

300 LEVEL

FIRST SEMESTER CURRICULUM

Course Code	Course Title	U	L	T	P
CSC 301	Structured Programming	3	1	-	2
CSC 305	Algorithms and Complexity Analysis	3	2	1	-
CSC 307	Compiling Techniques	3	2	1	-
CSC 311	Software Engineering	4	3	-	1
CSC 319	Operating System	3	2	-	1
CSC 337	Computer Architecture & Organization	4	3	-	1
	Elective	3	3	-	-
Total		23	17	2	4

ELECTIVES

CSC 309	Information Technology Management	3	3	-	-
CSC 335	Operation Research	3	2	1	-
CSC 339	Web Programming	3	1	-	2

300 LEVEL

SECOND SEMESTER CURRICULUM

Course Code	Course Title	U	L	T	P
CSC 392	Industrial Training/Field Work	4	-	-	4
CSC 394	Inspection/Visitation	4	-	-	4
CSC 396	SIWES Report	4	-	-	4
CSC 398	Seminar	4	-	-	4
Total		16	-	-	16

CSC 301: STRUCTURED PROGRAMMING (3 Units)

Structured programming elements, structured design principles, abstraction modularity, stepwise refinement, structured design techniques. Teaching of a particular structured programming languages e.g. C++, Python, PASCAL, ALGOL etc. **Pre-requisite: CSC 203 or 204.**

CSC305: ALGORITHM AND COMPLEXITY ANALYSIS (3 Units)

Basic algorithm analysis: asymptotic analysis of upper and average complexity bounds; standard complexity classes time and space tradeoffs in algorithm analysis, recursive algorithm. Algorithm strategies: Fundamental computing algorithms: numerical algorithms, sequential and binary search algorithms; sorting algorithms, binary search trees, hash tables, graphs and its representation. **Pre-requisite: CSC 217.**

CSC 307: COMPILING TECHNIQUES (3 Units)

Review of compilers, assemblers and interpreters, structure and functional aspects of a typical compiler, syntax, semantics and pragmatics, functional relationship btw lexical analysis, expression analysis and code generation. Internal form of course programme. Use of a standard compiler, as a working example. Error detection and recovery. Grammars and languages, the parsing problem and the scanner. **Pre-requisite: CSC 206**

CSC 309: INFORMATION TECHNOLOGY MANAGEMENT (3 Units)

Concept and principles of Management, Functions of management. Information Technology Management. Challenges of Management. Technology assimilation. Information technology's strategies, IT policy and strategy, IT planning and strategic issues for senior executives. Developing the firm's IT strategy. IT controls and asset protection, Chief Information Officer duties and responsibilities. Team management, project management tools, software risk and quality assurance.

CSC 311: SOFTWARE ENGINEERING (4 Units)

Software Design: Software architecture, Design Patterns, O.O analysis and design, Design for re-use. Using APIS, API programming Class browsers and related tools, Component based computing. Software tools and Environment: requirements analysis and design modeling, Tools, Testing tools, Tools Integrating mechanisms.

CSC 319: OPERATING SYSTEM (3 Units)

Overview of O/S, Role & Purpose, Functionality Mechanism to Support client-server, models, hand-held devices, Design issues influence of security, networking, multimedia, Windows, O/S Principles, Structuring methods, Abstraction processes,, concept of APIS, device organization, interrupts. Concurrency: state and state diagram structures, dispatching and context switching; interrupt; concurrent execution'; mutual exclusion problem and some solutions deadlock; models and mechanisms (semaphores, monitors etc). Producer-consumers problems and synchronizations. Multiprocessor issues, Scheduling and dispatching. Memory management: overlays, swapping and partitions , paging and segmentation placement and replacement policies, working set and trashing, caching.

CSC 335: OPERATION RESEARCH (3 Units)

Phases of Operation Research study and modeling. linear programming, dynamic programming and integer linear programming, applications of linear and integer programming models in information systems, network models, inventory models, and queuing models, Decision theory and games, flow project controls etc.

CSC 337: COMPUTER ARCHITECTURE AND ORGANIZATION (4 Units)

Register transfer notation, memory, bus and CPU (datapath and control unit) design. Memory system, general characteristic of memory operation (technology-magnetic recording semiconductor memory, coupled devices, magnetic bubble). Memory addressing, memory hierarchy, virtual memory and control systems. Memory systems organization and architecture, Primary and secondary memories, core memory etc. magnetic devices disks, tapes video disks etc. Hardware control, micro programmed control, asynchronous control, I/C control. Peripheral devices, printers crt's keyboards character recognition, operational amplifiers analog-to -digital and digital- to-analog converter. Introduction to the methodology of faulty tolerance computing.

CSC339: WEB PROGRAMMING (3 Units)

Students should be exposed to the knowledge of HTML, PHP, Cascade Style, Javascript, WAMP Server. Web application design and development

CSC 392: INDUSTRIAL TRAINING/FIELD WORK (4 Units)

Every student in the Department of Computer Science must undergo an Industrial Attachment in a place relevant to the student's area of interest during the second semester of third year and long vacation of the penultimate year. Assessment of Log Books on six months industrial training activities in Information Technology industries and allied establishments.

CSC 394: INSPECTION AND VISITATION (4 Units)

Assessment of students in their respective industrial training locations.

CSC 396: SIWES REPORTS (4 Units)

Report of the acquired experience will be typed, bounded, submitted and presented. Assessment of this scientific writing of industrial training report.

CSC 398: SEMINAR (4 Units)

Final seminar on topics related to industrial experiences.