

# PUNE INSTITUTE OF COMPUTER TECHNOLOGY

DHANKAWADI, PUNE -43

## SCHEDULE OF LAB ASSIGNMENTS

ACADEMIC YEAR: 2025- 2026

Department: Computer Engineering  
Class: T.E.  
Subject Name: Laboratory Practice-I  
Subject code: 310248

Date:01/07/2025  
Semester: I  
Examination scheme:  
Term Work: 25  
Practical: 25

PART I: Systems Programming and Operating System		
GroupA (Any Two Assignments from Sr. No.1 to 3)		
Expt. No.	Problem Statement	Last date for performance
A1-01	Design suitable Data structures and implement Pass-I of a two-pass assembler for pseudo-machine. Implementation should consist of a few instructions from each category and a few assembler directives.	02 Aug 2025
A1-02	Design suitable Data structures and implement Pass-II of a two-pass assembler for pseudo-machine. The output of Pass-I(intermediate code file, symbol table and literal table) should be input for Pass-II.	16 Aug 2025
A2-01	Design suitable data structures and implement Pass-I of a two-pass macro-processor.	30 Aug 2025
A2-02	Design suitable data structures and implement Pass-II of a two-pass macro-processor. The output of Pass-I(MNT, MDT, and intermediate code file without any macro definitions) should be input for Pass-II.	13 Sept 2025
Group B (Any Two Assignments from Sr. No.4 to 7) (Programming language: C/ C++/ JAVA/ Python)		
B1	Write a program to solve Classical Problems of Synchronization using Mutex and Semaphore.	12 July 2025
B2	Write a program to simulate CPU Scheduling Algorithms: FCFS,SJF (Preemptive),Priority (Non-Preemptive)and Round Robin (Preemptive).	12 July 2025
B3	Write a program to simulate Memory placement strategies–best fit, first fit, next fit and worst fit.	27 Sept 2025
B4	Write a program to simulate Page replacement algorithm.	27 Sept 2025

<b>PART II: Elective I</b>		
(Any Two assignments from each elective subject are compulsory, all the assignments should be covered among different batch students)		
<b>HumanComputer Interface</b>		
(Programming tools recommended: GUI in python)		
1	Design a paper prototype for selected Graphical User Interface.	04 Oct 2025
2	Implement GOMS (Goals, Operators, Methods, and Selection rules) modeling technique to model user's behavioral given scenario.	04 Oct 2025
3	Design a User Interface in Python.	18 Oct 2025
4	To redesign existing Graphical User Interface with screen complexity.	18 Oct 2025
<b>Distributed System</b>		
1	Implementation of Inter-process communication using socket programming :implementing multithreaded echo server.	04 Oct 2025
2	Implementation of RPC Mechanism.	04 Oct 2025
3	Simulation of election algorithms(Ring and Bully).	18 Oct 2025
4	Implementation of Clock Synchronization: a)NTP b) Lamport's clock.	18 Oct 2025



Subject Coordinator  
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