



**Hope Foundation's
International Institute of Information Technology, Pune**

**DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II**

COURSE FILE INDEX

Sr. No.	Format	DISCRIPTION
1	Vision, Mission of Institute	
2	Vision Mission of Department	
3	Program Educational Objectives, Program Outcomes, and Program Specific Outcomes	
4	Institute Academic Calendar	
5	Department Academic Calendar	I2IT / ACAD / SP / 01
6	Class wise Time Table	I2IT / ACAD / TT / 01
7	Faculty wise Time Table	I2IT / ACAD / TT / 02
8	Lab wise Time Table in case of Lab – In charge	I2IT / ACAD / TT / 04
9	University Syllabus	
10	Lesson Plan Resources	I2IT / ACAD / CP / 05
11	Course Objectives and Outcomes (Theory)	I2IT / ACAD / CP / 01
12	Correlation of COs with POs (Theory)	I2IT / ACAD / CP / 02
13	CO-PO mapping Justification (Theory)	I2IT / ACAD / CP / 02A
14	Course Objectives and Outcomes (Laboratory)	I2IT / ACAD / CP / 01
15	Correlation of COs with POs (Laboratory)	I2IT / ACAD / CP / 02
16	CO-PO mapping Justification (Laboratory)	I2IT / ACAD / CP / 02A
17	Theory Teaching Plan	I2IT / ACAD / CP / 03
18	Laboratory Teaching Plan	I2IT / ACAD / CP / 04
19	List of Laboratory Assignments	I2IT / ACAD / CP / 04A
20	Rubrics for Continuous evaluation	I2IT / ACAD / CP / 06
21	Previous University Question Papers	
22	Theory Question Bank	I2IT / ACAD / CP / 21
23	Objective Question Bank	
24	List of Theory Assignments	I2IT / ACAD / CP / 18
25	Class Test Question Papers with solutions	I2IT / ACAD / CP / 07
26	Class Test Attendance	I2IT / ACAD / CP / 08
27	Course Outcomewise Class Test Marksheet	I2IT / ACAD / CP / 08A
28	Class Test Evaluation Record	I2IT / ACAD / CP / 12
29	Slow Learner and Advanced Learner Identification	I2IT / ACAD / CP / 09
30	Schedule of Slow Learner Activities	I2IT / ACAD / CP / 10
31	Assignments to Advanced Learners	I2IT / ACAD / CP / 11
32	List of Slow Learners	I2IT / ACAD / CP / 13
33	List of Advanced Learners	I2IT / ACAD / CP / 14
34	Slow Learner Attendance Record	I2IT / ACAD / CP / 15

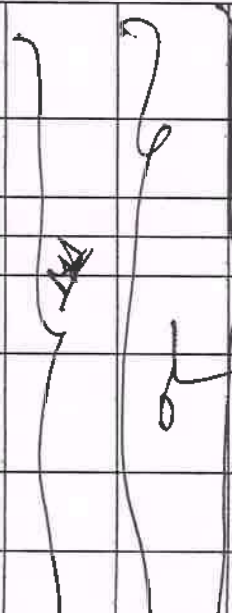
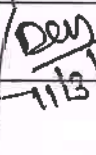
Sr. No.	Format	DISCRIPTION
35	Performance Improvement of Slow Learner	I2IT / ACAD / CP / 16
36	Innovative Practices in Teaching-Learning and ICT	I2IT / ACAD / CP / 19
37	Content Beyond Syllabus (CBS)	I2IT / ACAD / CP / 17
38	CBS Attendance Record	I2IT / ACAD / CP / 17A
39	Previous University Result	I2IT / ACAD / CP / 21
40	TW Calculation Sheet	I2IT / ACAD / CP / 20
41	Course End Survey (Theory & Laboratory)	I2IT / ACAD / CP / 22
42	Theory Attendance Record	I2IT / ACAD / BB / 01
43	Practical Attendance Record	I2IT / ACAD / BB / 02
44	Continuous Assessment Record	I2IT / ACAD / BB / 03
45	Assignment Assessment Record	I2IT / ACAD / BB / 04
46	Average University Result	I2IT / ACAD / AT / 01
47	CO Attainment through University Result	I2IT / ACAD / AT / 02
48	CO Attainment through Class Test & Theory Assignment	I2IT / ACAD / AT / 03
49	CO Attainment through Course End Survey	I2IT / ACAD / AT / 04
50	CO Attainment through Continuous Evaluation	I2IT / ACAD / AT / 05
51	PO & PSO Attainment through CO for Theory	I2IT / ACAD / AT / 06
52	PO & PSO Attainment through CO for Practical	I2IT / ACAD / AT / 06





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 210254				Class: SE 2019		Faculty Name: Dr. Deepak S. Uplaonkar					
Course Name: Microprocessor					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
UNIT 1 : Introduction to 80386											
1	1.1	Prerequisite : First Lecture Activity Conduction, Coverage of Syllabus of Prerequisite 1, Teaching Scheme Awareness			CEO215.1 CEO215.2 CEO215.3	CO215.1	08/02/23	14/02/23			
2	1.2	Brief History of Intel Processors, 80386 DX Features and Architecture					09/02/23	15/02/23			
3	1.3	Programmers Model, Operating modes,					10/02/23	15/02/23			
4	1.4	Addressing modes and Data types					15/02/23	16/02/23			
5	1.5	Data Movement Instructions, Binary Arithmetic Instructions, Decimal Arithmetic Instructions					16/02/23	17/02/23			
6	1.6	Logical Instructions, Control Transfer Instructions, String and Character Transfer Instructions					17/02/23	21/02/23			
7	1.7	Instructions for Block Structured Language, Flag Control Instructions					22/02/23	22/02/23			
8	1.8	Coprocessor Interface Instructions, Segment Register Instructions, Miscellaneous Instructions					23/02/23	23/02/23			



UNIT 2 : Bus Cycle and Systems Architecture

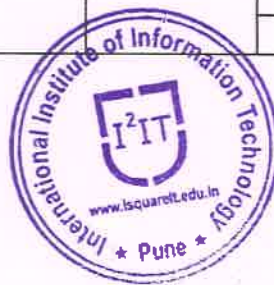
9	2.1	Initialization: Processor state after reset	CEO215.1 CEO215.2 CEO215.3	CO215.2	24/02/23	23/02/23			
10	2.2	Functional pin diagram, functionality of various pins			01/03/23	27/02/23			
11	2.3	I/O Organization, Memory organization			02/03/23	01/03/23			
12	2.4	Basic memory read and write cycles with timing diagram			03/03/23	02/03/23			
13	2.5	System Registers			08/03/23	03/03/23			
14	2.6	System Registers continued			09/03/23	08/03/23			
15	2.7	System Instructions			10/03/23	08/03/23			
16		Class Test I							

UNIT 3 : Memory Management

17	3.1	Global descriptor table	CEO215.1 CEO215.2 CEO215.3	CO215.3	15/03/23	15/03/23			
18	3.2	Local descriptor table			16/03/23	16/03/23			
19	3.3	Interrupt descriptor table			17/03/23	17/03/23			
20	3.4	GDTR, LDTR, IDTR			23/03/23	21/03/23			
21	3.5	Formats of descriptors and selectors			24/03/23	23/03/23			
22	3.6	Segment translation			29/03/23	31/03/23			
23	3.7	Page translation			30/03/23	19/04/23	Due to insert		
24	3.8	Combined Segment and page translation			31/03/23	20/04/23	— u —		

UNIT 4 : Protection

25	4.1	Need of Protection	CEO215.1 CEO215.2 CEO215.3	CO215.4	05/04/23	21/04/23	Due to insert		
26	4.2	Overview of 80386DX Protection Mechanisms			05/04/23	26/04/23	— u —		
27	4.3	Protection rings and levels			06/04/23	27/04/23	— u —		
28	4.4	Privileged instruction			06/04/23	27/04/23			
29	4.5	Concept of DPL, CPL, RPL, EPL			12/04/23	28/04/23			
30	4.6	Segment Level Protection			12/04/23	28/04/23			
31	4.7	Page Level Protection			13/04/23	29/04/23			
32	4.8	Combining Segment and Page Level Protection			13/04/23	29/04/23			
33		Class Test II							



UNIT 5 : Multitasking and Virtual 8086 Mode

34	5.1	Task State Segment	CEO215.1 CEO215.2 CEO215.3	CO215.5	19/04/23	02/05/23			
35	5.2	TSS Descriptor, Task Register			19/04/23	02/05/23			
36	5.3	Task Gate Descriptor			20/04/23	03/05/23			
37	5.4	Task Switching, Task Linking			20/04/23	03/05/23			
38	5.5	Task Address Space			21/04/23	11/05/23			
39	5.6	Virtual 8086 Mode- Features			21/04/23	11/05/23			
40	5.7	Memory management in virtual mode: Structure Of V86 Stack			26/04/23	15/05/23			
41	5.8	Entering And Leaving V86 Mode			26/04/23	15/05/23			

UNIT 6 : Interrupts, Exceptions and Introduction to Microcontrollers

42	6.1	Identifying Interrupts Enabling & Disabling Interrupts,	CEO215.1 CEO215.2 CEO215.3	CO215.6	27/04/23	16/05/23			
43	6.2	Priority among Simultaneous Interrupts & Exceptions			27/04/23	17/05/23			
44	6.3	Interrupt Descriptor Table (IDT), IDT Descriptors			28/04/23	17/05/23			
45	6.4	Interrupt Tasks and Interrupt Procedures			28/04/23	18/05/23			
46	6.5	Error Code, and Exception Conditions			03/05/23	19/05/23			
47	6.6	Introduction to Microcontrollers: Architecture of typical Microcontroller			03/05/23	24/05/23			
48	6.7	Difference between Microprocessor and Microcontroller,			04/05/23	26/05/23			
49	6.8	Characteristics of microcontrollers Application of Microcontrollers.			04/05/23	26/05/23			
50		Class Test III							

Start of Semester

Signature	Date
Course Faculty :	08/02/23
HoD :	10/02/23



End of Semester

Signature	Date
Course Faculty :	27/05/23
HoD :	31/05/23



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

I2IT / ACAD / CP / 04 Ver 01

PRACTICAL TEACHING RECORD

Course Code: 210257				Class: SE 2019		Faculty Name: Dr. Deepak S. Uplaonkar			
Course Name: Microprocessor Laboratory				Batch: A		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Write an X86/64 ALP to accept five 64 bit Hexadecimal numbers from user and store them in an array and display the accepted numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	7/2/2023 14/02/23 21/02/23	14/02 21/02 14/03				
2	Write an X86/64 ALP to accept a string and to display its length.	CEO218.1 CEO218.2 CEO218.3	CO218.1	28/02/23	21/02				
3	Write an X86/64 ALP to find the largest of given Byte/Word/Dword/64-bit numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	14/03/23	21/03				
4	Write a switch case driven X86/64 ALP to perform 64-bit hexadecimal arithmetic operations (+, -, *, /) using suitable macros. Define procedure for each operation.	CEO218.1 CEO218.2 CEO218.3	CO218.2	21/03/23	18/04				
5	Write an X86/64 ALP to count number of positive and negative numbers from the array.	CEO218.1 CEO218.2 CEO218.3	CO218.1	28/03/23	25/04				
6	Write X86/64 ALP to convert 4-digit Hex number into its equivalent BCD number and 5-digit BCD number into its equivalent HEX number. Make your program user friendly to accept the choice from user for: (a) HEX to BCD b) BCD to HEX (c) EXIT. Display proper strings to prompt the user while accepting the input and displaying the result. (Wherever necessary, use 64-bit registers).	CEO218.1 CEO218.2 CEO218.3	CO218.3	04/04/23	16/05				
7	Write X86/64 ALP to detect protected mode and display the values of GDTR, LDTR, IDTR, TR and MSW Registers also identify CPU type using CPUID instruction.	CEO218.1 CEO218.2 CEO218.3	CO218.4	11/04/23	02/05				
8	Write X86/64 ALP to perform non-overlapped block transfer without string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	18/04/23	16/05				
9	Write X86/64 ALP to perform overlapped block transfer with string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	25/04/23	23/05				
10	Write X86/64 ALP to perform multiplication of two 8-bit hexadecimal numbers. Use successive addition and add and shift method. (use of 64-bit registers is expected).	CEO218.1 CEO218.2 CEO218.3	CO218.2	02/05/23	23/05				

Start of Semester

Signature	Date	Signature	Date
Course Faculty :	07/02/23	Course Faculty :	27/05
HoD :	10/02/23	HoD :	31/05





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International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

12IT / ACAD / CP / 04 Ver 01

PRACTICAL TEACHING RECORD

Course Code: 210257				Class: SE 2019		Faculty Name: Dr. Deepak S. Uplankar			
Course Name: Microprocessor Laboratory				Batch: B		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMO
1	Write an X86/64 ALP to accept five 64 bit Hexadecimal numbers from user and store them in an array and display the accepted numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	7/2/2023 14/02/23 21/02/23	14/02 15/02 14/03				
2	Write an X86/64 ALP to accept a string and to display its length.	CEO218.1 CEO218.2 CEO218.3	CO218.1	28/02/23	21/02				
3	Write an X86/64 ALP to find the largest of given Byte/Word/Dword/64-bit numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	06/03/23	21/03				
4	Write a switch case driven X86/64 ALP to perform 64-bit hexadecimal arithmetic operations (+, -, *, /) using suitable macros. Define procedure for each operation.	CEO218.1 CEO218.2 CEO218.3	CO218.2	21/03/23	18/04				
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6	Write X86/64 ALP to convert 4-digit Hex number into its equivalent BCD number and 5-digit BCD number into its equivalent HEX number. Make your program user friendly to accept the choice from user for: (a) HEX to BCD b) BCD to HEX (c) EXIT. Display proper strings to prompt the user while accepting the input and displaying the result. (Wherever necessary, use 64-bit registers).	CEO218.1 CEO218.2 CEO218.3	CO218.3	04/04/23	16/05				
7	Write X86/64 ALP to detect protected mode and display the values of GDTR, LDTR, IDTR, TR and MSW Registers also identify CPU type using CPUID instruction.	CEO218.1 CEO218.2 CEO218.3	CO218.4	11/04/23	02/05				
8	Write X86/64 ALP to perform non-overlapped block transfer without string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	18/04/23	16/05				
9	Write X86/64 ALP to perform overlapped block transfer with string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	25/04/23	23/05				
10	Write X86/64 ALP to perform multiplication of two 8-bit hexadecimal numbers. Use successive addition and add and shift method. (use of 64-bit registers is expected).	CEO218.1 CEO218.2 CEO218.3	CO218.5	05/05/23	23/05				

Start of Semester

Signature	Date
Course Faculty:	07/05/23
HoD:	10/05/23



End of Semester

Signature	Date
Course Faculty:	27/05
HoD:	31/05



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

I2IT / ACAD / CP / 04 Ver 01

PRACTICAL TEACHING RECORD

Course Code: 210257				Class: SE 2019		Faculty Name: Dr. Deepak S. Uplankar			
Course Name: Microprocessor Laboratory				Batch: C		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Write an X86/64 ALP to accept five 64 bit Hexadecimal numbers from user and store them in an array and display the accepted numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	06/02/23 13/02/23 20/02/23	22/02 27/02 13/03				
2	Write an X86/64 ALP to accept a string and to display its length.	CEO218.1 CEO218.2 CEO218.3	CO218.1	27/02/23	06/03				
3	Write an X86/64 ALP to find the largest of given Byte/Word/Dword/64-bit numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	06/03/23	20/03				
4	Write a switch case driven X86/64 ALP to perform 64-bit hexadecimal arithmetic operations (+, -, *, /) using suitable macros. Define procedure for each operation.	CEO218.1 CEO218.2 CEO218.3	CO218.2	13/03/23	24/04				
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6	Write X86/64 ALP to convert 4-digit Hex number into its equivalent BCD number and 5-digit BCD number into its equivalent HEX number. Make your program user friendly to accept the choice from user for: (a) HEX to BCD b) BCD to HEX (c) EXIT. Display proper strings to prompt the user while accepting the input and displaying the result. (Wherever necessary, use 64-bit registers).	CEO218.1 CEO218.2 CEO218.3	CO218.3	27/03/23	12/05				
7	Write X86/64 ALP to detect protected mode & display the values of GDTR, LDTR, IDTR, TR & MSW Registers also identify CPU type using CPUID instruction.	CEO218.1 CEO218.2 CEO218.3	CO218.4	03/04/23	14/05				
8	Write X86/64 ALP to perform non-overlapped block transfer without string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	10/04/23	14/05				
9	Write X86/64 ALP to perform overlapped block transfer with string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	17/04/23	19/05				
10	Write X86/64 ALP to perform multiplication of two 8-bit hexadecimal numbers. Use successive addition and add and shift method. (use of 64-bit registers is expected).	CEO218.1 CEO218.2 CEO218.3	CO218.5	24/04/23	22/05				

Start of Semester

Signature	Date
Course Faculty :	07/02/23
HoD :	10/02/23

End of Semester

Signature	Date
Course Faculty :	27/05
HoD :	07/06





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

12IT/ACAD/CP/04 Ver 01

PRACTICAL TEACHING RECORD

Course Code: 210257		Class: SE 2019		Faculty Name: Dr. Deepak S. Uplaonkar					
Course Name: Microprocessor Laboratory				Batch: D		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APM
1	Write an X86/64 ALP to accept five 64 bit Hexadecimal numbers from user and store them in an array and display the accepted numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	08/02/23 15/02/23 22/02/23	15/02 22/02 01/03				
2	Write an X86/64 ALP to accept a string and to display its length.	CEO218.1 CEO218.2 CEO218.3	CO218.1	01/03/23	15/03				
3	Write an X86/64 ALP to find the largest of given Byte/Word/Dword/64-bit numbers.	CEO218.1 CEO218.2 CEO218.3	CO218.1	08/03/23	15/03				
4	Write a switch case driven X86/64 ALP to perform 64-bit hexadecimal arithmetic operations (+, -, *, /) using suitable macros. Define procedure for each operation.	CEO218.1 CEO218.2 CEO218.3	CO218.2	15/03/23	19/04				
5	Write an X86/64 ALP to count number of positive and negative numbers from the array.	CEO218.1 CEO218.2 CEO218.3	CO218.1	29/03/23	26/04				
6	Write X86/64 ALP to convert 4-digit Hex number into its equivalent BCD number and 5-digit BCD number into its equivalent HEX number. Make your program user friendly to accept the choice from user for: (a) HEX to BCD b) BCD to HEX (c) EXIT. Display proper strings to prompt the user while accepting the input and displaying the result. (Wherever necessary, use 64-bit registers).	CEO218.1 CEO218.2 CEO218.3	CO218.3	05/04/23	12/05				
7	Write X86/64 ALP to detect protected mode & display the values of GDTR, LDTR, IDTR, TR & MSW Registers also identify CPU type using CPUID instruction.	CEO218.1 CEO218.2 CEO218.3	CO218.4	12/04/23	12/05				
8	Write X86/64 ALP to perform non-overlapped block transfer without string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	19/04/23	14/05				
9	Write X86/64 ALP to perform overlapped block transfer with string specific instructions. Block containing data can be defined in the data segment.	CEO218.1 CEO218.2 CEO218.3	CO218.5	26/04/23	18/05				
10	Write X86/64 ALP to perform multiplication of two 8-bit hexadecimal numbers. Use successive addition and add and shift method. (use of 64-bit registers is expected).	CEO218.1 CEO218.2 CEO218.3	CO218.2	03/05/23	24/05				

Start of Semester

Signature	Date
Course Faculty :	09/02/23
HoD :	12/02/23

End of Semester

Signature	Date
Course Faculty :	27/05
HoD :	31/05






Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 310243				Class: TE 2019		Name of Faculty: Prof. Arya Chandrapal Singh						
Course Name: System Programming & Operating System						Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered				CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
										AC	HOD	APMC
UNIT 1 : Introduction												
1	1.1	Introduction to System Programming, explanation of CEOs,COs, POs, PSOs, CO-PO Mapping				CEO303.1	CO303.1, CO303.2, CO303.3	18/7/2022	18/7/2022			
2	1.2	Need of Systems Programming, Software Hierarchy, Types of software: system software and application software						19/7/2022	18/7/2022			
3	1.3	Evolution of components of Systems Programming: Text Editors, Assembler, Macros, Compiler, Interpreter						20/7/2022	19/7/2022			
4	1.4	Loader, Linker, Debugger, Device Drivers, Operating System						21/7/2022	20/7/2022			
5	1.5	Elements of Assembly Language Programming: Assembly Language statements						25/7/2022	21/7/2022			
6	1.6	Benefits of Assembly Language, A simple Assembly scheme, Pass Structure of Assembler						28/7/2022	25/7/2022			
7	1.7	Design of two pass Assembler: Processing of declaration statements, Assembler Directives and imperative statements						29/7/2022	28/7/2022			
8	1.8	Advanced Assembler Directives, Intermediate code forms, Pass I and Pass II of two pass Assembler						1/8/2022	29/7/2022			
UNIT 2 : Macro Processor and Compilers												
9	2.1	Introduction to Macro, Features of a Macro facility						4/8/2022	1/8/2022			
10	2.2	Macro instruction arguments, Conditional Macro expansion, Macro calls within Macros						5/8/2022	4/8/2022			





11	2.3	Macro instructions, Defining Macro, Design of two pass Macro processor	CEO303.2	CO303.1, CO303.2, CO303.3	8/8/2022	5/8/2022		}	}	}
12	2.4	Concept of single pass Macro processor			11/8/2022	8/8/2022				
13	2.5	Introduction to Compilers: Phases of Compiler with one example			12/8/2022	12/8/2022				
14	2.6	Comparison of Compiler and Interpreter			18/8/2022	22/8/2022				
UNIT 3 : Linkers and Loaders										
15	3.1	Introduction to Loaders, Loader schemes	CEO303.3	CO303.1, CO303.2, CO303.3	19/8/2022	25/8/2022		}	}	}
16	3.2	Compile and Go, General Loader Scheme			22/8/2022	26/8/2022				
17	3.3	Absolute Loaders, Subroutine Linkages			25/8/2022	29/8/2022				
18	3.4	Relocating Loaders, Direct linking Loaders, Overlay structure			26/8/2022	1/9/2022				
19	3.5	Design of an Absolute Loader			29/8/2022	2/9/2022				
20	3.6	Design of Direct linking Loader			1/9/2022	5/9/2022				
21	3.7	Self-relocating programs, Static and Dynamic linking			2/9/2022	8/9/2022				
UNIT 4 : Operating System (OS)										
22	4.1	Introduction to Operating Systems, Evolution of OS, Operating System Services	CEO303.4	CO303.4	5/9/2022	12/9/2022		}	}	}
23	4.2	Functions of Operating System			8/9/2022	12/9/2022				
24	4.3	Process Management: Process, Process States: 5 and 7 state model, Process control block			12/9/2022	14/9/2022				
25	4.4	Threads, Thread life cycle, Multithreading Model, Process control system calls			15/9/2022	15/9/2022				
26	4.5	Process Scheduling: Uni-processor Scheduling, Scheduling: Preemptive, Non-preemptive			16/9/2022	16/9/2022				
27	4.6	Longterm, Medium-term, Short term scheduling			19/9/2022	22/9/2022				
28	4.7	Scheduling Algorithms: FCFS, SJF, RR, and Priority			22/9/2022	23/9/2022				
UNIT 5 : Synchronization and Concurrency Control										
29	5.1	Concurrency: Principle and issues with Concurrency		CO303.5	23/9/2022	26/9/2022		}	}	}
30	5.2	Mutual Exclusion, Hardware approach			26/9/2022	29/9/2022				
31	5.3	Software approach, Semaphore, Mutex and monitor			29/9/2022	30/9/2022				
32	5.4	Reader writer problem, Producer Consumer problem, Dining Philosopher problem			30/9/2022	12/10/2022				





33	5.5	Deadlocks: Principle of Deadlock, Deadlock prevention			3/10/2022	14/10/2022			
34	5.6	Deadlock avoidance, Deadlock detection, Deadlock recovery			6/10/2022	17/10/2022			
35	5.7	Case Study: Concurrency Mechanism: Unix/Linux/Windows			7/10/2022	17/10/2022			
UNIT 6 : Memory Management									
36	6.1	Introduction: Memory Management concepts, Memory Management requirements	CEO303.6	CO303.6	10/10/2022	18/10/2022			
37	6.2	Memory Partitioning: Fixed Partitioning, Dynamic Partitioning, Buddy Systems Fragmentation, Paging, Segmentation, Address translation			13/10/2022	19/10/2022			
38	6.3	Placement Strategies: First Fit, Best Fit, Next Fit and Worst Fit			14/10/2022	3/11/2022			
39	6.4	Virtual Memory (VM): Concepts, Swapping, VM with Paging, Page Table Structure			17/10/2022	4/11/2022			
40	6.5	Inverted Page Table, Translation Look aside Buffer, Page Size, VM with Segmentation, VM with Combined paging and segmentation			20/10/2022	7/11/2022			
41	6.6	Page Replacement Policies: First In First Out (FIFO)			21/10/2022	10/11/2022			
42	6.7	Last Recently Used(LRU), Optimal, Thrashing, Case Study: Memory management in Linux /Windows/Android			31/10/2022	10/11/2022			

Start of Semester

Signature	Date
Course Faculty : 	18/7/22
HoD : 	20/7/22



End of Semester

Signature	Date
Course Faculty : 	5/11/22
HoD : 	20/10/22



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester I

PRACTICAL TEACHING RECORD

Course Code: 310248				Class: TE 2019		Name of Faculty: Prof. Arya Chandrapal Singh			
Course Name: Laboratory Practice-I				Batch: A		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design of Two Pass Assembler	CEO308.1	CO308.1	25/7/2022	1/7/2022				
2	Design of Two Pass Macroprocessor	CEO308.1	CO308.1	8/8/2022	22/8/2022				
3	Design of Dynamic Link Library	CEO308.1	CO308.2	29/8/2022	5/9/2022				
4	Synchronization using Mutex and Semaphore	CEO308.2	CO308.3	12/9/2022	19/9/2022				
5	Simulation of CPU Scheduling Algorithms: FCFS, SJF, Priority and Round Robin			19/9/2022	26/9/2022				
6	Simulation of Memory placement strategies – best fit, first fit, next fit and worst fit			26/9/2022	10/10/2022				
7	Simulation of Page replacement algorithm			10/10/2022	17/10/2022				

Start of Semester

Signature	Date
Course Faculty :	18/7/22
HoD :	20/7/22



End of Semester

Signature	Date
Course Faculty :	5/11/22
HoD :	30/10/22



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester I

PRACTICAL TEACHING RECORD

Course Code: 310248				Class: TE 2019		Name of Faculty: Prof. Arya Chandrapal Singh			
Course Name: Laboratory Practice-I				Batch: B		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design of Two Pass Assembler	CEO308.1	CO308.1	28/7/2022	2/8/2022		2	2	
2	Design of Two Pass Macroprocessor	CEO308.1	CO308.1	11/8/2022	17/8/2022				
3	Design of Dynamic Link Library	CEO308.1	CO308.2	18/8/2022	7/9/2022				
4	Synchronization using Mutex and Semaphore	CEO308.2	CO308.3	8/9/2022	20/9/2022				
5	Simulation of CPU Scheduling Algorithms: FCFS, SJF, Priority and Round Robin			22/9/2022	28/9/2022				
6	Simulation of Memory placement strategies – best fit, first fit, next fit and worst fit			29/9/2022	12/10/2022				
7	Simulation of Page replacement algorithm			13/10/2022	19/10/2022				

