



IMS ENGINEERING COLLEGE, GHAZIABAD

(Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow, Uttar Pradesh & Approved by AICTE, New Delhi)

NH-09, Adhyatik Nagar, Near Dasna, Distt: Ghaziabad, Uttar Pradesh Website: <https://www.imsec.ac.in>

SUPPORTING DOCUMENTS NAAC AQAR: 2021-22

I.I.I	<p><i>The Institution ensures effective curriculum delivery through a well planned and documented process.</i></p> <p><i>Attachment: Supporting Document</i></p>
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IMS ENGINEERING COLLEGE, GHAZIABAD
ACADEMIC CALENDAR (As per AKTU) (EVEN SEM: 2021 - 22)

Feb-22						
M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						
T/ W Days : 19/24						

Mar-22						
M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			
T/ W Days : 16/23						

Apr-22						
M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	
T/ W Days : 16/25						

May-22						
M	T	W	T	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					
T/ W Days : 16/24						

Jun-22						
M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			
T/ W Days : 0/26						

Jul-22						
M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
T/ W Days : 0/26						

IMPORTANT DATES	HOLIDAYS	EXAMINATION / CLASS TESTS
Starting Date of Registration for B.Tech 6 th & 8 th Sem and MBA 4th Sem: 1 st Feb, 2022	01-Mar (TUE) : Maha Shivratri	CT1: 21st, 22nd & 23rd Mar, 2022
Commencement of Classes for B.Tech 6 th & 8 th Sem and MBA 4th Sem: 2nd Feb, 2022	17 MAR (THU) : Holika Dahan	CT2: 18th, 19th & 20th Apr, 2022
Starting Date of Registration for B.Tech 2 nd and 4 th Sem and MBA 2nd sem: 31st Mar, 2022	18-19 MAR (FRI-SAT) : Holi	PUT: 17th - 21st May, 2022
Commencement of Classes for B.Tech 2nd and 4th Sem and MBA 2nd sem: 31st Mar, 2022	10 APR (SUN) : Ramnavmi	AKTU End Semester Examinations 1st - 20th Jun, 2022
Upload Assignments (Important Dates)	14 APR (THU) : Ambedkar Jayanti	
Cultural Fest: VIBGYOR 11-12 Mar, 2022	03-MAY (TUE) : Eid-UI- Fitra	
Sports Fest / Chakravayuh* 24th-26th Mar, 2022	16-MAY (MON) : Budh Purnima	
Tech Fest* 22-23 Apr, 2022	10-JUL (SUN) : Eid-UI-Zoha	
Convocation 3rd April, 2022		

Total Teaching Days/Working Days (T/W) : 67/ 148

Faculty members are requested to 1) Upload the attendance after completion of the class (L/T/P) itself on the same day.
 2) Upload / Check / Submit the assignment as per schedule (weekly).

Registrar
 IMS Engineering College
 Ghaziabad

Note: Due to staggered semester for (1st & 2nd) and (3rd & 4th) year B.Tech and 1st & 2nd year MBA, rescheduling of some of the events as and when required shall be duly notified.

IMS ENGINEERING COLLEGE, GHAZIABAD
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
Faculty Subject Load 2021-22 (Even Semester)

S.No	Faculty Name	Subject	Sub Code	Yr/Sec	L	T	P	Total
1	Dr. Sonali Mathur	Data Analytics (IT)			3	0	0	7
		Data Analytics Lab (IT)			0	0	4	
2	Dr. Avdesh Gupta	Computer Network	KCS603	3/CSE3	3	2	0	11
		Computer Network Lab	KCS653	3/CSE3	0	0	4	
		Project	KCS852	4/CSE3	0	0	2	
3	Dr. Pushpa Chaudhary	Add on course (SQL)			8	0	0	8
4	Dr. Subhajit Ghosh	Natural Language Processing	KOE-083	4/CSE3	3	0	0	15
		Natural Language Processing	KOE-083	4/CSE4	3	0	0	
		Python (IT Branch)			7	0	0	
		Project	KCS852	4/CSE1	0	0	2	
5	Mr. N. U. Khan	Theory of Automata and Formal Languages	KCS402	2/CSE2	3	2	0	17
		Theory of Automata and Formal Languages	KCS402	2/CSE3	3	2	0	
		DSMM	KOE094	4/CSE4	3	0	0	
		Project	KCS852	4/CSE3	0	0	2	
		Project	KCS852	4/CSE1	0	0	2	
6	Dr. Amit Chugh	Operating Systems	KCS401	2/CSE4	4	0	0	17
		Computer Network	KCS603	3/CSE1	3	2	0	
		Computer Network Lab	KCS653	3/CSE1	0	0	4	
		Operating Systems Lab	KCS451	2/CSE4	0	0	4	
7	Ms. C. Pushpanjali	Object Oriented Programming	KOE064	3/CSE2	3	0	0	15
		Universal Human Values	KVE401	2/CSE1	3	0	0	
		Universal Human Values	KVE401	2/CSE2	3	0	0	
		Universal Human Values	KVE401	2/CSE3	3	0	0	
		Universal Human Values	KVE401	2/CSE4	3	0	0	
8	Mr. Vivek Jain	Computer Network	KCS603	3/CSE4	3	2	0	16
		Computer Network Lab	KCS653	3/CSE4	0	0	4	
		Computer Network	KCS603	3/CSE2	3	2	0	
		Add on course (APTI)			2	0	0	
9	Ms. Shaili Gupta	Theory of Automata and Formal Languages	KCS402	2/CSE1	3	2	0	15
		Python Programming	KNC402	2/CSE2	3	0	0	
		Python Lab	KCS453	2/CSE2	0	0	4	
		DSMM	KOE094	4/CSE3	3	0	0	
10	Mr. Mukesh Kumar Singh	Web Technology	KCS602	3/CSE2	3	2	0	15
		Web Technology Lab	KCS652	3/CSE2	0	0	4	
		Project	KCS852	4/CSE2	0	0	2	
		Add on course (Web Designing 2nd year)			4	0	0	
11	Ms. Anjali Sardana	Software Engineering	KCS601	3/CSE1	3	2	0	16
		Software Engineering Lab	KCS651	3/CSE1	0	0	4	
		Python Lab	KCS453	2/CSE4	0	0	4	
		Python Programming	KNC402	2/CSE4	3	0	0	
12	Mr. Hakim Singh	Web Technology	KCS602	3/CSE3	3	2	0	19
		Web Technology Lab	KCS652	3/CSE3	0	0	4	
		Software Engineering Lab	KCS651	3/CSE4	0	0	4	
		Project	KCS852	4/CSE4	0	0	2	
		Add on course (Web Designing 2nd year)			4	0	0	
13	Ms. Tanu Gupta	Natural Language Processing	KOE083	4/CSE2	3	0	0	16
		Natural Language Processing	KOE-083	4/CSE1	3	0	0	
		Big Data	KCS061	3/CS1	3	0	0	
		Big Data	KCS061	3/CSE2				
		Microprocessor	KCS403	2/CSE4	3	2	0	
		Project	KCS852	4/CSE3	0	0	2	
14	Dr. Ravi Sharma	Web Technology	KCS602	3/CSE1	3	2	0	16
		Web Technology Lab	KCS652	3/CSE1	0	0	4	
		Big Data	KCS061	3/CSE4	3	0	0	

		Web Technology Lab	KCS652	3/CSE4	0	0	4	
		Software Engineering	KCS601	3/CSE2	3	2	0	
15	Mr. Naveen Kumar	Software Engineering Lab	KCS651	3/CSE2	0	0	4	16
		Big Data	KCS061	3/CSE3	3	0	0	
		Big Data	KCS061	3/CSE1				
		Add on course (APTI)			4	0	0	
		Software Engineering	KCS601	3/CSE4	3	2	0	
16	Mr. Amit Kumar	Object Oriented Programming	KOE064	3/CSE3	3	0	0	17
		Object Oriented Programming	KOE064	3/CSE4	3	0	0	
		Add on course (APTI)			4	0	0	
		Microprocessor	KCS403	2/CSE1	3	2	0	
17	Ms. Pardeep Kaur	Microprocessor	KCS403	2/CSE3	3	2	0	15
		Web Technology	KCS602	3/CSE4	3	2	0	
		Computer Network	KCS603	3/CS1	3	2	0	
18	Mr. Kishore Kunal Keshari	Computer Network Lab	KCS653	3/CS1	0	0	4	13
		Digital Electronics	KOE049	2/CSE1	4	0	0	
		Object Oriented Programming	KOE064	3/CS1	3	0	0	
19	Mr. Bhupinder Singh	Python Programming	KNC402	2/EC	2	0	0	15
		Object Oriented Programming	KOE064	3/CSE1	3	0	0	
		Python Programming	KNC402	2/CS2	3	0	0	
		Python Lab	KCS453	2/CS2	0	0	4	
		Operating Systems	KCS401	2/CSE1	4	0	0	
20	Ms. Ritika Dhyani	Operating Systems Lab	KCS451	2/CSE1	0	0	4	16
		Operating Systems	KCS401	2/CS1	4	0	0	
		Operating Systems Lab	KCS451	2/CS1	0	0	4	
		Theory of Automata and Formal Languages	KCS402	2/CSE4	3	2	0	
21	Ms. Neha Verma	Image Processing	KCS062	3/CSE1	3	0	0	16
		Image Processing	KCS062	3/CSE3				
		Image Processing	KCS062	3/CSE4				
		Image Processing	KCS062	3/CS1				
		Image Processing	KCS062	3/CSE2				
22	Mr. Aditya Sam Koushi	Theory of Automata and Formal Languages (IT)	KCS402	IT	3	2	0	16
		Digital Electronics	KOE049	2/CSE2	4	0	0	
		Operating Systems	KCS401	2/CSE3	4	0	0	
		Operating Systems Lab	KCS451	2/CSE3	0	0	4	
		Add on course (C++)			0	0	4	
23	Mr Satyaveer Singh Tomar	Web Technology	KCS602	3/CS1	3	2	0	17
		Web Technology Lab	KCS652	3/CS1	0	0	4	
		Add on course (Web Designing 2nd year)			8	0	0	
24	Mr. Nitin Goyal	Software Engineering	KCS601	3/CSE3	3	2	0	17
		Software Engineering Lab	KCS651	3/CSE3	0	0	4	
		Digital Electronics	KOE049	2/CSE4	4	0	0	
		Digital Electronics	KOE049	2/CSE3	4	0	0	
25	Mr. Ashish Kumar	Operating Systems	KCS401	2/CSE2	4	0	0	16
		Operating Systems Lab	KCS451	2/CSE2	0	0	4	
		Computer Network Lab	KCS653	3/CSE2	0	0	4	
		IT Deptt (Apti)					4	
		Project	KCS852	4/CSE4	0	0	2	
26	Mr. Manish Kumar	Data Structure (EC/EN/ME)			4	0	0	18
27	Dr. Ajay Kumar	Add on courses (Advanced DS)			0	0	12	
28	Mr. Amit Katoch	Add on courses (Python)					14	14
		Python Programming	KNC402	2/CSE1	3	0	0	
		Python Lab	KCS453	2/CSE1	0	0	4	
		Python Programming	KNC402	2/CSE3	3	0	0	
29	Mr. Mohit Mittal	Python Lab	KCS453	2/CSE3	0	0	4	8
30	Mr. Kushal Gupta	1st Year			8	0	0	
31	Mr. Atul Kumar	1st Year			8	0	0	
		Admission Cell			8	0	0	8

