

Semester II

Course Code: EITG - 105		
Course Title: Fundamentals of IT		
Number of Credits: 03	Total Hours: 42	Total Marks: 75
Prerequisites for the course		
Student is expected to have basic understanding of computer and basic mathematics.		
Objectives of Course		
To learn the specified foundational concepts of Information Technology		
Course Content		
Unit I	Number System	7 Hours
Non-Positional Number System, positional Number System, Decimal Number System, Binary Number System, Octal Number System, Hexadecimal Number, Number Conversion		
Unit II	Computer Codes	8 Hours
Data Types, Computer Codes. BCD: Coding of Alphabetic and Numeric Characters in BCD, BCD Coding Scheme Examples. EBCDIC: Coding of Alphabetic and Numeric Characters in EBCDIC. ASCII: Coding of Numeric and Alphabetic Characters in ASCII, ASCII-7 Coding scheme, ASCII-8 Coding scheme.		
Unit III	Computer Arithmetic	10 Hours
Reasons for using binary instead of Decimal Numbers, Basic arithmetic operations using binary numbers: Addition, Subtraction, Multiplication, Division. Binary over decimal, Examples of a few devices that work in binary mode, Binary arithmetic, Binary addition, Binary subtraction, Complement of a number, Complement of a binary number, Complementary method of subtraction, Binary multiplication, Binary division, Rules for binary division, Additive method of multiplication and division		
Unit IV	Computer languages	10 hours
Some popular Computer languages or programming languages. Categories of programming languages: machine, assembly, and high level languages. Programming language tools: assembler, linker, and interpreter. Concepts: object oriented programming languages, subprogram, characteristics of a good programming language, and factors to consider while selecting a language for coding an application.		
Unit V	Business Data Processing	7 Hours
Standard methods of organizing data: Database system and File Management System. Data Processing, Data storage Hierarchy, Relationship Among character, Field, Record, And File. File Organizations, Organization Of an Indexed Sequential File, File Utilities, Sorting on One Key, Sorting on Two Keys, Merging of two Files. Database Models: Hierarchical Database, network Database, Relational Database, Object-Oriented Database, Creating Reports, Sample Output of Reports.		
Pedagogy		
Lectures/Tutorial/Assignments		
Course Outcome		
The core topics in Information Technology as enlisted will be studied		
References/Readings		
1. Computer Fundamentals –P.K. Sinha & Priti Sinha 2. ITIL for Beginners (The Complete Beginner's Guide to Itil by Clyde Bank Technology 3. Open Source for the Enterprise (Managing risks, raping rewards) by Dan Woods, Gautam Guliani 4. Technology in Action Complete by Alan Evans, Jonathan Weyers, Mary Anne Poatsy 5. ITSM (Quickstart Guide — The Simplified Beginner's Guide to IT Service Management) by ClydeBank Technology		