Start of Semester

Signature	Date
Course Faculty :	12/7/22
HoD :	9/7/22



End of Semester

Signature	Date
Course Faculty :	5/10/22
HoD :	31/10/22



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester I

PRACTICAL TEACHING RECORD

Course Code: 310248				Class: TE 2019		Name of Faculty: Prof. Arya Chandrapal Singh			
Course Name: Laboratory Practice-I				Batch: C		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design of Two Pass Assembler	CEO308.1	CO308.1	27/7/2022	4/8/2022				
2	Design of Two Pass Macroprocessor	CEO308.1	CO308.1	10/8/2022	1/9/2022				
3	Design of Dynamic Link Library	CEO308.1	CO308.2	24/8/2022	15/9/2022				
4	Synchronization using Mutex and Semaphore	CEO308.2	CO308.3	14/9/2022	22/9/2022				
5	Simulation of CPU Scheduling Algorithms: FCFS, SJF, Priority and Round Robin			21/9/2022	11/10/2022				
6	Simulation of Memory placement strategies – best fit, first fit, next fit and worst fit			28/9/2022	3/11/2022				
7	Simulation of Page replacement algorithm			12/10/2022	4/11/2022				

Start of Semester

Signature	Date
Course Faculty :	18/7/22
HoD :	20/7/22



End of Semester

Signature	Date
Course Faculty :	5/11/22
HoD :	20/11/22



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 410252(A)				Class: BE 2019		Name of Faculty: Prof. Deptii Chaudhari					
Course Name: Natural Language Processing					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
									AC	HOD	APMC
UNIT 1 : Introduction to Natural Language Processing											
1	1.1	What is natural language processing? Stages of NLP			CEO412.1	CO412.1	01-02-2023	01/02/23		MA	Den
2	1.2	Why NLP is hard?					06-02-2023	02/02/23			
3	1.3	Programming languages Vs Natural Languages					07-02-2023	06/02/23			
4	1.4	Are natural languages regular? Finite automata for NLP					08-02-2023	07/02/23			
5	1.5	Challenges and Issues(Open Problems) in NLP					13-02-2023	08/02/23			
6	1.6	Basics of text processing: Tokenization, Stemming, Lemmatization, Part of Speech Tagging					14-02-2023	13/02/23			
UNIT 2 : Language Syntax and Semantics											
7	2.1	What is Morphology? Types of Morphemes, Inflectional morphology & Derivational morphology			CEO412.2	CO412.2	15-02-2023	14/02/23		MA	Den
8	2.2	Morphological parsing with Finite State Transducers (FST)					20-02-2023	15/02/23			
9	2.3	Syntactic Representations of Natural Language, Parsing Algorithms					21-02-2023	20/02/23			
10	2.4	Probabilistic context-free grammars, and Statistical parsing					22-03-2023	22/02/23			
11	2.5	Lexical Semantic, Relations among lexemes & their senses –Homonymy, Polysemy, Synonymy, Hyponymy, WordNet, Word Sense Disambiguation (WSD)					27-02-2023	22/02/23			
12	2.6	Dictionary based approach, Event Semantic Analysis					28-02-2023	27/02/23			



UNIT 3 : Language Modelling

13	3.1	Probabilistic language modeling, Markov models	CEO412.2	CO412.3	01-03-2023	28/02/23			
14	3.2	Generative models of language, Log-Linear Models, Graph-based Models			06-03-2023	02/03/23			
15	3.3	Simple n-gram models, Estimation parameters and smoothing			08-03-2023	06/03/23			
16	3.4	Evaluating language models, Word Embeddings/ Vector Semantics: Bag-of-words, TFIDF, word2vec, doc2vec			13-03-2023	08/03/23			
17	3.5	Contextualized representations (BERT)			14-03-2023	14/03/23			
18	3.6	Latent Dirichlet Allocation (LDA), Latent Semantic Analysis, Non Negative Matrix Factorization			15-03-2023	15/03/23			

UNIT 4 : Information Retrieval using NLP

19	4.1	Introduction to Informational Retrieval, Vector Space Model	CEO412.2	CO412.4	20-03-2023	20/03/23			
20	4.2	NER System Building Process			21-03-2023	22/03/23			
21	4.3	Evaluating NER System			27-03-2023	27/03/23			
22	4.4	Entity Extraction, Relation Extraction			28-03-2023	20/04/23	Dhruva		
23	4.5	Reference Resolution			29-03-2023	11/04/23	Dhruva		
24	4.6	Coreference resolution, Cross Lingual Information Retrieval			03-04-2023	12/04/23	Insem		

UNIT 5 : NLP Tools and Techniques

25	5.1	Prominent NLP Libraries: Natural Language Tool Kit (NLTK), spaCy, TextBlob, Gensim etc.	CEO412.3	CO412.5	04-04-2023	17/04/23	Insem		
26	5.2	Lexical Knowledge Networks, WordNets			05-04-2023	18/04/23	Insem		
27	5.3	Indian Language WordNet (IndoWordnet)			10-04-2023	19/04/23			
28	5.4	VerbNets, PropBank, Treebanks, Universal Dependency Treebanks			11-04-2023	24/04/23			
29	5.5	Word Sense Disambiguation			12-04-2023	25/04/23			
30	5.6	Lesk Algorithm, Walker's algorithm, WordNets for Word Sense Disambiguation			17-04-2023	25/04/23			



UNIT 6 : Applications of NLP									
31	6.1	Machine Translation: Rule based techniques	CEO314.4	CO314.6	18-04-2023	26/04/23	Debm	Debm	
32	6.2	Statistical Machine Translation (SMT)			19-04-2023	26/04/23			
33	6.3	Cross Lingual Translation			24-04-2023	28/04/23			
34	6.4	Sentiment Analysis, Question Answering			25-04-2023	28/04/23			
35	6.5	Text Entailment, Discourse Processing			26-04-2023	29/04/23			
36	6.6	Dialog and Conversational Agents, Natural Language Generation			02-05-2023	29/04/23			

Start of Semester

Signature	Date
Course Faculty : <i>Debm</i>	01/02/23
HoD : <i>o</i>	02/02/23

End of Semester

Signature	Date
Course Faculty : <i>Debm</i>	03/05/23
HoD : <i>o</i>	05/05/23



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

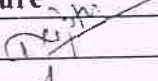
Course Code: 410255				Class: BE 2019		Name of Faculty: Prof. Deptii Chaudhari			
Course Name: Laboratory Practice VI				Batch: A		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Perform tokenization (Whitespace, Punctuation-based, Treebank, Tweet, MWE) using NLTK library. Use porter stemmer and snowball stemmer for stemming. Use any technique for lemmatization.	CEO415.1	CO415.1	09-02-2023	09/02/23				
2	Perform bag-of-words approach (count occurrence, normalized count occurrence), TF-IDF on data. Create embeddings using Word2Vec.	CEO415.1	CO415.1	16-02-2023	16/02/23				
3	Perform text cleaning, perform lemmatization (any method), remove stop words (any method), label encoding. Create representations using TF-IDF. Save outputs.	CEO415.1	CO415.1	23-02-2023	23/02/23				
4	Create a transformer from scratch using the Pytorch library	CEO415.2	CO415.2	02-03-2023	02/03/23				
5	Morphology is the study of the way words are built up from smaller meaning bearing units. Study and understand the concepts of morphology by the use of add delete table	CEO415.2	CO415.1	09-03-2023	09/03/23				

6	Import the legacy data from different sources such as (Excel , Sql Server, Oracle etc.) and load in the target system. (You can download sample database such as Adventure works, Northwind, foodmart etc.)	CEO415.4	CO415.5	16-03-2023	16/03/23			
7	Perform the Extraction Transformation and Loading (ETL) process to construct the database in the Sql server.	CEO415.4	CO415.5	23-03-2023	23/03/23			
8	Create the cube with suitable dimension and fact tables based on ROLAP, MOLAP and HOLAP model.	CEO415.4	CO415.5	30-03-2023	30/03/23			
9	Import the data warehouse data in Microsoft Excel and create the Pivot table and Pivot Chart	CEO415.4	CO415.5	06-04-2023	03/04/23	Insem		
10	Perform the data classification using classification algorithm. Or Perform the data clustering using clustering algorithm.	CEO415.4	CO415.4	13-04-2023	20/04/23			
11	Mini Project on NLP	CEO415.3	CO415.3	20-04-2023	27/04/23			
12	Mini Project on BI	CEO415.4	CO415.6	27-04-2023	27/04/23			

Start of Semester

Signature	Date
Course Faculty : 	01/02/23
HoD :	02/02/23

End of Semester

Signature	Date
Course Faculty : 	03/05/23
HoD :	05/05/23





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF COMPUTER ENGINEERING
Academic Year 2022-23 Semester II

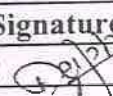

PRACTICAL TEACHING RECORD

Course Code: 410255				Class: BE 2019		Name of Faculty: Prof. Deptii Chaudhari				
Course Name: Laboratory Practice VI				Batch: D		Teaching Scheme:		Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Perform tokenization (Whitespace, Punctuation-based, Treebank, Tweet, MWE) using NLTK library. Use porter stemmer and snowball stemmer for stemming. Use any technique for lemmatization.	CEO415.1	CO415.1	06-02-2023	06/02/23					
2	Perform bag-of-words approach (count occurrence, normalized count occurrence), TF-IDF on data. Create embeddings using Word2Vec.	CEO415.1	CO415.1	13-02-2023	13/02/23					
3	Perform text cleaning, perform lemmatization (any method), remove stop words (any method), label encoding. Create representations using TF-IDF. Save outputs.	CEO415.1	CO415.1	20-02-2023	20/02/23					
4	Create a transformer from scratch using the Pytorch library	CEO415.2	CO415.2	27-02-2023	27/02/23					
5	Morphology is the study of the way words are built up from smaller meaning bearing units. Study and understand the concepts of morphology by the use of add delete table	CEO415.2	CO415.1	06-03-2023	06/03/23					



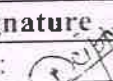

6	Import the legacy data from different sources such as (Excel , Sql Server, Oracle etc.) and load in the target system. (You can download sample database such as Adventure works, Northwind, foodmart etc.)	CEO415.4	CO415.5	13-03-2023	13/03/23			
7	Perform the Extraction Transformation and Loading (ETL) process to construct the database in the Sql server.	CEO415.4	CO415.5	20-03-2023	20/03/23			
8	Create the cube with suitable dimension and fact tables based on ROLAP, MOLAP and HOLAP model.	CEO415.4	CO415.5	27-03-2023	27/03/23			
9	Import the data warehouse data in Microsoft Excel and create the Pivot table and Pivot Chart	CEO415.4	CO415.5	03-04-2023	10/04/23	Insem		
10	Perform the data classification using classification algorithm. Or Perform the data clustering using clustering algorithm.	CEO415.4	CO415.4	10-04-2023	17/04/23			
11	Mini Project on NLP	CEO415.3	CO415.3	17-04-2023	24/04/23			
12	Mini Project on BI	CEO415.4	CO415.6	24-04-2023	24/04/23			

Start of Semester

Signature	Date
Course Faculty : 	01/02/23
HoD : 	02/02/23



End of Semester

Signature	Date
Course Faculty : 	03/05/23
HoD : 	05/05/23



Hope Foundation's
International Institute of Information Technology, Pune

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester II

COURSE FILE INDEX

Sr. No.	Format	DISCRIPTION
1	Vision, Mission of Institute	
2	Vision Mission of Department	
3	Program Educational Objectives, Program Outcomes, and Program Specific Outcomes	
4	Institute Academic Calendar	
5	Department Academic Calendar	I2IT / ACAD / SP / 01
6	Class wise Time Table	I2IT / ACAD / TT / 01
7	Faculty wise Time Table	I2IT / ACAD / TT / 02
8	Lab wise Time Table in case of Lab – In charge	I2IT / ACAD / TT / 04
9	University Syllabus	
10	Lesson Plan Resources	I2IT / ACAD / CP / 05
11	Course Objectives and Outcomes (Theory)	I2IT / ACAD / CP / 01
12	Correlation of COs with POs (Theory)	I2IT / ACAD / CP / 02
13	CO-PO mapping Justification (Theory)	I2IT / ACAD / CP / 02A
14	Course Objectives and Outcomes (Laboratory)	I2IT / ACAD / CP / 01
15	Correlation of COs with POs (Laboratory)	I2IT / ACAD / CP / 02
16	CO-PO mapping Justification (Laboratory)	I2IT / ACAD / CP / 02A
17	Theory Teaching Plan	I2IT / ACAD / CP / 03
18	Laboratory Teaching Plan	I2IT / ACAD / CP / 04
19	List of Laboratory Assignments	I2IT / ACAD / CP / 04A
20	Rubrics for Continuous evaluation	I2IT / ACAD / CP / 06
21	Previous University Question Papers	
22	Theory Question Bank	I2IT / ACAD / CP / 21
23	Objective Question Bank	
24	List of Theory Assignments	I2IT / ACAD / CP / 18
25	Class Test Question Papers with solutions	I2IT / ACAD / CP / 07
26	Class Test Attendance	I2IT / ACAD / CP / 08
27	Course Outcomewise Class Test Marksheet	I2IT / ACAD / CP / 08A
28	Class Test Evaluation Record	I2IT / ACAD / CP / 12
29	Slow Learner and Advanced Learner Identification	I2IT / ACAD / CP / 09
30	Schedule of Slow Learner Activities	I2IT / ACAD / CP / 10
31	Assignments to Advanced Learners	I2IT / ACAD / CP / 11
32	List of Slow Learners	I2IT / ACAD / CP / 13
33	List of Advanced Learners	I2IT / ACAD / CP / 14
34	Slow Learner Attendance Record	I2IT / ACAD / CP / 15
35	Performance Improvement of Slow Learner	I2IT / ACAD / CP / 16
36	Innovative Practices in Teaching-Learning and ICT	I2IT / ACAD / CP / 19

Sr. No.	Format	DISCRIPTION
37	Content Beyond Syllabus (CBS)	I2IT / ACAD / CP / 17
38	CBS Attendance Record	I2IT / ACAD / CP / 17A
39	Previous University Result	I2IT / ACAD / CP / 21
40	TW Calculation Sheet	I2IT / ACAD / CP / 20
41	Course End Survey (Theory & Laboratory)	I2IT / ACAD / CP / 22
42	Theory Attendance Record	I2IT / ACAD / BB / 01
43	Practical Attendance Record	I2IT / ACAD / BB / 02
44	Continuous Assessment Record	I2IT / ACAD / BB / 03
45	Assignment Assessment Record	I2IT / ACAD / BB / 04
46	Average University Result	I2IT / ACAD / AT / 01
47	CO Attainment through University Result	I2IT / ACAD / AT / 02
48	CO Attainment through Class Test & Theory Assignment	I2IT / ACAD / AT / 03
49	CO Attainment through Course End Survey	I2IT / ACAD / AT / 04
50	CO Attainment through Continuous Evaluation	I2IT / ACAD / AT / 05
51	PO & PSO Attainment through CO for Theory	I2IT / ACAD / AT / 06
52	PO & PSO Attainment through CO for Practical	I2IT / ACAD / AT / 06





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 204181				Class: SE 2019		Name of Faculty: Prof.Suvarna Hande						
Course Name: Electronic Circuits				Teaching Scheme:			Th: 3 Hrs / week					
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
									AC	HOD	APMC	
UNIT 1 : MOSFET & its Analysis												
1	1.1	Enhancement MOSFET: Construction, Characteristics,			CEO202.1 CEO202.2	CO202.1	17-08-2022	22/8/22		all	HOD	APMC
2	1.2	DC Load line, Numericals					18-08-2022	23/8/22				
3	1.3	AC equivalent ckt, Parameters, Parasitics.					19-08-2022	24/8/22				
4	1.4	Non ideal characteristics: Finite output resistance, Body effect,					24-08-2022	24/8/22				
5	1.5	Sub-threshold conduction, breakdown effects, Temperature effect, effect of W/L ratio					25-08-2022	29/8/22				
6	1.7	Common source amplifier & analysis,					26-08-2022	14/9/22				
7	1.8	Source follower: circuit diagram, comparison with common source,					01-09-2022	16/9/22				
8	1.9	Frequency response for amplifier					02-09-2022	19/9/22				

UNIT 2 : MOSFET Circuits

9	2.1	MOSFET as switch, CMOS inverter, MOSFET resistor & diode.	CEO202.1 CEO202.2	CO202.2	08-09-2022	21/9/22				
10	2.2	Current sink & source, Current mirror			14-09-2022	21/9/22				
11	2.3	Four types of feedback amplifiers, Effects of feedback			15-09-2022	22/9/22				
12	2.4	Voltage series & current series feedback amplifiers and analysis,			16-09-2022	23/9/22				
13	2.5	Oscillators: Barkhausen criterion,			20-09-2022	28/9/22				
14	2.6	Wein bridge & phase shift oscillator.			21-09-2022	30/9/22				

UNIT 3 : Voltage Regulators

15	3.1	Three terminal voltage regulators (317 & 337): Block diagram of linear voltage regulator,		CO202.3	22-09-2022	6/10/22				
16	3.2	IC 317 and IC337, Features and specifications, typical circuits,			23-09-2022	11/10/22				
17	3.3	Current boosting, Low Dropout Regulator (LDO)			27-09-2022	11/10/22				
18	3.4	SMPS: Block diagram, Types,			28-09-2022	12/10/22				
19	3.5	SMPS :features and specifications,			29-09-2022	18/10/22				
20	3.6	Typical circuits buck and boost converter.			30-09-2022	18/10/22				

UNIT 4 : Operational Amplifier									
21	4.1	Block diagram of Op-amp	CEO202.3	CO202.4	06-10-2022	19/10/22		}	}
22	4.2	Differential amplifier analysis for Dual input Balanced output mode - AC analysis (using r parameters)			07-10-2022	20/10/22			
23	4.3	Differential amplifier analysis for Dual input Balanced output mode - DC analysis			10-10-2022	20/10/22			
24	4.4	Level shifter			12-10-2022	21/11/22			
25	4.5	Op amp parameters			13-10-2022	31/11/22			
26	4.6	Current mirror, Op-amp characteristics (AC & DC).			14-10-2022	4/11/22			
27	4.7	Voltage series & voltage shunt feedback amplifier			19-10-2022	7/10/22			
28	4.8	Effect on Ri, Ro, gain & bandwidth.			20-10-2022				
UNIT 5 : Op-Amp Applications									
29	5.1	Inverting amplifier, non-inverting amplifier,	CEO202.3 CEO202.4	CO202.5	21-10-2022	9/11/22		}	#
30	5.2	Voltage follower, Summing amplifier,			02-11-2022	10/11/22			
31	5.3	Differential amplifier, Practical integrator,			03-11-2022	10/11/22			
32	5.4	Practical differentiator, Instrumentation amplifier			04-11-2022	11/11/22			
33	5.5	Comparator, Schmitt trigger,			09-11-2022	15/11/22			
34	5.6	Square wave generator.			10-11-2022	16/11/22			
35	5.7	Triangular wave generator.			11-11-2022	17/11/22			
36	5.8	Numericals			16-11-2022	18/11/22			

UNIT 6 : Converters & PLL

37	6.1	Voltage to Current, Current to Voltage converters.	CEO202.5 CEO202.6	CO202.6	17-11-2022	21/11/22				
38	6.2	DAC & ADC: Resistor weighted and R-2R DAC			18-11-2022	22/11/22				
39	6.3	SAR, Flash and dual slope ADC Types / Techniques			18-11-2022	22/11/22				
40	6.4	Characteristics, block diagrams, Circuits, Specifications, Merits, Demerits, Comparisons.			23-11-2022	23/11/22				
41	6.5	PLL: Block Diagram, Characteristics, phase detectors, Details of PLL IC 565			24-11-2022	24/11/22				
42	6.6	Applications, Typical circuits.			25-11-2022	24/11/22				

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	18/11/22
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	25/11/22
HoD : <i>[Signature]</i>	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 204194				Class: SE 2019		Faculty Name: Prof. Shweta Jain					
Course Name: Object Oriented Programming					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by				
							AC	HOD	APMC		
UNIT 1 :: Foundation of Object Oriented Programming											
1	1.1	CEO215.1		02-02-2023	13/2/23 14/2/23						
2	1.2			03-02-2023	15/2/23 20/2/23						
3	1.3			08-02-2023	22/2/23						
4	1.4			09-02-2023	27/2/23						
5	1.5			10-02-2023	2/3/23						
6	1.6				8/3/23						

Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
7	1.7	Dynamic initialization of variables, memory management operators				8/3/23		AS		
8	1.8	Member dereferencing operators, operator precedence, typecast operators, Scope resolution operators, arrays.			15-02-2023	15/3/23				
UNIT 2 : Classes & Objects										
9	2.1	Defining class, Defining member functions, static data members	CEO215.2	CO215.2	16-02-2023	21/3/23		AS		Phin 28/07/2
10	2.2	Static member functions, private data members, public member functions			17-02-2023	21/3/23				
11	2.3	Arrays of objects, objects as function arguments			22-02-2023	23/3/23				
12	2.4	Constructors: types of constructors, Constructors & Destructors: Constructors, Parameterized constructors,			23-02-2023	23/3/23				
13	2.5	Multiple constructors in a class, Constructors with default arguments.			24-02-2023	23/3/23				
14	2.6	Handling of multiple constructors and destructors. (Complex Class & String Class)rectifiers			01-03-2023	11/3/23				
UNIT 3 : Operator Overloading										
15	3.1	Fundamentals of Operator Overloading			02-03-2023	21/3/23		AS		

Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
16	3.2	Restrictions on Operators Overloading	CEO215.2	CO215.3	03-03-2023	11/3/23		25		
17	3.3	Operator Functions as Class Members vs. as Friend Functions,			08-03-2023	12/3/23				
18	3.4	Overloading Unary Operators,			09-03-2023	12/3/23				
19	3.5	Overloading Binary Operators			10-03-2023	17/3				
20	3.6	Overloading of operators using friend functions			15-03-2023	17/3				
UNIT 4 : Inheritance & Polymorphism										
21	4.1	Introduction to inheritance, base and derived classes, friend classes, types of inheritance, hybrid inheritance	CEO215.2	CO215.4	16-03-2023	18/3		25		
22	4.2	member access control, static class, multiple inheritance ambiguity			17-03-2023	18/3				
23	4.3	Virtual base class, Introduction to polymorphism,			23-03-2023	19/3				
24	4.4	Pointers to objects, virtual functions, pure virtual functions,			24-03-2023	20/3				
25	4.5	Abstract base class, Polymorphic class, virtual destructors, early and late binding			29-03-2023	19/3				
26	4.6	container classes, Contained classes, Singleton class			29-03-2023	20/3				
27		Class Test II								
UNIT 5 : Templates, Namespaces and Exception handling										
28	5.1	Introduction, Function template and class template, function overloading vs. function templates	CEO215.2	CO215.5	30-03-2023	25/3		25		
29	5.2	Namespaces:Introduction, Rules of namespaces,Exception handling: Introduction, basics of exception handling			31-03-2023	26/3				
30	5.3	Exception handling mechanism, throwing and catching mechanism,			05-04-2023	27/3, 28/3				

Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
31	5.4	Specifying exceptions, Multiple Exceptions			05-04-2023	29/3/23 31/3/23				
32	5.5	Exceptions with arguments C++ streams, stream classes			06-04-2023	4/4 5/4				
33	5.6	Unformatted I/O, formatted I/O and I/O manipulators.			12-04-2023	6/4 8/4				
UNIT 6 : Working with files										
34	6.1	Introduction, classes for file Stream Operations	CEO215.2	CO215.6	13-04-2023	11/4 12/4				
35	6.2	Opening and closing files, detecting End_Of_File (EOF)			19-04-2023	13/4 18/4				
36	6.3	On-line and Off- line UPS, study of various selection criteria and performance parameters of batteries in battery operated power systems			20-04-2023	19/4 22/4				
37	6.4	Modes fFile Opening			21-04-2023	23/4 25/4				
38	6.5	File pointers and manipulators			26-04-2023	26/4				
39	6.6	Updating file, error handling during file operations			27-04-2023	27/4 28/4				
40		Class Test III			24/5/23	24/5/23				

Start of Semester

Signature	Date
Course Faculty :Prof. Shweta Jain	2/2/23
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty :Prof. Shweta Jain	28/5/23
HoD : <i>[Signature]</i>	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 304183				Class: TE 2019		Name of Faculty: Anjali Jagtap						
Course Name: Database Management				Teaching Scheme:			Th: 3 Hrs / week		Monitored by			
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)				AC
UNIT 1 : Introduction to DBMS												
1	1.1	Introduction to Database Management System, Purpose of Database Systems, Database System Applications			CEO303.1 CEO303.2	CO303.1	18.07.2022	18/7/22	—	}	}	}
2	1.2	Data Abstraction and Database System Structure.					19.07.2022	19/7/22	—			
3	1.3	Structure of relational database, Domains, Relations					20.07.2022	20/7/22	—			
4	1.4	Relational Algebra - Operators and syntax					21.07.2022	21/7/22	—			
5	1.5	Relational algebra queries, tuple relational calculus					22.07.2022	22/7/22	—			
6	1.6	Entity Relational Model, Entity set, relationship sets and weak entity set, Mapping cardinalities, Keys					25.07.2022	25/7/22	—			
7	1.7	E-R diagram, E-R features, convertin E-R & EER diagram into tables					26.07.2022	26/7/22	adjustment			
UNIT 2 : Relational Database Design												
8	2.1	Basic concepts, CODD's Rules			CEO303.1 CEO303.2	CO303.2	28.07.2022	18/7/22	—	}	}	}
9	2.2	Relational Integrity: Domain, Referential Integrities, Enterprise Constraints					01.08.2022	1/8/22	adjustment			
10	2.3	Database Design: Features of Good Relational Designs, Normalization					02.08.2022	2/8/22	—			
11	2.4	Atomic Domains and First Normal Form					04.08.2022	2/8/22	adjustment			
12	2.5	Decomposition using Functional Dependencies					08.08.2022	5/8/22	adjustment			
13	2.6	Algorithms for Decomposition, 2NF, 3NF, 4NF and BCNF.					11.08.2022	8/8/22	add on course			
		Class Test I					23.08.2022	23/8/22	—			