Department of Computer Science & Engineering
Session 2021-22 (Even Semester)

Faculty Name: Ms. Megha Gupta

Date of Joining: 28/09/2020

	Subject Name 1 (Theory/Elective)	exp	Subject Name 2 (Theory/Elective)	exp
2 nd year subject	Operating System	✓	Python Programming	✓
3 rd year subject	Software Engineering	✓	Computer Networks	✓
4 th year subject	Entrepreneurship Development		Digital and Social Media Marketing	
30 hrs course (Subject Name)	Reasoning	✓	Aptitude	✓
Placement Prep course (Subject Name)	Reasoning	✓	Aptitude	✓

Additional responsibilities at department level:

S. No.	Particulars	Tick your choice
1	Time Table/ERP Coordinator	
2	Technical events Coordinator	
3	Summer/Winter Internship/Training Coordinator	
4	Placement Coordinator	
5	Class Coordinator	✓
6	Alumni Interaction and data compilation	
7	Computer Lab Coordinator	
8	Student achievement records	✓
9	Byte Magazine team	✓
10	Departmental Library	
11	Monthly Newsletter / Report preparation	
12	Result Compilation (Sessional/External)	
13	Sessional Exam Coordinator	
14	Add-on courses coordinator	
15	OBE Coordinator	
16	PO/PSO Attainment team	
17	Different types of Surveys (Team)	
18		
19		
20		

Signature

Megha
28/09/22

Department of Computer Science & Engineering

Class Time Table (Class Co-ordinator: Mr. Anjali Sardana)

Academic Session 2021-22(EVEN) B.Tech 3rd Yr-sec 1, Branch CSE, Room No. 105, C-BLOCK

TIME	Period-1 8:50-09:50	Period-2 09:50-10:40	Period-3 10:40-11:30	Period-4 11:30-12:20	Period-5 12:20-01:10	Period-6 01:10-02:00	Period-7 02:00-02:50	Period-8 02:50-03:40	Period-9 03:40-04:30	
MON	KOE064 (L) BS	KCS062 (L) C-105 NV KCS061 (L) C-107 NR	PDP I (L) MC	PYTHON LAB+ CSEIII-1 & 2 AJK LAB 2 JAVA LAB+ CSEIII-1 & 2 FA LAB 7		Break	KCS602 (T) B1 C-105 RS KCS603 (T) B2 C-206 AC	KCS602 (L) RS		
TUE	PYTHON LAB+ CSEIII-1 & 2 AJK LAB 2 JAVA LAB+ CSEIII-1 & 2 FA LAB 8		KOE064 (L) BS	KCS651 (SE Lab) CSE III-1 B1 AS LAB 8 KCS653 (CN Lab) CSE III-1 B2 AC LAB 7			KCS062 (L) C-105 NV KCS061 (L) C-206 NR	KCS601 (T) B1 C-105 AS KCS602 (L) B2 C-103 RS		
WED	KCS602 (L) RS	KNC602 (L) BKG	KCS603 (L) AC	KCS653 (CN Lab) CSE III-1 B1 AC LAB 7 KCS652 (WT Lab) CSE III-1 B2 RS LAB 6			PYTHON LAB+ CSEIII-1 & 2 AJK LAB 2 JAVA LAB+ CSEIII-1 & 2 FA LAB 6			
THU	KCS603 (L) AC	KCS603 (T) B1 C-105 AC KCS601 (T) B2 C-203 AS	KCS062 (L) C-105 NV KCS061 (L) C-107 NR	KOE064 (L) BS	PDP II (L) MN			APTITUDE + CSEIII-1 ASX C-105		KCS601 (L) AS
FRI	KCS601 (L) AS	KNC602 (L) BKG	KCS601 (L) AS	KCS652 (WT Lab) CSE III-1 B1 RS LAB 6 KCS651 (SE Lab) CSE III-1 B2 AS LAB 8			KCS602 (L) RS	KCS603 (L) AC		

Code	Subject Name	Faculty Name	L	T	P
01	Software Engineering	Ms Anjali Sardana (AS)	3	2	0
02	Web Technology	Dr Ravi Sharma (RS)	3	2	0
03	Computer Networks	Dr. Amit Chugh (AC)	3	2	0
62	Image Processing	Ms Neha Verma (NV)	3	0	0
51	Big Data	Mr Naveen Rathore (NR)	3	0	0
54	Object Oriented Programming	Mr. Bhupinder Singh (BS)	3	0	0
12	India Tradition Culture and Society	Mr. Bhupesh Kumar Gupta (BKG)	2	0	0
1	SE Lab	Ms Anjali Sardana (AS)	0	0	4
2	WT Lab	Dr Ravi Sharma (RS)	0	0	4
3	CN Lab	Dr. Amit Chugh (AC)	0	0	4
	PDP I	Dr. Milan Chakravarty (MC)	1	0	0
	PDP II	Dr. Marya Naim (MN)	1	0	0
	Python Lab +	Dr. Ajay Kumar (AJK)	0	0	6
	Java Lab +	Mr. Falzan Ahmad (FA)	0	0	6
	Aptitude +	Mr. Ankit Saxena (ASX)	2	0	0

Anjali
HOD CSE
25/4/22



Department of Computer Science & Engineering

Class Time Table (Class Co-ordinator: Mr.Vivek Jain)

Academic Session 2021-22(EVEN) B.Tech 3rd Yr-sec 2, Branch CSE, Room No. 106, C-BLOCK

DAY/TIME	Period-1	Period-2	Period-3	Period-4	Period-5	Period-6	Period-7	Period-8	Period-9
	8:50-09:50	09:50-10:40	10:40-11:30	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30
MON	KCS062 (L) C-410 NV KCS061 (L) C-106 TG	KCS602 (L) MKS	KCS603 (L) VJ	PYTHON LAB+ CSEIII-1 & 2 AJK LAB 2		Break	KCS653 (CN Lab) CSE III-2 B1 AKR LAB 7		
				JAVA LAB+ CSEIII-1 & 2 FA LAB 7			KCS651 (SE Lab) CSE III-2 B2 NR LAB 8		
TUE	PYTHON LAB+ CSEIII-1 & 2 AJK LAB 2		KCS602 (L) MKS	KCS601 (L) NR	KCS062 (L) C-410 NV KCS061 (L) C-106 TG		PDP II (L) MN	KOE064 (L) CPP	
	JAVA LAB+ CSEIII-1 & 2 FA LAB 8						KNC602 (L) BKG	KCS603 (T) B1 C-106 VJ KCS601 (T) B2 C-105 NR	KCS603 (L) VJ
WED	KCS601 (L) NR	KCS602 (L) MKS	KNC602 (L) BKG	KCS603 (T) B1 C-106 VJ KCS601 (T) B2 C-105 NR	KCS603 (L) VJ		JAVA LAB+ CSEIII-1 & 2 FA LAB 6		
THU	KCS601 (L) NR	KCS602 (T) B1 C-106 MKS KCS603 (T) B2 C-206 VI	KOE064 (L) CPP	KCS652 (WT Lab) CSE III-2 B1 MKS LAB 6			KNC602 (L) BKG	KCS603 (L) VJ	KCS062 (L) C-410 NV KCS061 (L) C-106 TG
FRI	KCS601 (T) B1 C-106 NR KCS602 (T) B2 C-108 MKS	APTITUDE + CSEIII-2 ASX C-106		KOE064 (L) CPP	PDP I (L) MC		KCS651 (SE Lab) CSE III-2 B1 NR LAB 8		
							KCS652 (WT Lab) CSE III-2 B2 MKS LAB 6		

