International Islamic University Chittagong

Department of Computer Science and Engineering (CSE)

Syllabus of 5th Semester

Course Plan:

Course No.	Course Title	Contact Hours/Week		Credit Hours		Prerequisite Courses
		Theory	Practical	Theory	Practical	
CSE-3521	Computer Architecture	3		3		
CSE-3523	Microprocessors, Microcontrollers and Embedded Systems	3		3		
CSE-3524	Microprocessors, Microcontrollers and Embedded Systems Lab		2		1	
CSE-3527	Compiler	3		3		
CSE-3528	Compiler Sessional		2		1	
CSE-3529	Systems Analysis and Design	3		3		
CSE-3532	Tools and Technologies for Internet Programming		4		2	
EEE-2421	Electrical Drives			2		
EEE-2422	Electrical Drives Sessional				1	
URED-3503	Introduction to Political Thoughts and Social Behavior	2		1		
Total	**9 Courses**	**17**	**8**	**15**	**5**	

Course Objectives:
1. This course provides an overview of the architecture and organization of a computer hardware system and how it is built.
2. It includes a discussion of the CPU, memory, I/O organization and peripherals.

Outcome:
1. At the end of this course, the student should be able to: Identify the different hierarchical views of a computer (gates, micro program, machine language, assembly language).
2. Know the different devices and components of a computer system and how these components work together.
3. It is expected that students at the end of this course will be able to design a stored program computer using logic gates, flip-flops, and components from a given library of digital components.

8 Stanza Syllabus:

Stanza	Topics
1	Information representation, Performance measurement
2	Instruction and data access methods
3	Arithmetic Logic Unit (ALU): arithmetic and logical operations floating point operations, ALU design
4	The control unit (Single cycle Data path) : hardwired and micro programmed
5	The control unit (Multiple cycle Data path) : hardwired and micro programmed
6	Hazard; Exceptions; Pipelining
7	Memory organization
8	I/O systems, channels, interrupts, DMA

Recommended Books:
1. J. P. Hayes   :Computer Architecture and Organization
2. Dr. M. Rafiquzzaman   :Fundamentals of Computer System Architecture
3. Romesh S. Gaonkar   :Microprocessor, Architecture, Programming and Application with 8085
4. John Hennesy, David Patterson   : Computer Organization.
5. Shafwat Zaky   :Computer Architecture

Course Objectives:
- Understand fundamental operating concepts behind microprocessors and microcontrollers.
- To learn and understand architecture and programming of 8086 processor.
- To learn and understand interfacing techniques like memory and I/O Interfacing with 8086.
- To learn and understand architecture and programming of 8051 microcontroller.
- To learn and understand generation of time delay, serial communication and interrupts.
- To learn and understand the development of microprocessor and microcontroller based system.

Outcome:
After complete the course the students will be able to
- Understand the theory and basic architecture of microprocessor
- Program a microprocessor system using assembly language
- Understand and capable or interfacing the microprocessor to the I/O devices.
- Develop simple applications on microprocessor and microcontroller -based systems.

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.
4	Interrupt System: Sources of interrupt, Types of interrupt, handling interrupt request, interrupt vector and table, 8259A priority interrupt controller, Daisy chain.
5	An overview of Intel 80186, 80286, 80386, 80486 and Pentium microprocessor; Advanced microprocessor: Embedded microprocessor, Bit slice microprocessor, arithmetic processor, Multitasking, Itanium and Merced Microprocessor.
6	I/O operation: Isolated and memory mapped I/O, 8255A Programmable peripheral Interface, DMA technique, I/O ports, I/O processor
7	Micro controller: Architecture of 8051, Signals, Operational features, Memory and I/O addressing, Interrupts, Instruction set, Applications.
8	Embedded Systems: Introduction to Embedded Systems, Characteristics, Components, Hardware-Software Partitioning, Specification and Modeling, Optimizing Design, SOC, Application Domains.

