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COURSE FILE

ON

OPERATING SYSTEMS LAB

Course Code – CS406PC

II B.Tech II-SEMESTER A.Y.: 2022-2023

Prepared by

Mrs. T. RAMYA PRIYA

Assistant Professor

Computer Science & Engg. Dept. SRI INDU INSTITUTE OF ENGG & TECH. Sheriguda(M, Ibrahmnatnam/M), R.R.Disi-501 10.

Sheriguda(Vill), Ibrahimpatnam R.R. Dist. Telangana-501 510.

Main Road, Sheriguda, Ibrahimpatnam, R.R. Dist. 501 510. Campus Ph:9640590999, 9347187999, 8096951507.





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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Name of the Physical	OPERATING SYSTEMS LAB
laboratory:	
Course Code:	CSO46PC
Room No:	A-105
Name of the lab incharge	Mrs. B.SARITHA
Name of the faculty	Mrs. T. RAMYA PRIYA
incharge	

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

INSTITUTE VISION AND MISSION

Vision:

To become a premier institute of academic excellence by providing the world class education that transforms individuals into high intellectuals, by evolving them as empathetic and responsible citizens through continuous improvement.

Mission:

IM1: To offer outcome-based education and enhancement of technical and practical skills.

IM2: To continuous assess of teaching-learning process through institute-industry

collaboration.

IM3: To be a center of excellence for innovative and emerging fields in technology

development with state-of-art facilities to faculty and students fraternity.

IM4: To create an enterprising environment to ensure culture, ethics and social responsibility among the stakeholders

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DEPARTMENT VISION AND MISSION

Vision:

To become a prominent knowledge hub for learners, strive for educational excellence with innovative and industrial techniques so as to meet the global needs.

Mission:

- **DM1 :** To provide ambience that enhances innovations, problem solving skills, leadership qualities, decision making, team-spirit and ethical responsibilities.
- **DM2 :** To impart quality education with professional and personal ethics, so as to meet the challenging technological needs of the industry and society.
- **DM3 :** To provide academic infrastructure and develop linkage with the world class organizations to strengthen industry-academia relationships for learners.
- **DM4 :** To provide and strengthen new concepts of research in the thrust area of Computer Science and Engineering to reach the needs of Government and Society.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES

- **PEO1:** To develop trained graduates with strong academic and technical skills of modern computer science and engineering.
- **PEO2:** To promote trained graduates with leadership qualities and the ability to solve real time problems using current techniques and tools in interdisciplinary environment.
- **PEO3:** To motivate the graduates towards lifelong learning through continuing education and professional development.

PROGRAM SPECIFIC OUTCOMES

- **PSO1: Professional Skills:** To implement computer programs of varying complexity in the areas related to Web Design, Cloud Computing, Network Security and Artificial Intelligence.
- **PSO2: Problem-Solving Skills**: To develop quality products using open ended programming environment.

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PROGRAMME OUTCOMES (POs)

- **PO1:** Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **PO2: Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **PO3: Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **PO4:** Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **PO5:** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- **PO6:** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **PO7:** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **PO8:** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **PO9:** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **PO10:** Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **PO11: Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **PO12:** Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech in COMPUTER SCIENCE AND ENGINEERING

II YEAR COURSE STRUCTURE AND SYLLABUS (R18)

Applicable From 2022-23 Admitted Batch

II YEAR I SEMESTER

S. No.	Course	Course Title	L	Т	Ρ	Credits
	Code					
1	CS301ES	Analog and Digital Electronics	3	0	0	3
2	CS302PC	Data Structures	3	1	0	4
3	MA303BS	Computer Oriented Statistical Methods	3	1	0	4
4	CS304PC	Computer Organization and Architecture	3	0	0	3
5	CS305PC	Object Oriented Programming using C++	2	0	0	2
6	CS306ES	Analog and Digital Electronics Lab	0	0	2	1
7	CS307PC	Data Structures Lab	0	0	3	1.5
8	CS308PC	IT Workshop Lab	0	0	3	1.5
9	CS309PC	C++ Programming Lab	0	0	2	1
10	*MC309	Gender Sensitization Lab	0	0	2	0
		Total Credits	14	2	12	21