Sub Code	Subject Name	Faculty Name	L	T	P
KCS601	Software Engineering	Mr Naveen Rathore (NR)	3	2	0
KCS602	Web Technology	Mr Mukesh Kumar Singh (MKS)	3	2	0
KCS603	Computer Networks	Mr.Vivek Jain (VJ)	3	2	0
KCS062	Image Processing	Ms Neha Verma (NV)	3	0	0
KCS061	Big Data	Mr Tanu Gupta (TG)	3	0	0
KOE064	Object Oriented Programming	Ms. C. Pushpanjali Patel (CPP)	3	0	0
KNC602	India Tradition Culture and Society	Mr. Bhupesh Kumar Gupta (BKG)	2	0	0
KCS651	SE Lab	Mr Naveen Rathore (NR)	0	0	4
KCS652	WT Lab	Mr Mukesh Kumar Singh (MKS)	0	0	4
KCS653	CN Lab	Mr. Ashish Kumar (AKR)	0	0	4
	PDP I	Dr. Milan Chakravarty (MC)	1	0	0
	PDP II	Dr. Marya Naim (MN)	1	0	0
	Python Lab +	Dr. Ajay Kumar (AJK)	0	0	6
	Java Lab +	Mr. Faizan Ahmad (FA)	0	0	6
	Aptitude +	Mr. Ankit Saxena (ASX)	2	0	0

Ronali
HOD CSE
25/4/22



Department of Computer Science & Engineering
Class Time Table (Class Co-ordinator: Mr. Nitin Goyal)

Academic Session 2021-22(EVEN) B.Tech 3rd Yr-sec 3, Branch CSE, Room No. 107, C-BLOCK

DAY/TIME	Period-1 8:50-09:50	Period-2 09:50-10:40	Period-3 10:40-11:30	Period-4 11:30-12:20	Period-5 12:20-01:10	Period-6 01:10-02:00	Period-7 02:00-02:50	Period-8 02:50-03:40	Period-9 03:40-04:30
MON	KCS603 (L) AG	KCS062 (L) C-105 NV KCS061 (L) C-107 NR	KOE064 (L) AK	KCS601 (T) B1 NG C-107 KCS603 (T) B2 C-105 AG	KCS601 (L) NG	Break	DB LAB + CSEIII-3 (B1+B2) PC C-107		
TUE	KCS601 (L) NG	KCS652 (WT Lab) CSE III-3 B1 HS LAB 6 KCS653 (CN Lab) CSE III-3 B2 AG LAB 7	KOE064 (L) AK	KCS603 (T) B1 C-107 AG KCS602 (T) B2 C-102 HS	KCS603 (T) B1 C-107 AG KCS602 (T) B2 C-102 HS		KCS062 (L) C-105 NV KCS061 (L) C-107 NR	KCS602 (L) HS	KNC602 (L) BKG
WED	KCS602 (L) HS	KCS651 (SE Lab) CSE III-3 B1 NG LAB 8 KCS652 (WT Lab) CSE III-3 B2 HS LAB 6	KCS603 (L) AG	PDP (L) MN			APTITUDE + CSEIII-3 ASX C-107		
THU	DB LAB + CSEIII-3 (B1+B2) PC C-107		KCS062 (L) C-105 NV KCS061 (L) C-107 NR	KNC602 (L) BKG	KCS602 (T) B1 C-107 HS KCS601 (T) B2 C-206 NG		KCS653 (CN Lab) CSE III-3 B1 AG LAB 7 KCS651 (SE Lab) CSE III-3 B2 NG LAB 8		
FRI	KCS601 (L) NG	KCS603 (L) AG	PDP II (L) MC	KCS602 (L) HS	KOE064 (L) AK		DB LAB + CSEIII-3 (B1+B2) PC C-107		

Sub Code	Subject Name	Faculty Name	L	T	P
KCS601	Software Engineering	Mr. Nitin Goyal (NG)	3	2	0
KCS602	Web Technology	Mr Hakim Singh (HS)	3	2	0
KCS603	Computer Networks	Dr Avdhesh Gupta (AG)	3	2	0
KCS062	Image Processing	Ms Neha Verma (NV)	3	0	0
KCS061	Big Data	Mr Naveen Kumar Rathore (NR)	3	0	0
KOE064	Object Oriented Programming	Mr Amit Kumar (AK)	3	0	0
KNC602	India Tradition Culture and Society	Mr. Bhupesh Kumar Gupta (BKG)	2	0	0
KCS651	SE Lab	Mr. Nitin Goyal (NG)	0	0	4
KCS652	WT Lab	Mr Hakim Singh (HS)	0	0	4
KCS653	CN Lab	Dr Avdhesh Gupta (AG)	0	0	4
	PDP I	Dr. Milan Chakravarty (MC)	1	0	0
	PDP II	Dr. Marya Naim (MN)	1	0	0
	Aptitude +	Mr. Ankit Saxena (ASX)	2	0	0
	DBMS Lab +	Dr. Pushpa Choudhary (PC)	0	0	6

Ankit
 HOD CSE
 25/11/22



Department of Computer Science & Engineering
Class Time Table (Class Co-ordinator: Ms. Pardeep Kaur)

Academic Session 2021-22(EVEN) B.Tech 3rd Yr-sec 4, Branch CSE, Room No. 108, C-BLOCK

DAY/TIME	Period-1 8:50-09:50	Period-2 09:50-10:40	Period-3 10:40-11:30	Period-4 11:30-12:20	Period-5 12:20-01:10	Period-6 01:10-02:00	Period-7 02:00-02:50	Period-8 02:50-03:40	Period-9 03:40-04:30	
MON	KCS062 (L) C-410 NV KCS061 (L) C-108 RS	KCS603 (L) VJ	KNC602 (L) BKG	KCS651 (SE Lab) CSE III-4 B1 HS LAB 8 KCS652 (WT Lab) CSE III-4 B2 RS LAB 6		Break	KOE064 (L) AK	KCS601 (L) AK		
TUE	KCS601 (L) AK	PDP (L) MN	KCS603 (T) B1 C-108 VJ KCS601 (T) C-107 B2 AK	KCS603 (L) VJ	KCS062 (L) C-410 NV KCS061 (L) C-108 RS			DSA LAB+ CSEIII-4 (B1+B2) MAS LAB 2		
WED	APTITUDE + CSEIII-4 ASX C-108		KOE064 (L) AK	KCS602 (L) PK	KCS601 (L) AK			KCS653 (CN Lab) CSE III-4 B1 VJ LAB 7 KCS651 (SE Lab) CSE III-4 B2 HS LAB 8		
THU	KOE064 (L) AK	PDP (L) MC	DSA LAB+ CSEIII-4 (B1+B2) MAS LAB 2		KCS602 (T) B1 C-108 PK KCS603 (T) B2 C-106 VJ			KCS602 (L) PK	KNC602 (L) BKG	KCS062 (L) C-410 NV KCS061 (L) C-108 RS
FRI	KCS652 (WT Lab) CSE III-4 B1 RS LAB 6 KCS653 (CN Lab) CSE III-4 B2 VJ LAB 7		KCS602 (L) PK	KCS601 (T) B1 C-108 AK KCS602 (L) B2 C-105 PK	KCS603 (L) VJ			DSA LAB+ CSEIII-4 (B1+B2) MAS LAB 2		

Sub Code	Subject Name	Faculty Name	L	T	P
KCS601	Software Engineering	Mr Amit Kumar (AK)	3	2	0
KCS602	Web Technology	Ms Pardeep Kaur (PK)	3	2	0
KCS603	Computer Networks	Mr Vivek Jain (VJ)	3	2	0
KCS062	Image Processing	Ms Neha Verma (NV)	3	0	0
KCS061	Big Data	Dr. Ravi Sharma (RS)	3	0	0
KOE064	Object Oriented Programming	Mr Amit Kumar (AK)	3	0	0
KNC602	India Tradition Culture and Society	Mr. Bhupesh Kumar Gupta (BKG)	2	0	0
KCS651	SE Lab	Mr Hakim Singh (HS)	0	0	4
KCS652	WT Lab	Dr. Ravi Sharma (RS)	0	0	4
KCS653	CN Lab	Mr Vivek Jain (VJ)	0	0	4
	PDP I	Dr. Milan Chakravarty (MC)	1	0	0
	PDP II	Dr. Marya Naim (MN)	1	0	0
	Aptitude +	Mr. Ankit Saxena (ASX)	2	0	0
	DSA+	Mr. Manish Kumar Singh (MAS)	0	0	6

Sanahi
 HOD CSE
 25/11/22



IMS Engineering College, Ghaziabad

Course File Audit Report

Name of Faculty Ritika Dhyani Deptt. CSE

Subject Name: Operating System Subject Code: KCS-401 Yr: 2 Sec: 1

Subject Name: OS Lab Subject Code: KCS-411 Yr: 2 Sec: 1

Subject Name: Subject Code: Yr: Sec:

Subject Name: Subject Code: Yr: Sec:

S.No.	Date	Audited By	Signature	Comments
1	12/3/22	Dr. Pandeep		-ok-
2	20/6/22	Dr. Sarika		-ok-
3	29/8/22	Dr. Pandeep Dr. Sarika		-ok-

HOD

* Course file will audit three times in a semester

- a. At as start of semester
- b. At after CT1
- c. At a course file submission.