Recommended Books:

1. Dr. M. Rafiquzzaman   :Microprocessors & Microcomputer -Based System Design
2. T. Hanley   :Microprocessor and microcomputer
3. John F. wakerly   :Micro Computer architecture and programming
4. John P. Hayes   :Compute architecture and organization
5. Bary B Brey   :The INTEL Microprocessors 8086/8088
6. Douglas V.   :Hall, Microprocessor and Interface.
7. Ramesh Gaonker   :Microprocessor Interfacing
8. Mohamed Ali Mazidi, Janice Gillispie Mazidi :The 8051 microcontroller and embedded systems

Course Code: CSE-3524
Course Title: Microprocessors, Microcontrollers and Embedded Systems Lab
Credit Hours: 1 Contact Hours: 2

Course Objectives:
This course introduces the assembly language programming of 8086 and 8051 microcontroller. It gives a practical training of interfacing the peripheral devices with the 8086 microprocessor. The course objective is to introduce the basic concepts of microprocessor and to develop in students the assembly language programming skills and real time applications of microprocessor as well as microcontroller.

Outcome:
After complete the course the students will be able to:
- Understand and apply the fundamentals of assembly level programming of microprocessors and microcontroller.
- Familiarize the architecture of 8086 processor and interfacing with various modules.
- Understand of 8051 Microcontroller concepts, architecture, programming and application of Microcontrollers.
- Do any type of embedded systems, industrial and real time applications by knowing the concepts of Microprocessor and Microcontrollers.

Syllabus:

Exp. No.	Name of Experiment
1	Arithmetic operations in 8086 trainer KIT: Multi-byte Addition, Subtraction, Multiplication, Division
2	Finding Arithmetic mean of given numbers, and Searching for smallest and largest number from the array of given numbers using 8086 KIT
3	Running Program Code in 8086 KIT using Serial Monitor
4	Experiments with Interrupt System
5	Experiments with 8253 Interface
6	Controlling LED with 8255A Interface
7	Controlling 8x8 Dot-Matrix LED using 8255A Interface
8	Controlling 7 Segment display using 8255A Interface
9	Experiment with Speaker Interface
10	Experiments with 8251A Interface
11	Interfacing D/A Converter
12	Interfacing A/D Converter
13	Stepping Motor Control
14	Interfacing LCD Display

Course Code: CSE-3525   Course Title: Data Communication
Credit Hours: 3 Contact Hours: 3

Course Objectives:
- Understand about the different types policy-making organizations of the communication world.
- Grasp concepts of LANs, MANs, and WANs.
- Understand and explain underlying network concepts.
- Understand the signals using in communication.
- Understand and compare among the various types of modulation techniques.
- Understand interfacing and modem's functions.
- Understand the properties of the transmission media both the guided and unguided and its effect on the signals.
- Understand switching, multiplexing and error handling of signals

Learning outcomes:
After completing this course the student must demonstrate the knowledge and ability to:
- Independently understand basic computer network technology.
- Understand and explain Data Communications System and its components.
- Identify the different types of network topologies and protocols.
- Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.
- Identify the different types of network devices and their functions within a network.
- Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.

8 Stanza Syllabus:

Stanza	Topics
1	Data Communication fundamentals and Netowrk Model: Trend of data communication, Data communication's components, Network criteria, Protocols and Standards, Standards Organizations, Basic concepts of line configuration, Topology, Transmission modes and Categories of Networks, Introduction to network standards and protocols, Layerd approach of communication study, OSI model and function of its seven layers, TCP/IP protocol suite and addressing.
2	Signal and system, Transmission media, interfaces: Analog signal, digital signals, periodic signal, Time and Frequency domain, Composite Signals, Decomposition of digital signal,bandwidth, throughput, transmission impairment: attenuation, distortion and noise. Nyquist bit rate, Shannon capacity and performance analysis, Electromagnetic wave, Electromagnetic spectrum, Guided media: twisted pair cable, coaxial and fiber optic cable. Unguided media: radio wave, microwave and Infrared. Standard connectors, NIC, HUB, bridge, router, gateway and modems, antenna.
3	Digital Transmission: Digital to digital conversion, Line encoding schemes, block coding, scrambling, Analog to digital conversion, PAM, PCM, and DM, Transmission modes: parallel, serial, synchronous, and asynchronous.
4	Analog Transmission: Digital to analog conversion: ASK, FSK, PSK, QAM, MSK, GMSK etc.,Bandwidth utilization, Analog to digital conversion: AM, FM and PM.
5	Multiplexing, Spreading and switching: Multiplexing – FDM, WDM, TDM (Synchronous and statistical) spread spectrum FHSS & DSSS, packet-switched data networks, circuit switched data networks, Virtual Circuit networks.
6	Error-Recovery and Link-Control: Data link layer and control, Error detection and correction, framing, flow and error control, Stop-and-Wait protocol, Automatic Repeat Request (ARQ), Go-Back-N, Selective Repeat, HDLC, PPP
7	Multiple Access: Wired LAN, Wireless LAN, Connecting LAN, Backbone networks and virtual LAN.
8	Wireless WANS and Optical Networks: Cellular Telephone, Sattelite Networks, SONET/SDH.