II YEAR II SEMESTER

S. No.	Course	Course Title	L	Т	Р	Credits
	Code					
1	CS401PC	Discrete Mathematics	3	0	0	3
2	SM402MS	Business Economics & Financial Analysis	3	0	0	3
3	CS403PC	Operating Systems	3	0	0	3
4	CS404PC	Database Management Systems		1	0	4
5	CS405PC	Java Programming	3	1	0	4
6	CS406PC	Operating Systems Lab	0	0	3	1.5
7	CS407PC	Database Management Systems Lab	0	0	3	1.5
8	CS408PC	Java Programming Lab	0	0	2	1
9	*MC409	Constitution of India	3	0	0	0
		Total Credits	18	2	8	21

*MC - Environmental Science – Should be Registered by Lateral Entry Students Only.

Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.



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CO's, PO's, PSO's MAPPING

AY:2022-2023

SEMESTER-II

Class : II CSE A

Course Outcomes:

After completing this course the student will be able to:

C226.1	•
$C_{220.1}$	•

Develop programs on CPU scheduling algorithms (Synthesis)

- C226.2. Construct the programs on file organization and file allocation techniques.(Analysis)
- C226.3: Solve deadlock avoidance and deadlock prevention using Bankers' algorithm. (Evaluation)
- C226.4: classify and construct programs on memory management techniques (Analysis)
- C226.5: Develop application programs using system calls (Synthesis)
- C226.6: Describe inter processes communication between the processes using semaphores and named pipes (Knowledge)

Mapping of course outcomes with program outcomes and program specific outcomes:

High -3						Med	Medium -2			Low-1				
PO/PSO/ CO	P01	P02	P03	P04	PO5	P06	P07	P08	P09	P010	P011	P012	PS01	PSO2
C226.1	1	3	2	-	-	-	-	-	-	-	-	-	2	-
C226.2	-	-	3	-	2	-	-	-	-	-	-	1	-	3
C226.3	2	-	2	-	3	-	-	-	-	-	-	-	2	-
C226.4	-	1	3	-	-	-	-	-	-	-	-	2	-	3
C226.5	3	-	2	-	-	-	-	-	-	-	1	-	-	-
C226.6	1	2	3	-	-	-	-	-	-	-	-	-	3	-
C226.7	1.7	2	2.5	-	2.5	-	-	-	-	-	1	2	-	-



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OPERATING SYSTEMS LAB

AY:2022-2023SEMESTER-IIClass: II CSE-AList of Programs Including Additional Programs and their CO, PO/PSO Mapping

SNO	Name of the program	СО	PO/PSO			
5110			РО	PSO		
1	 Write a c program to simulate the following CPU scheduling algorithms A) Round Robin B) SJF 	C226.1	PO1, PO2, PO3	PSO1		
2	2. Write a c program to simulate the following CPU scheduling algorithmsA) FCFSB) Priority	C226.1	PO1, PO2, PO3	PSO1		
3	 3. Write a c program to simulate the following file organization techniques A) Single level B) Two level C)Hierarchical 	C226.2	PO3, PO5, PO12	PSO2		
4	 4. Write a c program to simulate the following file allocation techniques a) Contiguous b) Linked c) Indexed 	C226.2	PO3, PO5, PO12	PSO2		
5	 5. Write a c program to copy contents of one file to another file using system calls. 6. Write a c program to simulate the bankers algorithm for avoid deadlocks 	C226.3& C226.5	PO1, PO3, PO5, PO11	PSO1		

6	7. Write a c program to simulate the bankers algorithm for deadlock detection	C226.3	PO1, PO3, PO5	PSO1
7	 8. Write a c program to simulate the following page replacement algorithms a. FIFO b. LRU c. LFU 	C226.4	PO2, PO3, PO12	PSO2
8	 9. Write a c program to simulate the following memory management techniques a. Segmentation b. Paging 	C226.4	PO2, PO3, PO12	PSO2
9	 10. Write a c program to implement the Ls sort command (use unnamed pipe) 11. Write a c program to solve the Dining Philosopher problem using semaphores 12. Write a c program to implement IPC between two un related processes using named pipe 	C226.6	PO1, PO2, PO3	PSO1
ADDITIC	DNAL PROGRAMS			
10	 Write a c program to solve the Reader- Writer problem using semaphores Write a c program to solve the Buffer- Reader problem using semaphores 	C226.6	PO1, PO2, PO3	PSO1