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

Course File

S. No	Particulars
1	Quality Policy (on left inside cover of Course File)
2	Institute Mission and Vision
3	Departmental Mission and Vision
4	Program Educational Objectives (PEO) and Program Specific Outcomes (PSO)
5	Program Outcomes (PO)
6	Academic Calendar, University Academic Calendar
7	Class Time Table / Individual Time Table
8	Student List
9	University Evaluation Scheme
10	Syllabus (Theory)
11	Course Outcome, Mapping with PO/PSO
12	Syllabus (Practical) with Experiment List mapped with Course Outcomes
13	Topics beyond Syllabus
14	Quiz/Assignment/Tutorial Records
15	CT Question Paper (mapped with CO)
16	Sessional Marks Analysis
17	CO Attainment
18	CO Survey Record
19	Lecture Notes / PPT / MCQs
20	Question Bank
21	Attendance Register

Name and Signature of Course Instructor	Signature of HoD
RITIKA DHYANI 	
	Space for Internal Auditor's Use



DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH
Jankipuram Vistar, Sector-II, Sitapur Road, Lucknow, 226031

ACADEMIC CALANDER
FOR B. TECH/B.PHARM/B. ARCH/B.H.M.C.T./BFA/D/B.VOC/MBA/MBATM/MBA(I)/
MCA/MCA(I)/BFA/M. TECH/M. PHARM/M. ARCH. & other Courses
ACADEMIC SESSION 2021-22 (proposed)

S. No.	Particulars	Dates	
		Odd Semester	Even Semester
01	Commencement of Classes session 2021-22	Sep 14, 2021 for III, V, VII & IX Semester students Oct 01, 2021 for I, III Semester (Lateral Entry) students	Feb 01, 2022 for VI, VIII & X Semester students Feb 15, 2022 for II, IV Semester students
02	Last date of fresh admission	Oct 15, 2021	---
03	Last date of submitting admission list of students to University (for newly admitted student)	Nov 15, 2021	---
04	Last date of submitting Enrollment form /Exam Form for regular & carry over exams.	Nov 30, 2021	---
05	Last date of Submitting Examination fee for both semesters and examination/carry over examination fee	Nov 30, 2021	---
06	Last date of submitting sessional marks of Theory & Practical to University.	Dec 31, 2021	May 31, 2022
07	End Semester Theory Examination	Jan 04, 2022 to Jan 30, 2022	June 01, 2022 to June 20, 2022
08	End Semester Practical Examination (PE)	Feb 01, 2022, to Feb 10, 2022	June 21, 2022 to June 26, 2022
09	Last date for Submission of PE Marks.	Jan 15, 2022	July 31, 2022
10	Evaluation of Answer sheets	Feb 01, 2022 to Feb 25, 2022	July 01, 2022 to July 20, 2022
11	Summer Training/ Internship		July 01, 2022 to July 31, 2022
12	Winter Vacations/ Summer Vacation		July 01, 2022 to July 31, 2022
13	Commencement of Classes session 2022-23	For I, III, V, VII & IX Semester Aug 01, 2022	

Note:

1. The institute shall ensure minimum teaching hours as prescribed in the University ordinances for each semester. If required the Director/Principal shall arrange extra classes on weekends/holidays.
2. The Institute should ensure that at least two class tests are conducted after completing 1/3rd & 2/3rd syllabus respectively. All students will be required to appear in both first and second class tests. If, for any reason beyond the control of students such as illness, tragic incident in family, the student fails to appear in any test, it will be the responsibility of the Principle/Director of the Institute to arrange make up class test for such students. If the student fails to appear in first class test, his makeup class test will be conducted before second class test and in case of second class test at least one month before the start of end semester/theory examination. The duration of class test will be minimum one hour for each class test. 70% attendance at 1st test and 75% attendance at second class test are required. In case attendance is short, parents are to be informed accordingly on monthly basis.
3. The Director/Principal of Institute shall ensure the submission of attendance of students regularly through Attendance Monitoring System (AMS) of the University and shall ensure that no student is allowed to appear in the examinations who has not attained the minimum required attendance as per norms prescribed in relevant ordinances. It will be obligatory on the part of the Director/Principal of the Institute to detain such students and their admit cards will not be issued to them. A list of students detained from appearing in University Examination(s) be submitted to University and their Examination centre before the commencement of the theory examination.
4. The teachers who are assigned evaluation duty during vacation shall be entitled for earned leave as per rules and duty leave for other examination related works assigned by the University.
5. Summer training/internship for 1st year B.Tech. students shall also be held between July 01, 2022 to July 31, 2022


(Nand Lal Singh)
Registrar



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

Institute Vision and Mission

Vision

Our vision is to impart Vibrant, Innovative and Global Education to make IMS the world leader in terms of Excellence of Education, Research and to serve the nation in the 21st century.

Mission

- To develop IMSEC as a Centre of Excellence in Technical and Management Education.
- To inculcate in its students the qualities of Leadership, Professionalism, Executive Competence and Corporate understanding.
- To imbibe and enhance Human Values, Ethics and Morals in our students.
- To transform students into Globally Competitive Professionals

NH-24, Adhyatmik Nagar, Distt: Ghaziabad. Uttar Pradesh -201015

Toll Free: 18001028393, Contact us: 0120-4940000, Website: www.imsec.ac.in



Department Vision and Mission

Vision

To be recognized as a Centre of Excellence imparting quality education and creating new opportunities for students to meet the challenges of technological development in Computer Science & Engineering.

Mission

- To promote technical proficiency by adopting effective teaching learning processes.
- To provide environment & opportunity for students to bring out their inherent talents for all round development.
- To promote latest technologies in Computer Science & Engineering and across disciplines in order to serve the needs of Industry, Government, Society, and the scientific community.
- To educate students to be Successful, Ethical and Effective problem-solvers and Life-Long learners who will contribute positively to the society.



Program Educational Objectives

1. Graduates of the program will be able to apply fundamental principles of engineering in problem solving and understand the role of computing in multiple disciplines.
2. Graduates will learn to apply various computational techniques & tools for developing solutions & projects in real world.
3. Be employed as computer science professionals beyond entry-level positions or be making satisfactory progress in graduate programs.
4. Demonstrate that they can function, communicate, collaborate and continue to learn effectively as ethically and socially responsible computer science professionals.

Program Specific Outcomes (PSO)

1. Foundation of Computer System: Ability to understand the principles and working of computer systems.
2. Foundations of Software development: Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open-source platforms.
3. Foundation of mathematical concepts: Ability to apply mathematical methodologies to solve computation task, model real world problem using appropriate data structure and suitable algorithm.
4. Applications of Computing and Research Ability: Ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.



Program Outcomes

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **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.
3. **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.
4. **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.
5. **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.
6. **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.
7. **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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **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.
11. **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.
12. **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.



Department Of Computer Science & Engineering
Class Timetable (Class Co-ordinator: Mr. Kishor Kunal Keshri)

Academic Session 2021-22(ODD) B.Tech 2nd Yr-sec 1, Branch CSE, Room No. 101, C-BLOCK

DAY/TIME	Period-1	Period-2	Period-3	Period-4	Period-5	Period-6	Period-7	Period-8	Period-9
	8:50-09:50	09:50-10:40	10:40-11:30	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30
MON	KVE401 (U) CPP	KCS403 (L) PK	KCS401 (L) RD	KOE049 (L) KKK	KCS403 (T) B1 C-101 PK KCS402 (T) B2 C-103 SG		KCS451 (OS Lab) CSE II-1 B1 RD LAB 6 KCS453 (Python Lab) CSE II-1 B2 AKT LAB 1		
TUE	KNC402 (L) AKT	KVE401 (U) CPP	KCS401 (L) RD	KCS403 (L) PK	KOE049 (L) KKK		WD + CSEII-1 (B1+B2) FA C-101		
WED	KCS352 (Microprocessor Lab) CSE II-1 B1 BLS KCS451 (OS Lab) CSE II-1 B2 RD LAB 7		KCS402 (L) SG	KNC402 (L) AKT	KCS402 (T) B1 C-101 SG KCS403 (T) B2 C-105 PK		KOE049 (L) KKK	Add on Course	
THU	KVE401 (U) CPP	KCS403 (L) PK	KNC402 (L) AKT	KCS401 (L) RD	KCS402 (L) SG		APTITUDE + CSEII-1 (B1+B2) NR C-101		
FRI	KOE049 (L) KKK	KCS402 (L) SG	KCS401 (L) RD	KCS453 (Python Lab) CSE II-1 B1 AKT LAB 1 KCS352 (Microprocessor Lab) CSE II-1 B2 BLS			WD + CSEII-1 (B1+B2) FA C-101		

Sub Code	Subject Name	Faculty Name	L	T	P
KOE049	Digital Electronics	Mr. Kishor Kunal Keshri (KKK)	4	0	0
KVE401	Universal Human Values	Ms. C. Pushpanjali Patel (CPP)	3	0	0
KCS401	Operating System	Ms. Ritika Dhyani (RD)	4	0	0
KCS402	Theory of Automata and Formal	Ms. Shaili Gupta (SG)	3	2	0
KCS403	Microprocessor	Ms.Pardeep Kaur (PK)	3	2	0
KNC402	Python	Mr.Amit Kathoch (AKT)	3	0	0
KCS451	Operating System Lab	Ms. Ritika Dhyani (RD)	0	0	2*2
KCS452	Microprocessor Lab	Mr. Balwant Singh (BLS)	0	0	2*2
KCS453	Python Language Programming Lab	Mr.Amit Kathoch (AKT)	0	0	2*2
	Web Designing (WD) +	Mr. Faizan Ahmad (FA)	0	0	4
	APTITUDE+	Mr. Naveen Rathore (NR)	4	0	0



IMS Engineering College, Ghaziabad
Department of Computer Science Engineering
List of Students 2nd Year CSE1 (Even Semester) 2021-22

