

Course Title (MAJOR/MINOR COURSE)	Course Code	Credits-06	
		Theory	Practical
<b>BIT122M: INFORMATION TECHNOLOGY (BASICS OF INFORMATION TECHNOLOGY)</b>	BIT122M	04	02

### UNIT I

Introduction to Computing - Computer Systems, Components of a computer system, Hardware and software, Evolution and generations of computers, and Classification of computers on the basis of capacity, purpose, and generation.

Data representation in digital computer. Number System: Bit, byte, binary, decimal, octal systems and hexadecimal conversion from one system to the other, representation of characters, integers and fractions. Binary Arithmetic: Addition, subtraction and multiplication. Computer Codes - BCD, Gray Code, ASCII and Unicode.

### Unit II

Problem Solving – Approaches, top-down and bottom-up programming. Algorithm, Flowchart, Pseudocode and Source Code. Representation of Algorithm, Flowchart, Pseudo code and Source Code with examples. Transformation of Algorithms into source code.

The Role of Algorithms in Computing, Algorithms as a technology, analysing algorithms, Designing algorithms, Growth of Functions.

Computer languages - Machine language, assembly language, higher level language, 4GL. Translator Programs - Compiler, Interpreter, Assembler.

### Unit III

Operating Systems - Introduction, Features, Functions - Process Management, Memory Management, File Management, Device Management etc. Different types and classification of Operating Systems. Introduction to different Operating Systems.

Data, Information and Knowledge. Database, database management system, database System, Database Applications. Structured and Unstructured data. Big Data. Different kinds of databases.

### Unit IV

Internet, History of Internet, Features and uses of Internet. The Internet Architecture, IP Address, Domain Name. Managing the Internet. Introduction to WWW, Web browsers, Websites, Email, Search Engine etc.

Connecting to Internet, Internet Connections, Internet Address, Internet Services, Uses of Internet, Introduction to Internet of Things (IoT) and Cloud Computing. Introduction to E-commerce, E-governance, E-government, Smart homes with relevant examples like AMS, admissions systems etc.

**Note: The Practical Component shall be based on the Unit-I to Unit-IV**

### Reference Books

1. Introduction to Information Technology, V Rajaraman, PHI
2. Introduction to Computers, Peter Norton, 7<sup>th</sup> Edition, McGraw Hill Education
3. Fundamentals of Computers, V. Rajaraman, PHI Publications
4. Computer Fundamentals, Anita Goel, Pearson Education India