Recommended Books
1. Behrouz A Forouzan: Data Communications and Networking. (4th Edition)
2.Willium Stallings: Data and computer communication, Seventh edition.
3. Andrew S Tanenbaum: Computer Networks
4. F. Halsall : Data communication Computer Network and open system

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Course Objectives:
- Grasp of compiler construction.
- To introduce the major concept areas of language translation and compiler design.
- To enrich the knowledge in various phases of compiler ant its use, code optimization techniques, machine code generation, and use of symbol table.
- To extend the knowledge of parser and understand the theory and practice of compiler implementation.
- To provide practical programming skills necessary for constructing a compiler
- Utilize tools to automate compiler construction.
- Develop a large, complex, but well-structured software system that implements various phases of a compiler such as the scanner, parser, code generator, and optimizer.

Learning outcomes:
After complete the course the students will be able to:
- Ability of a compiler construction
- Apply the knowledge of LEX tool and YACC tool to develop a scanner and parser.
- To design & conduct experiments for Intermediate Code Generation in compiler.
- To design & implement a software system for backend of the compiler.
- To deal with different translators.
- To develop program to solve complex problems in compiler
- To learn the new code optimization techniques to improve the performance of a program in terms of speed & space.
- To acquire the knowledge of modern compiler & its features.
- To learn & use the new tools and technologies used for designing a compiler
- To use the knowledge of patterns, tokens & regular expressions for solving a problem in the field of data mining.

8 Stanza Syllabus:

Stanza	Topics
1	Structure of compiler: Translator, Basic principles of compilers and compiler design, types of compilers, applications, phases of a compiler.
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.
3	Automata: Lexical analysis, Regular expressions, finite automata, Non-deterministic Finite-State Automata, Minimization of Finite-State Automata, DFA, Symbol table management.
4	Syntax Analysis: Parser, Error-Recovery, Left recursion, Left factoring, Top-Down Parsers, FIRST and FOLLOW, Recursive-Descent and Predictive Parsing, LL(1) parsing.
5	Parsing: Bottom-Up Parsing, Operator Precedence parsing, LR Parsers, Construction of SLR, CLR, LALR Parse Tables, Shift-Reduce Parsing.
6	Syntax-Directed Translation: Syntax-Directed definitions, Semantic Rules, Dependency Graph, Attributes, Construction of Syntax trees, Type checking, Type expressions, Translation Scheme, Type checking of expressions, statements and functions, Type conversions.
7	Intermediate code generation: Run time environments, Activation tree, Control stack, rRun time storage organization, Storage allocation strategies, Intermediate languages, three address statements, quadruples, triples, indirect triples and polish notations.
8	Code Generation and Optimization: Code generation issues, Instruction costs, Basic blocks, Flow graphs, DAG representation, Next use information, Transformations of Basic Blocks, Peephole optimization, Function preserving transformations, Optimization of Basic Blocks, Different models of code generation, error detection and error handling.

Recommended Books:
1. William A Barret, R. M. Bates   : Compiler Construction theory and   practice
2. Compiler principles, technique and tools   : Alfred V. Aho, Ravi Sethi
3. A.J Holub   : Compiler Design in C.
4. Trembly and Sorensen   : Theory and Practices of Compiler Writing.