S.No.	Admission ID	Roll No.	Batch	Name	Father Name	PHONE (Student)	Mobile(Parent)	EMAIL
1	A2020CSE7431	2001430100001	B1	AADHYA GUPTA	AJAY KUMAR GUPTA	8527896505	9650995158	aadhyaagupta06@gmail.com
2	A2020CSE7052	2001430100002	B1	AASTHA AGARWAL	MANOJ KUMAR AGARWAL	9149127006	9927390761	aasthaagarwal158@gmail.com
3	A2020CSE7402	2001430100003	B1	AASTHA TIWARI	MANOJ TIWARI	9718248784	8851341171	AASTHA2TIWARI@GMAIL.COM
4	A2020CSE7129	2001430100004	B1	AAYUSHI CHAUHAN	HARVANSI SINGH	7817835245	7817835245	ayurana87@gmail.com
5	A2020CSE7349	2001430100005	B1	ABHI JAISWAL	RAJENDRA JAISWAL	9369179545	9415509273	jaiswalkamni109@gmail.com
6	A2020CSE7056	2001430100006	B1	ABHINAV BALIYAN	VIPIN BALIYAN	9354445458	9354506079	abhinavbaliyan14587@gmail.com
7	A2020CSE7159	2001430100007	B1	ABHINAV CHAUHAN	SHARVAN KUMAR	9760348489	7906704885	abhinavc2003@gmail.com
8	A2020CSE7322	2001430100008	B1	ABHINAV KUMAR	OMKAR SINGH	6396564460	9639292099	abhi72486511@gmail.com
9	A2020CSE7112	2001430100009	B1	ABHINAV SAXENA	NAGESH KUMAR	8958337368	9927100356	sajalsaxenass01@gmail.com
10	A2020CSE7351	2001430100010	B1	ABHINAV PATEL	ARVIND KUMAR	8439803606	9756602585	abhi2003.bly@gmail.com
11	A2020CSE7500	2001430100011	B1	ABHISHEK	HARI DATT SHARMA	8445227311		appandey328@gmail.com
12	A2020CSE7044	2001430100012	B1	ABHISHEK	VINAY KUMAR	8766379793	8506035751	ABHISHEKJACOB93@GMAIL.COM
13	A2020CSE7193	2001430100013	B1	ABHISHEK CHATRUVEDI	AJAY CHATRUVEDI	8604917582	9935725668	abhishekchatruvedi291@gmail.com
14	A2020CSE7356	2001430100014	B1	ABHISHEK KUMAR YADAV	DIWAKAR YADAV	8874493174		abhishekyadav0312@gmail.com
15	A2020CSE7382	2001430100015	B1	ABHISHEK KUMAR SINGH	KHARAK BHADUR SINGH	7275585174	8917726813	starkop688@gmail.com
16	A2020CSE7408	2001430100016	B1	ABHISHEK PARAS	MAHENDERPAL	9758211350	9758156047	abhishekparas@imsec.ac.in
17	A2020CSE7443	2001430100017	B1	ABHISHEK SINGH	SHIVANANAD SINGH	7068180830	7068180830	yashsingh1729@gmail.com
18	A2020CSE7341	2001430100018	B1	ADITYA KUMAR	GOPAL PRASAD	9097876646		adityaraj3536@gmail.com
19	A2020CSE7392	2001430100019	B1	ADITYA KUMAR	VANI SINGH	9899523321	8527633325	adityasingh.singh504@gmail.com
20	A2020CSE7425	2001430100020	B1	ADITYA KUMAR YADAV	VINOD KUMAR YADAV	8887900896	7388938338	ay81792@gmail.com
21	A2020CSE7225	2001430100021	B1	ADITYA MAHESHWARI	NEELOTPAL MAHESHWARI	9027125144	9719238250	aditya.mah33@gmail.com
22	A2020CSE7301	2001430100022	B1	ADITYA PRATAP MALL	DEVENDRA KUMAR MALL	9118110426	9450473510	malladityapratap2002@gmail.com
23	A2020CSE7370	2001430100023	B1	ADITYA PRATAP SINGH	SANTOSH KUMAR SINGH	9598906705	7457929907	adityapsingh980@gmail.com
24	A2020CSE7241	2001430100024	B1	ADITYA RAJPOOT	LALIT HARI RAJPOOT	8840183337	8931937565	adityarajpoot681@gmail.com
25	A2020CSE7235	2001430100025	B1	ADITYA SINGH	ANOOP SINGH	9005104222	9695178406	adityasingh09123@gmail.com
26	A2020CSE7306	2001430100026	B1	ADITYA SINGH	DINESH SINGH	7014614310	9838035503	adityasinghnjms15@gmail.com
27	A2020CSE7552	2001430100027	B1	ADITYA VERMA	PRAVEEN KUMAR	9958466556	9958466556	ADITYAGOLD02@GMAIL.COM
28	A2020CSE7036	2001430100028	B1	AJAY	SUBHASH BABU	7302611273	9411901590	ajaysaxena20032003@gmail.com
29	A2020CSE7131	2001430100029	B1	AKASH GUPTA	SHASHIKANT GUPTA	9118283887	8115400980	ARYANAKSHARYAN@GMAIL.COM
30	A2020CSE7028	2001430100030	B1	AKASH KUMAR KUSHWAH	KASHINATH KUSHWAHA	9931669668	8235958782	KUMAR01012001AKASH@GMAIL.COM
31	A2020CSE7439	2001430100031	B1	AKASH PATHAK	RATNESH KUMAR PATHAK	9454390950	9454390950	akkuopathak200@gmail.com
32	A2020CSE7046	2001430100032	B1	AKSHAT AGARWAL	SURENDRA KUMAR AGARWAL	9917168996	9837215417	akshatagarwal32@gmail.com
33	A2020CSE7391	2001430100033	B1	AKSHIT SEHWAG	RAJEEV SEHWAG	8171428803	9719878803	sehwyagshvander@gmail.com
34	A2020CSE7354	2001430100034	B2	AMANKANT PATHAK	SHRIKANT PATHAK	9045868660	9997599310	amankantpathak6@gmail.com
35	A2020CSE7057	2001430100035	B2	AMAN KUMAR	RAJU KUMAR	8802079522	9811654275	AMANKUMARMICRO@GMAIL.COM
36	A2020CSE7071	2001430100037	B2	AMAN KUMAR SHUKLA	SANJAY KUMAR SHUKLA	9389992972	8802194118	AMANSHUKLA826852@GMAIL.COM
37	A2020CSE7214	2001430100038	B2	AMAN UPADHYAY	PANKAJ KUMAR UPADHYAY	7985998196	9415260715	AMANUPADHYAY2000@GMAIL.COM
38	A2020CSE7122	2001430100039	B2	AMARDEEP KUMAR	SUNIL KUMAR	8757807474	7979776717	AMARDEEPRITU875780@GMAIL.COM

39	A2020CSE7501	2001430100040	B2	AMARTYA RAI	GIRISH CHAND RAI	7985661170		ammu.amartya.rai@gmail.com
40	A2020CSE7242	2001430100041	B2	ANAGH SHARMA	VIJAY PANDIT	6397185461	9411951150	sharmaanagh13@gmail.com
41	A2020IT7105	2001430100042	B2	ANANYA GUPTA	SANJAY KUMAR GUPTA	7906938304	9350474710	SANJY GUPTA112000@YAHOO.COM
42	A2020CSE7377	2001430100043	B2	ANKIT YADAV	HARISH CHANDRA YADAV	9112588137	9935218137	ankityadav@gmail.com
43	A2020CSE7574	2001430100044	B2	ANKITA SINGH	RAMESH SINGH	9599635223	9839115311	ankitasinghrajput0711@gmail.com
44	A2020CSE7278	2001430100045	B2	ANKUR YADAV	RAM VISHAL YADAV	7836960810		ay424686@gmail.com
45	A2020CSE7250	2001430100046	B2	ANMOL MISHRA	ASHOK MISHRA	9140805823	7392838029	anmolmishra287@gmail.com
46	A2020CSE7332	2001430100047	B2	ANSH SHARMA	SURENDRA KUMAR SHARMA	7355942435	9451756604	anshsharma51111@gmail.com
47	A2020CSE7512	2001430100048	B2	ANSHIKA SAINI	SANJAY SAINI	7900438517		sanjayrada12@gmail.com
48	A2020CSE7065	2001430100049	B2	ANSHU SHARMA	BRIJESH SHARMA	9069628494	9891761389	anshush0609@gmail.com
49	A2020CSE7506	2001430100050	B2	ANUBHAV KUMAR	SANJAY SINGH	9560136135	9560136135	kumaranubhav832@gmail.com
50	A2020CSE7229	2001430100051	B2	ANUBHAV KUMAR SRIVAS	ASHOK KUMAR SRIVASTAVA	8318037790	9919394922	ANUBHAVSRIVASTAVA192000@GMAIL.COM
51	A2020CSE7361	2001430100052	B2	ANUBHAV SINGH CHAHAR	ASHOK KUMAR	7983159975	7983159975	asunnysingh5@gmail.com
52	A2020CSE7320	2001430100053	B2	ANUBHAV VARSHNEY	PRAMOD KUMAR VARSHNEY	7906098649	9456200340	anubhavvarshneyttt@gmail.com
53	A2020CSE7435	2001430100054	B2	ANUPRIYA YADAV	HARERAM YADAV	6386822165	6386822165	ianupriya15@gmail.com
54	A2020CSE7376	2001430100055	B2	ANURAG SRIVASTAVA	NAVIN KUMAR SRIVASTAVA	8765488173	8765638846	as187642@gmail.com
55	A2020CSE7152	2001430100056	B2	APARANA SHARMA	MANISH KUMAR SHARMA	7895115848	9837805848	aparanas138@gmail.com
56	A2020CSE7154	2001430100057	B2	ARJUN JAKHAR	ASHWINI KUMAR JAKHAR	8445204816	9719866714	185shwanikuma@gmail.com
57	A2020CSE7137	2001430100058	B2	ARPITA SINGH	SANJAY KUMAR	9354054468	9910131355	arpita8156@gmail.com
58	A2020CSE7247	2001430100059	B2	ARUN KUMAR	ANUJ KUMAR	8948245144	7905264500	iarunkumar278@gmail.com
59	A2020CSE7073	2001430100060	B2	ARYAN SINGH	SANTOSH KUMAR SINGH	7903522457	7903522457	sgh450aryansgh@gmail.com
60	A2020CSE7305	2001430100061	B2	ARYANT AGRAHARI	SANJAY AGRAHARI	7268930598	7380705646	aryantkumar84@gmail.com
61	A2021CSE7609	LATERAL ENTRY	B2	SHIKHAR AGRAHARI	RAJESH KUMAR GUPTA	9598346426	8604574269	shikharagrahari452@gmail.com
62	A2021CSE7644	LATERAL ENTRY	B2	TANU	SUDESH GUPTA	9027956063	8604574269	tanutiwari12122001@gmail.com
63	A2021CSE7677	LATERAL ENTRY	B2	PRINCE BHARDWAJ	RAJVEER SHARMA	9536851421	9402777013	PRINCEBHARDWAJP48@GMAIL.COM
64	A2021CSE7683	LATERAL ENTRY	B2	ANSHU KUMAR VERMA	ASHOK VERMA	8736868574	9770650609	ANSHUVERMA27001@GMAIL.COM
65	A2021CSE7687	LATERAL ENTRY	B2	ANUJ KUMAR SINGH	ARUN KUMAR SINGH	7607525797	7838624328	ANUJSINGH1026@GMAIL.COM