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				TIME TABLE	E FOR A.Y 202	2-23				
Class: II-B. Tecl	h CSE -A	Se	mester: II		LH. NO: A-30	1			W.E.F:	1-05-2023
Period/	1	2		3	4	1:00-	5	6		7
Day	9:40-10:30	10:30-	11:20	11:20-12:10	12:10-1:00	1:30	1:30-2:20	2:20-3	3:10	3:10-4:00
Monday	DM	JA	VALAB(BA	TCH-I) / DBMS LAB	(BATCH-II)	1	COI	JAV	ST25000	DBMS
Tuesday	OS	DBMS/J		LIB	DBMS		COI			SS/DAA
Wednesday	JAVA	0	S	DBMS	BEFA	LUN	DBMS LA	B(BATCH-I)	-I) /OS LAB (BATCH-II)	
Thursday	DM	CO	UN	BEFA	DM	CH	OS	DBM		BEFA
Friday	COI	IN	T	OS	JAVA/DBMS(T)		JAVA	BEF	A	SPORTS
Saturday	DBMS	D	M	JAVA	OS		OS LAB (BATCH	-I) / JAVAL	AB(BAT	СН-П)
SubjectCode CS401PC	Subject N Discrete Mathe			of the Faculty Naga Ratnam	Subject Code CS405PC		Subject Nar Java Programm			e of the Faculty .S .Swapna Shar
SM402MS	Business Econo Financial An		Mr.U	P Bharadwaja	CS406PC		Operating System	ns Lab	M	T.Ramya Priya/ rs P.Sowjanya/ Veera kishore K
CS403PC	Operating Sy	stems	Mrs '	Г.Ramya Priya	CS407PC Lab Dat		Database Management Systems		1.	D. Rajeswari/ V. ya/ Mr A Vijay Kumar
CS404PC	Database Mana Systems	<u> </u>	Mrs	D. Rajeswari	CS408PC		Java Programming Lab			.S .Swapna Shan R.Padma/ Mrs R Ganga
	CO-C/SS/D	AA	Mrs B.S	S.Swapna Shanti	MC409		Constitution of I	ndia	Mrs	K Laxmi Shilpa
Sports	Sports		Mr.	P Sreeramulu	LIB		Library		Mrs	T.Ramya Priya
is porto	Internet		Mı	D Nagaraju	COUN		Counselling			T.Ramya Priya
Internet			The second se	Mentor 1 : Mrs D.	and the second	_		Mrs B.S.		

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABADB.Tech. in COMPUTER SCIENCE AND ENGINEERING

II YEAR LABS SYLLABUS (R18) Applicable From 2022-23 Admitted Batch CS406PC: OPERATING SYSTEMS LAB (Using UNIX/LINUX)

B. TECH II Year II Sem

L T P C 0 0 3 1.5

Prerequisites:

- A course on "Programming for Problem Solving".
- A course on "Computer Organization and Architecture".

Co-requisite:

• A course on "Operating Systems".

Course Objectives:

- To provide an understanding of the design aspects of operating system concepts through simulation
- Introduce basic Unix commands, system call interface for process management, inter process communication and I/O in Unix

Course Outcomes:

- Simulate and implement operating system concepts such as scheduling, deadlock management, file management and memory management.
- Able to implement C programs using Unix system calls

LIST OF EXPERIMENTS:

- 1. Write C programs to simulate the following CPU Scheduling algorithms
 - a) FCFS b) SJF c) Round Robin d) priority
- 2. Write programs using the I/O system calls of UNIX/LINUX operating system (open, read, write, close, fcntl, seek, stat, opendir, readdir)
- 3. Write a C program to simulate Bankers Algorithm for Deadlock Avoidance and Prevention.
- 4. Write a C program to implement the Producer Consumer problem using semaphores using UNIX/LINUX system calls.
- 5. Write C programs to illustrate the following IPC mechanisms
 - a) Pipes b) FIFOs c) Message Queues d) Shared Memory
- 6. Write C programs to simulate the following memory management techniques
 - a) Paging b) Segmentation

TEXT BOOKS:

- Operating System Principles- Abraham Silberchatz, Peter B. Galvin, Greg Gagne 7thEdition, John Wiley
- 2. Advanced programming in the Unix environment, W.R.Stevens, *Pearson* education.