Course Code: CSE-3528   Course Title: Compiler Lab
Credit Hours: 1 Contact Hours: 2

Course Objectives:
- To implement the Lexical Analyzer by using various Lexical Analyzer tools and C programming language
- Design and implementation of Syntax Analyzer and parser
- Experiments for NFA, DFA, CFG from given regular expression
- Develop the program to solve complex problems in compiler
- Design and implement the frontend of the compiler by means of generating Intermediate codes.
- To implement code optimization techniques.
- To implement the backend of the compiler
- To provide an Understanding of the language translation peculiarities by designing complete translator for a simple language
- Construction of the compiler for C programming language

Learning outcomes and competences:
- After complete the course the students will be able to:
- Apply the knowledge of lexical analyzer tools to develop a scanner, tokenizer and parser.
- Design and conduct experiments for NFA, CFG and DFA from a given regular expression
- Design and implement a front end of the compiler.
- Develop program for implementing symbol table.
- Programming implementation to solve the parser problems.
- Program writing for intermediate code generation.
- Learn the new code optimization techniques and apply it to improve the performance of a program in terms of time and space.
- Learning and use of the new tools and technologies for designing a compiler
- Professional Skills: The ability to research, understand and implement computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient analysis and design of computer-based systems of varying complexity.
- Problem-Solving Skills: The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.
- Successful Career and Entrepreneurship: The ability to employ modern computer languages, environments, and platforms in creating innovative career paths, to be an entrepreneur, and a zest for higher studies.

Lab No.	Name of Experiments
1	Introduction to compiler sessional, basic C programming structures, Basic compiler construction tools (LEX, YACC etc.)
2	Implementation of comments remover of C program in C programming language
3	Implementation of identifier and number checker of C program in C
4	Implementation of tokenizer by using C programming language
5	Implementation of Lexical analyzer using by LEX tool
6	Implementation of Syntax analyzer using by YACC tool
7	**Mid-term Examination**
8	Implementation of FIRST and FOLLOW of non-terminals from a CFG grammar
9	Implementation of left factoring and Left recursion remover in C
10	Implementation of Predictive Parsing Table using FIRST and FOLLOW from a grammar
11	Implementation of Shift-reduce Parser from a CFG
12	Construction of Calculator using LEX and YACC (Project)
13	Implementation of intermediate code generation using C programming
14	Lab report and project submission. Preparation for semester final examination

Text Books:
   1)   **Compilers, Principles Techniques and Tools**, Alfred V Aho, Ravi Sethi, Jeffrey D. Ullman, 2nded, earson, 2005
Recommended Books:
   1. **Compiler Construction theory and practice**, William A Barret, R. M. Bates, 2nd Ed.
   2.**Compiler Design in C**, A.J Holub
Flex and Bison: Text Processing Tools, Levine. O'Reilly Media. 2009. ISBN: 0596155972

Course Objectives:

The student who completes this course should know:

1. The traditional systems/software development methodologies.
2. Traditional analysis and design techniques: entity-relationship diagrams, data flow diagrams, and data dictionaries.
3. How to use prototyping in the analysis and design phases of systems development.
4. Project planning: defining the scope, purpose and activities of a project; setting up a project management web page.
5. PERT/CPM project management techniques, including the use of Microsoft Visio.
6. What a CASE tool is and how it is used in software development.
7. How Object Oriented methodology techniques work.

8 Stanza Syllabus:

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.
4	Tools of analysis and design: Data Flow Diagram(DFD), DFD symbols, Constructing DFD; Data Dictionary; Decision Tree, Structured English, Decision Tables.
5	System Design and Construction: The process of design, System design phases, Design methodologies; Structured design; Form-Driven methodology; Input design, Output design, File and database design
6	Testing and Quality Assurance: Testing, Types of system tests; White-Box testing; Black-box testing; Quality factors specifications.
7	Implementation and Maintenance: Types of implementation, Documenting the system, Training and supporting users, Factor models of implementation success; The process of maintaining information system, Types of maintenance, Cost of maintenance, Reducing maintenance cost.
8	Hardware/ Software selection, control and security: Phases in selection, Criteria for software selection, Hardware selection, Financial considerations in selection; Security definitions, Threats to system security, Control measures, system failures and recovery.