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

CONTENTS BEYOND SYLLABUS

Session: 2021-22

Faculty Name: Ritika Dhyani

Subject Code: KCS 401

Class: 2CSE1

Subject Name: Operating System

Lec. No	Topic	Date Planned	Date Covered	Reference (Book Name/web address/notes etc)	Mapping with COs
1.	Distributed OS	18-04-22	18-04-22	Notes	CO1
2.	MultiTasking OS	19-04-22	19-04-22	Notes	CO1

SEMESTER- IV

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS402/ KOE041-48	Maths IV/Engg. Science Course	3	1	0	30	20	50		100		150	4
2	KVE401/ KAS301	Universal Human Values/ Technical Communication	3	0	0	30	20	50		100		150	3
			2	1	0								
3	KCS401	Operating Systems	3	0	0	30	20	50		100		150	3
4	KCS402	Theory of Automata and Formal Languages	3	1	0	30	20	50		100		150	4
5	KCS403	Microprocessor	3	1	0	30	20	50		100		150	4
6	KCS451	Operating Systems Lab	0	0	2				25		25	50	1
7	KCS452	Microprocessor Lab	0	0	2				25		25	50	1
8	KCS453	Python Language Programming Lab	0	0	2				25		25	50	1
9	KNC402/ KNC401	Python Programming/Computer System Security	2	0	0	15	10	25		50			0
10		MOOCs (Essential for Hons. Degree)											
		Total										900	21

B.TECH. (COMPUTER SCIENCE AND ENGINEERING)

FOURTH SEMESTER (DETAILED SYLLABUS)

Operating systems (KCS401)		
Course Outcome (CO)		Bloom's Knowledge Level (KL)
At the end of course , the student will be able to understand		
CO 1	Understand the structure and functions of OS	K ₁ , K ₂
CO 2	Learn about Processes, Threads and Scheduling algorithms.	K ₁ , K ₂
CO 3	Understand the principles of concurrency and Deadlocks	K ₂
CO 4	Learn various memory management scheme	K ₂
CO 5	Study I/O management and File systems.	K ₂ ,K ₄

DETAILED SYLLABUS		3-0-0
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Unit	Topic	Proposed Lecture
I	Introduction : Operating system and functions, Classification of Operating systems- Batch, Interactive, Time sharing, Real Time System, Multiprocessor Systems, Multiuser Systems, Multiprocess Systems, Multithreaded Systems, Operating System Structure- Layered structure, System Components, Operating System services, Reentrant Kernels, Monolithic and Microkernel Systems.	08
II	Concurrent Processes : Process Concept, Principle of Concurrency, Producer / Consumer Problem, Mutual Exclusion, Critical Section Problem, Dekker's solution, Peterson's solution, Semaphores, Test and Set operation; Classical Problem in Concurrency- Dining Philosopher Problem, Sleeping Barber Problem; Inter Process Communication models and Schemes, Process generation.	08
III	CPU Scheduling : Scheduling Concepts, Performance Criteria, Process States, Process Transition Diagram, Schedulers, Process Control Block (PCB), Process address space, Process identification information, Threads and their management, Scheduling Algorithms, Multiprocessor Scheduling. Deadlock : System model, Deadlock characterization, Prevention, Avoidance and detection, Recovery from deadlock.	08
IV	Memory Management : Basic bare machine, Resident monitor, Multiprogramming with fixed partitions, Multiprogramming with variable partitions, Protection schemes, Paging, Segmentation, Paged segmentation, Virtual memory concepts, Demand paging, Performance of demand paging, Page replacement algorithms, Thrashing, Cache memory organization, Locality of reference.	08
V	I/O Management and Disk Scheduling : I/O devices, and I/O subsystems, I/O buffering, Disk storage and disk scheduling, RAID. File System : File concept, File organization and access mechanism, File directories, and File sharing, File system implementation issues, File system protection and security.	08

Text books:

1. Silberschatz, Galvin and Gagne, "Operating Systems Concepts", Wiley
2. Sibsankar Halder and Alex A Aravind, "Operating Systems", Pearson Education
3. Harvey M Dietel, " An Introduction to Operating System", Pearson Education
4. D M Dhamdhare, "Operating Systems : A Concept based Approach", 2nd Edition,
5. TMH 5. William Stallings, "Operating Systems: Internals and Design Principles ", 6th Edition, Pearson Education



Sub Code	KCS-401
Sub. Name	Operating System

COURSE OUTCOMES		Bloom's Level
CO1	Understand the structure and functions of OS	K1, K2
CO2	Learn about Processes, Threads and Scheduling algorithms.	K1, K2
CO3	Understand the principles of concurrency and Deadlocks	K2
CO4	Learn various memory management scheme	K2
CO5	Study I/O management and File systems.	K2, K4

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1											1
CO2	2	1	1									2
CO3	2	2	2	1								2
CO4	2	1	1									1
CO5	2	2	2	1								2
Avg	1.8	1.5	1.5	1								1.6

CO-PSO Matrix				
COs	PSO1	PSO2	PSO3	PSO4
CO1	2	1	1	2
CO2	1	2	2	2
CO3	2	2	2	2
CO4	2	2	1	2
CO5	2	2	2	2
Avg	1.8	1.8	1.6	2.0

Operating Systems Lab (KCS451)

1. Study of hardware and software requirements of different operating systems (UNIX,LINUX,WINDOWS XP, WINDOWS7/8)
2. Execute various UNIX system calls for
 - i. Process management
 - ii. File management
 - iii. Input/output Systems calls
3. Implement CPU Scheduling Policies:
 - i. SJF
 - ii. Priority
 - iii. FCFS
 - iv. Multi-level Queue
4. Implement file storage allocation technique:
 - i. Contiguous(using array)
 - ii. Linked -list(using linked-list)
 - iii. Indirect allocation (indexing)
5. Implementation of contiguous allocation techniques:
 - i. Worst-Fit
 - ii. Best- Fit
 - iii. First- Fit
6. Calculation of external and internal fragmentation
 - i. Free space list of blocks from system
 - ii. List process file from the system
7. Implementation of compaction for the continually changing memory layout and calculate total movement of data
8. Implementation of resource allocation graph (RAG)
9. Implementation of Banker"s algorithm
10. Conversion of resource allocation graph (RAG) to wait for graph (WFG) for each type of method used for storing graph.
11. Implement the solution for Bounded Buffer (producer-consumer)problem using inter process communication techniques-Semaphores
12. Implement the solutions for Readers-Writers problem using inter process communication technique -Semaphore

Microprocessor Lab (KCS452)

1. Write a program using 8085 Microprocessor for Decimal, Hexadecimal addition and subtraction of two Numbers.
2. Write a program using 8085 Microprocessor for addition and subtraction of two BCD numbers.
3. To perform multiplication and division of two 8 bit numbers using 8085.
4. To find the largest and smallest number in an array of data using 8085 instruction set.
5. To write a program to arrange an array of data in ascending and descending order.
6. To convert given Hexadecimal number into its equivalent ASCII number and vice versa using 8085 instruction set.
7. To write a program to initiate 8251 and to check the transmission and reception of character.
8. To interface 8253 programmable interval timer to 8085 and verify the operation of 8253 in six different modes.
9. To interface DAC with 8085 to demonstrate the generation of square, saw tooth and triangular wave.
10. Serial communication between two 8085 through RS-232 C port.

Department of Computer Science & Engineering
IMS Engineering College

Year: 2ND

Semester: 4TH

Subject: Operating Systems Lab

Subject Code: KCS451

Course Outcome	
CO1	Understand the structure, types and functions of different Operating Systems.
CO2	Able to understand the file handling, process managing in UNIX and interpret various CPU scheduling algorithm.
CO3	Students will be able to develop contiguous and non-contiguous memory allocation and implement programs for banker's algorithm.
CO4	Students will be able to apply and analyze different page replacement algorithms and resource allocation graphs
CO5	Able to develop producer-consumer problem and semaphores.