UNIT 3 : Basics of SQL									
14	3.1	Creation, Alteration, Defining constraints – Primary key, Foreign key, Unique key	CEO303.3	CO303.3	16.08.2022	16/8/22	—	}	}
15	3.2	Not null, Check, IN operator, Functions - Aggregate Functions			18.08.2022	22/8/22	adjustment		
16	3.3	Built-in Functions Numeric, Date, String Functions, Set operations			22.08.2022	22/8/22	—		
17	3.4	sub-queries, correlated subqueries, Use of group by, having, order by			23.08.2022	23/8/22	—		
18	3.5	join and its types, Exist, Any, All, view and its types.			25.08.2022	25/8/22	—		
19	3.6	Commit, Rollback, Save-point PL/SQL Concepts: Cursors			29.08.2022	30/8/22	adjustment		
20	3.7	Stored Procedures, Stored Function, Database Triggers.			30.08.2022	30/8/22	—		
UNIT 4 : Database Transactions Mangement									
21	4.1	Basic concepts of a Transaction, Transaction Management, Properties of Transactions	CEO303.4	CO303.4	01.09.2022	12/9/22	adjustment	}	}
22	4.2	Concept of Schedule, serial Schedule			05.09.2022	13/9/22	Add on course		
23	4.3	Serializability: Conflict and View			06.09.2022	13/09/22	—		
24	4.4	Cascaded Aborts, Recoverable and Non-recoverable Schedules			08.09.2022	15/9/22	—		
25	4.5	Concurrency Control: Need, Locking Methods			12.09.2022	19/9/22	—		
26	4.6	Deadlock handling			13.09.2022	20/9/22	—		
27	4.7	Time-stamp based Protocols			15.09.2022	22/9/22	—		
		Class Test II			19.09.2022	28/9/22	—		

UNIT 5 : Parallel Database									
28	5.1	Introduction to Database Architectures: Multi-user DBMS Architectures	CEO303.5	CO303.5	19.09.2022	20/9/22	—	}	}
29	5.2	Case study- Oracle Architecture			20.09.2022	17/10/22	—		
30	5.3				22.09.2022	18/10/22	—		
31	5.4	Performance Parameters for Parallel Databases, Types of Parallel Database Architecture,			26.09.2022	18/10/22	—		
32	5.5	Evaluating Parallel Query in Parallel Databases			27.09.2022	19/10/22	adjustment		
33	5.6	Virtualization on Multicore processors			29.09.2022	19/10/22	adjustment		
UNIT 6 : Distributed Databases									
34	6.1	Distributed Database Management System, Factors Encouraging DDBMS	CEO303.6	CO303.6	03.10.2022	20/10/22	In sem	}	}
35	6.2	Advantages of Distributed Databases, Types of Distributed Databases			04.10.2022	22/10/22	examination		
36	6.3	Architecture of Distributed Databases,			06.10.2022	22/10/22	TE, BE		
37	6.4	Distributed Database Design,			10.10.2022	31/10/22			
38	6.5	Distributed Data Storage, and Distributed Transaction			11.10.2022	9/11/22			
39	6.6	Failure modes, Commit Protocols,			13.10.2022	2/11/22	—		
40	6.7	Concurrency Control in Distributed Database			17.10.2022	3/11/22	—		
		Class Test III					17.10.2022		

Start of Semester

	Signature	Date
Course Faculty :	<i>[Signature]</i>	18/7/22
HoD :	<i>[Signature]</i>	18/7/22

End of Semester

	Signature	Date
Course Faculty :	<i>[Signature]</i>	3/11/22
HoD :	<i>[Signature]</i>	3/11/22



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 304192				Class: TE 2019		Faculty Name: Prof. Anjali Jagtap					
Course Name: Cellular Networks				Teaching Scheme:			Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
									AC	HOD	APMC
UNIT 1 : Introduction of Wireless Channel											
1	1.1	Introduction, Free Space Propagation Model			CEO311.1	CO311.1	01.02.2023	2/2/23	—	F	H
2	1.2	Ground-Reflection Scenario					02.02.2023	2/2/23	adjustment		
3	1.3	Hata Model					03.02.2023	7/2/23	—		
4	1.4	Receiver-Noise Computation					07.02.2023	9/2/23	—		
5	1.5	Channel Estimation techniques					09.02.2023	10/2/23	—		
6	1.6	Diversity in wireless communications					10.02.2023	14/2/23	—		
UNIT 2 : Orthogonal Frequency Division Multiplexing											
7	2.1	Introduction, Motivation and Multicarrier basics			CEO311.2	CO311.2	14.02.2023	15/2/23	adjustment	F	H
8	2.2	OFDM example					16.02.2023	15/2/23	extra lecture		
9	2.3	bit error rate for OFDM					17.02.2023	16/2/23	—		
10	2.4	Introduction to MIMO Wireless Communications					21.02.2023	16/2/23	extra lecture		
11	2.5	MIMO System Model					23.02.2023	21/2/23	—		
12	2.6	MIMO-OFDM					24.02.2023	21/2/23	adjustment		
		Class Test I					06.03.2023	06/3/23	—		

Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
								AC	HOD	APMC	
UNIT 3 : Introduction to Mobile Communication											
13	3.1	Introduction to Cellular Service Progression	CEO311.3	CO311.3	28.02.2023	28/2/23	—	}	}	}	
14	3.2	Cell Geometry			02.03.2023	24/2/23	—				
15	3.3	Overview of Cellular mobile and Network architecture			03.03.2023	24/2/23	adjustment				
16	3.4	Cellular radio system design-- Frequency assignments			09.03.2023	11/3/23	—				
17	3.5	frequency reuse channels			10.03.2023	21/3/23	—				
18	3.6	Concept of cell splitting			14.03.2023	3/3/23	—				
19	3.7	Cell sectoring			16.03.2023	9/3/23	—				
20	3.8	Significance of Handover in cellular systems with Handoff algorithms and roaming.			17.03.2023	10/3/23	—				
UNIT 4 : Wireless System Planning											
21	4.1	Link-Budget Analysis,	CEO311.4	CO311.4	21.03.2023	14/3/23	—	}	}	}	
22	4.2				21.03.2023	16/3/23	—				
23	4.3				23.03.2023	16/3/23	—				
24	4.4				Tele-traffic Theory	24.03.2023	17/3/23				—
25	4.5				Tele-traffic System Model	28.03.2023	21/3/23				—
26	4.6				Steady State Analysis	28.03.2023	23/3/23				—
		Class Test II			27.03.2023	21/3/23	—				
UNIT 5 : Wireless and Mobile Technologies and Protocols and their performance evaluation											
27	5.1	Wireless and mobile technologies,	CEO311.5	CO311.5	30.03.2023	25/3/23	extra session	}	}	}	
28	5.2	LTE- advanced			31.03.2023	24/3/23	—				
29	5.3				06.04.2023	31/3/23	—				
30	5.4	5G – Architecture			11.04.2023	11/4/23	extra session				
31	5.5	wireless local area network			11.04.2023	11/4/23	—				
32	5.6	Simulations of wireless networks			13.04.2023	21/4/23	extra session				

Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
UNIT 6 : Performance Analysis Issues										
33	6.1	Introduction to Network coding	CEO311.6	CO311.6	18.04.2023	18/4/23	extra session	AC	HOD	APMC
34	6.2	basic hamming code			18.04.2023	18/4/23				
35	6.3	significance of Information Theory			20.04.2023	20/4/23				
36	6.4	Interference suppression and Power control			21.04.2023	21/4/23				
37	6.5				25.04.2023	25/4/23				
38	6.6	MAC layer scheduling and connection admission in mobile communication			25.04.2023	25/4/23				
39	6.7				27.04.2023	27/4/23				
40	6.8				28.04.2023	28/4/23				
		Class Test III			24.04.2023	15/5/23				

Start of Semester

Signature	Date
Course Faculty: <i>[Signature]</i>	11/2/23
HoD: <i>[Signature]</i>	11/2/23

End of Semester

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Course Faculty: <i>[Signature]</i>	12/5/23
HoD: <i>[Signature]</i>	12/5/23

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Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 404182			Class: BE 2019		Name of Faculty: Prof. Ashvini Kulkarni						
Course Name: VLSI Design & Technology					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
								AC	HOD	APMC	
UNIT 1 : HDL Design											
1	1.1	Design Flow, Language constructs	CEO401.1	CO401.1	19-07-2022	19/7/22		du	R	f 28/10/22	
2	1.2	Data objects, Data types			20-07-2022	20/7/22					
3	1.3	Entity, Architecture & types of modeling			21-07-2022	21/7/22					
4	1.4	Sequential statements, Concurrent statements			25-07-2022	22/7/22					
5	1.5	Packages, Sub programs, Attributes, HDL modeling of Combinational, Sequential circuits and FSM			25-07-2022	26/7/22					
6	1.6	Simulations, Synthesis, Efficient coding styles, Hierarchical and flat designs			26-07-2022	26/7/22					
7	1.7	Partitioning for synthesis, Pipelining, Resource sharing			01-08-2022	27/7/22					
UNIT 2 : Digital design and Issues											
8	2.1	Sequential synchronous machine design, Moore and Mealy machines			02-08-2022	21/8/22					
9	2.2	HDL code for Machines, FIFO, Metastability and solutions			02-08-2022	21/8/22					
10	2.3	Noise margin, Fan-out, Skew, Timing considerations, Hazards			08-08-2022	21/8/22					

The record shall be monitored by Academic Co-Ordinator (weekly), by HoD (Biweekly) and reviewed by APMC Co-Ordinator (Biweekly)

Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 404182			Class: BE 2019		Name of Faculty: Prof. Ashvini Kulkarni					
Course Name: VLSI Design & Technology					Teaching Scheme:		Th: 3 Hrs / week			
Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
11	2.4	Clock distribution, Clock jitter, Supply and ground bounce	CEO401.1	CO401.2	09-08-2022,	9/8/22		}	}	}
12	2.5	Power distribution techniques, Power optimization			18/08,2022	10/8/22				
13	2.6	Interconnect routing techniques; Wire parasitic, Signal integrity issues. I/O architecture.			23.08.2022	16/8/22				
		Class Test I								
UNIT 3 : PLD Architectures and applications										
14	3.1	Design Flow.	CEO401.2	CO401.3	23.08.2022	18/8/22		}	}	}
15	3.2	CPLD Architecture, Features, Specifications, Applications			25.08.2022	18/8/22				
16	3.3	FPGA Architecture, Features, Specifications, Applications			30-08-2022	22/8/22				
17	3.4	The Simulation and Synthesis Tools			30-08-2022	23/8/22				
18	3.5	FPGA synthesis and implementation			01-09-2022	25/8/22				
19	3.6	FPGA synthesis and implementation			08-09-2022	29/8/22	SL leave.			
UNIT 4 : Digital CMOS circuits										
20	4.1	N-MOS, P-MOS and CMOS, MOSFET parasitic			06-09-2022	1/9/22				

Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 404182			Class: BE 2019		Name of Faculty: Prof. Ashvini Kulkarni						
Course Name: VLSI Design & Technology					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
								AC	HOD	APMC	
21	4.2	Technology scaling, Channel length modulation	CEO401.2	CO401.4	06-09-2022	6/9/22		all #			
22	4.3	Hot electron effect, Velocity saturation			13-09-2022	12/9/22					
23	4.4	CMOS Inverter, Device sizing, CMOS combinational logic design			13-09-2022	13/9/22					
24	4.5	Power dissipations, Power delay product			15-09-2022	15/9/22					
25	4.6	Body Effect, Rise and fall times, Latch Up effect			20-09-2022	19/9/22					
26	4.7	Transmission gates			20-09-2022	20/9/22					
		Class Test II									
UNIT 5 : Application Specific Integrated Circuit											
27	5.1	Design Flow	CEO401.4	CO401.5	22-09-2022	22/9/22		all #			
28	5.2	Cell design specifications, Spice simulation, AC and DC analysis, Transfer Characteristics, Transient responses, Noise analysis			27-09-2022	26/9/22					
29	5.3	Lambda rules, Design rule check, Fabrication methods of circuit elements			27-09-2022	26/9/22					
30	5.4	Layout of cell, Library cell designing for NAND & NOR, Circuit Extraction, Electrical rule check			29-09-2022	16/9/22					

The record shall be monitored by Academic Co-Ordinator (weekly), by HoD (Biweekly) and reviewed by APMC Co-Ordinator (Biweekly)

Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 404182			Class: BE 2019		Name of Faculty: Prof. Ashvini Kulkarni						
Course Name: VLSI Design & Technology					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
								AC	HOD	APMC	
31	5.5	Layout Vs. Schematic, Post-layout Simulation and Parasitic extraction			04-10-2022	29/9/22		all	#		
32	5.6	Design Issues like Antenna effect, Electro migration effect			04-10-2022	29/9/22					
33	5.7	Cross talk and Drain punch through, Timing analysis			06-10-2022	12/10/22					
UNIT 6 : VLSI Testing and Analysis											
34	6.1	Types of fault	CEO401.4	CO401.6	11-10-2022	12/10/22		all	#	all 28/10/22	
35	6.2	Need of Design for Testability (DFT), DFT Guideline			11-10-2022	13/10/22					
36	6.3	Testability, Fault models			13-10-2022	17/10/22					
37	6.4	Path sensitizing Test pattern generation, Sequential circuit test			18-10-2022	17/10/22					
38	6.5	Built-in Self Test, JTAG & Boundary scan			18-10-2022	25/10/22					
39	6.6	TAP Controller			20-10-2022	28/10/22					
		Class Test III									

Course Faculty : all 18/11/22
HoD : Rhateaka

Course Faculty : all 5/11/22
HoD : Rhateaka



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 404190				Class: BE 2019		Faculty Name: Prof. Bhagyashri Thorat				
Course Name: Fiber Optics Communication					Teaching Scheme:		Th: 3 Hrs / week			
Lr. No.	Topics to be Delivered	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
UNIT 1 : Optical Fibers for Telecommunication (8 Hrs.)										
1	1.1 Fundamentals of Optical Communication: EM spectrum - Optical Spectral bands, advantages of optical fibers Shannon channel capacity, power units (watts, dB & dBm) Block diagram of optical fiber communications link Related Problems/Numericals	CEO410.1	CO410.1, CO410.2, CO410.3	2/2/2023	2/2/2023		[Signature]	[Signature]	[Signature]	
2	1.2 Optical Fiber Waveguides: Introduction, Total internal reflection, acceptance angle,			3/2/2023	3/2/2023					
3	1.3 Transmission characteristics of optical fibers: attenuation - material absorption, scattering			8/2/2023	6/2/2023	Time Table Updated.				
4	1.4 signal distortion - intermodal delay, intramodal dispersion or chromatic dispersion, modal delay,			9/2/2023	8/2					
5	1.5 bit rate-distance product, plot of material & waveguide			10/2/2023	9/2					

The record shall be monitored by Academic Co-Ordinator (weekly), by HoD (Biweekly) and reviewed by APMC Co-Ordinator (Biweekly)

6	1.6	optical fibers for 5G networks, comparison.			15/2/2023	13-2				
7	1.7	dispersions for standard single mode, dispersion shifted and dispersion flattened fibers;				13-2				
8	1.8	Numerical Solving on unit 1								
UNIT 2 : Optical Sources										
9	2.1	Optical Sources: Introduction, wavelength and material consideration (direct & indirect bandgap semiconductors); requirements from optical sources for telecommunication.	CE0410.2	CO410.1, CO410.2, CO410.3	16/2/2023	14-2				
10	2.2	LED: principle of working, quantum efficiency, optical output power characteristics,			17/2/2023	20-2				
11	2.3	spectral width, effect of temperature on charac			22/2/2023	21-2				
12	2.4	analog modulation, digital modulation, LED			23/2/2023	22-2				
13	2.5	Semiconductor Laser Diodes: absorption, spo			24/2/2023	24-2				
14	2.6	concept of population inversion and optical feedback, output power characteristics of LASER;				24-2				
15	2.7	Bias point and amplitude modulation range for analog applications of LEDs & laser diodes, comparison of LEDs & Lasers			1/3/2023	1-3				
		Class Test I								
UNIT 3 : Photodetectors										
13	3.1	Introduction, requirements from optical detectors, material considerations,			2/3/2023	2-3				
14	3.2	types: p-n, pin, Avalanche photodiode, photo transistor,			3/3/2023	3-3				
15	3.3	principle of working, quantum efficiency,			8/3/2023	17-3				

The record shall be monitored by Academic Co-Ordinator (weekly, by HoD (Biweekly) and reviewed by APMC Co-Ordinator (Biweekly)

16	3.4	long cutoff wavelength, detector response time, comparison of photodetectors,	CEO410.3	CO410.1, CO410.2, CO410.3	9/3/2023	18-3	2 weeks exam	}	}	}
17	3.5	thermal noise, dark current noise, quantum no			10/3/2023	20-3	2			
18	3.6	Numericals on Photodetectors			15/3/2023	24-3				
UNIT 4 : Fiber Optic Link Design & WDM Systems										
19	4.1	Point to point optical link: Choice of components, system design considerations,	CEO410.4	CO410.1, CO410.4, CO410.5	16/3/2023	25-3		}	}	}
20	4.2	optical power budget, rise time budget, bit rate for RZ and			17/3/2023	26-3				
21	4.3	Optical Power Numericals solving			23/3/2023	27-3				
22	4.4	WDM Concepts & Components: Overview of WDM, WDM components: 2 x 2 fiber coupler,			24/3/2023	28-3				
23	4.5	basics of fiber grating filters, optical add/drop multiplexer, architecture of optical amplifiers (SOA, EDFA & FRA),			29/3/2023	31-3				
24	4.6	Noise figure, OSNR & system impact of ASE			29/3/2023	31-3				
		Class Test II								
UNIT 5 : Optical Networks										
25	5.1	Optical Network concepts: fundamentals, network terminology, desirable properties,	CEO410.5	CO410.6	30/3/2023	3-4		}	}	}
26	5.2	elements of an optical network, optical network topology types, advantages of optical network.			31/3/2023	4-4				
27	5.3	Overview of Optical Networks: FDDI,			5/4/2023	4-4				

28/10/25

The record shall be monitored by Academic Co-Ordinator (weekly), by HoD (Biweekly) and reviewed by APMC Co-Ordinator (Biweekly)

28	5.4	PON, GPON,			5/4/2023	10-4			
29	5.5	Long haul, Metro, Access, Submarine optical networks, role of fiber optic network in the 5G networks.			6/4/2023	11-4			
30	5.6	Current technology trends, standards and chal			12/4/2023	17-4			
UNIT 6 : Optical Fiber Measurements									
31	6.1	Test Equipments for field work: Test support lasers, visual fault indicator, optical power meter,	CEO410.6	CO410.1, CO410.6	13/4/2023	18-4			
32	6.2	Optical Time Domain Reflectometry (OTDR), optical spectrum analyzer (OSA),			19/4/2023	21-4			
33	6.3	BER test equipment			20/4/2023	22-4			
34	6.4	fiber attenuation (cutback			21/4/2023	25-4			
35	6.5	macro bending loss, fiber dispersion			26/4/2023	28-4			
36	6.6	System performance evaluation: Eye Diagram Test, study of OTDR			27/4/2023	28-4			
		Class Test III							

Start of Semester

Signature	Date
Course Faculty : 	2-2-2023
HoD : 	

End of Semester

Signature	Date
Course Faculty : 	27-4-2023
HoD : 	

Conclusion of Teaching: 28/04/2023



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: SE 2019	Course Name: Logic Design & Computer Organization
Course Code: 214442	Name of Faculty: Sayali Sabale

COURSE EDUCATIONAL OBJECTIVES

Course Objective	Description
CEO202.1	To make undergraduates, aware of different levels of abstraction of computer systems from hardware perspective.
CEO202.2	To make undergraduates, understand the functions, characteristics of various components of Computer & in particular processor & memory.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO202.1	Perform basic binary arithmetic & simplify logic expressions.
CO202.2	Grasp the operations of logic ICs and Implement combinational logic functions using ICs.
CO202.3	Comprehend the operations of basic memory cell types and Implement sequential logic functions using ICs.
CO202.4	Elucidate the functions & organization of various blocks of CPU.
CO202.5	Understand CPU instruction characteristics, enhancement features of CPU.
CO202.6	Describe an assortment of memory types (with their characteristics) used in computer systems and basic principle of interfacing input, output devices.

CLASS TEST- COURSE OUTCOME MAPPING

Question No	CLASS TEST - I		CLASS TEST-II		CLASS TEST - III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1 - Q15	CO202.1	15	CO202.3	15	CO202.5	15
Q16 - Q30	CO202.2	15	CO202.4	15	CO202.6	15

THEORY ASSIGNMENT- COURSE OUTCOME MAPPING

Question No	ASSIGNMENT-I		ASSIGNMENT-II		ASSIGNMENT-III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1	CO202.1	10	CO202.3	10	CO202.5	10
Q2	CO202.2	10	CO202.4	10	CO202.6	10

Sayali Sabale
 Sayali Sabale
 Signature of Faculty

Dr. Jyoti Surve
 Dr. Jyoti Surve
 Head of Department



Sign of Faculty: *Sayali Sabale*



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

CORRELATION BETWEEN CO, PO & PSO


Course Name: Logic Design & Computer Organization	Course Code: 214442
Name of Faculty: Sayali Sabale	Class: SE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO202.1	2	2	-	-	-	-	-	-	-	-	-	-
CO202.2	2	1	1	-	-	-	-	-	-	-	-	-
CO202.3	2	1	1	-	-	-	-	-	-	-	-	-
CO202.4	3	2	1	-	-	-	-	-	-	-	-	-
CO202.5	2	1	1	-	-	-	-	-	-	-	-	-
CO202.6	2	1	1	-	-	-	-	-	-	-	-	-

1 - LOW , 2 - MEDIUM , 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO202.1	1	-	-	-
CO202.2	2	-	-	-
CO202.3	2	-	-	-
CO202.4	2	1	-	-
CO202.5	2	-	-	-
CO202.6	2	-	-	-


Sayali Sabale
Signature of Faculty


Dr. Jyoti Surve
Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: SE 2019	Course Name: Logic Design & Computer Organization
Course Code: 214442	Name of Faculty: Sayali Sabale

CO-PO mapping Justification (Theory)

CO code	Course Outcomes	Justification
CO202.1	Perform basic binary arithmetic & simplify logic expressions.	<p>This outcome key parameters</p> <p>Construction and characteristics of Logic families i.e. TTL and CMOS, Logic gate circuits addresses the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1. And also correlate moderately with PO2 as it covers Signed Binary number representation and Arithmetic operation (addition, subtraction, multiplication, and division), subtraction using 2's complement, Codes System: Binary, BCD, octal, hexadecimal, Excess-3, Gray code & their conversions and Logic minimization technique. Students are able to define a problem and provide a systematic solution with the help of conducting experiments, analyzing the problem and interpreting the data.</p> <p>It correlates low with PO1 as it addresses the understanding of engineering fundamentals.</p>
CO202.2	Grasp the operations of logic ICs and Implement combinational logic functions using ICs.	<p>This outcome key parameters</p> <p>Student gain knowledge of designing SSI chips i.e. Code converters, Half-Adder, Full Adder, Half Subtractor, Full Subtractor, n bit Binary adder.</p> <p>Student understand concept of MSI chips: Multiplexer (IC 74153), Demultiplexer (IC 74138), Decoder (74238), Encoder (IC 74147), Binary adder (IC 7483) And learn to design MSI chips: BCD adder & subtractor using IC 7483, Implementation of logic functions using IC 74153 & 74138 address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>As the Performance parameters of MSI chips helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses the solutions for complex engineering problems and design system components or processes by using combinational circuits.</p> <p>It correlates moderately with PO1 as it addresses the understanding of engineering fundamentals with design skills.</p>
CO202.3	Comprehend the operations of basic memory cell types and Implement sequential logic functions using ICs.	<p>This outcome key parameters</p> <p>Students will learn about Single bit memory cell, latch, flip flop Register and counter that addresses the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>As the Sequential circuits used in the different problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses the data storage and processing techniques.</p> <p>It correlates moderately with PO1 as student learns about sequential circuits and it addresses the understanding of engineering fundamentals with design skills. Identify and define the computing infrastructure and operations requirements appropriate to its solution.</p>



CO code	Course Outcomes	Justification
CO202.4	Elucidate the functions & organization of various blocks of CPU.	<p>This outcome key parameters</p> <p>Knowledge of basic concepts of Computer organization & computer architecture will help the students to formulate solutions for engineering problems correlate high with PO1.</p> <p>Knowledge of various design techniques of memory (Types & their uses in computer), IO (types & functions) & system bus (Address, data & control, Typical control lines, Multiple-Bus Hierarchies), Von Neumann & Harvard architecture, Instruction cycle will help the students to apply the same to identify and analyze engineering problems, it correlates moderate with PO2.</p> <p>Correlate low with PO3 as student gains knowledge of Processor: Single bus organization of CPU; ALU(ALU signals, functions & types); Register (types & functions) of user visible, control & status registers such as general purpose, address registers, data registers, flags, PC, MAR, MBR, IR)& control unit (control signals & typical organization of hard wired & microprogrammed CU) this will help the students to apply to design the solutions for complex engineering problems,</p> <p>It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals i.e. student learn about fundamentals of computer organization and computer architecture with design skills.</p> <p>It correlates low with PSO2 as in this student learn about processor and computer organization and architecture so they can analyze problem, and identify, define the computing infrastructure and operations requirements appropriate to its solution,</p>
CO202.5	Understand CPU instruction characteristics, enhancement features of CPU.	<p>This outcome key parameters</p> <p>Use of different elements of machine instruction, instruction representation (Opcode & mnemonics, Assembly language elements), Instruction Format & 0-1-2-3 address formats, RISC & CISC processor usage will help the students to apply the same to formulate solutions for engineering problems, correlate moderately with PO1</p> <p>Study of analyzing different Addressing mode, Multiprocessor systems: Taxonomy of Parallel Processor Architectures, two types of MIMD clusters & SMP (organization & benefits) & multicore processor contribute to analyze the problem and interpreting the data correlates low with PO2</p> <p>Analyzing different types of Interrupt, instruction pipelining contribute to design, implement, and evaluate a software or a software/hardware system, component, or process to meet desired needs within realistic constraints and that correlates low with PO3</p> <p>Knowledge of RISC & CISC Processor, Instruction set, multicore intel core i7, 8086 Assembly language programming help the students in the development and management of information processing systems and applications in the interdisciplinary domain so correlates moderately with PSO1</p>
CO202.6	Describe an assortment of memory types (with their characteristics) used in computer systems and basic principle of interfacing input, output devices.	<p>This outcome key parameters</p> <p>Use of different Memory Systems, Cache Memory, Input/Output Systems will help the students to apply the same to formulate solutions for engineering problems, correlates moderately with PO1.</p> <p>Knowledge of Memory & Input / Output Systems will help the students to apply the same to analyzing the problem and interpreting the data, it correlates low with PO2.</p> <p>Knowledge of Memory Hierarchy, signals to connect memory to processor, characteristics of semiconductor memory: SRAM, DRAM & ROM, I/O Module, Programmed I/O, Interrupt Driven I/O, Direct Memory Access (DMA) will help to design, implement, and evaluate a software or a software/hardware system, component, or process to meet desired needs within realistic constraints, it correlates low with PO3</p> <p>Knowledge of Memory, Principle of Locality, Organization, Mapping functions, write policies, Replacement policies, Multilevel Caches, Cache Coherence, help the students in the development and management of information processing systems and applications in the interdisciplinary domain so correlates moderately with PSO1</p>





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: SE 2019	Course Name: Logic Design & Computer Organization Lab
Course Code: 214446	Name of Faculty: Sayali Sabale

COURSE EDUCATIONAL OBJECTIVES

Course Objective	Description
CEO206.1	To design & implement combinational and sequential circuits.
CEO206.2	To learn simulation of digital systems.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO206.1	Use simplification method i.e. K-Map and design Combinational circuits for Code Converters using various logic gates.
CO206.2	Apply the principles of number system, binary codes, K-map and implement BCD Adder.
CO206.3	Design various combinational circuits such as full adder, full subtractor or different logic equations using multiplexers and decoders.
CO206.4	Design and implement Up and Down Synchronous Counters, Asynchronous Counters using master slave JK flip-flop IC 7476
CO206.5	Design Sequential Logic circuits: MOD counters using synchronous counters.
CO206.6	Understand the basics of simulator tool & to simulate basic blocks such as ALU & memory.