REFERENCE BOOKS:

- 1. Operating Systems Internals and Design Principles, William Stallings, Fifth Edition–2005, Pearson Education/PHI
- 2. Operating System A Design Approach-Crowley, TMH.
- 3. Modern Operating Systems, Andrew S Tanenbaum, 2nd edition, Pearson/PHI
- 4. UNIX Programming Environment, Kernighan and Pike, PHI/Pearson Education
- 5. UNIX Internals: The New Frontiers, U. Vahalia, Pearson Education

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OPERATING SYSTEMS LAB

AY:2022-2023

SEMESTER-II

Class: II CSE-A

External Examination Ouestion Paper

1. Write C programs to simulate the following CPU Scheduling algorithms

a) FCFS b) SJF c) Round Robin d) priority

- 2. Write programs using the I/O system calls of UNIX/LINUX operating system(open, read, write, close, fcntl, seek, stat, opendir, readdir)
- 3. Write a C program to simulate Bankers Algorithm for Deadlock Avoidance and Prevention.
- 4. Write a C program to implement the Producer Consumer problem using semaphores using UNIX/LINUX system calls.
- 5. Write C programs to illustrate the following IPC mechanisms
 a) Pipes b) FIFOs c) Message Queues d) Shared Memory
- 6. Write C programs to simulate the following memory management techniquesa) Paging b) Segmentation



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		Operating	g systems Lab		
	Ex	xternal Time T	able Examina	tion Branch	
А.	Y.: 2022-23				SEM-II
Date	Day	Branch	Session	HT.No	Total No. of Students
15/9/2023	FRIDAY	CSE-A	FN	21X31A0501 TO 21X31A0565 & 22X35A0501 TO 21X35A0508	69
19/9/2023	TUESDAY	CSE-B	FN	21X31A0566 TO 21X31A05D0 & 22X35A0509 TO 22X35A0516	69
19/9/2023	TUESDAY	CSE-C	AN	21X31A05D1 TO 21X31A05J4 & 22X35A0517 TO 22X35A0522	68

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Operating systems Lab External Time-Table with Examiner

A.Y.: 2022-23 SEM-II

		DEPARTMENT OF CO	MPUTER S	CIENCE & I	ME-TABLE, SEP-20 ENGINEERING(IOT N: 1:00PM TO 4:00F	,00,/11/12,/10000) Date:14/09/2023
s.NO	YEAR/SEC	NAME OF THE LAB	DATE	SESSION	LOCATION	NAME OF THE INTERNAL EXAMINER	NAME OF THE EXTERNAL EXAMINER
1		DBMS LAB	19/9/2023	FN	LAB NO-A-6&4	Mrs.D.Rajeshwar i	Mr.G.Harish Reddy (9963992727)
2	II-II-CSE-A	JAVA LAB	16/9/2023	FN ·	LAB NO-A-7&8	Mrs.B.S.Swapna shanthi	Dr.B.Srinu (8185924275)
3		OPERATING SYSTEMS LAB	15/9/2023	FN	LAB NO-A- 1&2	Mrs.P.Ramya priya	Mrs.R.Akshara (9177841919)
4		DBMS LAB	16/9/2023	FN	LAB NO-A-6&4	Mrs.D.Uma	Mr.N.SriAnjancya (9866858140)
5	II-II-CSE-B	JAVA LAB	15/9/2023	AN	. LAB NO-A-7&8	Mrs.M.Karuna	Mr.CH.CHAITANYAKU MAR(8500330546)
6		OPERATING SYSTEMS LAB	19/9/2023	FN	LAB NO-A- 1&2	Mr.D.Nagaraju	Mrs.Durga Devi (9948353838)
7		DBMS LAB	15/9/2023	FN	LAB NO-A-6&4	Mrs.P.H.Swama Rekha	Mr.S.Kranthi Reddy (9573013861)
8	II-I-CSE-C	JAVA LAB	16/9/2023	AN	LAB NO-A-7&8	Mrs.J.Priyanka	Mrs.K.L.Anusha (9704446862)
9		OPERATING SYSTEMS LAB	19/9/2023	AN	LAB NO-A- 1&2	Mr.P.Sreeramulu	Mr.Chaithanya Kumar (9989698416)

