forms. Maclaurin's Theorem in Finite and Infinite Forms. Langrange's Form of Remainders. Cauehy's Form of Remainder. Expansion of Functions by Differentiation and Integration. Partial Differentiation. Euler's Theorem. Tangent and Normal, Maxima and Minima, Points
of Inflection and Their Applications. Evaluation of Indeterminate Forms by L'Hospitals Rule, Curvature, Evaluate and Inviolate. Asymptotes. Envelopes, Curve Tracing.
Integral Calculus: Definitions of Integration, Integration by The Method of Substitutions,
Integration by The Method of Successive Reduction. Definite Integrals. Beta Function and
Gamma Function. Area Under a Plane Curve in Cartesian and Polar Co-Ordinates. Area

of the Region Enclosed by Two Curves in Cartesian and Polar Co-Ordinates, Parametric
and Pedal Equations. Intrinsic Equation. Volumes of Solids of Revolution. Volume of Hollow Solids of Revolution by Shell Method. Area of Surface of Revolution.

Hum 1113 **Contact hours/week: 3**
Functional English **Credits: 3.00**
Prerequisite: None

Grammar: Construction and Transformation of Sentences, Analysis of Sentence, Structure, Use of Preposition, Question Words, WH & Yes/No Question, Phrases & Idioms, Correction, Conditional Sentences, Punctuation, Pronunciation, Phonetic Transcription, Spoken English.

Composition: Definition of Scientific Terms, Comprehension, Précis Writing, Commercial
Correspondence, Paragraph Writing, Amplification, Tenders & Schedules, Memos & Press-Release, Report Writing.

Short Stories:
The Diamond Necklace – Guy De Mapausant
Meeting in the Mosque – E. M. Forster
Tickets, Please – D. H. Lawrence
The Dead – James Joyce

Hum 1114 **Contact hours/week: 3**
English Language Lab **Credits: 1.50**
Prerequisite: None

Developing Reading Skill: Strategies of Reading Skimming, Scanning, Predicting, Inferencing; Practicing Comprehension from Literary and Non Literary Texts.

Developing Writing Skill: Sentence Variety; Generating Sentences, Clarity and Correctness of Sentences, Linking Sentences for Paragraphs, Writing Paragraphs, Essays, Reports Formal and Informal Letters.

Developing Listening Skill: Listening to Recorded Texts and Class Lectures and Learning to Take Notes.

Developing Speaking Skill: Oral Skills Including Communicative Expressions for Personal Identification, Life at Home, Giving Advice and Opinion, Instruction and Directions, Requests, Complains Apologies, Describing People and Places, Narrating Events.

Chem 1113 **Contact hours/week: 3**
Inorganic and Physical Chemistry **Credits: 3.00**
Prerequisite: None

Chemical Bond: Different Types of Chemical Bonds; Properties of Ionic and Covalent Compounds, Modern Approach of Covalent Bond.

Thermo-chemistry: Types of Energy, Enthalpy of Reaction, Heat of Combustion, Heat of
Formation and Heat of Neutralization, Experimental Determination of Thermal Changes

During Chemical Reaction.
Titration: Acid Base Titration and its Problem During the Process of Titration.
Solution: Types of Solution, Factors Influencing the Solubility of Substance. Mechanism of
Dissolution; Solution of Gases in Liquids, Different Units of Concentration, Distribution Law
and its Application; Properties of Dilute Solution, Raoult's Law - its Application, Elevation of
Boiling Point, Depression of Freezing Point and Osmotic Pressure.
Electro-chemistry: Electrolytes, Mechanism of Electrolytic Conduction, Transport Number
and Electrolytic Conductance.
Kinetics and Chemical Equilibrium: Rate of a Reaction, Factors Determining the Rate,
Law of Mass Action, Evaluation and Characteristics of Equilibrium Constant of Reaction; the Lechatclier's Principle.
Colloid: Colloids and Properties of Colloidal System and its Application.

Chem 1114 **Contact hours/week: 3/2**
Sessional based on Chem 1114 **Credits: 0.75**
Prerequisite: None
Sessional based on the theory course Chemistry 1114.