ASSIGNMENT- COURSE OUTCOME MAPPING

Assignment	Course Outcome No	Assignment	Course Outcome No
1	CO206.1	6	CO206.4
2	CO206.2	7	CO206.4
3	CO206.3	8	CO206.5
4	CO206.5	9	CO206.6
5	CO206.3	10	CO206.6


Sayali Sabale
Signature of Faculty




Dr. Jyoti Surve
Head of Department



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

CORRELATION BETWEEN CO, PO & PSO

Course Name: Logic Design & Computer Organization Lab	Course Code: 214446
Name of Faculty: Sayali Sabale	Class: SE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO206.1	2	1	1	1	-	-	-	-	-	-	-	-
CO206.2	2	1	1	-	-	-	-	-	-	-	-	-
CO206.3	2	1	1	-	-	-	-	-	-	-	-	-
CO206.4	2	1	1	-	-	-	-	-	-	-	-	-
CO206.5	1	1	1	-	-	-	-	-	-	-	-	-
CO206.6	1	1	1	1	1	-	-	-	-	-	-	-
1 - LOW , 2 - MEDIUM , 3 - HIGH												

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO206.1	1	-	-	-
CO206.2	1	-	-	-
CO206.3	1	-	-	-
CO206.4	1	-	-	-
CO206.5	1	-	-	-
CO206.6	1	-	-	-

Sayali Sabale

Sayali Sabale
Signature of Faculty



Dr. Jyoti Surve

Dr. Jyoti Surve
Head of Department



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: SE 2019	Course Name: Logic Design & Computer Organization Lab
Course Code: 214446	Name of Faculty: Sayali Sabale

CO-PO mapping Justification (Laboratory)

CO code	Course Outcomes	Justification
CO206.1	Use simplification method i.e. K-Map and design Combinational circuits for Code Converters using various logic gates.	This outcome key parameters Construction and characteristics of Logic families, Design K-map to get more simplified equation for implementation of combinational circuits address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1. It correlate low with PO2 because this provides systematic solution using K-map, Correlate low with PO3 because it has ability to design, implement, and evaluate software or a software/hardware system, Correlate low with PO4 because provide essay schematic solutions to complex engineering /Technology problems. It correlates low with PSO1 as it addresses the understanding of engineering fundamentals.
CO206.2	Apply the principles of number system, binary codes, K-map and implement BCD Adder.	This outcome key parameters Concept of Number System, Binary Codes, and BCD Adder, K-map address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1. From the K-map we can find out equation to implement BCD Adder that helps in the problem analysis, it correlates low with PO2. This outcome correlates low with PO3 as it addresses the implementation of software or hardware techniques. It correlates low with PSO1 as it addresses the understanding of engineering fundamentals with design skills.
CO206.3	Design various combinational circuits such as full adder, full subtractor or different logic equations using multiplexers and decoders.	This outcome key parameters we implement full adder and full subtractor using multiplexer and Design table which address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1. AS the multiplexer and decoder helps in the problem analysis, it correlates low with PO2. This outcome correlates low with PO3 as it addresses the Design Table Techniques in multiplexer. It correlates low with PSO1 as it addresses the understanding of engineering fundamentals with design skills.



Sign of Faculty:

CO code	Course Outcomes	Justification
CO206.4	Design and implement Up and Down Synchronous Counters, Asynchronous Counters using master slave JK flip-flop IC 7476.	<p>This outcome key parameters Up and Down Synchronous Counters. Asynchronous Counters using master slave JK flip-flop IC 7476 address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>AS the Synchronous and asynchronous counter helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses the State Table, State Diagram, Excitation Table, Characteristic Table Techniques in Counters.</p> <p>It correlates low with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p>
CO206.5	Design Sequential Logic circuits: MOD counters using synchronous counters.	<p>This outcome key parameters</p> <p>Designing Modulo counter/ripple counter addresses the basics of mathematics, engineering fundamentals, complex problems correlate low with PO1.</p> <p>As the specifications of Modulo counters helps in the problem analysis, it correlates low with PO3.</p> <p>It correlates low with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p>
CO206.6	Understand the basics of simulator tool & to simulate basic blocks such as ALU & memory.	<p>This outcome key parameters</p> <p>Working Principle of basics of simulator tool addresses the basics of mathematics, engineering fundamentals, complex problems correlate low with PO1.</p> <p>Design & simulate single bit ALU with four functions(AND, OR, XOR, AD) helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses single bit RAM cell design.</p> <p>This outcome correlates low with PO4 as it addresses working of simulation tool which helps to provide solution for complex problems.</p> <p>This outcome correlates low with PO5 as it addresses working of simulation tool which helps to provide solution for complex problems.</p> <p>It correlates low with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p>






Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
ACADEMIC YEAR : 2022-23, SEM - I

Lesson Plan

Course Code : 214442				Class: SE IT A		Name of Faculty: Prof. Sayali B. Sabale							
Course Name: Logic Design & Computer Organization					Teaching Scheme:		Th : 3 Hrs / week						
Lr. No.		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of	Monitored by						
							AC	HOD	APMC				
Unit I : Introduction To Digital Electronics													
1	Digital Logic families: Digital IC Characteristics; TTL: Standard TTL characteristics, Operation of TTL NAND gate,CMOS: Standard CMOS characteristics, operation of CMOS NAND gate; Comparison of TTL & CMOS.	CEO202.1	CO202.1	17-8-2022	17/08/2022		}			}			
2	Signed Binary number representation and Arithmetic Sign Magnitude, 1's complement & 2's complement representation, Unsigned Binary arithmetic (addition, subtraction, multiplication, and division)			18-8-2022	18/08/2022						AK 10/9	}	}
3	Subtraction using 2's complement; IEEE Standard 754 Floating point number representations.			22-8-2022	22/08/2022								
4	Codes: Binary, BCD, octal & their conversions			23-8-2022	23/08/2022								
5	Codes: Hexadecimal, Excess-3, Gray code & their conversions			24-8-2022	24/08/2022								



6	Logic minimization: Representation of logic functions: logic statement, truth table, SOP form,			24-8-2022	29/08/2022				
7	POS form; Simplification of logical functions using K-Maps up to 4 variables			29-8-2022	30/08/2022 05/09/2022				
Unit II : Combinational Logic Design									
8	Design using SSI chips: Code converters, Half- Adder, Full Adder,	CEO202.1	CO202.2	30-8-2022	06/09/2022 07/09/2022				
9	Half Subtractor, Full Subtractor, n bit Binary adder.			5-9-2022	12/09/2022				
10	Design using MSI chips: Binary adder and Subtractor (IC 7483) BCD adder using IC 7483			6-9-2022	13/09/2022				
11	Introduction to MSI chips: Multiplexer (IC 74153), Demultiplexer (IC 74138),			7-9-2022	14/09/2022				
12	Implementation of logic functions using IC 74153 & 74138.			19-9-2022	15/09/2022				
13	Decoder (74238) Encoder (IC 74147), Look ahead carry generator and comparator			20-9-2022	20/09/2022				
Unit III : Sequential Logic Design									
14	Introduction to sequential circuits: Difference between combinational circuits and sequential circuits; Memory element-latch & Flip-Flop.			21-9-2022	26/09/2022				
15	Flip- Flops: Logic diagram, truth table & excitation table of SR, JK, D, T flip flops;			26-9-2022	27/09/2022				
16	Conversion from one FF to another			27-9-2022	28/09/2022				



17	Study of flip flops with regard to asynchronous and synchronous, Preset & Clear, Master Slave configuration, Study of 7474, 7476 flip flop ICs.	CEO202.1	CO202.3	28-9-2022	3/10/2022		}		}	
18	Application of flip-flops: Counters - asynchronous, study of 7490 modulus n counter ICs & their applications to implement mod counters; .			3-10-2022	4/10/2022					}
19	Registers- shift register types (SISO, SIPO, PISO & PIPO) & applications, Ring Counter using Flip Flops			10-10-2022	10/10/2022					
Unit IV : Computer Organization & Processor										
20	Computer organization & computer architecture, organization, functions & types of computer units- CPU(typical organization, Functions, Types)	CEO202.2	CO202.4	11-10-2022	11/10/2022		}	}	}	
21	Memory (Types & their uses in computer), IO(types & functions)			12-10-2022	12/10/2022					
22	system bus(Address, data & control , Typical control lines, Multiple-Bus Hierarchies); Von Neumann & Harvard architecture; Instruction cycle			17-10-2022	18/10/2022					
23	Processor: Single bus organization of CPU; ALU(ALU signals, functions & types)			18-10-2022	18/10/2022					
24	Register (types & functions of user visible, control & status registers such as general purpose, address registers, data registers, flags, PC, MAR, MBR, IR)& operations.			19-10-2022	7/11/2022					



Unit VI : Memory & Input / Output Systems

32	Memory Systems: Characteristics of Memory Systems, Memory Hierarchy, signals to connect memory to processor, memory read & write cycle,	CEO202.2	CO202.6	16-11-2022	22/11/2022				
33	characteristics of semiconductor memory: SRAM, DRAM & ROM			21-11-2022	23/11/2022				
34	Cache Memory – Principle of Locality, Organization, Mapping functions,			22-11-2022	24/11/2022				
35	write policies, Replacement policies, Multilevel Caches, Cache Coherence,			23-11-2022	24/11/2022				
36	Input / Output Systems: I/O Module, Programmed I/O, Interrupt Driven I/O, Direct Memory Access (DMA).			24-11-2022	25/11/2022				
37	Virtual Memory and Paging			25-11-2022	25/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	17/08/2022
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	25/11/2022
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
ACADEMIC YEAR : 2022-23, SEM - I

B

Lesson Plan

Course Code : 214442				Class: SE IT B		Name of Faculty: Prof. Sayali B. Sabale				
Course Name: Logic Design & Computer Organization					Teaching Scheme:		Th : 3 Hrs / week			
Lr. No.		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of	Monitored by			
							AC	HOD	APMC	
Unit I : Introduction To Digital Electronics										
1	Digital Logic families: Digital IC Characteristics; TTL: Standard TTL characteristics, Operation of TTL NAND gate,CMOS: Standard CMOS characteristics, operation of CMOS NAND gate; Comparison of TTL & CMOS.	CEO202.1	CO202.1	17-8-2022	17/8/2022		Sik 30/8	JL 30/8	De	
2	Signed Binary number representation and Arithmetic Sign Magnitude, 1's complement & 2's complement representation, Unsigned Binary arithmetic (addition, subtraction, multiplication, and division)			18-8-2022	18/8/2022					
3	Subtraction using 2's complement; IEEE Standard 754 Floating point number representations.			22-8-2022	22/08/2022					
4	Codes: Binary, BCD, octal & their conversions			23-8-2022	23/08/2022					
5	Codes: Hexadecimal, Excess-3, Gray code & their conversions			24-8-2022	24/08/2022					



6	Logic minimization: Representation of logic functions: logic statement, truth table, SOP form,			24-8-2022	30/08/2022				
7	POS form; Simplification of logical functions using K-Maps up to 4 variables			29-8-2022	30/08/2022 01/09/2022				
Unit II : Combinational Logic Design									
8	Design using SSI chips: Code converters, Half- Adder, Full Adder,	CEO202.1	CO202.2	30-8-2022	06/09/2022 07/09/2022				
9	Half Subtractor, Full Subtractor, n bit Binary adder.			5-9-2022	07/09/2022				
10	Design using MSI chips: Binary adder and Subtractor (IC 7483) BCD adder using IC 7483			6-9-2022	12/09/2022				
11	Introduction to MSI chips: Multiplexer (IC 74153), Demultiplexer (IC 74138),			7-9-2022	13/09/2022				
12	Implementation of logic functions using IC 74153 & 74138.			19-9-2022	14/09/2022				
13	Decoder (74238) Encoder (IC 74147), Look ahead carry generator and comparator			20-9-2022	19/09/2022				
Unit III : Sequential Logic Design									
14	Introduction to sequential circuits: Difference between combinational circuits and sequential circuits; Memory element-latch & Flip-Flop.			21-9-2022	20/09/2022				
15	Flip- Flops: Logic diagram, truth table & excitation table of SR, JK, D, T flip flops;			26-9-2022	26/09/2022				
16	Conversion from one FF to another			27-9-2022	28/09/2022				



17	Study of flip flops with regard to asynchronous and synchronous, Preset & Clear, Master Slave configuration, Study of 7474, 7476 flip flop ICs.	CEO202.1	CO202.3	28-9-2022	3/10/2022				
18	Application of flip-flops: Counters - asynchronous, study of 7490 modulus n counter ICs & their applications to implement mod counters; .			3-10-2022	4/10/2022				
19	Registers- shift register types (SISO, SIPO, PISO & PIPO) & applications, Ring Counter using Flip Flops			10-10-2022	10/10/2022				
Unit IV : Computer Organization & Processor									
20	Computer organization & computer architecture, organization, functions & types of computer units- CPU(typical organization, Functions, Types)			11-10-2022	11/10/2022				
21	Memory (Types & their uses in computer), IO(types & functions)			12-10-2022	12/10/2022				
22	system bus(Address, data & control , Typical control lines, Multiple-Bus Hierarchies); Von Neumann & Harvard architecture; Instruction cycle			17-10-2022	13/10/2022				
23	Processor: Single bus organization of CPU; ALU(ALU signals, functions & types)	CEO202.2	CO202.4	18-10-2022	17/10/2022				
24	Register (types & functions of user visible, control & status registers such as general purpose, address registers, data registers, flags, PC, MAR, MBR, IR)& operations.			19-10-2022	18/10/2022				



25	control unit (control signals & typical organization of hard wired & microprogrammed CU). Micro Operations (fetch, indirect, execute, interrupt) and control signals for these micro			31-10-2022	20/10/2022				
Unit V : Processor Instructions & Processor Enhancements									
26	Instruction : elements of machine instruction: instruction representation (Opcode & mnemonics, Assembly language elements) ; Instruction Format & 0-1-2-3 address formats, Types of operands	CEO202.2	CO202.5	1-11-2022	31/10/2022				
27	Addressing modes; Instruction types based on operations (functions & examples of each);			2-11-2022	2/11/2022				
28	key characteristics of RISC& CISC; Interrupt: its purpose, types , classes & interrupt handling (ISR , multiple interrupts), exceptions; instruction pipelining(operation & speed up)			7-11-2022	7/11/2022				
29	Multiprocessor systems: Taxonomy of Parallel Processor Architectures,			9-11-2022	9/11/2022				
30	two types of MIMD clusters & SMP (organization & benefits)			14-11-2022	14/11/2022				
31	Multicore processor (various Alternatives & advantages Of multicores), typical features of multicore intel core i7.			15-11-2022	15/11/2022				



Unit VI : Memory & Input / Output Systems

32	Memory Systems: Characteristics of Memory Systems, Memory Hierarchy, signals to connect memory to processor, memory read & write cycle,	CEO202.2	CO202.6	16-11-2022	16/11/2022				
33	characteristics of semiconductor memory: SRAM, DRAM & ROM			21-11-2022	16/11/2022				
34	Cache Memory – Principle of Locality, Organization, Mapping functions,			22-11-2022	21/11/2022				
35	write policies, Replacement policies, Multilevel Caches, Cache Coherence,			23-11-2022	23/11/2022				
36	Input / Output Systems: I/O Module, Programmed I/O, Interrupt Driven I/O, Direct Memory Access (DMA).			24-11-2022	24/11/2022				
37	Virtual Memory and Paging			25-11-2022	28/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	17/08/2022
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	2/12/2022
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Div. - A

PRACTICAL TEACHING RECORD

Course Code: 214446			Class: SE 2019		Name of Faculty: Sayali Sabale				
Course Name: Logic Design & Computer Organization Lab				Batch: B		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1	26-8-2022	26/08/2022				
2	Design and implement 1 digit BCD adder using IC7483		CO206.2	2-9-2022	02/09/2022				
3	Design and implement full adder using multiplexer IC 74153		CO206.3	16-9-2022	16/09/2022				
4	Design and implement Any three variable function using multiplexer IC 74153		CO206.3	23-9-2022	23/09/2022				
5	Design and implement full subtractor using decoder IC 74138		CO206.3	30-9-2022	30/09/2022				
6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.4	14-10-2022	07/10/2022				
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476		CO206.4	21-10-2022	14/10/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)		CO206.5	4-11-2022	04/11/2022				



9	Design & simulate single bit ALU with four functions(AND, OR, XOR, ADD).	CEO206.2	CO206.6	11-11-2022	11/11/2022				
10	Design & simulate single bit RAM cell		CO206.6	18-11-2022	18/11/2022 25/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	26/08/2022
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	25/11/2022
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Div. A

PRACTICAL TEACHING RECORD

Course Code: 214446				Class: SE 2019		Name of Faculty: Sayali Sabale			
Course Name: Logic Design & Computer Organization Lab				Batch: C		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1	26-8-2022	02/09/2022				
2	Design and implement 1 digit BCD adder using IC7483		CO206.2	2-9-2022	16/09/2022				
3	Design and implement full adder using multiplexer IC 74153		CO206.3	16-9-2022	23/09/2022				
4	Design and implement Any three variable function using multiplexer IC 74153		CO206.3	23-9-2022	30/09/2022				
5	Design and implement full subtractor using decoder IC 74138		CO206.3	30-9-2022	07/10/2022				
6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.4	14-10-2022	16/10/2022				
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476		CO206.4	21-10-2022	4/11/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)		CO206.4	4-11-2022	11/11/2022				



9	Design & simulate single bit ALU with four functions (AND, OR, XOR, ADD).	CEO206.2	CO206.6	11-11-2022	18/11/2022				
10	Design & simulate single bit RAM cell		CO206.6	18-11-2022	25/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>J. Sabah</i>	17/08/22
HoD : <i>J. Sabah</i>	

End of Semester

Signature	Date
Course Faculty : <i>J. Sabah</i>	25/11/22
HoD : <i>J. Sabah</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Div.-B.

PRACTICAL TEACHING RECORD

Course Code: 214446				Class: SE 2019		Name of Faculty: Sayali Sabale			
Course Name: Logic Design & Computer Organization Lab				Batch: A		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1	25-8-2022	25/08/2022				
2	Design and implement 1 digit BCD adder using IC7483		CO206.2	1-9-2022	01/09/2022				
3	Design and implement full adder using multiplexer IC 74153		CO206.3	8-9-2022	08/09/2022				
4	Design and implement Any three variable function using multiplexer IC 74153		CO206.3	15-9-2022	19/09/2022				
5	Design and implement full subtractor using decoder IC 74138		CO206.3	22-9-2022	22/09/2022				
6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.4	13-10-2022	29/09/2022				
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476		CO206.4	20-10-2022	6/10/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)			3-11-2022	20/10/2022				



9	Design & simulate single bit ALU with four functions(AND, OR, XOR, ADD).	CEO206.2	CO206.6	10-11-2022	3/11/2022, 10/11/2022				
10	Design & simulate single bit RAM cell		CO206.6	17-11-2022	17/11/2022 24/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>JB Senbelle</i>	17/8/22
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>JB Senbelle</i>	25/11/22
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Div. B.

PRACTICAL TEACHING RECORD

Course Code: 214446		Class: SE 2019		Name of Faculty: Sayali Sabale					
Course Name: Logic Design & Computer Organization Lab				Batch: C		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1	24-8-2022	24/08/2022		[Signature]		
2	Design and implement 1 digit BCD adder using IC7483		CO206.2	7-9-2022	07/09/2022				
3	Design and implement full adder using multiplexer IC 74153		CO206.3	14-9-2022	14/09/2022				
4	Design and implement Any three variable function using multiplexer IC 74153		CO206.3	21-9-2022	21/09/2022				
5	Design and implement full subtractor using decoder IC 74138		CO206.3	28-9-2022	30/09/2022				
6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.4	12-10-2022	12/10/2022		[Signature]		
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476		CO206.4	19-10-2022	19/10/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)		CO206.4	1-11-2022	02/11/2022				



9	Design & simulate single bit ALU with four functions(AND, OR, XOR, ADD).	CEO206.2	CO206.6	9-11-2022	09/11/2022 11/11/2022	JBN 20/11	JBN
10	Design & simulate single bit RAM cell		CO206.6	16-11-2022	16/11/2022 23/11/2022		

Start of Semester

Signature	Date
Course Faculty : JBN	17/8/22
HoD : JBN	

End of Semester

Signature	Date
Course Faculty : JBN	25/11/2022
HoD : JBN	20/11





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Div. B

PRACTICAL TEACHING RECORD

Course Code: 214446				Class: SE 2019		Name of Faculty: Sayali Sabale			
Course Name: Logic Design & Computer Organization Lab				Batch: D		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1	22-8-2022	22/08/2022				
2	Design and implement 1 digit BCD adder using IC7483		CO206.2	29-8-2022	29/08/2022				
3	Design and implement full adder using multiplexer IC 74153		CO206.3	5-9-2022	05/09/2022				
4	Design and implement Any three variable function using multiplexer IC 74153		CO206.3	19-9-2022	12/09/2022				
5	Design and implement full subtractor using decoder IC 74138		CO206.3	26-9-2022	19/09/2022				
6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.4	3-10-2022	26/09/2022				
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476		CO206.4	10-10-2022	03/10/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)		CO206.5	17-10-2022	10/10/2022				



9	Design & simulate single bit ALU with four functions(AND, OR, XOR, ADD).	CEO206.2	CO206.6	31-10-2022	17/10/2022 31/10/2022				
10	Design & simulate single bit RAM cell		CO206.6	7-11-2022	11/11/2022 28/11/2022 28/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>HB Sabarwal</i>	17/08/22
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>HB Sabarwal</i>	02/12/2022
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: SE 2019	Course Name: Logic Design & Computer Organization Lab
Course Code: 214446	Name of Faculty: Kamna Sahu

COURSE EDUCATIONAL OBJECTIVES

Course Objective	Description
CEO206.1	To design & implement combinational and sequential circuits.
CEO206.2	To learn simulation of digital systems.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO206.1	Understand working of digital electronic circuits.
CO206.2	Apply the knowledge to appropriate IC as per design specification.
CO206.3	Analyze the basic logic gates and various reduction techniques of digital logic circuit
CO206.4	Analyze, design and implement combinational logic circuits.
CO206.5	Design Sequential Logic circuits: MOD counters using synchronous counters.
CO206.6	Understand the basics of simulator tool & to simulate basic blocks such as ALU & memory.