1801

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LAB OCCUPANCY CHART

OPERATING SYSTEMS LAB

	Ι	II	III	IV		V	VI	VII
	9:40-	10:30 -	11:20-	12.10-	1:00-	1:30-2:20	2:20-3:10	3:10-4:00
	10:30	11:20	12:10	1:00	1:30			
MON								
					L			
TUE					U			
					Ν			
WED					С		OS LAB (B	BATCH-II)
					H			
THU								
FRI								
							OS LAB (B	BATCH-I)
SAT								

Head of the Department Department of H&S SRI INDU INSTITUTE OF ENGG & TECH reriouda^[M] Ibrahimostnam ^[M] R.R. Dist-501 516

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Do's and Don'ts

Do's

- 1. Come with completed observation and record.
- 2. Remove your shoes or wear foot socks before you enter the lab.
- 3. Always keep quiet. Be considerate to other lab users.
- 4. Report any problems with the computer to the person in charge.
- 5. Shut down the computer properly.
- 6. Wear ID card before entering into the lab.

7. Read and understand how to carry out an activity thoroughly before coming to the laboratory.

8. Write in time, Out time and system details in the login register

Don'ts

- 1. Do not touch any part of the computer with wet hands.
- 2. Do not change system settings.
- 3. Do not hit the keys on the computer too hard.
- 4. Don't damage, remove, or disconnect any labels, parts, cables or equipment.

5. Do not install or download any software or modify or delete any system files on any lab computers.

- 6. Do not disturb your neighboring students. They may be busy in completing tasks.
- 7. Do not remove anything from the computer laboratory without permission.
- 8. Do not use pen drives.



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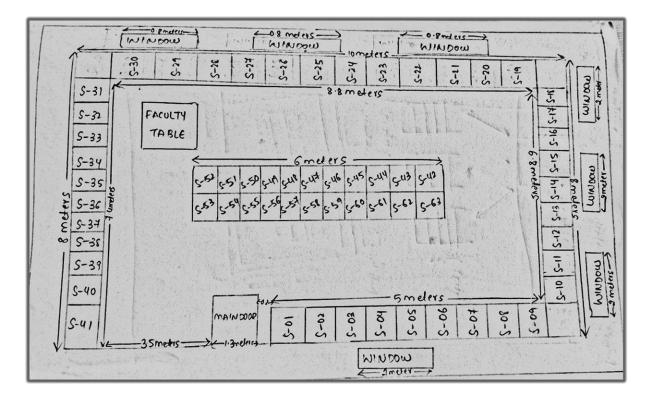
PHYSICAL LAB FLOOR PLAN

Lab Name: Lab- I

Room No: A-105

-105 Block: A

Floor No: 1st



Lab Area (in.sqm.) = (11.20*8.23) 92.176sqm

S - SYSTEM

Lab Area (in.sft.) =(120.55*88.58) 10,678.31sft

B. Rahia Kaul Head of the Department

Lab In-charge





Accredited by NAAC with A+ Grade, Recognized under 2(f) of UGC Act 1956. (Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderabad) Khalsa Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist., Telangana – 501 510 https://siiet.ac.in/

LAB MANUAL LINK:

https://drive.google.com/file/d/1fU8N-3YbKUsCmmE1GVkw2xOACPWrT_cv/view?usp=sharing

Department of Computer Science and Engineering

Course Outcome Attainment (Internal Examination-1)

Name of the	T. RAMYA	Academic Year:
faculty :	PRIYA	2022-2023
Branch &	CSE-A	Examination: I
Section:		Internal
Lab Course		Year/semester II/II
Name:	Operating	
	Systems Lab	

