List of New Courses Introduced in the Academic Year 2016-2017
ODD SEM

S.No	Course Code	Name of the Course
1	SCS1201	Advanced Data Structures
2	SCS1208	Foundations for System Programming
3	SIT1616	Hardware Peripherals and Interfacing

SCS1201	ADVANCED DATA STRUCTURES	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 BASIC TREE CONCEPTS **9 Hrs.**

Trees- Ordinary and Binary trees terminology, Properties of Binary trees, Implementation using Array and Linked list - Binary tree ADT representations, recursive and non recursive traversals - Binary Search tree - Insertion and Deletion.

UNIT 2 ADVANCED TREE CONCEPTS **9 Hrs.**

Threaded Binary Trees, AVL Tree, B-tree Insertion and deletion, Splay trees - Heap trees - Heapify Procedure, Tries .

UNIT 3 GRAPH CONCEPTS **9 Hrs.**

Terminology, Representation using Array and Linked List - Types of graphs - Graph traversals - BFS and DFS - Applications.

UNIT 4 ADVANCED GRAPH CONCEPTS **9 Hrs.**

Minimum Spanning Tree - Kruskal's, Prim's and Sollin's Algorithm - Shortest path using Dijkstra's, Bellman Ford and Floyd Warshall Algorithm

UNIT 5 TABLES AND SETS **9 Hrs.**

Rectangular tables - Jagged tables - Inverted tables - Symbol tables - Static tree tables - Dynamic tree tables - Hash tables. Sets: Representation - Operations on sets - Applications.

Max. 45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to

CO1 : Implement the basics on linear data structures.
CO2 : Execute operations on tree data structures.
CO3 : Traverse the graph using BFS and DFS.
CO4 : Apply Spanning tree and shortest path algorithms in real time applications.
CO5 : Comprehend set operations and table data structures.
CO6 : Solve the problem of a non linear data structure using appropriate algorithm.

TEXT / REFERENCE BOOKS

1. Ellis Horowitz and Sartaj Sahni "Fundamentals of Data Structures" Galgotia Book Source, Pvt. Ltd., 2004.
2. M. A. Weiss, "Data Structures and Algorithm Analysis in C", Second Edition, Pearson Education, 2005.
3. Naps, Thomas L., and Bhagat Singh. "Introduction to Data Structure with Pascal". West Publishing Co., 1986.
4. Jean Paul Tremblay and Paul G. Sorenson, "An Introduction to Data Structures with Applications", Tata McGraw-Hill, Second edition, 2001.
5. Aaron M Tanenbaum, Moshe J Augenstein and Yedidyah Langsam, "Data Structures using C and C++", Pearson Education, 2004.
6. A. V. Aho, J. E. Hopcroft, and J. D. Ullman, "Data Structures and Algorithms", Pearson Education, First Edition Reprint 2003.
7. R. F. Gilberg, B. A. Forouzan, "Data Structures", Second Edition, Thomson India Edition, 2005.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks: 100 **Exam Duration: 3 Hrs.**

PART A: 2 Questions from each unit, each carrying 2 marks 20 Marks

PART B: 2 Questions from each unit with internal choice, each carrying 16 marks 80 Marks

SIT1616	HARDWARE PERIPHERALS AND INTERFACING	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 **9 Hrs.**

CPU Essentials - Processor Modes - Modern CPU Concepts - Architectural Performance Features – The Intel's CPU - CPU Over Clocking - Over Clocking Requirements - Over Clocking The System - Over Clocking The Intel Processors - Essential Memory Concepts - Memory Organizations - Memory Packages - Modules – Logical Memory Organizations - Memory Considerations - Memory Types - Memory Techniques - Selecting And Installing Memory.

UNIT 2 **9 Hrs.**

Active Motherboards - Sockets And Slots - Intel D850GB - Pentium4 Mother Board - Expansion Slots – Form Factor - Upgrading A Mother Board - Chipsets - North Bridge - South Bridge - CMOS - CMOS Optimization Tactics - Configuring The Standard CMOS Setup - Motherboard BIOS - POST - BIOS Features - BIOS And Boot Sequences - BIOS Shortcomings And Compatibility Issues - Power Supplies And Power Management - Concepts Of Switching
Regulation - Potential Power Problems - Power Management

UNIT 3 **9 Hrs.**

The Floppy Drive - Magnetic Storage - Magnetic Recording Principles - Data And Disk Organization – Floppy Drive - Hard Drive - Data Organization And Hard Drive - Sector Layout - IDE Drive Standard And Features – Hard Drive Electronics - CD- ROM Drive - Construction - CDROM Electronics - DVD-ROM - DVD Media - DVD Drive And
Decoder.

UNIT 4 **9 Hrs.**

Parallel Port - Signals And Timing Diagram - IEEE1284 Modes - Asynchronous Communication - Serial Por Signals - Video Adapters - Graphic Accelerators - 3D Graphics Accelerator Issues - Directx - Mice - Modems - Keyboards - Sound Boards - Audio Bench Marks.

UNIT 5 **9 Hrs.**

Buses - Industry Standard Architecture (Isa), Peripheral Component Interconnect (Pci) - Accelerated Graphics Port (Agp) - Plug-And-Play Devices - Scsi Concepts - Usb Architecture.

Max. 45 Hrs.

COURSE OUTCOMES

On completion of the course, student will be able to:

CO1 : Outline the importance of Social Network Analysis.
CO2 : Classify the social network models
CO3 : Describe cliques, clusters and components
CO4 : Predict the human behavior of the different communities
CO5 : Explain policies for privacy and trust
CO6 : Visualize data using visualization tools.

TEXT / REFERENCE BOOKS

Stephen J.Bigelow, "Trouble Shooting, maintaining and Repairing PCs", Tata McGraw-Hill, New Delhi, 2001.
Craig Zacker & John Rourke, "The complete reference:PC hardware", Tata McGraw-Hill, New Delhi, 2001
Mike Meyers, "Introduction to PC Hardware and Troubleshooting", Tata McGraw-Hill, New Delhi, 2003.
B.Govindarajulu, "IBM PC and Clones hardware trouble shooting and maintenance", Tata McGraw-Hill, New Delhi, 2002

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END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100 Exam Duration: 3 Hrs.
PART A: 2 Questions from each unit, each carrying 2 marks 20 Marks
PARTB: 2 Questions from each unit with internal choice, each carrying 16 marks 80 Marks