ASSIGNMENT- COURSE OUTCOME MAPPING

Assignment	Course Outcome No	Assignment	Course Outcome No
1	CO206.1, CO206.2 CO206.3, CO206.4	5	CO206.1, CO206.2 CO206.3, CO206.5
2	CO206.1, CO206.2 CO206.3, CO206.4	6	CO206.1, CO206.2 CO206.3, CO206.5
3	CO206.1, CO206.2 CO206.3, CO206.4	7	CO206.1, CO206.2 CO206.3, CO206.5
4	CO206.1, CO206.2 CO206.3, CO206.4	8	CO206.6
5	CO206.1, CO206.2 CO206.3, CO206.5	10	CO206.6

Kamna Sahu
 Signature of Faculty



Dr. Jyoti Surve
 Head of Department



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

CORRELATION BETWEEN CO, PO & PSO

Course Name: Logic Design & Computer Organization Lab	Course Code: 214446
Name of Faculty: Kamna Sahu	Class: SE 2019


CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO206.1	2	-	-	-	-	-	-	-	-	-	-	1
CO206.2	2	1	1	-	-	-	-	-	-	-	-	1
CO206.3	2	1	1	-	-	-	-	-	-	-	-	1
CO206.4	2	1	1	-	-	-	-	-	-	-	-	1
CO206.5	2	-	-	-	-	-	-	-	-	-	-	1
CO206.6	2	1	1	-	-	-	-	-	-	-	-	1
1 - LOW , 2 - MEDIUM , 3 - HIGH												

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO206.1	1	-	-	-
CO206.2	2	-	-	-
CO206.3	2	-	-	-
CO206.4	2	-	-	-
CO206.5	2	-	-	1
CO206.6	2	-	-	-


Kamna Sahu
Signature of Faculty




Dr. Jyoti Surve
Head of Department



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year : 2022-23, Semester - I

PRACTICAL TEACHING RECORD

Subject Code : 214446 Class: SE IT (A-Division)				Name of Faculty: Kamna Sahu					
Subject Name: Logic Design & Computer Organization Laboratory				Batch: A		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1 CO206.3	25-8-2022	25-8-2022				
2	Design and implement 1 digit BCD adder using IC7483			1-9-2022	1-9-2022				
3	Design and implement full adder using multiplexer IC 74153			8-9-2022	8-9-2022				
4	Design and implement Any three variable function using multiplexer IC 74153			15-9-2022	15/9/2022				
5	Design and implement full subtractor using decoder IC 74138			22-9-2022	22/9/2022				



6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.2 CO206.3	29-9-2022	29/9/2022				
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476			6-10-2022	6/10/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)			13-10-2022	13/10/2022				
9	Design & simulate single bit ALU with four functions(AND, OR, XOR, ADD).	CEO206.2	CO206.3	20-10-2022	3/11/2022				
10	Design & simulate single bit RAM cell			27-10-2022	24/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>Kahy</i>	
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>Kahy</i>	
HoD : <i>[Signature]</i>	





Hope Foundation's

Information Technology, Pune




International Institute of

Innovation & Leadership

DEPARTMENT OF INFORMATION TECHNOLOGY

Academic Year : 2022-23, Semester - I

PRACTICAL TEACHING RECORD

Subject Code : 214446				Class: SE IT (B-Division)		Name of Faculty: Kamna Sahu					
Subject Name: Logic Design & Computer Organization Laboratory				Batch: B		Teaching Scheme:		Pr : 2 Hrs / week			
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by				
							AC	HOD	APMC		
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1 CO206.3	26-8-2022	26-8-2022						
2	Design and implement 1 digit BCD adder using IC7483			2-9-2022	2-9-2022						
3	Design and implement full adder using multiplexer IC 74153			16-9-2022	14/9/2022						
4	Design and implement Any three variable function using multiplexer IC 74153			23-9-2022	23/9/2022						
5	Design and implement full subtractor using decoder IC 74138			30-9-2022	30/9/2022						



6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.2 CO206.3	7-10-2022	14/10/22				
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476			14-10-2022	11/11/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)			21-10-2022	25/11/2022				
9	Design & simulate single bit ALU with four functions(AND, OR, XOR, ADD).	CEO206.2	CO206.3	28-10-2022	2/12/2022				
10	Design & simulate single bit RAM cell			4-11-2022	2/12/2022				

Start of Semester

Signature	Date
Course Faculty : <u>K. Sahu</u>	
HoD : <u>[Signature]</u>	

End of Semester

Signature	Date
Course Faculty : <u>K. Sahu</u>	
HoD : <u>[Signature]</u>	





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Institute of Information Technology, Pune

DEPARTMENT OF INFORMATION TECHNOLOGY

Academic Year : 2022-23, Semester - I

PRACTICAL TEACHING RECORD

Subject Code : 214446				Class: SE IT (A-Division)		Name of Faculty: Kamna Sahu				
Subject Name: Logic Design & Computer Organization Laboratory				Batch: D		Teaching Scheme:		Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Design and implement 4-bit BCD to Excess-3 code	CEO206.1	CO206.1 CO206.3	24-8-2022	24-8-2022					
2	Design and implement 1 digit BCD adder using IC7483			7-9-2022	14/9/2022					
3	Design and implement full adder using multiplexer IC 74153			14-9-2022	21/9/2022					
4	Design and implement Any three variable function using multiplexer IC 74153			28-9-2022	28/9/2022					
5	Design and implement full subtractor using decoder IC 74138			5-10-2022	12/10/2022					



6	Design and implement 3 bit Up and 3 bit Down Asynchronous Counters using master slave JK flip-flop IC 7476	CEO206.1	CO206.2 CO206.3	12-10-2022	19/10/2022				
7	Design and implement 3 bit Up and 3 bit Down Synchronous Counters using master slave JK flip-flop IC 7476			19-10-2022	2/11/2022				
8	Design and implement Modulo 'N' counter using IC7490. (N= 100 max)			26-10-2022	9/11/2022				
9	Design & simulate single bit ALU with four functions(AND, OR, XOR, ADD).	CEO206.2	CO206.3	2-11-2022	16/11/2022				
10	Design & simulate single bit RAM cell			9-11-2022	23/11/2022				

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year : 2022-23, Semester - II

Class: SE	Course: Computer Graphics
Course Code: 214453	Faculty Name: Prof. Megha R. Mehar

COURSE EDUCATIONAL OBJECTIVES

Course Educational Objective	Description
CEO214.1	Understand the foundations of computer graphics: hardware systems, math basis, light and color.
CEO214.2	Understand the complexities of modeling realistic objects through modeling complex scenes using a high-level scene description language.
CEO214.3	Become acquainted with some advanced topics in computer graphics. The student should gain an expanded vocabulary for discussing issues relevant to computer graphics (including both the underlying mathematics and the actual programming).
CEO214.4	The student should gain an appreciation and understanding of the hardware and software utilized in constructing computer graphics applications.
CEO214.5	The student should gain a comprehension of windows, clipping and view-ports in relation to images displayed on screen.
CEO214.6	The student should gain an understanding of geometric, mathematical and algorithmic concepts necessary for programming computer graphics.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO214.1	Apply mathematical and logical aspects for developing elementary graphics operations like scan conversion of points, lines, circle, and apply it for problem solving.
CO214.2	Employ techniques of geometrical transforms to produce, position and manipulate Objects in 2 dimensional space.
CO214.3	Describe mapping from a world coordinates to device coordinates, clipping, and projections in order to produce 3D images on 2D output device.
CO214.4	Apply concepts of rendering and shading using computer graphics tools in design, development and testing of 2D, 3D modeling applications.
CO214.5	Apply concepts of animation, curves and fractals using computer graphics tools in design, development and testing of 2D, 3D modeling applications.
CO214.6	Perceive the concepts of virtual reality.

CLASS TEST- COURSE OUTCOME MAPPING

Question No	CLASS TEST - I		CLASS TEST-II		CLASS TEST - III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1 To Q12	CO214.1	15	CO214.3	15	CO214.5	15
Q13 To Q14	CO214.2	15	CO214.4	15	CO214.6	15

THEORY ASSIGNMENT- COURSE OUTCOME MAPPING

Question No	ASSIGNMENT-I		ASSIGNMENT-II		ASSIGNMENT-III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1	CO214.1	10	CO214.3	10	CO214.5	10
Q2	CO214.2	10	CO214.4	10	CO214.6	10

Prof. Megha Mehar
 Signature of Faculty



Dr. Jyoti surve
 Head of Department

Sign of Faculty:



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
ACADEMIC YEAR : 2022-23, SEM - II

CORRELATION BETWEEN CO, PO & PSO

Course Name: Computer Graphics	Course Code:214453
Faculty Name: Prof. Megha R.Mehar	Class: SE

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO214.1	3	3	3	1	3	2	-	-	-	-	-	1
CO214.2	3	3	2	2	2	2	-	-	-	-	-	1
CO214.3	3	3	2	3	2	2	-	-	-	-	-	1
CO214.4	3	3	3	3	3	3	-	-	-	-	-	1
CO214.5	3	3	3	3	3	3	-	-	-	-	-	1
CO214.6	1	1	1	1	-	-	-	-	-	-	-	1

1 - LOW , 2 - MEDIUM , 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO214.1	3	3	-	-
CO214.2	3	3	-	-
CO214.3	3	3	-	-
CO214.4	3	3	-	-
CO214.5	3	3	-	-
CO214.6	3	3	-	-


Signature of Faculty


Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II


Class: SE 2019	Course Name-Computer Graphics
Course Code-214453	Name of Faculty-Prof.Megha Mehar

CO-PO mapping Justification (Theory)

CO code	Course Outcomes	PO/PSO	Justification
CO214.1	Apply mathematical and logical aspects for developing elementary graphics operations like scan conversion of points, lines, circle, and apply it for problem solving.	PO1	Moderately mapped as students learn to model complex objects and use various graphics concepts to build graphics packages. This can be used to provide solutions for various engineering problems.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO214.2	Employ techniques of geometrical transforms to produce, position and manipulate Objects in 2 dimensional and 3-dimensional space respectively.	PO1	Moderately mapped as students learn to fill the polygons using various attributes and 2D geometric transformations.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO3	Moderately mapped as students will be able to design and implement graphics packages to provide solutions for various problems
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO214.3	Describe mapping from a world coordinates to device coordinates, clipping, and projections in order to produce 3D images on 2D output device.	PO1	Moderately mapped as students learn to perform 3D geometric transformations, 2D clipping and color models.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO3	Moderately mapped as students will be able to design and implement graphics packages to provide solutions for various problems.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO214.4	Apply concepts of rendering, shading, animation, curves and fractals using computer graphics tools in design, development and testing of 2D, 3D modeling applications.	PO1	Moderately mapped as students learn to view the objects in different projections like perspective and parallel.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO214.5	Apply concepts of rendering, shading, animation, curves and fractals using computer graphics tools in design, development and testing of 2D, 3D modeling applications.	PO1	Moderately mapped as students learn to use IO interactions.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO3	Slightly mapped as students will be able to design and implement IO interactions.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.

CO code	Course Outcomes	PO/PSO	Justification
CO214.6	Perceive the concepts of virtual reality.	PO1	Moderately mapped as students learn to model complex objects and use various graphics concepts to build graphics packages. This can be used to provide solutions for various engineering problems.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.






Signature of Faculty
Prof. Megha Mehar


Head of Department
Dr. Jyoti Surve



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year: 2022-23, Semester - II

THEORY TEACHING RECORD

Course Code : 214453				Class: SE		Name of Faculty: Prof. Megha R. Mehar				
Course Name: Computer Graphics				Teaching Scheme:		Th : 3 Hrs /Week				
Lr. No.	Topics to be Delivered	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
Unit I: Computer Graphics Basic, OpenGL and Line, Circle Drawing										
1	1.1	CEO214.1 CEO214.2 CEO214.3 CEO214.4 CEO214.5 CEO214.6	CO214.1	08-02-2023	08/02/2023, 09/02/2023, 16/02/2023					
2	1.2			10-02-2023	15/02/2023 15/02/2023 16/02/2023					
3	1.3			14-02-2023	20/02/2023	Prof. Mandar Datar				
4	1.4			16/02/2023	28/02/2023 1/3/2023					
5	1.5			17-02-2023	3/03/2023					
6	1.6			21-2-2023	8/03/2023					
Unit II: Polygons, 2D Transformation										
7	2.1			22-2-2023	14/03/2023	On leave				



8	2.2	Polygon filling methods: Seed Fill – Flood fill and Boundary Fill, Scan-line Fill algorithms	CEO214.1 CEO214.2	CO214.2	24-2-2023	15/3/2023				
9	2.3	2D Transformations: Translation, Scaling, Rotation	CEO214.3 CEO214.4		28-2-2023	17/03/2023				
10	2.4	2D Transformations: Reflection and Shearing	CEO214.5 CEO214.6		1-3-2023	17/3/23				
11	2.5	Matrix representation and homogeneous coordinate system			3-3-2023	17/3/23				
12	2.6	Composite transformations			8-3-2023					
Unit III: Windowing, Clipping, 3D Transformation, Projections										
13	3.1	Windowing: Concept of window and viewport, viewing transformations			10-3-2023	31/3/23				
14	3.2	Line Clipping: Cohen Sutherland method of line clipping			14-3-2023	11/4/23				
15	3.3	Polygon Clipping: Sutherland Hodgeman method for convex and concave polygon clipping.	CEO214.1 CEO214.2		15-3-2023	12/4/23				
16	3.4	3D Transformation: Translation, scaling, rotation about X, Y, Z & arbitrary axis, and reflection about XY, YZ, XZ & arbitrary plane.	CEO214.3 CEO214.4 CEO214.5 CEO214.6	CO214.3	17-3-2023	20/4/23	flip class room Activity			
17	3.5	Projections: Types of projections- Parallel, Perspective			21-3-2023	20/4/23				
18	3.6	Parallel: oblique – Cavalier, Cabinet, Orthographic – isometric, diametric, trimetric			24-3-2023	20/4/23				
Unit IV: Segments, Illumination models, Color models and Shading										
19	4.1	Segments: Introduction, Segment table, segment creation, closing, deleting, renaming, and visibility.			28-3-2023	13/4/2023				



20	4.2	Illumination models: Light sources, ambient light, diffuse light, specular reflection, the Phong model, combined diffuse and specular reflections with multiple light sources.
21	4.3	Illumination models: The Phong model, combined diffuse and specular reflections with multiple light sources.
22	4.4	Color Models: CIE Chromaticity Diagram, Color Gamut, RGB, CMY, YCbCr, HSV color models.
23	4.5	Color Models: RGB, CMY, YCbCr, HSV color models.
24	4.6	Shading Algorithms: Constant intensity shading, Halftone, Gourand and Phong Shading.

CEO214.1
CEO214.2
CEO214.3
CEO214.4
CEO214.5
CEO214.6

CO214.4

31-3-2023	18/4/23			
5-4-2023	19/4/2023			
11-4-2023	25/4/2023			
12-4-2023	25/4/2023			
18-4-2023	25/4/2023			

Unit V: Curves, Fractals and Animation

25	5.1	Curves: Introduction, interpolation and approximation, Spline Interpolation Methods – hermite interpolation, Bezier curves, B-Splines.
26	5.2	Fractals: Introduction, Classification, fractal Dimension, Fractal dimension and surfaces, Hilbert curve, Koch Curve.
27	5.3	Animation: Basics of animation, types of animation, principles of animation, design of animation sequences

CEO214.1
CEO214.2
CEO214.3
CEO214.4
CEO214.5
CEO214.6



CO214.5

19-3-2023	26/4/2023			
21-4-2023	28/04/2023 28/4/2023	8:30 am to 10:30 am		
25-4-2023	03/05/2023			

28	5.4	Animation languages, key frame, morphing, motion specification.		26-4-2023	9/5/2023				
29	5.5	Methods of controlling animation, frame-by-frame animation techniques, real-time animation techniques.		28-4-2023	10/5/2023				
30	5.6	Real-time animation techniques.		2-5-2023	12/5/2023				

Unit VI: Virtual Reality

31		Introduction of Virtual Reality: Fundamental Concept, Three I's of virtual reality and Classic Components of VR systems, Applications of VR systems.		2-5-2023	15/5/2023 15/5/2023				
32		Multiple Modals of Input and Output Interface in Virtual Reality: Input – 3D position Trackers and its types, Navigation and Manipulation Interfaces, Gesture Interfaces	CEO214.1 CEO214.2 CEO214.3 CEO214.4 CEO214.5 CEO214.6	2-5-2023	16/5/2023				
33		Graphics Displays – HMD and CAVE, Sound Displays, Haptic Feedback		2-5-2023	16/5/2023				
34		Rendering Pipeline: Graphics rendering Pipeline, Haptics Rendering Pipeline		3-5-2023	18/5/2023				
35		Modeling in Virtual Reality: Concepts of Geometric Modeling, Kinematic Modeling.		3-5-2023	18/5/2023				
36		Physical modeling and Behavior modeling.		3-5-2023	19/5/2023				

Start of Semester

Signature	Date
Course Faculty :	24/4/2023
HoD :	



End of Semester

Signature	Date
Course Faculty :	
HoD :	19/6



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY

Academic Year : 2022-23, Semester - II

Class: SE	Course: Computer Graphics Laboratory
Course Code: 214457	Faculty Name: Prof. Megha R.Mehar

COURSE EDUCATIONAL OBJECTIVES

Course Educational Objective	Description
CEO218.1	To acquaint the learners with the concepts of OpenGL.
CEO218.2	To acquaint the learners with the basic concepts of Computer Graphics.
CEO218.3	To implement the various algorithms for generating and rendering the objects.
CEO218.4	To get familiar with mathematics behind the transformations.
CEO218.5	To understand and apply various methods and techniques regarding animation.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO218.1	Explore the OpenGL Library
CO218.2	Apply line & circle drawing algorithms to draw the objects.
CO218.3	Apply polygon filling methods for the object.
CO218.4	Apply polygon clipping algorithms for the object.
CO218.5	Apply the 2D transformations on the object.
CO218.6	Implement the curve generation algorithms & Demonstrate the animation of any object using animation principles.

ASSIGNMENT- COURSE OUTCOME MAPPING

Assignment	Course Outcome No	Assignment	Course Outcome No
1	CO218.1	5	CO218.4
2	CO218.2	6	
11		7	
3	CO218.3	7	CO218.6
4	CO218.5	8	
9			


Prof. Megha Mehar
Signature of Faculty


Dr. Jyoti Surve
Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
ACADEMIC YEAR : 2022-23, SEM - I

CORRELATION BETWEEN CO, PO & PSO

Course Name: Computer Graphics Lab	Course Code: 214448
Faculty Name: Megha Mehar	Class: SE

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO218.1	1	1	-	-	-	-	-	-	-	-	-	-
CO218.2	3	3	2	2	2	2	-	-	-	-	-	-
CO218.3	3	3	2	3	2	2	-	-	-	-	-	-
CO218.4	3	3	3	3	3	3	-	-	-	-	-	-
CO218.5	3	3	3	3	3	3	-	-	-	-	-	-
CO218.6	3	3	3	3	-	-	-	-	-	-	-	-

1 - LOW , 2 - MEDIUM , 3 - HIGH

Course Outcome (COs)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO218.1	1	1	-	-
CO218.2	3	3	-	-
CO218.3	3	3	-	-
CO218.4	3	3	-	-
CO218.5	3	3	-	-
CO218.6	3	3	-	-

1 - LOW , 2 - MEDIUM , 3 - HIGH


Signature of Faculty


Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

Class: SE 2019	Course Name-Computer Graphics Lab
Course Code-214457	Name of Faculty-Prof.Megha Mehar

CO-PO mapping Justification (Lab)

CO code	Course Outcomes	PO/PSO	Justification
CO218.1	Explore the OpenGL Library	PO1	Moderately mapped as students learn to model complex objects and use various graphics concepts to build graphics packages. This can be used to provide solutions for various engineering problems.
CO218.2	Apply line & circle drawing algorithms to draw the objects.	PO1	Moderately mapped as students learn to fill the polygons using various attributes and 2D geometric transformations.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO3	Moderately mapped as students will be able to design and implement graphics packages to provide solutions for various problems
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO218.3	Apply polygon filling methods for the object.	PO1	Moderately mapped as students learn to perform 3D geometric transformations, 2D clipping and color models.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO3	Moderately mapped as students will be able to design and implement graphics packages to provide solutions for various problems.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO218.4	Apply polygon clipping algorithms for the object.	PO1	Moderately mapped as students learn to view the objects in different projections like perspective and parallel.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO218.5	Apply the 2D transformations on the object.	PO1	Moderately mapped as students learn to use IO interactions.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO3	Slightly mapped as students will be able to design and implement IO interactions.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.
		PSO1	Moderately mapped as students understand the basics of OpenGL, transformations, polygon filling etc. in writing programs to build applications.
CO218.6	Implement the curve generation algorithms & Demonstrate the animation of any object using animation principles.	PO1	Moderately mapped as students learn to model complex objects and use various graphics concepts to build graphics packages. This can be used to provide solutions for various engineering problems.
		PO2	Moderately mapped as students can build a graphics project which needs the ability to understand the problem at various levels. Analyzing the need of various algorithms and implement those using appropriate tools and software packages.
		PO12	Slightly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.

Signature of Faculty
Prof. Megha Mehar



Head of Department
Dr. Jyoti Surve

Sign of Faculty:

For each batch, different record is to be maintained



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY

Academic Year : 2021-22, Semester - II



PRACTICAL TEACHING RECORD

Subject Code : 214457				Class: SE		Name of Faculty: Prof. Megha R.Mehar			
Subject Name: Computer Graphics Laboratory				Batch: A		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Install and explore the OpenGL	CEO218.1	CO218.1	02/09/2023	13/2/2023 14/2/2023		} SK 11/3	} SK 11/3	} Dev
2	Implement DDA line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	02/16/2023	02/03/2023				
3	Implement Bresenham's line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	23-2-2023	23/3/2023				
4	Implement Bresenham circle drawing algorithm to draw any object, The object should be displayed in all the quadrants with respect to center and radius	CEO218.1 CEO218.2 CEO218.3	CO218.2	03/02/2023	13/4/2023		SK 25/4	SK	





5	Implement the following polygon filling methods : i) Flood fill / Seed fill ii) Boundary fill ; using mouse click, keyboard interface and menu driven programming	CEO218.1 CEO218.2 CEO218.3	CO218.3	03/09/2023	17/4/2023	prof. Deepali B.			
6	Implement Cohen Sutherland polygon clipping method to clip the polygon with respect the viewport and window. Use mouse click, keyboard interface	CEO218.1 CEO218.2 CEO218.3	CO218.4	16-4-2023	20/4/2023		Plu 25/5	sk	Dev
7	Implement following 2D transformations on the object with respect to axis : – i) Scaling ii) Rotation about arbitrary point iii) Reflection	CEO218.1 CEO218.2 CEO218.3 CEO218.4	CO218.5	23-4-2023	27/4/23				
8	Generate fractal patterns using i) Bezier ii) Koch Curve	CEO218.1 CEO218.2 CEO218.3	CO218.6	04/06/2023	11/5/23		sk	sk	Dev
9	Implement animation principles for any object	CEO218.1 CEO218.2 CEO218.3 CEO218.5	CO218.6	13-4-2023	11/5/2023		19/6		Dev
10	Revision			20/04/2023 27/04/2023 04/05/2023	—				

Start of Semester

Signature	Date
Course Faculty : 	..
HoD : 	



End of Semester

Signature	Date
Course Faculty : 	
HoD : 	19/6/23



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year : 2021-22, Semester - II



PRACTICAL TEACHING RECORD

Subject Code : 214457				Class: SE		Name of Faculty: Prof. Megha R. Mehar				
Subject Name: Computer Graphics Laboratory				Batch: B		Teaching Scheme:		Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Install and explore the OpenGL	CEO218.1	CO218.1	02/08/2023	08/02/2023 13/02/2023					
2	Implement DDA line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	02/15/2023	14/02/2023 15/02/2023 01/03/2023		AK 11/5	for H3	Den	
3	Implement Bresenham's line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	22-2-2023	14/03/2023 23/03/2023	prof. Nitin W.	AK	AK	Den	
4	Implement Bresenham circle drawing algorithm to draw any object. The object should be displayed in all the quadrants with respect to center and radius	CEO218.1 CEO218.2 CEO218.3	CO218.2	03/01/2023	12/4/2023		AK 25/5	AK		



5	Implement the following polygon filling methods : i) Flood fill / Seed fill ii) Boundary fill ; using mouse click, keyboard interface and menu driven programming	CEO218.1 CEO218.2 CEO218.3	CO218.3	03/08/2023	18/4/2023	prof. prachi N.			
6	Implement Cohen Sutherland polygon clipping method to clip the polygon with respect the viewport and window. Use mouse click,	CEO218.1 CEO218.2 CEO218.3	CO218.4	15-3-2023	19/4/2023				
7	Implement following 2D transformations on the object with respect to axis : – i) Scaling ii) Rotation about arbitrary point iii) Reflection	CEO218.1 CEO218.2 CEO218.3 CEO218.4	CO218.5	29-3-2023	26/4/23				
8	Generate fractal patterns using i) Bezier ii) Koch Curve	CEO218.1 CEO218.2 CEO218.3	CO218.6	04/05/2023	10/5/2023				
9	Implement animation principles for any object	CEO218.1 CEO218.2 CEO218.3 CEO218.5	CO218.6	12-4-2023	10/5/2023				
10	Revision			19/04/2023 26/04/2023 03/05/2023	—				

Signature	Date
Course Faculty : 	
HoD : 	

Signature	Date
Course Faculty : 	
HoD : 	19/6/23





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
 Academic Year : 2021-22, Semester - II



PRACTICAL TEACHING RECORD

Subject Code : 214457				Class: SE		Name of Faculty: Prof. Megha R.Mehar					
Subject Name: Computer Graphics Laboratory				Batch: C		Teaching Scheme:		Pr : 2 Hrs / week			
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by				
							AC	HOD	APMC		
1	Install and explore the OpenGL	CEO218.1	CO218.1	02/14/2023	13/02/2023, 14/02						
2	Implement DDA line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	02/21/2023	15/02/2023 28/02/2023 14/03/2023					Den	
3	Implement Bresenham's line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	28-2-2023	17/03/2023	prof. Manday Datar				Den	
4	Implement Bresenham circle drawing algorithm to draw any object. The object should be displayed in all the quadrants with respect to center and radius	CEO218.1 CEO218.2 CEO218.3	CO218.2	03/04/2023	12/4/2023	prof. Deepali B.					



5	Implement the following polygon filling methods : i) Flood fill / Seed fill ii) Boundary fill ; using mouse click, keyboard interface and menu driven programming	CEO218.1 CEO218.2 CEO218.3	CO218.3	03/21/2023	12/4/2023	prof. Deepali B			
6	Implement Cohen Sutherland polygon clipping method to clip the polygon with respect the viewport and window. Use mouse click, keyboard interface	CEO218.1 CEO218.2 CEO218.3	CO218.4	28-3-2023	18/4/2023		BK 25/5	fr	
7	Implement following 2D transformations on the object with respect to axis : – i) Scaling ii) Rotation about arbitrary point iii) Reflection	CEO218.1 CEO218.2 CEO218.3 CEO218.4	CO218.5	11-4-2023	25/4/23				Dev
8	Generate fractal patterns using i) Bezier ii) Koch Curve	CEO218.1 CEO218.2 CEO218.3	CO218.6	04/18/2023	9/5/2023		fr 19/6	fr 19/6	
9	Implement animation principles for any object	CEO218.1 CEO218.2	CO218.6	25-04-2023					
10	Revision			05/02/2023	10/5/2023				

Signature	Date
Course Faculty : 	
HoD : 	

Signature	Date
Course Faculty : 	
HoD : 	19/6





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year : 2021-22, Semester - II

PRACTICAL TEACHING RECORD

Subject Code : 214457				Class: SE		Name of Faculty: Prof.Megha R.Mehar				
Subject Name: Computer Graphics Laboratory				Batch: D		Teaching Scheme:		Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Install and explore the OpenGL	CEO218.1	CO218.1	02/13/2023	15/2/2023, 20/2/23					
2	Implement DDA line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	02/20/2023	13/3/2023 17/3/2023	prof. Mandar Datar				
3	Implement Bresenham's line drawing algorithm to draw: i) Simple Line ii) Dotted Line iii) Dashed Line iv) Solid line ;using mouse interface Divide the screen in four quadrants with center as (0, 0). The line should work for all the slopes positive as well as negative.	CEO218.1 CEO218.2 CEO218.3	CO218.2	27-2-2023	17/3/2023 23/3/2023	Prof. Mandar Datar				
4	Implement Bresenham circle drawing algorithm to draw any object. The object should be displayed in all the quadrants with respect to center and radius	CEO218.1 CEO218.2 CEO218.3	CO218.2	03/06/2023	23/3/2023					



5	Implement the following polygon filling methods : i) Flood fill / Seed fill ii) Boundary fill ; using mouse click, keyboard interface and menu driven programming	CEO218.1 CEO218.2 CEO218.3	CO218.3	03/13/2023	23/3/2023		<i>SK</i> 05/5		
6	Implement Cohen Sutherland polygon clipping method to clip the polygon with respect the viewport and window. Use mouse click, keyboard interface	CEO218.1 CEO218.2 CEO218.3	CO218.4	20-3-2023	17/4/2023		<i>SK</i> 35/5		
7	Implement following 2D transformations on the object with respect to axis : – i) Scaling ii) Rotation about arbitrary point iii) Reflection	CEO218.1 CEO218.2 CEO218.3 CEO218.4	CO218.5	27-3-2023	24/4/23				
8	Generate fractal patterns using i) Bezier ii) Koch Curve	CEO218.1 CEO218.2 CEO218.3	CO218.6	04/03/2023	8/05/2023		<i>SK</i> 19/5	<i>SK</i> 19/5	
9	Implement animation principles for any object	CEO218.3 CEO218.4	CO218.6	10-4-2023	9/5/2023				
10	Revision			17/4/2023 24/04/2023	9/5/2023				

Signature	Date
Course Faculty : <i>SK</i>	
HoD : <i>SK</i>	

Signature	Date
Course Faculty : <i>SK</i>	
HoD : <i>SK</i>	19/5





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: TE 2019	Course Name: Operating System
Course Code: 314442	Name of Faculty: Dr. Bhavana Kanawade

COURSE EDUCATIONAL OBJECTIVES

Course Objective	Description
CEO302.1	To introduce basic concepts and functions of modern operating systems.
CEO302.2	To understand the concept of process, thread management and scheduling.
CEO302.3	To learn the concept of concurrency control.
CEO302.4	To study various Memory Management techniques.
CEO302.5	To know the concept of I/O and File management.
CEO302.6	To learn concept of system software.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO302.1	Explain the role of Modern Operating Systems.
CO302.2	Apply the concepts of process and thread scheduling.
CO302.3	Illustrate the concept of process synchronization, mutual exclusion and the deadlock.
CO302.4	Implement the concepts of various memory management techniques.
CO302.5	Make use of concept of I/O management and File system.
CO302.6	Understand Importance of System software.

