

SCTR'S PUNE INSTITUTE OF COMPUTER TECHNOLOGY  
DHANKAWADI, PUNE -43

**SCHEDULE OF LAB EXPERIMENTS**

ACADEMIC YEAR: 2021- 2022

DEPARTMENT : COMPUTER ENGG

DATE : 16/07/2021

CLASS : T.E


SEMESTER : I

SUBJECT : Laboratory Practice I

LAB Expt.No.	PROBLEM STATEMENT	LAST DATE FOR PERFORMANCE
	<b>Part I: Systems Programming and Operating System</b>	
	<b>Group A Assignments ( Any two assignments)</b>	
1.	A) Design suitable data structures and implement pass-I of a two-pass assembler for pseudo-machine in Java. Implementation should consist of a few instructions from each category and few assembler directives.	3 <sup>rd</sup> Week of August
	B) Design suitable data structures and implement pass-II of a two-pass assembler for pseudo-machine in Java. Implementation should consist of a few instructions from each category and few assembler directives. The output of Pass-I (intermediate code file and symbol table) should be input for pass-II.	4 <sup>th</sup> Week of August
2.	A) Design suitable data structures and implement pass-I of a two-pass macro-processor in Java	1 <sup>st</sup> Week of Sept
	B) Implement pass-II of a two-pass macro-processor in Java. The output of pass-I [assignment 2A] (MNT, MDT and file without any macro definitions) should be input for this assignment.	2 <sup>nd</sup> Week of Sept
3.	Write a program to create Dynamic Link Library for any mathematical operation and write an application program to test it. (Java Native Interface / Use VB or VC++).	1 <sup>st</sup> Week of Sept

	<b>Group B (Any Two Assignments)</b>	
1.	Implement program in C/C++/Java/Python to solve Classical Problems of Synchronization using Mutex and Semaphore.	5 <sup>th</sup> Week of July
2.	Write a program in C/C++/Java/Python to simulate CPU Scheduling Algorithms: FCFS, SJF (Preemptive), Priority(Non-Preemptive) and Round Robin (Preemptive).	5 <sup>th</sup> Week of July
3.	Write a program in C/C++/Java/Python to simulate Memory placement strategies – best fit, first fit, next fit and worst fit.	1 <sup>st</sup> Week of August
4.	Write a program in C/C++/Java/Python to simulate Page replacement algorithm.	1 <sup>st</sup> Week of August
	<b>Part II :Elective I (any two assignments) Distributed System</b>	
1.	Implementation (Unix C programming) of Inter-process communication using socket programming: implementing multithreaded echo server.	2 <sup>nd</sup> Week of Sept
2.	Implementation (Unix C programming/Java) of RPC Mechanism.	2 <sup>nd</sup> Week of Sept
3.	Simulation of election algorithms (Ring and Bully). (Unix C programming/Java)	3 <sup>rd</sup> Week of Sept
4.	Implementation of Clock Synchronization (C/C++/Java/Python): a) NTP b) Lamports clock.	3 <sup>rd</sup> Week of Sept
	<b>Part II :Elective I (any two assignments) Human Computer Interface (GUI in Python)</b>	
1.	Design a paper prototype for selected Graphical User Interface.	2 <sup>nd</sup> Week of Sept
2.	Implement GOMS (Goals, Operators, Methods and Selection rules) modeling technique to model user's behavior in given scenario.	2 <sup>nd</sup> Week of Sept
3.	Design a User Interface in Python.	3 <sup>rd</sup> Week of Sept
4.	To redesign existing Graphical User Interface with screen complexity.	3 <sup>rd</sup> Week of Sept

  
Subject Co-ordinator  
(Dr. Amar Buchade)

 19/07/2021  
Head of Department  
(Department of Computer Engg.)