Summary of the Courses

3rd Year 2nd Semester

Sl. No.	Course No.	Course Title	Theory hrs/week	Sessional hrs/week	Credits
1.	CSE-3122	Software Development Project	0	3	1.50
2.	CSE-3221	Operating System	3	0	3.00
3.	CSE-3222	Operating System Sessional	0	3/2	0.75
4.	CSE-3223	Compiler Design	3	0	3.00
5.	CSE-3224	Compiler Design Sessional	0	3/2	0.75
6.	CSE-3821	Computer Architecture	3	0	3.00
7.	CSE-3421	Data Communication	3	0	3.00
8.	CSE-3422	Data Communication Sessional	0	3/2	0.75
9.	CSE-3621	Information System Analysis & Design	3	0	3.00
10.	CSE-3622	Information System Analysis & Design Sessional	0	3/2	0.75
		Total	**15**	**9**	**19.50**

Contact Hours: 15T + 9S = 24 hrs/week

Total credits: 19.50

No. of Theory Courses: 5

No. of Lab / Sessional courses: 5

Detailed Syllabus

CSE-3122 Software Development Project

3 Hours/week **1.50 Credits**

Students will work in groups or individually to develop software/projects including new I/O drivers or similar projects involving operating systems modules in different types of data base systems or object oriented and latest visual programming languages. Students will submit source code and proper documentation.

CSE-3221 Operating System

3 Hours/week **3.00 Credits**

Introduction operating system, goals and components of operating system. Process management, process states and states transition, process control blocks, job and process scheduling, scheduling levels, objective and criteria. CPU scheduling algorithm, process co-ordinations critical section problems, semaphores. Deadlock: prevention, avoidance, detection and recovery.

Memory management, virtual memory, file system , file organization, space allocation, file access control mechanisms, Disk scheduling algorithm, parallel processing. Operating systems security. Function of UNIX.

CSE-3222 Operating System Sessional

3/2 Hours/week **0.75 Credits**

Sessional based on Operating Systems (CSE –3221)

CSE-3223 Compiler Design

3 Hours/week **3.00 Credits**

Introduction to compiler: Compiling techniques including parsing, semantic processing, and optimization, compiler and translator writing systems. Lexical analyzer, regular expression, non-deterministic finite automata (NFA)

and deterministic finite automata (DFA), contexts free grammar, ambiguous grammar, and basic parsing techniques. Scope rules, intermediate code, block structure, data structure for symbol table and symbol tables, run-time stack management and run time support, parameter passing mechanisms; stack storage organization and templates, heap storage management. Code generation macros: code optimization, error management, error detection and recovery. A small project.

CSE-3224 Compiler Design Sessional

3/2 Hours/week **0.75 Credits**

Sessional based on Compiler Design (CSE - 3223)

CSE-3821 Computer Architecture

3 Hours/week **3.00 Credits**

Introduction to computer hardware and software. Addressing methods and machine level instructions. Instruction sets. Components of a computer system: Processors, memory, secondary storage devices and media, and other input output devices. Processor organization: register, buses, multiplexes, decoders, CPU, ALU, clocks, main memory and caches. Arithmetic and logical processing unit, micro-programmed control unit. Information representation and transfer; instruction and data access methods; the control unit: hardware and micro-programmed. Interrupts, DMA, memory organization, computer peripherals, Von Neuman SISD organization, RISC and CISC machines.

CSE-3421 Data Communications

3 Hours/week **3.00 Credits**

Signals: Analog and Digital, Digital transmission: Line Coding, Sampling, PAM, PCM, PPM, PWM, DM, transmission mode, Analog transmission: Modulation of Digital Data: ASK, FSK, PSK, QPSK, OQPSK, QAM, Modulation of Analog Signal: AM, FM, PM, Multiplexing: FDM, WDM, TDM, Transmission Media, Error detection and correction, Data link control & protocols, GSM, CDMA.

CSE-3422 Data Communications Sessional

3/2 Hours/week **0.75 Credits**

Sessional based on Data Communications (CSE – 3421)

CSE-3621 Information System Analysis & Design

3 Hours/week **3.00 Credits**

Introduction to Information system and environment: Introduction to system, characteristics, organization & elements of system. Types of system. System Development life cycle: Introduction to SDLC, Feasibility study, Analysis, Design, Implementation, Post Implementation & maintenance, Consideration for candidate system. Role of the System Analyst. System planning & Initial Investigation, Information process & stages of System Design, Input/Output & Form Design, File Structure & organization. Database Design: Objective, Key terms, physical & logical views of Data, Data structure, Normalization System. Implementation: System Testing & Quality Assurance. Implementation & Software Maintenance, Hardware/ Software selection, Project scheduling & software Security, Disaster Recovery & Ethics in system development, Case study.

Object Oriented Modeling & Design: Introduction to object modeling & Functional Modeling. Object Oriented Analysis. Computer based information system.

CSE-3622 Information System Analysis & Design Sessional

3/2 Hours/week **0.75 Credits**

Sessional based on Information System Analysis & Design (CSE – 3621)