CLASS TEST- COURSE OUTCOME MAPPING

Question No	CLASS TEST - I		CLASS TEST-II		CLASS TEST - III	
	CO Mapping	Marks	CO Mapping	Marks	CO	Marks
Q1 - Q2	CO302.1	15	CO302.3	15	CO302.5	15
Q3 - Q4	CO302.2	15	CO302.4	15	CO302.6	15

THEORY ASSIGNMENT- COURSE OUTCOME MAPPING

Question No	ASSIGNMENT-I		ASSIGNMENT-II		ASSIGNMENT-III	
	CO Mapping	Marks	CO Mapping	Marks	CO	Marks
1	CO302.1	10	CO302.3	10	CO302.5	10
2	CO302.2	10	CO302.4	10	CO302.6	10

Dr. Bhavana Kanawade
 Signature of Faculty



Dr. Jyoti Surve
 Head of Department

Sign of Faculty:

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Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2021-23 Semester I

CORRELATION BETWEEN CO, PO & PSO

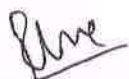
Course Name: Operating System	Course Code: 314442
Faculty Name: Dr. Bhavana Kanawade	Class: TE 2019


CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO302.1	3	2	2	1	1	-	-	-	-	-	-	2
CO302.2	3	2	2	1	1	-	-	-	-	-	-	2
CO302.3	3	2	2	1	1	-	-	-	-	-	-	2
CO302.4	3	2	2	1	1	-	-	-	-	-	-	2
CO302.5	3	2	2	1	1	-	-	-	-	-	-	2
CO302.6	2	-	-	-	-	-	-	-	-	-	-	2

1 - LOW, 2 - MEDIUM, 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO302.1	2	1	-	-
CO302.2	2	1	-	-
CO302.3	2	1	-	-
CO302.4	2	1	-	-
CO302.5	2	1	-	-
CO302.6	2	1	-	-


 Dr. Bhavana Kanawade
 Signature of Faculty


 Dr. Jyoti Surve
 Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: TE 2019	Course Name: Operating System Laboratory
Course Code: 314446	Name of Faculty: Dr. Bhavana Kanawade

COURSE EDUCATIONAL OBJECTIVES

Course Objective	Description
CEO306.1	To introduce and learn Linux commands required for administration.
CEO306.2	To learn shell programming concepts and applications.
CEO306.3	To demonstrate the functioning of OS basic building blocks like processes, threads under the LINUX.
CEO306.4	To demonstrate the functioning of OS concepts in user space like concurrency control (process synchronization, mutual exclusion), Memory Management, CPU Scheduling and Disk Scheduling in LINUX.
CEO306.5	To demonstrate the functioning of Inter Process Communication under LINUX.
CEO306.6	To study the functioning of OS concepts in kernel space like embedding the system call in

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO306.1	Will be able to apply the basics of Linux commands.
CO306.2	Will be able to build shell scripts for various applications.
CO306.3	Will be able to implement basic building blocks like processes, threads under the Linux
CO306.4	Will be able to develop various system programs for the functioning of OS concepts in user space like CPU Scheduling, concurrency control, Memory Management and Disk Scheduling in Linux.
CO306.5	Will be able to develop system programs for Inter Process Communication in Linux
CO306.6	Will be able to embed a system call in kernel

ASSIGNMENT- COURSE OUTCOME MAPPING

Assignment	Course Outcome No	Assignment	Course Outcome No
1	306.3	8	306.4
2		9	
3		10	
4	306.2	11	
5	306.4	12	
6	306.5	13	306.6
7			

Dr. Bhavana Kanawade
 Signature of Faculty



Dr. Jyoti Surve
 Head of Department



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

CORRELATION BETWEEN CO, PO & PSO

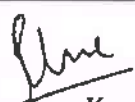
Course Name: Operating System Laboratory	Course Code: 314446
Faculty Name: Dr. Bhavana Kanawade	Class: TE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO306.1	3	2	2	1	1	-	-	-	-	-	-	2
CO306.2	3	2	2	1	1	-	-	-	-	-	-	2
CO306.3	3	2	2	1	1	-	-	-	-	-	-	2
CO306.4	3	2	2	1	1	-	-	-	-	-	-	2
CO306.5	3	2	2	1	1	-	-	-	-	-	-	2
CO306.6	2	-	-	-	-	-	-	-	-	-	-	2

1 - LOW, 2 - MEDIUM, 3 - HIGH

Course Outcome (COs)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO306.1	2	1	-	-
CO306.2	2	1	-	-
CO306.3	2	1	-	-
CO306.4	2	1	-	-
CO306.5	2	1	-	-
CO306.6	2	1	-	-


Dr. Bhavana Kanawade
Signature of Faculty


Dr. Jyoti Surve
Head of Department






Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 314442			Class: TE 2019		Name of Faculty: Dr. Bhavana Kanawade						
Course Name: Operating System					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
									AC	HOD	APMC
UNIT 1 : OVERVIEW OF OPERATING SYSTEM											
1	1.1	Operating System Objectives and Functions		CEO302.1	CO302.1	18/7/2022	18/7				
2	1.2	The Evolution of Operating Systems				19/7/2022	19/7				
3	1.3	The Evolution of Operating Systems				20/7/2022	20/7				
4	1.4	Developments Leading to Modern Operating Systems				21/7/2022	21/7				
5	1.5	Virtual Machines				25/7/2022	25/7				
6	1.6	Introduction to Linux OS, BASH Shell scripting: Basic shell commands.				26/7/2022	26/7				
UNIT 2 : PROCESS MANAGEMENT											
7	2.1	Process: Concept of a Process, Process States, Process Description, Process Control				28/7/2022	28/7				



8	2.2	Process: Concept of a Process, Process States, Process Description, Process Control.	 CEO302.2	CEO302.2	1/8/2022	28/7	Due to fop Time table rescheduled	}	}	Don
9	2.3	Processes and Threads, Concept of Multithreading			2/8/2022	1/8				
10	2.4	Types of Threads, Thread programming Using Pthreads			4/8/2022	2/8				
11	2.5	Scheduling: Types of Scheduling, Scheduling Algorithms, First Come First Served			8/8/2022	4/8				
12	2.6	Shortest Job First, Priority, Round Robin			16/8/2022	8/8				
UNIT 3 : CONCURRENCY CONTROL										
13	3.1	Process/thread Synchronization and Mutual Exclusion: Principles of Concurrency, Requirements for Mutual Exclusion	CEO302.3	CEO302.3	22/8/2022	16/8		}	}	Don
14	3.2	Mutual Exclusion: Operating System Support (Semaphores and Mutex).			23/8/2022	18/8				
15	3.3	Classical synchronization problems: Readers/Writers Problem, Producer and Consumer problem			25/8/2022	22/8				
16	3.4	Interprocess communication (Pipes, shared memory: system V).			29/8/2022	24/8	ML class swap adjustment			
17	3.5	Deadlock: Principles of Deadlock, Deadlock Modeling, and Strategies to deal with deadlock: Prevention, Avoidance, Detection and Recovery.			30/8/2022	25/8				
18	3.6	Example: Dining Philosophers Problem / Banker's Algorithm.			1/9/2022	29/8, 30/8				

UNIT 4 : MEMORY MANAGEMENT

19	4.1	Memory Management: Memory Management Requirements, Memory Partitioning: Fixed Partitioning, Dynamic Partitioning	CEO302.4	CEO302.4	5/9/2022	1/9 2/9			
20	4.2	Buddy System, Relocation			6/9/2022	5/9			
21	4.3	Paging, Page table structure, Segmentation			8/9/2022	6/9			
22	4.4	Virtual Memory: Background, Demand Paging			12/9/2022	8/9			
23	4.5	Page Replacement (FIFO, LRU, Optimal)			13/9/2022	13/9			
24	4.6	Allocation of frames, Thrashing			19/9/2022	13/9			

UNIT 5 : INPUT / OUTPUT AND FILE MANAGEMENT

25	5.1	I/O Management and Disk Scheduling: I/O Devices, Organization of the I/O Function, I/O Buffering	CEO302.5	CEO302.5	20/9/2022	15/9			
26	5.2	Disk Scheduling (FIFO, SSTF, SCAN, C-SCAN, LOOK, C-LOOK)			22/9/2022	19/9			
27	5.3	Disk Scheduling (FIFO, SSTF, SCAN, C-SCAN, LOOK, C-LOOK)			26/9/2022	20/9			
28	5.4	File Management: Overview-Files and File Systems, File structure			27/9/2022	26/9			
29	5.5	File Organization and Access, File Directories			3/10/2022	28/9			
30	5.6	File Sharing, Record Blocking, Secondary Storage Management			6/10/2022	13/10			

UNIT 6 : SYSTEMS SOFTWARE AND ITS IMPORTANCE

31	6.1	Need of System Software, study of various components of system software.	CEO302.6	CEO302.6	10/10/2022	17/10				
32	6.2	Assemblers: Elements of Assembly Language Programming			11/10/2022	19/10				
33	6.3	A simple Assembly Scheme and pass structure of Assemblers.			13/10/2022	20/10				
34	6.4	Introduction to compilers: Phase structure of Compiler and entire compilation process			17/10/2022	20/10				
35	6.5	Introduction to Macro processors, Macro Definition and call, Macro Expansion Loaders and Linkers			18/10/2022	7/11				
36	6.6	General Loader Scheme, Subroutine Linkages, Relocation and linking Linkages, Relocation and linking			20/10/2022	7/11				

Start of Semester

Signature	Date
Course Faculty : Dr. Bhawank	18/10/22
HoD :	18/10

End of Semester

Signature	Date
Course Faculty :	07/11/22
HoD :	30/11/22





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY

Academic Year 2022-23 Semester I

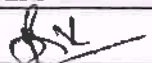

PRACTICAL TEACHING RECORD

Course Code: 314446				Class: TE 2019		Name of Faculty: Dr. Bhavana Kanawade			
Course Name: Operating System Laboratory				Batch: A		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Process control system calls: The demonstration of FORK and WAIT system calls along with zombie and orphan states.	CEO306.3	CO306.3	25/7/2022 29/7/2022	25/7 11/8	GFG session conducted on 29/7			
2	Process control system calls: The demonstration of EXECVE system calls along with zombie and orphan states.	CEO306.3	CO306.3	1/8/2022 5/8/2022	5/8 8/8				
3	To understand the significance of shell commands	CEO306.1	CO306.1	8/8/2022 19/8/2022	12/8 19/8				
4	Write a program to implement an address book using shell programming	CEO306.2	CO306.2	22/8/2022 26/8/2022	22/8				
5	Implement the C program for CPU Scheduling Algorithms: Shortest Job First (Preemptive) and Round Robin with different arrival time.	CEO306.4	CO306.4	29/8/2022 2/9/2022	23/9				
6	Inter process communication in Linux using FIFO	CEO306.5	CO306.5	5/9/2022 12/9/2022	16/9, 19/9				
7	Inter process communication in Linux using Shared Memory	CEO306.5	CO306.5	16/9/2022 19/9/2022	19/9				

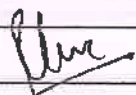
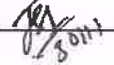


8	Thread synchronization using counting semaphores. Application to demonstrate: producer- consumer problem with counting semaphores and mutex.	CEO306.4	CO306.4	23/9/2022	26/8 29/8				
9	Thread synchronization and mutual exclusion using mutex. Application to demonstrate: Reader- Writer problem with reader priority.	CEO306.4	CO306.4	26/9/2022	29/8 2/9				
10	Implement the C program for Deadlock Avoidance Algorithm: Bankers Algorithm.	CEO306.4	CO306.4	30/9/2022 3/10/2022	28/9				
11	Implement the C program for Page Replacement Algorithms: FCFS, LRU, and Optimal for frame size as minimum three.	CEO306.4	CO306.4	7/10/2022	17/10				
12	Implement the C program for Disk Scheduling Algorithms: SSTF, SCAN, C-Look considering the initial head position moving away from the spindle.	CEO306.4	CO306.4	10/10/2022	21/10				
13	To embed system call in kernel	CEO306.6	CO306.6	14/10/2022 17/10/2022	21/10				

Start of Semester

Signature	Date
Course Faculty : 	18/7/22
HoD : 	18/7

End of Semester

Signature	Date
Course Faculty : 	07/11/22
HoD : 	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

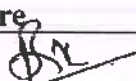

PRACTICAL TEACHING RECORD

Course Code: 314446				Class: TE 2019		Name of Faculty: Dr. Bhavana Kanawade			
Course Name: Operating System Laboratory				Batch: B		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Process control system calls: The demonstration of FORK and WAIT system calls along with zombie and orphan states.	CEO306.3	CO306.3	26/7/2022 29/7/2022	26/7 2/8	Crtk session conducted on 29/7			
2	Process control system calls: The demonstration of EXECVE system calls along with zombie and orphan states.	CEO306.3	CO306.3	2/8/2022 5/8/2022	12/8 16/8		AK 13/8		
3	To understand the significance of shell commands	CEO306.1	CO306.1	16/8/2022 19/8/2022	5/8 12/8		AK 13/8	AK 29/8	
4	Write a program to implement an address book using shell programming	CEO306.2	CO306.2	23/8/2022 26/8/2022	13/8 23/8		AK 27/8		
5	Implement the C program for CPU Scheduling Algorithms: Shortest Job First (Preemptive) and Round Robin with different arrival time.	CEO306.4	CO306.4	30/8/2022 2/9/2022	23/8 27/8				
6	Inter process communication in Linux using FIFO	CEO306.5		6/9/2022 13/9/2022	20/9				



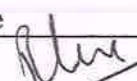

7	Inter process communication in Linux using Shared Memory	CEO306.5	CO306.5	16/9/2022 20/9/2022	13/19 16/19				
8	Thread synchronization using counting semaphores. Application to demonstrate: producer- consumer problem with counting semaphores and mutex.	CEO306.4	CO306.4	23/9/2022	26/18 30/18				
9	Thread synchronization and mutual exclusion using mutex. Application to demonstrate: Reader- Writer problem with reader priority.	CEO306.4	CO306.4	27/9/2022	2/19				
10	Implement the C program for Deadlock Avoidance Algorithm: Bankers Algorithm.	CEO306.4	CO306.4	30/9/2022 4/10/2022	11/10				
11	Implement the C program for Page Replacement Algorithms: FCFS, LRU, and Optimal for frame size as minimum three.	CEO306.4	CO306.4	7/10/2022	18/10				
12	Implement the C program for Disk Scheduling Algorithms: SSTF, SCAN, C-Look considering the initial head position moving away from the spindle.	CEO306.4	CO306.4	11/10/2022	21/10				
13	To embed system call in kernel	CEO306.6	CO306.6	14/10/2022 18/10/2022	21/10				

Start of Semester

Signature	Date
Course Faculty : 	19/11/22
HoD : 	18/11



End of Semester

Signature	Date
Course Faculty : 	07/11
HoD : 	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

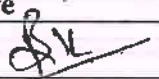
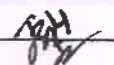
PRACTICAL TEACHING RECORD

Course Code: 314446				Class: TE 2019		Name of Faculty: Dr. Bhavana Kanawade			
Course Name: Operating System Laboratory				Batch: C		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Process control system calls: The demonstration of FORK and WAIT system calls along with zombie and orphan states.	CEO306.3	CO306.3	27/7/2022 29/7/2022	27/7 5/8	GfK session conducted on 29/7			
2	Process control system calls: The demonstration of EXECVE system calls along with zombie and orphan states.	CEO306.3	CO306.3	3/8/2022 5/8/2022	10/8		PK 13/8		
3	To understand the significance of shell commands	CEO306.1	CO306.1	10/8/2022 17/8/2022	17/8 12/8			PK 14/8	
4	Write a program to implement an address book using shell programming	CEO306.2	CO306.2	19/8/2022 24/8/2022	19/8 24/8		PK 23/8		
5	Implement the C program for CPU Scheduling Algorithms: Shortest Job First (Preemptive) and Round Robin with different arrival time.	CEO306.4	CO306.4	26/8/2022 2/9/2022	23/8				
6	Inter process communication in Linux using FIFO	CEO306.5	CO306.5	7/9/2022 14/9/2022	11/9 23/9				
7	Inter process communication in Linux using Shared Memory	CEO306.5	CO306.5	16/9/2022 19/9/2022	15/9				

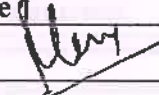



8	Thread synchronization using counting semaphores. Application to demonstrate: producer- consumer problem with counting semaphores and mutex.	CEO306.4	CO306.4	23/9/2022	26/9				
9	Thread synchronization and mutual exclusion using mutex. Application to demonstrate: Reader- Writer problem with reader priority.	CEO306.4	CO306.4	28/9/2022	29/9 7/10				
10	Implement the C program for Deadlock Avoidance Algorithm: Bankers Algorithm.	CEO306.4	CO306.4	30/9/2022 7/10/2022	28/9				
11	Implement the C program for Page Replacement Algorithms: FCFS, LRU, and Optimal for frame size as minimum three.	CEO306.4	CO306.4	12/10/2022	12/10				
12	Implement the C program for Disk Scheduling Algorithms: SSTF, SCAN, C-Look considering the initial head position moving away from the spindle.	CEO306.4	CO306.4	14/10/2022	19/10				
13	To embed system call in kernel	CEO306.6	CO306.6	19/10/2022	21/10				

Start of Semester

Signature	Date
Course Faculty : 	18/7/22
HoD : 	18/7

End of Semester

Signature	Date
Course Faculty : 	07/11/22
HoD : 	30/11





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

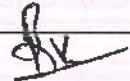

PRACTICAL TEACHING RECORD

Course Code: 314446				Class: TE 2019		Name of Faculty: Dr. Bhavana Kanawade			
Course Name: Operating System Laboratory				Batch: D		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Process control system calls: The demonstration of FORK and WAIT system calls along with zombie and orphan states.	CEO306.3	CO306.3	28/7/2022 29/7/2022	31/8 4/8	After session conducted on 29/7			
2	Process control system calls: The demonstration of EXECVE system calls along with zombie and orphan states.	CEO306.3	CO306.3	4/8/2022 5/8/2022	18/8				
3	To understand the significance of shell commands	CEO306.1	CO306.1	18/8/2022 19/8/2022	5/8 12/8				
4	Write a program to implement an address book using shell programming	CEO306.2	CO306.2	25/8/2022 26/8/2022	19/8 25/8				
5	Implement the C program for CPU Scheduling Algorithms: Shortest Job First (Preemptive) and Round Robin with different arrival time:	CEO306.4	CO306.4	1/9/2022 2/9/2022	29/8				
6	Inter process communication in Linux using FIFO	CEO306.5	CO306.5	8/9/2022 15/9/2022	29/8 25/8				
7	Inter process communication in Linux using Shared Memory	CEO306.5	CO306.5	16/9/2022 22/9/2022	8/9 15/9 16/9				

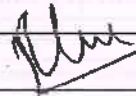
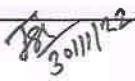


8	Thread synchronization using counting semaphores. Application to demonstrate: producer- consumer problem with counting semaphores and mutex.	CEO306.4	CO306.4	23/9/2022	26/8				
9	Thread synchronization and mutual exclusion using mutex. Application to demonstrate: Reader- Writer problem with reader priority.	CEO306.4	CO306.4	29/9/2022	11/9 2/9				
10	Implement the C program for Deadlock Avoidance Algorithm: Bankers Algorithm.	CEO306.4	CO306.4	30/9/2022 6/10/2022	13/10				
11	Implement the C program for Page Replacement Algorithms: FCFS, LRU, and Optimal for frame size as minimum three.	CEO306.4	CO306.4	7/10/2022	18/10				
12	Implement the C program for Disk Scheduling Algorithms: SSTF, SCAN, C-Look considering the initial head position moving away from the spindle.	CEO306.4	CO306.4	13/10/2022	21/10				
13	To embed system call in kernel	CEO306.6	CO306.6	14/10/2022 20/10/2022	21/10				

Start of Semester

Signature	Date
Course Faculty : 	12/7/22
HoD : 	18/7

End of Semester

Signature	Date
Course Faculty : 	07/11/22
HoD : 	30/11/22





Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

Class: TE 2019	Course Name: Web Application Development
Course Code: 314453	Faculty Name: Prof. Monali Bansode

COURSE EDUCATIONAL OBJECTIVES

Course Objective	Description
CEO313.1	To familiarize students with Web Programming basic concepts
CEO313.2	To learn and understand Web scripting languages.
CEO313.3	To explore the Front end web programming skills.
CEO313.4	To explore the Back end web programming skills.
CEO313.5	To understand and learn Mobile web development.
CEO313.6	To understand and learn Web application deployment.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO313.1	Develop Static and Dynamic website using technologies like HTML, CSS, Bootstrap.
CO313.2	Demonstrate the use of web scripting languages.
CO313.3	Develop web application with Front End Technologies.
CO313.4	Develop web application with Back End Technologies.
CO313.5	Develop mobile website using JQuery Mobile.
CO313.6	Deploy web application on cloud using AWS.

CLASS TEST- COURSE OUTCOME MAPPING

Question No	CLASS TEST - I		CLASS TEST-II		CLASS TEST - III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1 - Q15	CO313.1	15	CO313.3	15	CO313.5	15
Q16 - Q30	CO313.2	15	CO313.4	15	CO313.6	15

THEORY ASSIGNMENT- COURSE OUTCOME MAPPING

Question No	ASSIGNMENT-I		ASSIGNMENT-II		ASSIGNMENT-III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1	CO313.1	10	CO313.3	10	CO313.5	10
Q2	CO313.2	10	CO313.4	10	CO313.6	10



Sign of Faculty: _____

Monali



Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

CORRELATION BETWEEN CO, PO & PSO

Course Name: Web Application Development	Course Code: 314453
Faculty Name: Prof. Monali Bansode	Class: TE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO313.1	3	-	-	-	-	-	-	-	-	-	-	1
CO313.2	3	2	1	1	-	-	-	-	-	-	-	1
CO313.3	3	-	1	1	-	-	-	-	-	-	-	1
CO313.4	3	-	1	1	-	-	-	-	-	-	-	1
CO313.5	3	2	1	1	-	-	-	-	-	-	-	1
CO313.6	3	-	1	-	-	-	-	-	-	-	-	1

1 - LOW, 2 - MEDIUM, 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO313.1	3	1	-	-
CO313.2	3	2	-	-
CO313.3	3	2	-	-
CO313.4	3	2	-	-
CO313.5	3	-	-	-
CO313.6	3	-	1	-


 Prof. Monali Bansode
 Signature of Faculty


 Dr. Jyoti Surve
 Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

Class: TE 2019	Course Name: Laboratory Practice-II
Course Code: 314458	Faculty Name: Prof. Monali Bansode

COURSE EDUCATIONAL OBJECTIVES

Course Objective	Description
CEO318.1	To understand basic concepts of web programming and scripting languages.
CEO318.2	To learn Version Control Environment.
CEO318.3	To learn front end technologies.
CEO318.4	To learn back end technologies.
CEO318.5	To understand mobile web development.
CEO318.6	To comprehend web application deployment.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO318.1	Develop Static and Dynamic responsive website using technologies HTML, CSS, Bootstrap and AJAX.
CO318.2	Create Version Control Environment.
CO318.3	Develop an application using front end technologies.
CO318.4	Develop an application using backend technologies.
CO318.5	Develop mobile website using JQuery Mobile.
CO318.6	Deploy web application on cloud using AWS.

