B.Tech. I / M.Sc. I (All Branches)
CS109S2: Fundamentals of Computer and Programming
Mid Semester Exam Syllabus

- **Theory Part : (Introduction to Computer Science by ITL Education Solution and Pearson publication)**

Chapter : Introduction to Computers
- Introduction
- Characteristics of Computers,
- Generations of Computers,
- Classfication of Computers,
- The Computer system,
- Applications of Computers

Chapter : Number Systems and Logic Gates
- Introduction
- Number Systems
- Conversion between number bases
- Arithmatic system
- Signed and Unsigned numbers
- Concept of Overflow

Chapter : Computer Architecture
- Introduction,
- CPU,
- Memory- RAM, ROM, cache
- Interconnection of units
- Cache
- Communication between various units of Computer system,
- Processor Speed.

Chapter : Primary Memory
- Introduction
- Memory Representation,
- Memory Hierarchy
- RAM
- Types of RAM
- ROM
- Types of ROM

- **Programming Part : (Programming in ANCI C by E. Balagurusamy)**

> **Chapter : Introduction to Computing:** Art of Programming through Algorithms and Flowcharts.
>
> **Chapter : Introduction to Programming / Overview of C:** History of C, Importance of C, Basic Structure of C Programs, Programming Style, Executing a C Program.
>
> **Chapter : Constants, Variables and Data Types:** Introduction, Character Set, C Tokens, Keywords and Identifiers, Constants, Variables, Data Types, Declaration of Variables, Declaration of Storage class, Assigning Values to Variables, Defining Symbolic Constants, Declaring a variable as Constant.
>
> **Chapter : Operators and Expressions:** Introduction, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement operators, Conditional Operators, Bitwise Operators, Special Operators, Arithmetic Expressions, Evaluation of Expressions, Precedance of Arithmetic Operators, Type Conversion in Expressions, Operator Precedance and Associativity.
>
> **Chapter : Decision Making and Branching:** Introduction, Decision Making with if Statements, Simple if Statements, The if….else Statement, Nesting of if….else Statements, The else if Ladder, The Switch Statement, The ? : Operator, The goto Statement.
>
> **Chapter : Decision Making and Looping:** Introduction, The while Statement, The do Statement, The for Statement, The Nested For Loop and Pattern Programs, Jumps in loops.