LIST OF EXPERIMENT

S no.	Experiment	Mapping with CO
1.	Study of hardware and software requirements of different operating systems (UNIX, LINUX, WINDOWS XP, WINDOWS7/8)	1
2.	Execute various UNIX system calls for i. Process management ii. File management iii. Input/output Systems calls	1,2
3.	Implement CPU Scheduling Policies: i. SJF ii. Priority iii. FCFS iv. Multi-level Queue	2
4.	Implement file storage allocation technique: i. Contiguous(using array) ii. Linked -list(using linked-list) iii. Indirect allocation (indexing)	1,3
5.	Implementation of contiguous allocation techniques: i. Worst-Fit ii. Best- Fit iii. First- Fit	1,3
6.	Calculation of external and internal fragmentation i. Free space list of blocks from system ii. List process file from the system	1,3
7.	Implementation of compaction for the continually changing memory layout and calculate total movement of data.	3
8.	Implementation of resource allocation graph (RAG)	1,4
9.	Implementation of Banker's algorithm.	1,3
10.	Conversion of resource allocation graph (RAG) to wait for graph (WFG) for each type of method used for storing graph.	1,4
11.	Implement the solution for Bounded Buffer (producer-consumer)problem using inter process communication techniques-Semaphores.	1,5
12.	Implement the solutions for Readers-Writers problem using inter process communication technique -Semaphore.	1,5

ADDITIONAL LIST OF EXPERIMENT(Beyond Syllabus)

1.	Basic LINUX commands and its Use.	1
2.	Detail study of File Access Permission in LINUX.	1
3.	Detail study of LINUX Shell Programming.	1
4.	Program for FIFO, LRU, and OPTIMAL page replacement algorithm.	4
5.	Dining-Philosopher's Problem	5
6.	Simulate all File Organization Techniques. i. Single level directory ii. Two level directory.	2
7.	Write a C program to simulate disk scheduling algorithms. i. FCFS ii. SCAN iii. C-SCAN.	2
8.	Study of editors in LINUX.	1
9..	Write a script to find the greatest of three numbers.	1
10.	Write a script to calculate the sum of digits of the given number.	1
11.	Write a script to calculate the average of n numbers.	1
12.	Write a script to check whether the given number is prime or not.	1

Subject Faculty Members:

1. Dr. Amit Chugh
2. Mr. Ashish Kumar
3. Ms.RitikaDhyani
4. Mr. Aditya Sam Koshy



IMS Engineering College,

Ghaziabad

Department of Computer Science and Engineering

Sub Code	KCS-451
Sub: Name	Operating Systems Lab

COURSE OUTCOMES		Bloom's Level
CO1	Understand the structure, types and functions of different Operating Systems..	K2
CO2	Able to understand the file handling, process management in UNIX and interpret various CPU scheduling algorithms.	K2, K4
CO3	Students will be able to develop contiguous and non-contiguous memory allocation and implementation of programs for banker's algorithm.	K4
CO4	Students will be able to apply and analyze different page replacement algorithms and resource allocation graphs.	K2,K3
CO5	Able to develop producer-consumer problems and semaphores.	K2,K3

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2						1			1
CO2	1	2	2	1					1			1
CO3	1	2	2	2					1			1
CO4	1	2	2						1			1
CO5	1	2	2	1					1			2
Avg	1	2	2	1.3					1			1.2



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

SubjectName: Operating Systems	SubjectCode	KCS-401
DateofHandover:	MaxMarks	
DateofSubmission:		

ASSIGNMENT NO. -1

Q.no	Question	Mapped CO
a.	What is batch system?	CO1
b.	Define real time system?	CO1
c.	Differentiate between with one suitable example. 1. Interactive and Batch processing system.	CO1



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

SubjectName: Operating Systems	SubjectCode	KCS – 401
DateofHandover:	MaxMarks	
DateofSubmission:		

ASSIGNMENT NO. -2

Q.no	Question	Mapped CO
a.	What are the advantages and disadvantages of Layered approach?	CO1
b.	Differentiate between Monolithic and Microkernel with examples.	CO1
c.	Explain the services provided by OS	CO1



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

SubjectName: Operating Systems	SubjectCode	KCS - 401
DateofHandover:	MaxMarks	
DateofSubmission:		

ASSIGNMENT NO. -3

Q.no	Question	Mapped CO
a.	Write a short note on Producer/Consumer Problem.	CO2
b.	Discuss principle of concurrency.	CO2
c.	What is Multithreading Programming? Explain its benefits.	CO1



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

SubjectName: Operating Systems	SubjectCode	KCS - 401
DateofHandover:	MaxMarks	
DateofSubmission:		

ASSIGNMENT NO. -4

Q.no	Question	Mapped CO
a.	Define Process. What is the Process Control Block?	CO3
b.	What is the Process State? Explain with diagram.	CO3
c.	What is Multithreading Programming? Explain its benefits.	CO3



IMS Engineering College, Ghaziabad

Department of Computer Science and Engineering

SubjectName: Operating Systems	SubjectCode	KCS - 401
DateofHandover:	MaxMarks	
DateofSubmission:		

ASSIGNMENT NO. -5

Q.no	Question	Mapped CO
a.	Explain the different conditions of deadlock.	CO3
b.	Write down the methods for deadlock prevention.	CO3
c.	Describe the necessary conditions for deadlock to occur.	CO3



IMS ENGINEERING COLLEGE
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CT-I

Course : B.Tech
Semester : IV
Subject : Operating Systems
Time : 2 Hrs

AY 2021-22 (Even Semester)
Date : 17-05-2022
Subject Code : KCS-401
Max. Marks : 30

COURSE OUTCOMES

CO1	Understand the structure & functions of OS.
CO2	Learn about Processes, Threads and Scheduling algorithms
CO3	Understand the principles of concurrency and Deadlocks
CO4	Learn various memory management scheme
CO5	Study I/O management and File systems.

Q. No.	Questions	CO																								
<u>PART- A: Attempt All Questions (5x1 = 5Marks)</u>																										
1.	List any two open source Operating System.	1																								
2.	Define Operating System.	1																								
3.	Give two advantages of multiprocessor OS.	1																								
4.	Discuss the need of CPU Scheduling.	2																								
5.	Explain the term "Starvation" in CPU Scheduling.	2																								
<u>PART-B: Attempt ANY THREE Questions (3x5 = 15Marks)</u>																										
6.	Consider the following processes for a system programmed with Preemptive Priority Scheduling and find out the average waiting time. (Priority 1 being the highest and 10 being the lowest)	2																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Process</th> <th>Arrival Time</th> <th>Burst Time</th> <th>Priority</th> </tr> </thead> <tbody> <tr> <td>P0</td> <td>0</td> <td>1</td> <td>2</td> </tr> <tr> <td>P1</td> <td>1</td> <td>7</td> <td>6</td> </tr> <tr> <td>P2</td> <td>2</td> <td>3</td> <td>3</td> </tr> <tr> <td>P3</td> <td>3</td> <td>6</td> <td>5</td> </tr> <tr> <td>P4</td> <td>4</td> <td>5</td> <td>4</td> </tr> </tbody> </table>			Process	Arrival Time	Burst Time	Priority	P0	0	1	2	P1	1	7	6	P2	2	3	3	P3	3	6	5	P4	4	5	4
Process	Arrival Time	Burst Time	Priority																							
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P1	1	7	6																							
P2	2	3	3																							
P3	3	6	5																							
P4	4	5	4																							
7.	Explain Layered structure architecture. List its advantages and disadvantages.	1																								
8.	What is deadlock? Discuss the necessary conditions for deadlock.	3																								
9.	Discuss process transition diagram.	2																								
<u>PART-C: Attempt ANY ONE Question (1x10 = 10Marks)</u>																										
10.	a) Discuss the various services provided by Operating System.	1																								
	b) Differentiate between Monolithic & Microkernel.	1																								
11.	a) Compare preemptive and non-preemptive scheduling by taking suitable example.	2																								
	b) Consider the following processes for or a system that follows RR Scheduling with TQ=2. Find the Average Turnaround Time & Average Waiting Time.	2																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Process</th> <th>Arrival Time</th> <th>Burst Time</th> </tr> </thead> <tbody> <tr> <td>P0</td> <td>5</td> <td>5</td> </tr> <tr> <td>P1</td> <td>4</td> <td>6</td> </tr> <tr> <td>P2</td> <td>3</td> <td>7</td> </tr> <tr> <td>P3</td> <td>1</td> <td>9</td> </tr> <tr> <td>P4</td> <td>2</td> <td>2</td> </tr> </tbody> </table>			Process	Arrival Time	Burst Time	P0	5	5	P1	4	6	P2	3	7	P3	1	9	P4	2	2						
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IMS ENGINEERING COLLEGE
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CT-II

AY 2021-22 (Even Semester)
Date : 13/06/2022
Subject Code : KCS-401
Max. Marks : 30

Course : B.Tech
Semester : IV
Subject : Operating Systems
Time : 1.5 Hrs.

COURSE OUTCOMES	
CO1	Understand the structure & functions of OS.
CO2	Learn about Processes, Threads and Scheduling algorithms
CO3	Understand the principles of concurrency and Deadlocks
CO4	Learn various memory management scheme
CO5	Study I/O management and File systems.

Q. No.	Questions	CO																																																																																										
<u>PART- A: Attempt All Questions (5x1 = 5Marks)</u>																																																																																												
1.	What do you mean by Race Condition?	3																																																																																										
2.	What are the limitations of the Dekkers' Algorithm?	3																																																																																										
3.	Discuss the term "Busy Waiting".	3																																																																																										
4.	Name various Deadlock Recovery Mechanism.	3																																																																																										
5.	Define Cooperative Processes.	3																																																																																										
<u>PART-B: Attempt ANY THREE Questions (3x5 = 15Marks)</u>																																																																																												
6.	State the Producer Consumer Problem & give the solution for it.	3																																																																																										
7.	Write and explain the Petersons' Algorithm for Critical Section Problem.	3																																																																																										
8.	What do you mean by Critical Section Problem? Mention necessary conditions to the Critical Section problem.	3																																																																																										
9.	Discuss Mutual Exclusion implementation with the help of Test & Set Machine Instruction.	3																																																																																										
<u>PART-C: Attempt ANY ONE Question (1x10 = 10Marks)</u>																																																																																												
10.	a) Define Message Passing & Shared Memory Inter Process Communication	3																																																																																										
	b) Consider the following process	3																																																																																										
	<table border="1"> <thead> <tr> <th rowspan="2">Process</th> <th colspan="4">Allocation</th> <th colspan="4">Max</th> <th colspan="4">Available</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>P0</td> <td>0</td> <td>0</td> <td>1</td> <td>2</td> <td>0</td> <td>0</td> <td>1</td> <td>2</td> <td>1</td> <td>5</td> <td>2</td> <td>0</td> </tr> <tr> <td>P1</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>7</td> <td>5</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>P2</td> <td>1</td> <td>3</td> <td>5</td> <td>4</td> <td>2</td> <td>3</td> <td>5</td> <td>6</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>P3</td> <td>0</td> <td>6</td> <td>3</td> <td>2</td> <td>0</td> <td>6</td> <td>5</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>P4</td> <td>0</td> <td>0</td> <td>1</td> <td>4</td> <td>0</td> <td>6</td> <td>5</td> <td>6</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Process	Allocation				Max				Available				A	B	C	D	A	B	C	D	A	B	C	D	P0	0	0	1	2	0	0	1	2	1	5	2	0	P1	1	0	0	0	1	7	5	0					P2	1	3	5	4	2	3	5	6					P3	0	6	3	2	0	6	5	2					P4	0	0	1	4	0	6	5	6					
Process	Allocation				Max				Available																																																																																			
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P4	0	0	1	4	0	6	5	6																																																																																				
	(i) What is the content of the matrix need?																																																																																											
	(ii) Is the system in a safe state?																																																																																											
	(iii) If a request from process P1 arrives for (0,4,2,0), can the request be granted immediately?																																																																																											
11.	a) Discuss Dining Philosophers' Problem.	3																																																																																										
	b) What is Semaphore? Define the Primitive Operations involved in Semaphore Mechanism.	3																																																																																										

9/6/22



Roll No.