ASSIGNMENT- COURSE OUTCOME MAPPING

Assignment	Course Outcome No	Assignment	Course Outcome No
1	CO318.1	6	CO318.4
2	CO318.1	7	CO318.4
3	CO318.2	8	CO318.5
4	CO318.4	9	CO318.6
5	CO318.3		



Sign of Faculty: _____

Monali



Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

CORRELATION BETWEEN CO, PO & PSO

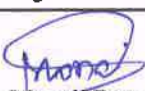
Course Name: Laboratory Practice-II	Course Code: 314458
Faculty Name: Prof. Monali Bansode	Class: TE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO318.1	3	2	-	-	-	-	-	-	-	1	-	1
CO318.2	3	3	1	1	-	-	-	-	-	1	-	1
CO318.3	3	2	2	2	2	-	-	-	-	1	1	1
CO318.4	3	2	2	1	-	-	-	-	-	-	-	-
CO318.5	3	2	1	1	-	-	-	-	-	-	-	-
CO318.6	3	2	2	1	-	-	-	-	-	1	-	1

1 - LOW , 2 - MEDIUM , 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO318.1	3	2	-	-
CO318.2	3	2	-	-
CO318.3	3	2	-	-
CO318.4	3	3	-	-
CO318.5	3	2	-	-
CO318.6	3	3	-	-


Prof. Monali Bansode
Signature of Faculty


Dr. Jyoti Surve
Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 314453				Class: TE 2019		Faculty Name: Prof. Monali Bansode						
Course Name: Web Application Development				Teaching Scheme:			Th: 3 Hrs / week					
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
									AC	HOD	APMC	
UNIT 1 : INTRODUCTION TO WEB TECHNOLOGIES												
1	1.1	HTML: Getting started with HTML, Why HTML, Tags and Elements, Attributes			CEO313.1	CO313.1	2/1/2023	01/02				
2	1.2	Properties, Headings list, Links, Tables, Images, HTML Form, Media (Audio, Video), Semantic HTML5 Elements.					2/6/2023	06/02				
3	1.3	CSS: Why CSS, Types of CSS, How to use CSS, Properties, Classes, Child-Class (Nested CSS).					2/7/2023	07/02				
4	1.4	Colors, Text, Background, Border, Margin, Padding, Positioning (flex, grid, inline, block), Animation, Transition					2/8/2023	08/02				
5	1.5	BOOTSTRAP: Why Bootstrap, CSS over Bootstrap, How to Use Bootstrap, Bootstrap Grid System, Bootstrap Responsive					2/13/2023	15/02	Hackathon			
6	1.6	Bootstrap Classes, Bootstrap Components (i.e., Button, Table, List, etc.), Bootstrap as a Cross Platform. W3C: What is W3C , How W3C handles/Supports Web Technologies.					2/14/2023	20/02	Hackathon			



Lr. No.	Topics to be Delivered	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
UNIT 2 : WEB SCRIPTING LANGUAGES									
7	2.1	CEO313.2	CO313.2	2/15/2023	22/02		[Signature]	[Signature]	[Signature]
8	2.2			2/20/2023	24/02				
9	2.3			2/21/2023	28/02				
10	2.4			2/22/2023	01/03				
11	2.5			2/27/2023	06/03				
12	2.6			2/28/2023	08/03				
	Class Test I								
UNIT 3 : FRONT END TECHNOLOGIES									
13	3.1	CEO313.3	CO313.3	3/1/2023	13/03		[Signature]	[Signature]	[Signature]
14	3.2			3/6/2023	14/03				
15	3.3			3/8/2023	15/03				

Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
16	3.4	Angular Components. Angular Data Binding, Directives and Pipes. Angular Services and Dependency. Injections (DI). Angular Routers. Angular Forms.	CEO313.3	CO313.3	3/13/2023	20/03		}	}	}
17	3.5	ReactJS: Introduction to ReactJS. React Components, Inter Components Communication.			3/14/2023	21/03				
18	3.6	Components Styling, Routing, Redux-Architecture, Hooks- Basic hooks, useState() hook, useEffect() hook useContext() hook.			3/15/2023	12/4				
UNIT 4 : BACK END TECHNOLOGIES										
19	4.1	Node.JS: Introduction to Node.JS. Environment Setup, Node.JS Events, Node.JS Functions, Node.JS Built in modules,	CEO313.4	CO313.4	3/20/2023	17/04		}	}	}
20	4.2	File System, NPM, Install External Modules, Handling Data I/O in Node.JS, Create HTTP Server, Create Socket Server, Microservices-PM2.			3/21/2023	17/04				
21	4.3	ExpressJS: Introduction to ExpressJS, Configure Routes, Template Engines, ExpressJS as Middleware, Serving Static Files,			3/27/2023	18/04				
22	4.4	REST HTTP Method APIs, Applying Basic HTTP Authentication, Implement Session Authentication.			3/28/2023	19/04				
23	4.5	MongoDB: NoSQL and MongoDB Basics, MongoDB-Node.JS Communication,			3/29/2023	20/04				
24	4.6	CRUD Operations using Node.JS, Mongoose ODM for Middleware, Advanced MongoDB.			4/3/2023	22/04				
		Class Test II								



Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
UNIT 5 : MOBILE WEB DEVELOPMENT										
25	5.1	Mobile-First: What is Mobile-First? What is Mobile Web?	CEO313.5	CO313.5	4/4/2023	24/04				
26	5.2	Understanding Mobile Devices and Desktop. JQuery Mobile: Introduction to the jQuery Mobile Framework,			4/5/2023	26/04				
27	5.3	Set-up jQuery Mobile, Pages,			4/10/2023	27/04				
28	5.4	Icons, Transitions, Layouts Widgets,			4/11/2023	3/05				
29	5.5	Events, Forms, Themes, Formatting Lists, Header and Footer.			4/12/2023	08/05				
30	5.6	CSS Classes, Data Attributes, Building a Simple Mobile Webpage.			4/17/2023	03/05				
UNIT 6 : WEB APPLICATION DEPLOYMENT										
31	6.1	Cloud: AWS Cloud, AWS Elastic Compute,	CEO313.6	CO313.6	4/18/2023	08/05				
32	6.2	AWS Elastic Load Balancer and its types,			4/19/2023	08/05				
33	6.3	AWS VPC and Component of VPC,			4/24/2023	09/05				
34	6.4	AWS storage			4/25/2023	09/05				
35	6.5	Deploy Website or Web Application on AWS,			4/26/2023	12/05				
36	6.6	Launch an Application with AWS Elastic Beanstalk.			5/2/2023	12/05				
		Class Test III								

Start of Semester

Signature	Date
Course Faculty : <i>Mon</i>	
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>Mon</i>	
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

Course Code: 314458			Class: TE 2019		Faculty Name: Prof. Monali Bansode					
Course Name: Laboratory Practice-II					Batch: CC3		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Create a responsive web page which shows the ecommerce/college/exam admin dashboard with sidebar and statistics in cards using HTML, CSS and Bootstrap.	CEO318.1	CO318.1	06/02/2023 - 13/02/2023	06/02					
2	Write a JavaScript Program to get the user registration data and push to array/local storage with AJAX POST method and data list in new page.	CEO318.1	CO318.1	2/20/2023	20/02					
3	Create version control account on GitHub and using Git commandsto create repository and push your code to GitHub	CEO318.2	CO318.2	2/27/2023	27/02					
4	Create Docker Container Environment (NVIDELA Docker or any other).	CEO318.4	CO318.4	3/6/2023	13/03					
5	Create an Angular application which will do following actions: Register User, Login User, Show User Data on Profic Component	CEO318.3	CO318.3	3/13/2023	10/04					



6	Create a Node.JS Application which serves a static website.	CEO317.3	CO317.4	3/27/2023	17/04				
7	Create four API using Node.JS, ExpressJS and MongoDB for CRUD Operations on assignment 2	CEO318.4	CO318.4	03/04/2023 - 10/04/2023	17/04				
8	Create a simple Mobile Website using jQuery Mobile.	CEO318.5	CO318.5	4/17/2023	08/05				
9	Deploy/Host Your web application on AWS VPC or AWS Elastic Beanstalk.	CEO318.6	CO318.6	4/24/2023	08/05				

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD :	

[Signature]
30/1

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD :	

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07/05





Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

Course Code: 314458			Class: TE 2019		Faculty Name: Prof. Monali Bansode					
Course Name: Laboratory Practice-II					Batch: CC2		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Create a responsive web page which shows the ecommerce/college/exam admin dashboard with sidebar and statistics in cards using HTML, CSS and Bootstrap.	CEO318.1	CO318.1	07/02/2023 - 14/02/2023	07/02					
2	Write a JavaScript Program to get the user registration data and push to array/local storage with AJAX POST method and data list in new page.	CEO318.1	CO318.1	2/21/2023	28/02					
3	Create version control account on GitHub and using Git commandsto create repository and push your code to GitHub	CEO318.2	CO318.2	3/14/2023	21/3					
4	Create Docker Container Environment (NVIDEA Docker or any other).	CEO318.4	CO318.4	3/21/2023	18/4					
5	Create an Angular application which will do following actions: Register User, Login User, Show User Data on Profile Component	CEO318.3	CO318.3	3/28/2023	25/4					
6	Create a Node.JS Application which serves a static website.	CEO317.3	CO317.4	4/4/2023	3/5					



7	Create four API using Node.JS, ExpressJS and MongoDB for CRUD Operations on assignment 2	CEO318.4	CO318.4	4/11/2023	8/5			
8	Create a simple Mobile Website using jQuery Mobile.	CEO318.5	CO318.5	4/18/2023	8/5			
9	Deploy/Host Your web application on AWS VPC or AWS Elastic Beanstalk.	CEO318.6	CO318.6	4/25/2023	9/5			

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD : <i>[Signature]</i>	

3/11

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD : <i>[Signature]</i>	

3/11





Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

Course Code: 314458				Class: TE 2019		Faculty Name: Prof. Monali Bansode				
Course Name: Laboratory Practice-II				Batch: CC1		Teaching Scheme:		Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment.	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Create a responsive web page which shows the ecommerce/college/exam admin dashboard with sidebar and statistics in cards using HTML, CSS and Bootstrap.	CEO318.1	CO318.1	01/02/2023 - 08/02/2023	01/02/23		}			
2	Write a JavaScript Program to get the user registration data and push to array/local storage with AJAX POST method and data list in new page.	CEO318.1	CO318.1	2/15/2023	08/02/23					
3	Create version control account on GitHub and using Git commandsto create repository and push your code to GitHub	CEO318.2	CO318.2	3/1/2023	15/02/23					
4	Create Docker Container Environment (NVIDELA Docker or any other).	CEO318.4	CO318.4	3/8/2023	22/04/23					
5	Create an Angular application which will do following actions: Register User, Login User, Show User Data on Profile Component	CEO318.3	CO318.3	15/03/2023 - 29/03/2023	01/03/23					
6	Create a Node.JS Application which serves a static website.	CEO317.3	CO317.4	4/5/2023	15/03/23					



7	Create four API using Node.JS, ExpressJS and MongoDB for CRUD Operations on assignment 2	CEO318.4	CO318.4	4/12/2023	19/04			
8	Create a simple Mobile Website using jQuery Mobile.	CEO318.5	CO318.5	4/19/2023	26/04			
9	Deploy/Host Your web application on AWS VPC or AWS Elastic Beanstalk.	CEO318.6	CO318.6	26/04/2023 - 19/04/2023	03/05			

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD : <i>[Signature]</i>	

End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	
HoD : <i>[Signature]</i>	





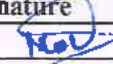

Hope Foundation's
International Institute of Information Technology, Pune
INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

Course Code: 314458			Class: TE 2019		Faculty Name: Prof. Monali Bansode					
Course Name: Laboratory Practice-II					Batch: AI		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Create a responsive web page which shows the ecommerce/college/exam admin dashboard with sidebar and statistics in cards using HTML, CSS and Bootstrap.	CEO318.1	CO318.1	02/02/2023 - 09/02/2023	09/02					
2	Write a JavaScript Program to get the user registration data and push to array/local storage with AJAX POST method and data list in new page.	CEO318.1	CO318.1	2/16/2023	16/02					
3	Create version control account on GitHub and using Git commandsto create repository and push your code to GitHub	CEO318.2	CO318.2	3/2/2023	23/02					
4	Create Docker Container Environment (NVIDELA Docker or any other).	CEO318.4	CO318.4	3/9/2023	02/03					
5	Create an Angular application which will do following actions: Register User, Login User, Show User Data on Profile Component	CEO318.3	CO318.3	3/16/2023	18/03					
6	Crcatc a Node.JS Application which serves a static website.	CEO318.3	CO318.4	3/30/2023	23/03					
7	Create four API using Node.JS, ExpressJS and MongoDB for CURD Operations on assignment 2	CEO318.4	CO318.4	06/04/2023 - 13/04/2023	23/03					



8	Create a simple Mobile Website using jQuery Mobile.	CEO318.5	CO318.5	4/20/2023	27/04				
9	Deploy/Host Your web application on AWS VPC or AWS Elastic Beanstalk.	CEO318.6	CO318.6	4/27/2023	08/05				

Start of Semester

Signature	Date
Course Faculty : 	
HoD : 	

30/11

End of Semester

Signature	Date
Course Faculty : 	
HoD : 	

13/15





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: BE 2019	Course Name: Deep Learning
Course Code: 414443	Name of Faculty: Dr. Jyoti Surve

COURSE EDUCATIONAL OBJECTIVES

Course	Description
CEO403.1	To introduce the theoretical foundations, algorithms, methodologies, and application of neural networks and deep learning.
CEO402.2	To design and develop an application-specific deep learning model.
CEO403.3	To provide the practical knowledge handling and analyzing real world applications

COURSE OUTCOME - DETAILS

Course	Description
CO403.1	Understand the theoretical foundations, algorithms, and methodologies of Deep Learning.
CO403.2	Apply the concepts of Convolution Neural Networks and use of popular CNN architectures.
CO403.3	Compare Feed Forward Neural Network and Recurrent Neural Network and learn modeling the time dimension using RNN and LSTM.
CO403.4	Elaborate unsupervised deep learning algorithms like Autoencoders.
CO403.5	Explore Representation Learning and Transfer Learning techniques using variants of CNN architecture
CO403.6	Evaluate the performance of deep learning algorithms and to provide solution for various real-world

CLASS TEST- COURSE OUTCOME MAPPING

Question No	CLASS TEST - I		CLASS TEST-II		CLASS TEST - III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1 - Q15	CO403.1	15	CO403.3	15	CO403.5	15
Q16 - Q30	CO403.2	15	CO403.4	15	CO403.6	15

THEORY ASSIGNMENT- COURSE OUTCOME MAPPING

Question No	ASSIGNMENT-I		ASSIGNMENT-II		ASSIGNMENT-III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1	CO403.1	10	CO403.3	10	CO403.5	10
Q2	CO403.2	10	CO403.4	10	CO403.6	10


 Dr. Jyoti Surve
 Signature of Faculty


 Dr. Jyoti Surve
 Head of Department



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Hope Foundation's
International Institute of Information Technology, Pune
DEPARMENT OF INFORATION TECHNOLOGY
Academic Year 2022-23 Semester I

CORRELATION BETWEEN CO, PO & PSO

Course Name: Deep Learning	Course Code: 414443
Faculty Name: Dr. Jyoti Surve	Class: BE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO403.1	2	2	2	-	1		-	-	-	-	1	1
CO403.2	2	2	2	-	1		-	-	-	-	1	1
CO403.3	2	2	2	-	1		-	-	-	-	1	1
CO403.4	2	2	2	-	1		-	-	-	-	1	1
CO403.5	2	2	2	-	1		-	-	-	-	1	1
CO403.6	2	2	2	-	1		-	-	-	-	1	1

1 - LOW , 2 - MEDIUM , 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO403.1	2	2	1	1
CO403.2	2	2	1	1
CO403.3	2	2	1	1
CO403.4	2	2	1	1
CO403.5	2	2	1	1
CO403.6	2	2	1	1

Signature of Faculty

Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: BE 2019	Course Name: Deep Learning
Course Code: 414443	Faculty Name: Dr. Jyoti Surve

CO-PO mapping Justification (Theory)

Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
CO403.1	Understand the theoretical foundations, algorithms, and methodologies of Deep Learning.	CO403.1-PO1	2	Moderate	fundamental knowledge of Mathematics is required in deep learning models through python programming which will help the students to apply the same to formulate solutions for engineering problems.
		CO403.1-PO2	2	Moderate	comparision of various types of algorithms like perceptrons ,Feed forward NN which help the students to apply the same to identify, analyze and formulate modules of problems.
		CO403.1-PO3	2	Moderate	Design various deep learning algorithms based on dataset available and user requirement.
		CO403.1-PO5	1	Low	students will use modern engineering and IT tools like python DL library for prediction And analysis of various problems.
		CO403.1-PO11	1	Low	Students will able to demonstrate knowledge and understanding of the engineering and management principles and apply to their own work to manage projects.
		CO403.1-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO403.1-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to design applications in the interdisciplinary domain
		CO403.1-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure of deep learning projects

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Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
		CO403.1-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO403.1-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology
CO403.2	Apply the concepts of Convolution Neural Networks and use of popular CNN architectures.	CO403.2-PO1	2	Moderate	fundamental knowledge of Mathematics is required in CNN models architectures which will help the students to apply to formulate solutions for engineering problems.
		CO403.2-PO2	2	Moderate	various CNN concepts and architecture will help the students to apply the knowledge to identify, analyze and formulate modules of problems.
		CO403.2-PO3	2	Moderate	students will able to design various CNN based algorithms on various realtime dataset available and as per user requirement.
		CO403.2-PO5	1	Low	students will use modern engineering and IT tools like python DL library for prediction And analysis of various problems on CNN
		CO403.2-PO11	1	Low	Students will able to demonstrate knowledge and understanding of the engineering and management principles and apply to their own work to manage projects.
		CO403.2-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO403.2-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to design applications in the interdisciplinary domain
		CO403.2-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure of CNN projects
		CO403.2-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO403.2-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology

Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
CO403.3	Compare Feed Forward Neural Network and Recurrent Neural Network and learn modeling the time dimension using RNN and LSTM.	CO403.3-PO1	2	Moderate	fundamental knowledge of Mathematics is required in comparing CNN models architectures with Recurrent Neural Network architectures which will help the students to apply to formulate solutions using both CNN and RNN
		CO403.3-PO2	2	Moderate	Knowledge of RNN architecture and LSTM will help the students to apply the concepts to identify, analyze and formulate modules of problems.
		CO403.3-PO3	2	Moderate	students will able to design various RNN and LSTM based algorithms on various realtime dataset available and as per user requirement.
		CO403.3-PO5	1	Low	students will use modern engineering and IT tools like python DL library for prediction And analysis of various problems on RNN,LSTM
		CO403.3-PO11	1	Low	Students will able to demonstrate knowledge and understanding of the engineering and management principles and apply to their own work to manage projects.
		CO403.3-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO403.3-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to design applications in the interdisciplinary domain
		CO403.3-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure of RNN,LSTM projects
		CO403.3-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO403.3-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology
		CO403.4-PO1	2	Moderate	fundamental knowledge of Mathematics is required in understanding autoencoders architectures which will help the students to apply its concept to formulate solutions



Sign of Faculty:

Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
CO403.4	Elaborate unsupervised deep learning algorithms like Autoencoders.	CO403.4-PO2	2	Moderate	various autoencoders structures help the students to apply its cocepts to identify, analyze and formulate modules of problems.
		CO403.4-PO3	2	Moderate	students will able to design various types of autoencoders on various realtime dataset available and as per user requirement.
		CO403.4-PO5	1	Low	students will use modern engineering and IT tools like python DL library for prediction And analysis of various problems on autoencoders
		CO403.4-PO11	1	Low	Students will able to demonstrate knowledge and understanding of the engineering and management principles and apply to their own work to manage projects.
		CO403.4-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO403.4-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to design applications in the interdisciplinary domain
		CO403.4-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure of autoencoders projects
		CO403.4-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO403.4-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology
		CO403.5-PO1	2	Moderate	fundamental knowledge of Mathematics is required in comparing representation learning models with transfer learning models which will help the students to apply to formulate solutions using both models
		CO403.5-PO2	2	Moderate	Knowledge of representation and transfer learning will help the students to apply the cocepts to identify, analyze and formulate modules of problems.
		CO403.5-PO3	2	Moderate	students will able to design various transfer learniong projects on various realtime dataset available and as per user requirement.

Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
CO403.5	Explore Representation Learning and Transfer Learning techniques using variants of CNN architecture	CO403.5-PO5	1	Low	students will use modern engineering and IT tools like python DL library for prediction And analysis like VGG,RESNET,LEENET
		CO403.5-PO11	1	Low	Students will able to demonstrate knowledge and understanding of the engineering and management principles and apply to their own work to manage projects.
		CO403.5-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO403.5-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to design applications in the interdisciplinary domain
		CO403.5-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure of transfer learning projects
		CO403.5-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO403.5-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology
CO403.6	Evaluate the performance of deep learning algorithms and to provide	CO403.6-PO1	2	Moderate	fundamental knowledge of Mathematics is required in comparing various deep learning models like NLP,ASR,RMS which will help the students to apply to formulate solutions using both models
		CO403.6-PO2	2	Moderate	Knowledge of various models of deep learning will help the students to apply the cocepts to identify, analyze and formulate modules of problems.
		CO403.6-PO3	2	Moderate	students will able to design various NLP,ASR,Recomender projects on various realtime dataset available and as per user requirement.
		CO403.6-PO5	1	Low	students will use modern engineering and IT tools like python NLP,ASR library for prediction And analysis
		CO403.6-PO11	1	Low	Students will able to demonstrate knowledge and understanding of the engineering and management principles and apply to their own work to manage projects.





Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
	solution for various real-world applications	CO403.6-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO403.6-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to design applications in the interdisciplinary domain
		CO403.6-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure of NLP,ASR projects
		CO403.6-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO403.6-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology

Dr.Jyoti Surve
Signature of Faculty



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Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: BE 2019	Course Name: Lab Practice IV
Course Code: 414447	Name of Faculty: Dr. Jyoti Surve

COURSE EDUCATIONAL OBJECTIVES


Course	Description
CEO407.1	To be able to formulate deep learning problems corresponding to different applications.
CEO407.2	To be able to apply deep learning algorithms to solve problems of moderate complexity.
CEO407.3	To apply the algorithms to a real-world problem, optimize the models learned and report on

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO407.1	Learn and Use various Deep Learning tools and packages.
CO407.2	Build and train a deep Neural Network models for use in various applications
CO407.3	Apply Deep Learning techniques like CNN, RNN Auto encoders to solve real word Problems
CO407.4	Evaluate the performance of the model build using Deep Learning

ASSIGNMENT- COURSE OUTCOME MAPPING

Assignment	Course Outcome No	Assignment	Course Outcome No
1	CO407.1	4	CO407.2
2	CO407.2,CO407.4	5	CO407.3
3	CO407.3, CO407.4	6	CO407.4


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Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARMENT OF INFORATION TECHNOLOGY
Academic Year 2022-23 Semester I

CORRELATION BETWEEN CO, PO & PSO

Course Name: Lab Practice IV	Course Code: 414447
Faculty Name: Dr. Jyoti Surve	Class: BE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO407.1	2	1	1	-	1	-	-	1	1	2	-	1
CO407.2	2	2	2	-	1	-	-	1	1	2	-	1
CO407.3	2	2	2	-	1	-	-	1	1	2	-	1
CO407.4	2	2	2	-	1	-	-	1	1	2	-	1

1 - LOW , 2 - MEDIUM , 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO407.1	1	1	1	1
CO407.2	2	2	1	1
CO407.3	2	2	1	1
CO407.4	2	2	1	1


Dr. Jyoti Surve
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Dr. Jyoti Surve
Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

Class: BE 2019	Course Name: Lab Practice IV
Course Code: 414447	Faculty Name: Dr. Jyoti Surve

Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
CO407.1	Learn and Use various Deep Learning tools and packages.	CO407.1-PO1	2	Moderate	Students will able to gain knowledge of various deep learning packages to formulate solutions to various engineering problems.
		CO407.1-PO2	1	Low	Students will able to apply deep learning packages and tools to analyze problems.
		CO407.1-PO3	1	Low	Students will able to Design solutions for various problems by applying deep learning tools
		CO407.1-PO5	1	Low	modern tool usage get practiced by students on various deep learning tool.
		CO407.1-PO8	1	Low	ethical practices will be endorsed during lab hours
		CO407.1-PO9	1	Low	students are encourage to implement projects/assignments as an individual or in teams.
		CO407.1-PO10	2	Moderate	students must communicate effectively in both oral and written forms during submission
		CO407.1-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO407.1-PSO1	1	Low	Students can apply their theoretical concepts and practical knowledge to to solve real world problems
		CO407.1-PSO2	1	Low	students will able to analyze a problem, and identify and define the computing infrastructure for standard deep learning projects which can be delivered as quality product.

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Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
		CO407.1-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO407.1-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology
CO407.2	Build and train a deep Neural Network models for use in various applications	CO407.2-PO1	2	Moderate	Students will able to gain knowledge of various deep neural network models to formulate solutions to various engineering problems.
		CO407.2-PO2	2	Moderate	Students will able to apply deep neural networks to analyze problems.
		CO407.2-PO3	2	Moderate	Students will able to Design solutions for various problems by applying deep neural network models
		CO407.2-PO5	1	Low	modern tool usage get practiced by students on various deep learning tools based on neural networks
		CO407.2-PO8	1	Low	ethical practices will be endorsed during lab hours
		CO407.2-PO9	1	Low	students are encourage to implement projects/assignments as an individual or in teams.
		CO407.2-PO10	2	Moderate	students must communicate effectively in both oral and written forms during submission
		CO407.2-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO407.2-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to to solve real world problems
		CO407.2-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure for standard deep learning projects which can be delivered as quality product.
		CO407.2-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO407.2-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology



Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
CO407.4	Evaluate the performance of the model build using Deep Learning	CO407.4-PO2	2	Moderate	Students will able to apply deep learning models like RNN CNN and autoencoders to analyze problems.
		CO407.4-PO3	2	Moderate	Students will able to Design solutions for various problems by applying deep learning models like autoencoders,CNN and RNN
		CO407.4-PO5	1	Low	modern tool usage get practiced by students on various deep learning tools and libraries
		CO407.4-PO8	1	Low	ethical practices will be endorsed during lab hours
		CO407.4-PO9	1	Low	students are encourage to implement projects/assignments as an individual or in teams.
		CO407.4-PO10	2	Moderate	students must communicate effectively in both oral and written forms during submission
		CO407.4-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO407.4-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to to solve real world problems
		CO407.4-PSO2	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure for standard deep learning projects which can be delivered as quality product.
		CO407.4-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO407.4-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology

Dr.Jyoti Surve
Signature of Faculty



Sign of Faculty: _____

Course Outcome	Course Outcome Statement	Mapping	Mapping Level		Justification
CO407.3	Apply Deep Learning techniques like CNN, RNN Auto encoders to solve real word Problems	CO407.3-PO1	2	Moderate	Students will able to gain knowledge of various deep learning techniques like CNN,RNN and autoencoders to formulate solutions to various engineering problems.
		CO407.3-PO2	2	Moderate	Students will able to apply deep learning models like RNN CNN and autoencoders to analyze problems.
		CO407.3-PO3	2	Moderate	Students will able to Design solutions for various problems by applying deep learning models like autoencoders,CNN and RNN
		CO407.3-PO5	1	Low	modern tool usage get practiced by students on various deep learning tools and libraries
		CO407.3-PO8	1	Low	ethical practices will be endorsed during lab hours
		CO407.3-PO9	1	Low	students are encourage to implement projects/assignments as an individual or in teams.
		CO407.3-PO10	2	Moderate	students must communicate effectively in both oral and written forms during submission
		CO407.3-PO12	1	Low	student will require deep learning knowledge life long if they want to pursue carrier in AIML
		CO407.3-PSO1	2	Moderate	Students can apply their theoretical concepts and practical knowledge to to solve real world problems
		CO407.3-PSO1	2	Moderate	students will able to analyze a problem, and identify and define the computing infrastructure for standard deep learning projects which can be delivered as quality product.
		CO407.3-PSO3	1	Low	students will able to understand professional, business and business processes, ethical, legal, security and social issues and responsibilities.
		CO407.3-PSO4	1	Low	students will able to Practice communication and decision-making skills through the use of appropriate technology
		CO407.4-PO1	2	Moderate	Students will able to gain knowledge of various deep learning techniques like CNN,RNN and autoencoders to formulate solutions to various engineering problems.



