

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

Lesson Plan & Work-done Diary for AY:2026-27, ODD Semester

Course with Code: PARALLEL COMPUTING					Faculty: Dr. Pavithra A C		Semester & Section: 7 th	
Module	Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE-1	1		Introduction to parallel programming, Parallel hardware and parallel software	Chalk and Talk			Chalk and Talk	
	2		Classifications of parallel computers, SIMD systems					
	3		MIMD systems, Interconnection networks					
	4		Cache coherence					
	5		Shared-memory vs. distributed-memory					
	6		Coordinating the processes/threads					
	7		Shared-memory					
	8		Distributed-memory					

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

Course with Code: PARALLEL COMPUTING					Faculty: Dr. Pavithra A C		Semester & Section: 7 th	
Module	Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE-2	9		GPU programming, Programming hybrid systems, MIMD systems, GPUs, Performance	Chalk and Talk				
	10		GPU programming, Programming hybrid systems, MIMD systems, GPUs, Performance					
	11		GPU programming, Programming hybrid systems, MIMD systems, GPUs, Performance					
	12		Speedup and efficiency in MIMD systems					
	13		Amdahl's law					
	14		Scalability in MIMD systems					
	15		Taking timings of MIMD programs					
	16		GPU performance					

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

Course with Code: PARALLEL COMPUTING					Faculty: Dr. Pavithra A C		Semester & Section: 7 th	
Module	Class No.	Date planned (DD/MM M)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE-3	17		Distributed memory programming with MPI – MPI functions	Chalk and Talk				
	18		The trapezoidal rule in MPI					
	19		Dealing with I/O					
	20		Collective communication					
	21		MPI-derived datatypes					
	22		Performance evaluation of MPI programs					
	23		A parallel sorting algorithm					
	24		A parallel sorting algorithm					

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

Course with Code: PARALLEL COMPUTING					Faculty: Dr. Pavithra A C		Semester & Section: 7 th	
Module	Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE-4	25		Shared-memory programming with OpenMP – openmp pragmas and directives	Power Point Presentation (PPT) With projection				
	26		The trapezoidal rule, Scope of variables					
	27		The reduction clause, loop carried dependency					
	28		Scheduling					
	29		producers and consumers					
	30		Caches, cache coherence and false sharing in openmp					
	31		Caches, cache coherence and false sharing in openmp					
	32		tasking, thread safety.					

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

Course with Code: PARALLEL COMPUTING					Faculty: Dr. Pavithra A C		Semester & Section: 7 th	
Module	Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE-5	33		GPU programming with CUDA - GPUs and GPGPU	Power Point Presentation (PPT) With projection				
	34		GPU architectures					
	35		Heterogeneous computing, Threads, blocks					
	36		grids Nvidia compute capabilities and device architectures					
	37		Vector addition, Returning results from CUDA kernels					
	38		CUDA trapezoidal rule I, CUDA trapezoidal rule II: improving performance					
	39		CUDA trapezoidal rule III: blocks with more than one warp.					
	40		CUDA trapezoidal rule III: blocks with more than one warp.					

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

	Activity	Planned	Actual	Remarks
1	Theory Classes	40	40	
2	Assignments/Quizzes/ Self study	3/3	3/3	
3	Tutorials/ Extra classes	0	0	
4	Internal Assessments	3	3	
5	ICT based Teaching (% of usage in Curriculum)	40	40	
Planning			Execution	
Faculty Signature: Dr. Pavithra A C			Faculty Signature: Dr. Pavithra A C	
HoD Signature:			HoD Signature:	

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

Lesson Plan & Work-done Diary for AY: 2026, ODD Semester

Course with Code: PARALLEL COMPUTING –BCS702				Faculty: Dr.Pavithra A C			Semester & Section: VII	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
1.		Write a OpenMP program to sort an array on n elements using both sequential and parallel mergesort(using Section). Record the difference in execution time.	Lab Observation					
2.		Write an OpenMP program that divides the Iterations into chunks containing 2 iterations, respectively (OMP_SCHEDULE=static,2). Its input should be the number of iterations, and its output should be which iterations of a parallelized for loop are executed by which thread.	Lab Observation					
3.		Write a OpenMP program to calculate n Fibonacci numbers using tasks.	Lab Observation					
4.		Write a OpenMP program to find the prime numbers from 1 to n employing parallel for directive. Record both serial and parallel execution times.	Lab Observation					
5.		Write a MPI Program to demonstration of MPI_Send and MPI_Recv.	Lab Observation					

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

Course with Code: PARALLEL COMPUTING –BCS702				Faculty: Dr.Pavithra A C			Semester & Section: VII	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
6.		Write a MPI program to demonstration of deadlock using point to point communication and avoidance of deadlock by altering the call sequence	Lab Observation					
7.		Write a MPI Program to demonstration of Broadcast operation.	Lab Observation					
8		Write a MPI Program demonstration of MPI_Scatter and MPI_Gather	Lab Observation					
9		Write a MPI Program to demonstration of MPI_Reduce and MPI_Allreduce (MPI_MAX, MPI_MIN, MPI_SUM, MPI_PROD	Lab Observation					

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

	Activity	Planned	Actual	Remarks
1	No of Labs	10		
2	Assignments/ Quizzes/ Self-study	-		
3	Tutorials/ Extra classes	-		
4	Internal Assessments	2		
5	ICT based Teaching (% of usage in Curriculum)	100		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	