IMS ENGINEERING COLLEGE
Department of CSE/CS/IT

CT-III

AY 2021-22 (Even Semester)

Course : B.Tech
Semester : IV
Subject : Operating Systems
Time : 9:30AM - 11:00 AM

Date : 08/07/2022
Subject Code : KCS-401
Max. Marks : 30

COURSE OUTCOMES

CO-1	Understand the structure & functions of OS.
CO-2	Learn about Processes, Threads and Scheduling algorithms
CO-3	Understand the principles of concurrency and Deadlocks
CO-4	Learn various memory management scheme
CO-5	Study I/O management and File systems.

Q. No.	Questions	CO
PART- A: Attempt All Questions (5x1 = 5Marks)		
1 (a)	Explain Bare Machine & Resident Monitors.	4
1 (b)	Differentiate between Paging & Segmentation.	4
1 (c)	Define the term "Thrashing".	4
1 (d)	Discuss the need of an I/O Buffer.	5
1 (e)	Name different Disk Scheduling Algorithms.	5
PART-B: Attempt ANY THREE Questions (3x5 = 15Marks)		
2 (a)	Differentiate between Internal & External Fragmentation with example.	4
2 (b)	Consider the following reference string 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6. How many page faults will occur for if the Page Replacement algorithm employed is: i) FIFO ii) LRU Assume there are 3 frames in the Physical Address Space.	4
2 (c)	Explain different methods of disk space allocation.	5
2 (d)	Discuss various level of RAID.	5
PART-C: Attempt ANY ONE Question (1x10 = 10Marks)		
3	a) Explain the process of Demand Paging. Discuss its advantages & disadvantages.	4
	b) Consider a Demand Paged System. The Paged Tables are held in Registers. It takes 8 milliseconds to service a page fault if an empty page is available or the replaced page is not modified, & 20 milliseconds if the page is modified. Memory access time is 100 nanoseconds. Assume that the page to be replaced is modified 70% of the time. What is the maximum acceptable page fault rate for an effective access time of not more than 200 nanoseconds.	4
4	a) Explain the concept of File Sharing with file protection and security methods.	5
	b) Suppose the moving head disk with 200 tracks is currently serving a request for track 143 & has just finished a request for track 125. If the queue of request is kept in FIFO order 86, 147, 91, 177, 94, 150. What is the total head movement for the following scheduling: i) FCFS ii) SSTF iii) C-SCAN	5

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Question Bank

Subject :Operating Systems

Subject Code:KCS401

Unit 1 : Introduction

- Q.1 (CO1) Define Operating System. Write main functions of OS.
- Q.2 (CO1) Discuss any 4 types of OS.
- Q.3 (CO1) Describe symmetric and asymmetric multiprocessing
- Q.4 (CO1) What are the advantages of spooling?
- Q.5 (CO1) Explain layered structure of an OS along with its advantages and disadvantages.
- Q.6 (CO1) Explain the services provided by OS
- Q.7 (CO1) What is kernel? Differentiate between monolithic and microkernel.
- Q.8 (CO1) What do you understand by system call? Discuss 5 types of system calls related to process management.
- Q.9 (CO1) What is reentrant kernel?
- Q.10 (CO1) Differentiate between multiprogramming and multiprocessing OS.
- Q.11 (CO1) Explain time sharing operating system?
- Q.12 (CO1) Explain simple batch system?
- Q.13 (CO1) Describe the operating system operations?
- Q.14 (CO1) What are operating system services?
- Q.15 (CO1) What are the various objectives of Operating systems?
- Q.16 (CO1) Explain User Operating-System Interface in detail.
- Q.17 (CO1) Explain computer system architecture?
- Q.18 (CO1) What is os user interface?

Q.19 (CO1) Explain virtual machines.

Q.20 (CO1) Explain the basic instruction cycle with appropriate diagram.

Unit 2 :Concurrent Processes

Q.1 (CO3) Define Message Passing & Shared Memory Inter Process Communication.

Q.2 (CO3) Compare Independent and cooperative processes.

Q.3 (CO3) What do you mean by Critical Section Problem?

Q.4 (CO3) Write and explain the Dekker' Algorithm for Critical Section Problem. Discuss its **limitations** also.

Q.5(CO3) Discuss atomic operations performed on Semaphore and also explain various applications of Semaphore.

Q.6 (CO3) Define Sleeping barber's problem in detail and discuss its solution.

Q.7 (CO3) Discuss Mutual Exclusion implementation with the help of Test & Set Machine Instruction.

Q.8 (CO3) Write and explain the Petersons' Algorithm for Critical Section Problem.

Q.9 (CO3) State the Producer Consumer Problem & give the solution for it.

Q.10 (CO3) Discuss Dining Philosophers' Problem.

Q.11 (CO3) Define entry section and exit section.

Q.12(CO3) Define semaphores

Q.13 (CO3) Discuss the "Race Condition" by taking suitable example

Q.14 (CO3) What are the requirements that a solution to the critical section problem must satisfy?

Q.15 (CO3) Explain necessary conditions to the Critical Section problem.

Q.16 (CO2) Explain Inter Process Communication models

Q.17 (CO2) Explain Process generation

Q.18 (CO3) Define process?

Q.19 (CO2) Explain different process states.

Q.20 (CO2) Explain Mutual Exclusion.

Unit 3 :CPU Scheduling

Q.1 (CO2)What is CPU Scheduling?

Q.2 (CO2) Discuss the performance criteria for CPU Scheduling.

Q.3 (CO2) What is the objective of CPU Scheduling?

Q.4 (CO2) What is the difference between pre-emptive & non pre-emptive scheduling?

Q.5 (CO2) List out various states of Process.

Q.6 (CO2) What is Process control Block?

Q.7 (CO2) Discuss process transition diagram.

Q.8 (CO2)Differentiate between long term, mid term and short-term scheduler.

Q.9 (CO2)Explain process control block with all its components.

Q.10(CO2)Discuss various mechanisms used for deadlock recovery.

Q.11 (CO2)What is a deadlock? Explain the necessary conditions for deadlock.

Q.12 (CO2)Consider the set of 4 processes whose arrival time and burst time are given below-

Process No.	Arrival Time	Burst Time
P1	0	3
P2	0	2
P3	2	1
P4	5	2

If the CPU scheduling policy is Shortest Remaining Time First, calculate the average waiting time and average turnaround time.

Q.13 (CO3)Consider the following process for a system that follows RR Scheduling with TQ=2. find Average Turnaround Time & Average Waiting Time

Process	Arrival Time	Burst Time
P0	5	5
P1	4	6

Q.3 (CO4) Write a short note on a) Dynamic Loading b) Dynamic Linking

Q.4 (CO4) Write a short note on a) Overlays b) Swapping

Q.5 (CO4) Discuss Logical versus physical address space.

Q.6 (CO4) Define terms a) Bare Machine b) Resident Monitor

Q.7 (CO4) Briefly discuss holes in memory partitioning.

Q.8 (CO4) Describe memory allocation.

Q.9 (CO4) Differentiate between Internal & External Fragmentation

Q.10 (CO4) Given memory partitions of 100K, 500K, 200K, 300K and 600K (in order). How would **each of the** first fit, best fit and worst fit algorithms place processes of 212K, 417K, 112K and 426K(in order)? **Which** algorithms makes the most efficient use of memory?

Q.11 (CO4) Explain the process of Demand Paging. What are its advantages & disadvantages?

Q.12 (CO4) Explain the concept of Segmentation in Paging.

Q.13 (CO4) Consider a Demand Paged System. The Paged Tables are held in Registers. It takes 8 milliseconds to service a page fault if an empty page is available or the replaced page is not modified, & 20 milliseconds if the page is modified. Memory access time is 100 nanoseconds. Assume that the page to be replaced is modified 70% of the time. What is the maximum acceptable page fault rate for an effective access time of not more than 200 nanoseconds?

Q.14 (CO4) Consider the following reference string 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6. How many **page faults** will occur for if the Page Replacement algorithm employed is:

- i) FIFO
- ii) LRU

Assume there are 3 frames in the Physical Address Space.

Q.15 (CO4) Write a short note on Cache Memory.

Q.16 (CO4) Explain FIFO Page Replacement algorithm and Belady's Anamoly Problem.

Q.17 (CO4) Explain Translation Look Aside Buffer?

Q.18 (CO4) Discuss page replacement algorithms with example.

Q.19 (CO4) Describe in detail the actions taken by the OS when a page fault occurs

Q.20 (CO4) Discuss the paging hardware with TLB.