

## Course Content:

### Section-A (Mid-term: 30 Marks)

# Architecture

1. Computer architecture Basic, History, Different terminologies of computing device, Types of Computer Architecture, Understanding Program Performance, Defining Performance, Measuring Performance, CPU Performance and its factor, Evaluating performance, MIPS as a performance Measure
2. Instruction and data access methods, Instruction Set, Stored-Program Concept, Operations of the computer Hardware, and Operands of the computer Hardware (Design Principles of Computer Hardware) Representation of Instructions in the Computer, Logical Operations, and Instructions for decision making, MIPS Addressing for 32-Bit Immediate and Addresses
3. Arithmetic and logical operations, floating point operations, ALU design Signed and Unsigned numbers, Number Conversion and representation, Arithmetic Operations and Representation. Matrix-chain multiplication and longest common subsequence problems as examples, Complexity analysis of the algorithms. Multiplication, Division and Floating point Hardware

# CSE-3521

# Microprocessor

## 8 Stanza Syllabus:

Stanza	Topics
1	Introductory Concept: Evaluation of microprocessor, Types of microprocessor, system bus, hardware of a microprocessor, memory-addressing technique.
2	8086 Microprocessor: properties, architecture, registers, FLAGS register, physical address calculation, addressing modes, Addressing Techniques of 8086 Microprocessor.
3	Instruction: Instruction set, Instruction format, Fetch-decode-Execution cycle.

8 Stanza Syllabus:

# System design and analysis

Stanza	Topics
1	Concepts of system and its environment: Information, Types of information, Quality of information, System, Types of systems, Components of system, Source of information.
2	Information gathering: strategy, Information searching methods, Interviewing technique, System development methodologies and life cycle.
3	Feasibility study & Cost/Benefit analysis: Feasibility considerations, steps in feasibility analysis, feasibility report, Cost and Benefit categories, procedure for cost and benefit determination, classification of cost and benefit, cost and benefit evaluation methods.



**Course Contents:****Section-A (Mid-term: 30 Marks)**

# Compiler

**Segment 1:**

Structure of compiler: Translator, Basic principles of compilers and compiler design, types of compilers, applications, phases of a compiler.

**Segment 2:**

Grammars & expressions: Concepts of languages and Grammars, Terminals and non-terminals, Useless non-terminals and Inaccessible tokens, Context-Sensitive Grammars, Context-Free Grammars, Right linear grammar, left linear grammar, Derivations and Parse trees, Ambiguous grammar.

**Segment 3:**

Automata: Lexical analysis, Regular expressions, finite automata, Non-deterministic Finite-State Automata, Minimization of Finite-State Automata, DFA, Symbol table management.

## Syllabus:

Week	Topic
Week 01:	Course Introduction
Week 02:	File IO, Exception Handling
Week 03:	Data Structures, Iteration, Object-Oriented Programming
Week 04:	Inheritance, Interfaces
Week 05:	Debugging, Logging

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# Tools and technology

## CSE-3532

Syllabus: B. Sc. Engineering in CSE – Autumn 2020



Week 06:	Multithreading Basics
Week 07:	MIDTERM EXAM

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*Course Outline*

*Section-A (Midterm Exam: 30 Marks)*

<b>Chapter# 01</b>	<b>Introduction to Political Thoughts:</b> <b>Government and Politics:</b> Meaning and Organs <b>Islamic Political System:</b> Meaning, Importance and Principles
<b>Chapter# 02</b>	<b>Shari'ah (Islamic Law):</b> Meaning, Sources and Differences between <i>Shari'ah</i> and Manmade Law <b>Constitution:</b> Definition, Islamic Constitution and Special Features of an Islamic Constitution
<b>Chapter# 03</b>	<b>Islamic State:</b> Concept of Islamic State, Differences between Islamic and Secular State, Necessity of Islamic State, Main Organs of Islamic State, Principles of Islamic State <b>The Executive (Head of the state):</b> Conception, Qualifications, How to select a Head of the State, Factions of the Executive.

*Section-B (Final Exam: 50 Marks)*



**Course Content:****Section-A (Mid-term: 30 Marks)****EEE****1. Introduction to Electrical Drives**

Introduction to electrical machines. Rotational motion, Newton's law, and power relationships. Magnetic field, Faraday's law, induced voltage on a conductor moving in a magnetic field, production of force on a wire in a magnetic field, Classification of Load torques, Mechanical and Electrical Power Calculation, Sizing of electric motors for given load system, Classes of Motor Duty, De-rating factor for electric motor sizing, Energy Efficient Motors, Motor name plate.

**2. Transformers:** Single-phase transformers: Construction, principle of operation and equivalent circuit, phasor diagram, efficiency and regulation. Short and open circuit tests. Three-phase transformers: Construction and connections.**3. DC Motor Drives:** Principles of operation and construction of DC machines, Emf equation and principle of commutation. Controlled rectifier fed dc drives, Power factor, supply harmonics and ripple in motor current, Chopper controlled dc drives, Closed loop control of DC Drives, Two and four quadrant controls.