S.No	HT No.	A+A+CD+MG	T+P+C+R	DDE
Max. Ma	arks ==>	5	5	15
1	21X31A0501	4	4	10
2	21X31A0502	4	4	10
3	21X31A0503	5	5	13
4	21X31A0504	5	5	13
5	21X31A0505	4	4	15
6	21X31A0506	5	5	14
7	21X31A0507	5	5	11
8	21X31A0508	4	5	13
9	21X31A0509	5	4	12
10	21X31A0510	2	2	10
11	21X31A0511	5	5	11
12	21X31A0512	4	4	10
13	21X31A0513	5	5	12
14	21X31A0514	5	5	12
15	21X31A0515	5	5	13
16	21X31A0516	5	5	10
17	21X31A0517	5	5	11
18	21X31A0518	5	5	12
19	21X31A0519	5	5	12
20	21X31A0520	5	5	12
21	21X31A0521	5	5	11
22	21X31A0522	5	5	12
23	21X31A0523	5	5	12
24	21X31A0524	5	5	12
25	21X31A0525	5	5	13
26	21X31A0526	5	4	14
27	21X31A0527	5	4	13
28	21X31A0528	4	5	14
29	21X31A0529	5	5	13
30	21X31A0530	5	4	12
31	21X31A0531	2	2	10
32	21X31A0532	4	4	10
33	21X31A0533	5	5	12
34	21X31A0534	5	5	14
35	21X31A0535	2	2	14



	y the faculty / HoD	3.00	3.00	3.00
70	22X35A0508	5		
69	22X35A0507	5	5	12
68	22X35A0506	5	5	10
67	22X35A0505	5	5	12
66	22X35A0504	5	5	12
65	22X35A0503	5	5	12
64	22X35A0502	5	5	13
63	22X35A0501	5	5	12
62	21X31A0565	5	5	13
61	21X31A0564	5	5	11
60	21X31A0563	5	5	12
59	21X31A0562	5	5	13
58	21X31A0561	5	5	12
57	21X31A0560	5	5	13
56	21X31A0559	5	5	11
55	21X31A0557	5	5	12
54	21X31A0556	5	5	13
53	21X31A0555	5	5	10
52	21X31A0554	5	5	12
51	21X31A0552	5	5	13
50	21X31A0550	5	5	10
49	21X31A0549	5	5	12
48	21X31A0548	5	5	12
47	21X31A0547	2	2	10
46	21X31A0546	5	4	10
	21/01/00/0			
45	21X31A0545	5	5	14
44	21X31A0544	2	2	12
43	21X31A0542 21X31A0543	5	5	12
42	21X31A0541 21X31A0542	5	5	10
40	21X31A0540	5	5	10
40	21X31A0539	2	2	12
39	21X31A0538	5	4	12
38	21X31A0537 21X31A0538	5	5	10
37	21X31A0536 21X31A0537	4	4 5	10 10

68

70

97%

64

70

91%

63

69

91%

Number of students performed above the target

Number of students attempted

Percentage of students scored more than target

CO Mapping with Exam Questions:

CO - 1	у	У	Y
CO - 2	у	У	Y
CO - 3	у	у	Y
CO - 4	у	У	Y
CO - 5	у	у	Y
CO - 6	у	У	Y

CO Attainment based on Exam Questions:

CO - 1	91%	91%	100%
CO - 2	91%	91%	100%
CO - 3	91%	91%	100%
CO - 4	91%	91%	100%
CO - 5	91%	91%	100%
CO - 6	91%	91%	100%

СО	Intrnal practical	DDE	OveralI	Level
CO-1	91%	100%	96%	3
CO-2	91%	100%	96%	3
CO-3	91%	100%	96%	3
CO-4	91%	100%	96%	3
CO-5	91%	100%	96%	3
CO-6	91%	100%	96%	3

Attainment Level			
1	40%		
2	50%		
3 >60%			

Attainment (Internal 2 Examination) =

3



Department of Computer Science and Engineering

Course Outcome Attainment (Internal Examination-II)

Name of the	T. RAMYA	Academic Year:
faculty :	PRIYA	2022-2023
Branch &	CSE-A	Examination: II
Section:	0.0211	Internal
Lab Course		Year/semester II/II
Name:	Operating	
	Systems Lab	