Recommended Books:

1. System Analysis and Design	: Alan Dennis, Barbara Haley Wixom
2. System Analysis and design	: Elias M. Awad
3. System Analysis and Design Methods	: Jeffrey L. Whitten, Lonnie D. Bentley
4. Modern System Analysis and Design	: Jeffrey A. Hoffer, Joey F. George and Joseph S. Valacich

Course Objectives:
- To understand the concept of Web Application Development and its Architecture.
- To understand the Essentials of Web Application Development.
- To understand and practice web page designing techniques.
- To understand and practice embedded dynamic scripting on client side Internet Programming.
- To understand the differences between client side & server side technologies to develop Web Application.

Course Outcomes:
- Able to design and implement Internet systems for enhancing practical knowledge.
- Able to understand functionality of Internet system.
- Able to design a system according to customer needs using the available Internet technologies.
- Able to Design and develop interactive, client-side, server-side executable web applications.

List of Experiments
HTML: Basic, Elements, Attributes, Headings, Paragraphs, Formatting, Links, Head, Images, Tables, Lists, Blocks, Layout, Forms, Colors, Colornames, CSS, JavaScript, Entities, URL Encode, Quick List
CSS: Introduction, Syntax, Id & Class, Styling Backgrounds, Text, Fonts, Links, Lists, Tables, Box Model, Border, Outline, Margin, Padding, Grouping/Nesting, Dimension, Display, Positioning, Floating, Align, Navigation Bar, Image Gallery
JavaScript: Introduction, Output, Statements, Comments, Variables, Data Types, Objects, Functions, Operators, Comparisons, Conditions, Loop, Errors, DOM Introduction, Number, String, Date, Array, Window, Screen, Location, History, Navigator, Popup Alert
PHP part 1: Syntax, Variables, String, Operators, If…Else, Switch, Arrays, While Loops, For Loops, Functions, Forms, $_GET, $_POST
PHP part 2: Date, Include, File Upload, Cookies, Sessions, E-mail, Error, Exception,, PHP Database, PHP ODBC
MySQL part 1: Select, Distinct, Where, And & Or, Order By, Insert, Update, Delete, Like, In, Between, Alias, Joins, Union, Create DB, Create Table, Primary Key,
MySQL part 2: Foreign Key, Drop, Alter, Increment, Views, Dates, Functions- avg(),count(),max(),Group By, Having, format()

Recommended Books:

1. Deitel, Deitel, and Nieto   "Internet & World Wide Web How to Program", Third Edition.
2. Marty Hall and Larry Brown   "Core Web programming", Second Edition.
3. Jackson,   "Web Technologies", Pearson Education, 2008.
4. B. Patel &Lal B. Barik,   " Internet & Web Technology ", Acme Learning Publishers
5. Leon and Leon, "Internet for Everyone", Vikas Publishing House.

Course code: EEE-2421
Course title: Electrical Drives and Instrumentation
Credit Hours: 2   **Contact Hours: 2 per Week**

Objectives:
This course is designed to provide students. The material will be presented using the normal mix of lectures and laboratory experiments and demonstrations. This course objective is also to
- To provide technical knowledge to solve industrial problems related to AC and DC Drives systems
- To introduce the students to electrical measurement and instrumentation techniques.
- To introduce the basic concepts and working principles of electrical machines

COURSE OUTCOMES:
The students will be able to
- Understand the basics of energy conversion and identify the different features of electrical machines.
- Carry out analysis of different electrical machines.
- Choose suitable electrical machine for specific applications.
- Analyze various measuring techniques for both electrical and non-electrical quantities.
- Evaluate measurement techniques for instrumentation.
- Prepare a written and oral presentation on an issue of electrical machines Design, Operation & Control

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

Section-B (Final Exam: 50 Marks)
Group-A (20 Marks)
4. **Induction Motor Drives:** Principles of operation and basic construction of three-phase induction motor. Slip equation, equivalent circuit, determination of equivalent circuit parameters by no-load and blocked-rotor tests. Volts per Hertz drives, Flux vector control drives, Direct torque control drives, Soft-Starters, Selection of speed drives and soft starters, Line reactors, Troubleshooting of AC Drives system, Drives parameter programming.

5. **Synchronous Motor Drives:** Stepper Motor Drives, Switched reluctance motor drives, Permanent Magnet Synchronous Motor (Interior Permanent Magnet and Surface Permanent Magnet, Brushless DC motor). Thyristor and microprocessor based speed control of motors.

Group-B (30 Marks)

6. **General Concepts of Measurements and instrumentations**
   Variables and measurement signals, the three stages of generalized measurement system, some common terms used in the measurement system, mechanical loading, impedance matching, and frequency response. Factors considered in selection of instruments - Measurement accuracy and precision. Error analysis and classification, sources of error.

7. **Instrumentation amplifiers:** Differential, logarithmic and chopper amplifiers; Frequency and voltage measurements using digital techniques; Recorders and display devices, spectrum analyzers and logic analyzers

8. **Measurement of Non Electrical Quantities: Transducers-** terminology, types, principles and application of photovoltaic, piezoelectric, thermoelectric, variable reactance and optoelectronic transducers; Measurement of Temperature: Resistance thermometer, and thermo couples.

Reference Books:

1. Malaric, R., "Instrumentation and Measurement in Electrical Engineering", Brown Walker Press, 2011. (textbook)
2. Sawhney, A.K., "A Course in Electrical and Electronic Measurement and Instrumentation", Dhanpat Rai & Sons, New Delhi, 2001
3. Ernest, O. Doeblin., "Measurement Systems: Applications and design", Mc-Graw Hill, 2004.
4. Beckwith, T.G and Buck, N.L., "Mechanical Measurements", Addition Wesley, 2007.
5. Golding, E.W., and Widdis, F.C., "Electrical Measurements and Measuring Instruments", A H Wheeler & Company, Calcutta, 1993.
6. B.L. Theraja & A.K. Theraja : A textbook of Electrical Technology
7. Stephen J. Chapman : Electric Machinery Fundamentals

Course code: EEE-2422   Course title: Electrical Drives and Instrumentation Lab
Credit Hours: 1   **Contact Hours:** 2 per Week
Laboratory works based on CSE-2421

1. To study the characteristics of motor
2. To study the characteristics of chopper amplifier
3. To construct a multimeter.
4. To perform also other experiments relevant to this course.

SECTION-A (MIDTERM EXAM: 30 MARKS)

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

SECTION-B (FINAL EXAM: 50 MARKS)

CHAPTER# 04	**Legislative (*Al-Shura*):** Meaning, Importance, Example and Functions **The Judiciary (*Al-Qada'*):** Meaning, Importance, Nature and Implementation, Types of Punishment **Citizenship (Nationality):** Meaning, Types, Rights *Hisbah:* Meaning, Importance, Objectives, Functions and Selection of *Mushtasib*
CHAPTER# 05	**Social Behavior:** **Dealings and Behavior in Islam (*Mu'amalah*):** Its Meaning, Definition and Scope. **Family life in Islam*:* (a) Role of Marriage as the basis of Islamic Family (b) Status of women in Islam, comparison with other religion (c) Rights and duties of women in Islam (d) Husband-wife relations (Duties and obligations to each other) (e) Rights of children in Islam (f) Duty towards Parents.
CHAPTER# 06	**Principles of Islamic Economic System:** (a) Earning and expenditure by *Halal* means (b) Right to own property and individual liberty (c) System of *Zakah* (d) Prohibition of interest (*Riba*) (e) Law of Inheritance (*Mirath*) (f) Various Islamic transactions.
CHAPTER# 07	**Political System:** Definition, Principals**,** Islamic State, Islamic monuments. **Dress code:** Dress code in Islam for male and female **Duties and obligations towards:** Relatives, Neighbors, Guests, Needy and Orphan.
CHAPTER# 08	**Basic virtues and Islam,** Duties of the Muslims to each other (1) Honesty (2) Truthfulness (3) Kindness (4) Perseverance (5) Firmness against evil (6) Tolerance (7) Punctuality (8) Courage (9) Trustworthiness (10) Forgiveness (11) Chastity for women (12) Intention (13) Modesty (14) Charity (15) Gifts (16) Thankfulness (17) Visiting the sick. Vices, Greediness, Jealousy, enviness, hated …etc. **Social Manners:** (1) Brotherhood (2) Greetings (3) Co-operation (4) Meetings (5) Talking (6) Keeping promises (7) Asking permission before entering someone's house. Welfare.