S.No	HT No.	A+A+CD+MG	T+P+C+R	DDE
Max. Ma	arks ==>	5	5	15
1	21X31A0501	5	4	13
2	21X31A0502	5	5	13
3	21X31A0503	5	5	14
4	21X31A0504	5	5	12
5	21X31A0505	5	5	12
6	21X31A0506	5	5	15
7	21X31A0507	5	5	12
8	21X31A0508	5	5	13
9	21X31A0509	5	5	11
10	21X31A0510	5	5	10
11	21X31A0511	5	5	13
12	21X31A0512	5	5	13
13	21X31A0513	5	5	14
14	21X31A0514	5	5	13
15	21X31A0515	5	5	13
16	21X31A0516	5	5	13
17	21X31A0517	5	5	14
18	21X31A0518	5	5	13
19	21X31A0519	5	5	13
20	21X31A0520	5	5	13
21	21X31A0521	5	5	12
22	21X31A0522	5	5	14
23	21X31A0523	5	5	13
24	21X31A0524	5	5	12
25	21X31A0525	5	5	13
26	21X31A0526	5	5	15
27	21X31A0527	5	5	12
28	21X31A0528	5	5	12
29	21X31A0529	5	5	13
30	21X31A0530	5	5	13
31	21X31A0531	5	5	13
32	21X31A0532	5	5	13
33	21X31A0533	5	5	12
34	21X31A0534	5	5	15
35	21X31A0535	2	2	10

36	21X31A0536	5	5	14
37	21X31A0537	5	5	14
38	21X31A0538	5	5	12
39	21X31A0539	5	5	13
40	21X31A0540	5	5	14
41	21X31A0541	5	5	14
42	21X31A0542	5	5	13
43	21X31A0543	5	5	12
44	21X31A0544	5	5	12
45	21X31A0545	5	5	14

				-
46	21X31A0546	5	5	11
47	21X31A0547	5	5	13
48	21X31A0548	5	5	13
49	21X31A0549	5	5	13
50	21X31A0550	5	5	13
51	21X31A0552	5	5	13
52	21X31A0554	5	5	15
53	21X31A0555	5	5	13
54	21X31A0556	5	5	13
55	21X31A0557	5	5	13
56	21X31A0559	5	5	13
57	21X31A0560	5	5	15
58	21X31A0561	5	5	13
59	21X31A0562	5	5	13
60	21X31A0563	5	5	13
61	21X31A0564	5	5	12
62	21X31A0565	5	5	14
63	22X35A0501	5	5	14
64	22X35A0502	5	5	13
65	22X35A0503	5	5	13
66	22X35A0504	2	2	10
67	22X35A0505	5	5	14
68	22X35A0506	5	5	14
69	22X35A0507	5	5	14
70	22X35A0508	5	5	13
Target set by the faculty / HoD		3.00	3.00	9.00
Number o above the	f students performed target	68	68	70
Number o	of students attempted	70	70	70
Percentag than targe	e of students scored more	97%	97%	100%

CO Mapping with Exam Questions:

CO - 1	у	У	Y
CO - 2	у	у	Y
CO - 3	у	у	Y
CO - 4	у	У	Y
CO - 5	у	У	Y
CO - 6	У	У	Y

CO Attainment based on Exam Questions:

CO - 1	97%	97%	100%
CO - 2	97%	97%	100%
CO - 3	97%	97%	100%
CO - 4	97%	97%	100%
CO - 5	97%	97%	100%
CO - 6	97%	97%	100%

СО	Intrnal practical	DDE	OveralI	Level
CO-1	97%	100%	99%	3
CO-2	97%	100%	99%	3
CO-3	97%	100%	99%	3
CO-4	97%	100%	99%	3
CO-5	97%	100%	99%	3
CO-6	97%	100%	99%	3

Attainment Level							
1	40%						
2	50%						
3	>60%						

Attainment (Internal 2 Examination) =

3



Department of Computer Science and Engineering

Course Outcome Attainment (University Examinations)

3

Name of the faculty: Branch & Section: Lab Course Name:

T. RAMYA PRIYA CSE-A Operating Systems Lab Academic Year: Year / Semester:

2022-2023 Π/Π

.No	Roll Number	Marks Secured
1	21X31A0501	65
2	21X31A0502	68
3	21X31A0503	72
4	21X31A0504	68
5	21X31A0505	70
6	21X31A0506	74
7	21X31A0507	70
8	21X31A0508	65
9	21X31A0509	63
10	21X31A0510	60
11	21X31A0511	69
12	21X31A0512	65
13	21X31A0513	68
14	21X31A0514	68
15	21X31A0515	67
16	21X31A0516	68
17	21X31A0517	70
18	21X31A0518	70
19	21X31A0519	70
20	21X31A0520	70
21	21X31A0521	71
22	21X31A0522	72
23	21X31A0523	72
24	21X31A0524	66
25	21X31A0525	70
26	21X31A0526	73
27	21X31A0527	68
28	21X31A0528	67
29	21X31A0529	72
30	21X31A0530	70
31	21X31A0531	66
32	21X31A0532	68
33	21X31A0533	70
34	21X31A0534	73
35	21X31A0535	
36	21X31A0536	70
lass A	verage mark	
		ormed above the target
	er of successful stu	
ercent	tage of students sc	ored more than target
ttai	inment level	

S.No	Roll Number	Marks Secured
37	21X31A0537	70
38	21X31A0538	68
39	21X31A0539	60
40	21X31A0540	70
41	21X31A0541	70
42	21X31A0542	71
43	21X31A0543	67
44	21X31A0544	60
45	21X31A0545	72
46	21X31A0546	60
47	21X31A0547	65
48	21X31A0548	70
48	21X31A0549	67
50	21X31A0550	65
51	21X31A0552	67
52	21X31A0554	67
53	21X31A0555	67
54	21X31A0556	70
55	21X31A0557	70
56	21X31A0559	70
57	21X31A0560	70
58	21X31A0561	67
59	21X31A0562	70
6	21X31A0563	70
61	21X31A0564	70
62	21X31A0565	67
63	22X35A0501	67
24	22X35A0502	68
25	22X35A0503	67
66	22X35A0504	
67	22X35A0505	69
68	22X35A0506	67
69	22X35A0507	70
70	22X35A0508	71

Attainment Level	% students
1	40%
2	50%
3	>60%



Department of Computer Science and Engineering Course Outcome Attainment

Academic Year:2022-2023

T. RAMYA PRIYA Name of the faculty : CSE-A Branch & Section: Lab Course Name:

Year / Semester: II/II

Operating systems Lab

Course Outcomes	1st Internal Exam		Internal Exam	University Exam	Attainment Level
C01	CO1 3.00 3.		3.00	3.00	3.00
CO2	3.00	3.00	3.00	3.00	3.00
CO3	3.00	3.00	3.00	3.00	3.00
CO4	CO4 3.00		3.00	3.00	3.00
CO5	CO5 3.00		3.00	3.00	3.00
CO6 3.00		3.00	3.00	3.00	3.00
In	ternal & Univ	ersity Attainment:	3.00	3.00	
		Weightage	70%	30%	1
CO Attainment for t	he course (Int	ernal, University)	2.10	0.90	
CO Attainment for	r the course (I	Direct Method)	3.00]

Overall course attainment level: 3.00



Department of Computer Science and Engineering Program Outcome Attainment (from Course)

Name of Faculty: Branch & Section: Course Name:

T. Ramya Priya CSE-A Operating systems Lab

Academic Year: 2022-2023 Year / Semester:

II/II

PO/PSO/ CO	P01	PO2	PO3	P04	PO5	P06	P07	P08	P09	P010	P011	P012	PSO1	PSO2
C226.1	1	3	2	-	-	-	-	-	-	-	-	-	2	-
C226.2	-	-	3	-	2	-	-	-	-	-	-	1	-	3
C226.3	2	-	2	-	3	-	-	-	-	-	-	-	2	-
C226.4	-	1	3	-	-	-	-	-	-	-	-	2	-	3
C226.5	3	-	2	-	-	-	-	-	-	-	1	-	-	-
C226.6	1	2	3	-	-	-	-	-	-	-	-	-	3	-
C226.7	1.7	2	2.5	-	2.5	-	-	-	-	-	1	2	-	-

	3.00
CO1	
CO2	3.00
	3.00
CO3	
CO4	3.00
	3.00
CO5	
CO6	3.00
Overall	course attainment level 3.00

mapping

PO-ATTAINMENT

	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	2.5 0	3.00	1.20	1.50	1.00	1.00			2.50	1.00		2.17

CO contribution to PO - 33%, 67%, 100% (Level 1/2/