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 414443				Class: BE 2019		Name of Faculty: Dr. Jyoti Surve					
Course Name: Deep Learning					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
									AC	HOD	APMC
UNIT 1 : Fundamentals of Deep Learning											
1	1.1	What is Deep Learning Multilayer Perceptron			CEO403.1	CO403.1	25-7-2022	25-7-2022		}	}
2	1.2	Feed forward neural, Back propagation					26-7-2022	1-8-2022			
3	1.3	Gradient descent, Vanishing gradient problem,					28-7-2022	1-8-2022			
4	1.4	Activation Functions: RELU, LRELU, ERELU, Optimization Algorithms					29-7-2022	26-7-2022			
5	1.5	Hyper parameters: Layer size, Magnitude (momentum, learning rate),					2-8-2022	2-8-2022			
6	1.6	Regularization (dropout, drop connect, L1, L2)					4-8-2022	2-8-2022			
UNIT 2 : Convolutional Neural Network											
7	2.1	Introduction to CNN			CEO403.1 CEO403.2	CO403.2	5-8-2022	08-08-2022		}	}
8	2.2	Convolution Operation ,Parameter Sharing					11-8-2022	08-08-2022			
9	2.3	Equivariant Representation Pooling					16-8-2022	10-08-2022			
10	2.4	Variants of the Basic Convolution Function					18-8-2022	10-08-2022			
11	2.5	The basic Architecture of CNN					19-8-2022	18-08-2022			
12	2.6	Popular CNN Architecture – AlexNet.					23-8-2022	23-08-2022			
		Class Test I					24-8-2022	24-08-2022			



UNIT 3 : Recurrent Neural Networks

13	3.1	Recurrent Neural Networks	CEO403.1 CEO403.2	CO403.3	26-8-2022				
14	3.2	Types of Recurrent Neural Networks			30-8-2022	30/8/22			
15	3.3	Feed-Forward Neural Networks vs Recurrent			1-9-2022	6/9/22			
16	3.4	Long Short-Term Memory Networks (LSTM)			2-9-2022	7/9/22			
17	3.5	Encoder Decoder architectures			6-9-2022	13/9/22			
18	3.6	Recursive Neural Networks			8-9-2022	13/9/22			

UNIT 4 : Autoencoders

19	4.1	Undercomplete Autoencoders	CEO403.2	CO403.4	13-9-2022	14/9/22			
20	4.2	Regularized Autoencoders-Sparse Autoencoders			15-9-2022	14/9/22			
21	4.3	Stochastic Encoders and Decoders			16-9-2022	20/9/22			
22	4.4	Denoising Autoencoders			19-9-2022	20/9/22			
23	4.5	Contractive Autoencoders			20-9-2022	21/9/22			
24	4.6	Applications of Autoencoders			20-9-2022	21/9/22			
		Class Test II			21-9-2022				

UNIT 5 : Representation Learning

25	5.1	Greedy Layerwise Pre-training	CEO403.2 CEO403.3	CO403.5	27-9-2022	27/9/22			
26	5.2	Transfer Learning and Domain Adaption			29-9-2022	28/9/22			
27	5.3	Domain Adaption			30-9-2022	28/9/22			
28	5.4	Distributed Representation			4-10-2022	12/10/22	Insem Exam.		
29	5.5	Variants of CNN			6-10-2022	12/10/22			
30	5.6	DenseNet			7-10-2022	13/10/22			

UNIT 6 : Applications of Deep Learning

31	6.1	Overview of Deep Learning Applications: Image	CEO403.2 CEO403.3	CO403.6	11-10-2022	18/10/22			
32	6.2	Social N/w/ analysis			13-10-2022	18/10/22			
33	6.3	Speech Recognition			14-10-2022	18/10/22			
34	6.4	Recommender system			17-10-2022	19/10/22			
35	6.5	Natural Language Processing			18-10-2022	20/10/22			
36	6.6	Summary of Applications			18-10-2022	21/10/22			
		Class Test III			19-10-2022	21/10/22			

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	18/7/22
HoD : <i>[Signature]</i>	



End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	07/11/22
HoD : <i>[Signature]</i>	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

PRACTICAL TEACHING RECORD

Course Code: 414447			Class: BE 2019		Name of Faculty: Dr. Jyoti Surve				
Course Name: Lab Practice IV				Batch: A		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Study of Deep learning Packages: Tensorflow, Keras, Theano and PyTorch	CEO407.1, CEO407.2	CO407.1	26/07/2022-2/8/2022	2-8-2022	23/8 conducted	23/8	24/8	24/8
2	Implementing Feedforward neural networks with Keras and TensorFlow	CEO407.2, CEO407.3	CO407.2, CO407.4	16/08/2022-22/8/2022	16/08,22/8	24/8 conducted			
3	Build the Image classification model	CEO407.2, CEO407.3	CO407.3, CO407.4	30/8/2022-6/9/2022	30/8/22, 6/9/22				
4	Use Autoencoder to implement anomaly detection	CEO407.2, CEO407.3	CO407.2	13/09/2022-20/09/2022	13/9/22, 20/9/22		27/9	27/9	27/9
5	Implement the Continuous Bag of Words (CBOW) Model	CEO407.2, CEO407.3	CO407.3	27/09/2022-10/4/2022	27/9/22	4/10 insem			
6	Object detection using Transfer Learning of CNN architectures	CEO407.2, CEO407.3	CO407.4	11/10/2022-18/10/2022	18/10/22	11/10 insem			

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	18/7/22
HoD : <i>[Signature]</i>	



End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	02/11/22
HoD : <i>[Signature]</i>	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARMENT OF INFORATION TECHNOLOGY
Academic Year 2022-23 Semester I

PRACTICAL TEACHING RECORD

Course Code: 414447				Class: BE 2019		Name of Faculty: Dr. Jyoti Surve			
Course Name: Lab Practice IV				Batch: B		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Study of Deep learning Packages: Tensorflow, Keras, Theano and PyTorch	CEO407.1, CEO407.2	CO407.1	25/7/2022, 1/8/2022	1-8-2022	23/8 conducted			
2	Implementing Feedforward neural networks with Keras and TensorFlow	CEO407.2, CEO407.3	CO407.2, CO407.4	8/8/2022, 23/08/2022	8/8/2022, 23/8/2022	4/8, 18/8 conducted			
3	Build the Image classification model	CEO407.2, CEO407.3	CO407.3, CO407.4	29/08/2022, 05/09/2022	29/8/22, 5/9/22	CL on 5/9			
4	Use Autoencoder to implement anomaly detection	CEO407.2, CEO407.3	CO407.2	12/09/2022, 19/09/2022	12/9/22, 19/9/22				
5	Implement the Continuous Bag of Words (CBOW) Model	CEO407.2, CEO407.3	CO407.3	26/09/2022, 3/10/2022	26/9/22	31/0, 10/10 Insem			
6	Object detection using Transfer Learning of CNN architectures	CEO407.2, CEO407.3	CO407.4	10/10/2022, 17/10/2022	17/10/22				

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	18/7
HoD : <i>[Signature]</i>	



End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	7/11/22
HoD : <i>[Signature]</i>	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

PRACTICAL TEACHING RECORD

Course Code: 414447				Class: BE 2019		Name of Faculty: Dr. Jyoti Surve			
Course Name: Lab Practice IV				Batch: C		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Study of Deep learning Packages: Tensorflow, Keras, Theano and PyTorch	CEO407.1, CEO407.2	CO407.1	28/7/2022, 4/8/2022	4-8-2022	11/8 conducted	<div style="display: flex; align-items: center;"> <div style="border-left: 1px solid black; padding-left: 5px; margin-right: 5px;"> 8/8 27/8 28/8 </div> <div style="border-left: 1px solid black; padding-left: 5px; margin-right: 5px;"> 28/8 29/8 </div> <div style="border-left: 1px solid black; padding-left: 5px;"> 29/8 30/8 </div> </div>		
2	Implementing Feedforward neural networks with Keras and TensorFlow	CEO407.2, CEO407.3	CO407.2, CO407.4	11/8/2022, 18/08/2022	11/8/2022, 18/8/2022	4/8, 18/8			
3	Build the Image classification model	CEO407.2, CEO407.3	CO407.3, CO407.4	25/8/2022, 1/9/2022	25/8/22, 1/9/22				
4	Use Autoencoder to implement anomaly detection	CEO407.2, CEO407.3	CO407.2	8/9/2022, 15/09/2022	8/9/22, 15/9/22				
5	Implement the Continuous Bag of Words (CBOW) Model	CEO407.2, CEO407.3	CO407.3	22/9/2022, 29/9/2022	22/9/22, 29/9/22				
6	Object detection using Transfer Learning of CNN architectures	CEO407.2, CEO407.3	CO407.4	6/10/2022, 13/10/2022	13/10/22, 20/10/22	(10) n sam.			

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	18/7/22
HoD : <i>[Signature]</i>	



End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	7/11/22
HoD : <i>[Signature]</i>	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester I

PRACTICAL TEACHING RECORD

Course Code: 414447				Class: BE 2019		Name of Faculty: Dr. Jyoti Surve			
Course Name: Lab Practice IV				Batch: D		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Study of Deep learning Packages: Tensorflow, Keras, Theano and PyTorch	CEO407.1,CEO4	CO407.1	27/7/2022, 3/8/2022	3-8-2022	17/8 conducted	AC	HOD	APMC
2	Implementing Feedforward neural networks with Keras and TensorFlow	CEO407.2, CEO407.3	CO407.2, CO407.4	10/8/2022, 17/08/2022	10-08-2022 17-08-22	3/8, 10/8 conducted	AC	HOD	APMC
3	Build the Image classification model	CEO407.2, CEO407.3	CO407.3, CO407.4	24/8/2022, 7/9/2022	24/8/22 7/9/22		AC	HOD	APMC
4	Use Autoencoder to implement anomaly detection	CEO407.2, CEO407.3	CO407.2	14/9/2022, 21/09/2022	14/9/22 21/9/22		AC	HOD	APMC
5	Implement the Continuous Bag of Words (CBOW) Model	CEO407.2, CEO407.3	CO407.3	28/09/2022, 12/10/2022	28/9/22 12/10/22	3/10 holiday, 12/10 missing	AC	HOD	APMC
6	Object detection using Transfer Learning of	CEO407.2,CEO4	CO407.4	19-10-2022	19/10/22		AC	HOD	APMC

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	18/7/22
HoD : <i>[Signature]</i>	



End of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	7/11/22
HoD : <i>[Signature]</i>	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

Class: BE 2019	Course Name: Distributed Systems
Course Code: 414450	Name of Faculty: Sayali Sabale

COURSE EDUCATIONAL OBJECTIVES

Course	Description
CEO410.1	To learn the principles, architectures and programming models used in distributed systems.
CEO410.2	To understand the fundamentals and knowledge of the Middleware of distributed systems
CEO410.3	To gain knowledge of working components and fault tolerance of distributed systems.
CEO410.4	To understand the significance of agreement, fault tolerance and recovery protocols in Distributed Systems.
CEO410.5	To make students aware about distributed and multimedia file systems and web systems.
CEO410.6	Create an awareness of Emerging trends in distributed computing.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO410.1	Demonstrate the core concepts of distributed systems.
CO410.2	Understand the concept of middleware of distributed systems
CO410.3	Understand Inter-process communication methods and analyze different coordination algorithms.
CO410.4	Comprehend the importance of replication to achieve fault tolerance in distributed systems.
CO410.5	Analyze the design and functioning of existing distributed file systems, distributed multimedia, and distributed web-based systems.
CO410.6	Understand various Recent Trends in distributed systems.

CLASS TEST- COURSE OUTCOME MAPPING


Question No	CLASS TEST - I		CLASS TEST-II		CLASS TEST - III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1 - Q15	CO410.1	15	CO410.3	15	CO410.5	15
Q16 - Q30	CO410.2	15	CO410.4	15	CO410.6	15

THEORY ASSIGNMENT- COURSE OUTCOME MAPPING

Question No	ASSIGNMENT-I		ASSIGNMENT-II		ASSIGNMENT-III	
	CO Mapping	Marks	CO Mapping	Marks	CO Mapping	Marks
Q1	CO410.1	10	CO410.3	10	CO410.5	10
Q2	CO410.2	10	CO410.4	10	CO410.6	10


 Sayali Sabale
 Signature of Faculty




 Dr. Jyoti Surve
 Head of Department

Sign of Faculty: 



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

CORRELATION BETWEEN CO, PO & PSO

Course Name: Distributed Systems	Course Code: 414450
Name of Faculty: Sayali Sabale	Class: BE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO410.1	2	1	2	1	-	1	1	-	-	-	-	1
CO410.2	2	1	1	1	1	1	1	-	-	-	-	1
CO410.3	2	1	2	1	-	1	1	-	-	-	-	1
CO410.4	2	2	2	1	-	1	1	-	-	-	-	1
CO410.5	2	2	2	2	-	1	1	-	-	-	-	1
CO410.6	2	2	2	2	2	1	1	-	-	-	-	1

1 - LOW, 2 - MEDIUM, 3 - HIGH

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO410.1	2	2	-	-
CO410.2	2	1	-	-
CO410.3	2	1	-	-
CO410.4	2	1	-	-
CO410.5	2	2	-	-
CO410.6	2	2	-	-


 Sayali Sabale
 Signature of Faculty


 Dr. Jyoti Surve
 Head of Department





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

Class: BE 2019	Course Name: Lab Practice V
Course Code: 414454	Name of Faculty: Sayali Sabale

COURSE EDUCATIONAL OBJECTIVES


Course	Description
CEO414.1	The course aims to provide an understanding of the principles on which the distributed systems are based, their architecture, algorithms and how they meet the demands of Distributed applications
CEO414.2	The course covers the building blocks for a study related to the design and the implementation of distributed systems and applications.

COURSE OUTCOME - DETAILS

Course Outcome	Description
CO414.1	Learn how to apply concept of client-server communication to develop any distributed application.
CO414.2	Understand the topic of communication and coordination in distributed computing system. And develop distributed application with CORBA and using Message Passing Interface (MPI).
CO414.3	Design, build and test application programs on clock synchronization for distributed systems
CO414.4	Analyze the design and functioning of different distributed algorithm and implement it.
CO414.5	Design, build, test simple web service and write any distributed application to consume the web service.
CO414.6	Learn how to apply principles of state-of-the-Art Distributed systems in practical application.

ASSIGNMENT- COURSE OUTCOME MAPPING

Assignment	Course Outcome No	Assignment	Course Outcome No
1	CO414.1	2	CO414.2
3	CO414.2	4	CO414.3
5	CO414.4	6	CO414.4
7	CO414.5	8	CO414.6


Sayali Sabale
Signature of Faculty




Dr. Jyoti Surve
Head of Department



**Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY**

Academic Year 2022-23 Semester II

Class: BE 2019	Course Name: Lab Practice V
Course Code: 414454	Name of Faculty: Sayali Sabale

CO-PO mapping Justification (Laboratory)

CO code	Course Outcomes	Justification
CO414.1	Learn how to apply concept of client-server communication to develop any distributed application.	<p>This outcome key parameters Concept of client-server communication address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>This outcome correlates low with PO12 as student establish client server communication and able to understand engineering, performance, optimizations and time complexity necessary for professional practice. It correlates low with PSO1 as it addresses the understanding of engineering fundamentals.</p>
CO414.2	Understand the topic of communication and coordination in distributed computing system. And develop distributed application with CORBA and using Message Passing Interface (MPI).	<p>This outcome key parameters Concept of Common Object Request Broker Architecture(CORBA) with distributed application address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1. Different communication topics of distributed application helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses the different communication techniques.</p> <p>This outcome correlates low with PO12 as student able to understand engineering, performance, optimizations and time complexity necessary for professional practice by using concept of CORBA and MPI. It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with different distributed application.</p>
CO414.3	Design, build and test application programs on clock synchronization for distributed systems.	<p>This outcome key parameters Clock Synchronization technique i.e. Berkeley algorithm address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>Clock Synchronization technique helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses the Clock Synchronization Techniques for distributed systems.</p> <p>This outcome correlates low with PO12 as student able to understand engineering, performance, optimizations and time complexity necessary for professional practice by using concept of clock synchronization techniques.</p> <p>It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with distributed systems.</p>



Sign of Faculty: Sayali Sabale

CO414.4	Analyze the design and functioning of different distributed algorithm and implement it.	<p>This outcome key parameters</p> <p>Concept of mutual exclusion algorithm and election algorithm address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>Bully and Ring algorithm for leader election helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses distributed algorithm in practical application.</p> <p>This outcome correlates low with PO12 as student able to understand engineering, performance, optimizations and time complexity necessary for professional practice by using different distributed algorithm.</p> <p>It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with different distributed algorithm.</p>
CO414.5	Design, build, test simple web service and distributed application to consume the web service.	<p>This outcome key parameters</p> <p>Concept of designing, building, testing web service and writing distributed application to consume the web service address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>This outcome correlates low with PO12 as student able to understand engineering, performance, optimizations and time complexity necessary for professional practice by using concept of Web Services.</p> <p>It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p>
CO414.6	Learn how to apply principles of state-of-the-Art Distributed systems in practical application.	<p>This outcome key parameters</p> <p>Different Concepts of Distributed Systems i.e. Communication techniques, middleware services, coordination techniques, replication and fault tolerance, Distributed Files, Multimedia and Web Based System address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>As this different techniques helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses designing distributed systems in practical application.</p> <p>This outcome correlates low with PO12 as student able to understand engineering, performance, optimizations and time complexity necessary for professional practice by using different concept of distributed Systems implement practical applications.</p> <p>It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with distributed systems in practical applications.</p>





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

Class: BE 2019	Course Name: Distributed Systems
Course Code: 414450	Name of Faculty: Sayali Sabale

CO-PO mapping Justification (Theory)

CO code	Course Outcomes	Justification
CO410.1	Demonstrate the core concepts of distributed systems.	<p>This outcome key parameters Characteristics, Design goals and challenges of Distributed Systems, Examples of Distributed Systems address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>Distributed Computing Models: Physical, Architecture and Fundamental models helps to provide a systematic solution with the experiments, analyzing the problem and interpreting the data correlate low with PO2.</p> <p>Pervasive networking and the modern Internet, Mobile and ubiquitous computing address to identify, formulates, and provides systematic solutions to complex engineering/Technology problems correlate moderately with PO3.</p> <p>Different trends in distributed systems address to identify, formulates, and provides systematic solutions to complex engineering/Technology problems correlate low with PO4 and PO6 because it also has ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems with necessary constraints and assumptions.</p> <p>Different trends in distributed system address to provide solution for the local and global impact of information technology on individuals, organizations and society correlate low with PO7.</p> <p>This outcome correlates low with PO12 as student able to to understand engineering, performance, optimizations and time complexity necessary for professional practice.</p> <p>It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals.</p> <p>It correlates moderately with PSO2 as it addresses the ability to work on large-scale computing systems.</p>



Sign of Faculty: Sayali Sabale

CO410.2	Understand the concept of middleware of distributed systems	<p>This outcome key parameters</p> <p>Middleware Framework, Role of middleware, Origins of middleware, Architecture vs Middleware, RMI, CORBA, Types of middleware-messages oriented middleware, intelligent middleware, content centric middleware, middleware protocol address the basics of engineering fundamentals, computing, science, complex problems correlate moderately with PO1.</p> <p>Concept of RMI, CORBA helps to provide systematic solution with conducting experiments, analyzing the problem and interpreting the data, it correlates low with PO2. This outcome correlates low with PO3 as it addresses implementation, and evaluation of a software, component, or process to meet desired needs within realistic constraints with the help of different middleware concepts.</p> <p>This outcome correlates low with PO4 as it addresses systematic solutions to complex engineering problems with the help of different middleware concepts.</p> <p>This outcome correlates low with PO5 as it address the modern tool usage so in the concept of middleware, RMI, CORBA we can use different tools, techniques and skills. As the concept of middleware focuses on communication between distruted systems so it applies mathematical foundations, algorithmic principles, and it can have local and global impact of information technology on individuals, organizations and society hence correlates low with PO6 and PO7.</p> <p>This outcome correlates low with PO12 as student able to to understand engineering, performance, optimizations and time complexity necessary for professional practice. It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p> <p>It correlates low with PSO2 as it addresses the identifying and defining the computing infrastructure and work on large-scale computing systems.</p>
CO410.3	Understand Inter-process communication methods and analyze different coordination algorithms.	<p>This outcome key parameters</p> <p>Inter-process communication, Types of communication, Clock synchronization, logical clocks, mutual exclusion, Gossip based coordination address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>As the different concept of coordination i.e. Clock synchronization, logical clocks, mutual exclusion helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates moderately with PO3 as it addresses the election algorithms techniques, Gossip based coordination techniques.</p> <p>This outcome correlates low with PO4 as it provides schematic solutions to engineering complex problems using different electoin algorithm, or mutual exclusion algorithm.</p> <p>This outcome correlates low with PO6 as their are algorithmic principles based on election algorithm and mutual exclusion algorithm.</p> <p>This outcome correlates low with PO7 provide solution for the local and global impact of information technology on individuals, organizations by understanding concept of Inter-process communication.</p> <p>This outcome correlates low with PO12 as student able to to understand engineering, performance, optimizations and time complexity necessary for professional practice. It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p> <p>It correlates low with PSO2 as it addresses the identifying and defining the computing infrastructure and work on large-scale computing systems.</p>



Sign of Faculty: JB Sahas

CO410.4	Comprehend the importance of replication to achieve fault tolerance in distributed systems.	<p>This outcome key parameters</p> <p>Cocept of Replication and Fault Tolerance in distributed systems address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1. Consistency protocols: Primary based protocols, replicated write protocols helps in the problem analysis, it correlates low with PO2.</p> <p>This outcome correlates low with PO3 as it addresses Reliable client server communication, Reliable group communication.</p> <p>This outcome correlates low with PO4 as it addresses distributed commit, Recovery – Check pointing, Message logging.</p> <p>As the concept of Reliable client server communication, Reliable group communication helps in the design of computer-based systems with necessary constraints hence correlates low with PO6.</p> <p>As the concept of Reliable client server communication, Reliable group communication helps in the designing solution for the local and global impact of information technology on individuals, organizations correlates low with PO7.</p> <p>This outcome correlates low with PO12 as student able to to understand engineering, performance, optimizations and time complexity necessary for professional practice. It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p> <p>It correlates low with PSO2 as it addresses the identifying and defining the computing infrastructure and work on large-scale computing systems.</p>
CO410.5	Analyze the design and functioning of existing distributed file systems, distributed multimedia, and distributed web-based systems.	<p>This outcome key parameters</p> <p>Sun Network File System and HDFS, Resource Management, Distributed Web Based Systems address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>Characteristics of Multimedia Data, Quality of Service Management helps analyzing the problem and interpreting the data and correlate moderately with PO2.</p> <p>Concept of Apache Web Server, Web Server Clusters, Communication by Hypertext Transfer Protocol, Synchronization, Web Proxy Caching helps to design, implement, and evaluate a software or a software/hardware system, component, or process to meet desired needs within realistic constraints correlate moderately with PO3.</p> <p>Concept of Distributed Files: Introduction, File System Architecture, Sun Network File System and HDFS. Distributed Multimedia Systems: Characteristics of Multimedia Data, Distributed Web Based Systems helps to design systematic solutions to complex engineering problems correlate moderately with PO4.</p> <p>As the concept of Distributed Files, Distributed Multimedia Systems, Distributed Web Based Systems helps in the designing of computer-based systems with necessary constraints and assumptions correlate low with PO6.</p> <p>As the concept of Distributed Files, Distributed Multimedia Systems, Distributed Web Based Systems helps in the designing solution for the local and global impact of information technology on individuals, organizations correlates low with PO7.</p> <p>This outcome correlates low with PO12 as student able to to understand engineering, performance, optimizations and time complexity necessary for professional practice. It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p> <p>It correlates moderately with PSO2 as it addresses the Distributed file echniques, Distributed Multimedia Systems</p>



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CO410.6	Understand various Recent Trends in distributed systems.	<p>This outcome key parameters</p> <p>Portable and handheld Devices, Wearable devices, Devices embedded in appliances, Parallel Virtual Machine (PVM), address the basics of mathematics, engineering fundamentals, complex problems correlate moderately with PO1.</p> <p>As the specifications Devices embedded in appliances helps in the problem analysis, it correlates moderately with PO2.</p> <p>This outcome correlates moderately with PO3 as it addresses Portable and handheld Devices, Wearable devices.</p> <p>Recent trends of distributed systems with different devices helps in the investigations of Complex Problems and moderately with PO4.</p> <p>Different Tools for Distributed System Monitoring are Prometheus, Zabbix, Nagios necessary for practice as a IT professional so correlates moderately with PO5.</p> <p>As the concept of Parallel Virtual Machine (PVM), Jini, Service Oriented Architecture and recent trends helps in the designing of computer-based systems with necessary constraints correlate low with PO6.</p> <p>As the different recent trend of distributed system helps in the designing solution for the local and global impact of information technology on individuals, organizations correlates low with PO7.</p> <p>It correlates moderately with PSO1 as it addresses the understanding of engineering fundamentals with design skills.</p> <p>It correlates moderately with PSO2 as it addresses the different recent trend of distributed systems that helps in the analyzing a problem, and identify and defining the computing infrastructure and working of large-scale computing systems.</p>
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DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

CORRELATION BETWEEN CO, PO & PSO

Course Name: Lab Practice V	Course Code: 414454
Name of Faculty: Sayali Sabale	Class: BE 2019

CO-PO MATRIX

Course Outcome (COs)	Program Outcomes (POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO414.1	2	-	-	-	-	-	-	-	-	-	-	1
CO414.2	2	1	1	-	-	-	-	-	-	-	-	1
CO414.3	2	1	1	-	-	-	-	-	-	-	-	1
CO414.4	2	1	1	-	-	-	-	-	-	-	-	1
CO414.5	2	-	-	-	-	-	-	-	-	-	-	1
CO414.6	2	1	1	-	-	-	-	-	-	-	-	1
1 - LOW , 2 - MEDIUM , 3 - HIGH												

Course Outcome (Cos)	Program Specific Outcomes (PSOs)			
	PSO1	PSO2	PSO3	PSO4
CO414.1	1	-	-	-
CO414.2	2	-	-	-
CO414.3	2	-	-	-
CO414.4	2	-	-	-
CO414.5	2	-	-	-
CO414.6	2	-	-	-


Sayali Sabale
Signature of Faculty




Dr. Jyoti Surve
Head of Department



Hope Foundation's
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DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 414450			Class: BE 2019		Name of Faculty: Sayali Sabale						
Course Name: Distributed Systems					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
								AC	HOD	APMC	
UNIT 1 : Introduction to Distributed Systems											
1	1.1	Introduction: Network operating System Vs Distributed operating systems, Characteristics, Design goals	CEO410.1	CO410.1	01/02/2023	01/02/23					
2	1.2	Challenges of Distributed Systems, Examples of Distributed Systems			06/02/2023	02/02/23					
3	1.3	Trends in Distributed systems: Pervasive networking and the modern Internet			07/02/2023	06/02/23					
4	1.4	Mobile and ubiquitous computing, Focus on resource sharing			08/02/2023	07/02/23					
5	1.5	Distributed Computing Models: Physical, Architecture			13/02/2023	08/02/23					
6	1.6	Distributed Computing Models: Physical, Architecture and Fundamental models			14/02/2023	13/02/23					



UNIT 2 : Middleware									
7	2.1	Introduction to middleware, middleware Framework, Role of middleware,	CEO410.2	CO410.2	15/02/2023	20/02/23			
8	2.2	Examples of Middleware, Origins of middleware, Architecture vs Middleware,			20/02/2023	21/02/23			
9	2.3	RMI, CORBA, General Approaches to adaptive software, Types of middleware-messages oriented middleware			21/02/2023	27/02/23			
10	2.4	Intelligent middleware, content centric middleware, middleware protocol			22/02/2023	28/02/23			
11	2.5	Middleware Services, Distributed computing Environment (DCE)			27/02/2023	01/03/23			
12	2.6	Middleware Issues, middleware Analyst Case Study: - XML Based middleware			28/02/2023	06/03/23			
		Class Test I							
UNIT 3 : Inter-Process Communication									
13	3.1	Introduction, Layered protocols, API for internet protocols, IPC through shared memory	CEO410.3	CO410.3	01/03/2023	08/03/23			
14	3.2	External data representation and marshaling, Types of communication, inter process communication,			06/03/2023	13/03/23			
15	3.3	multicast communication, message-oriented communication,			08/03/2023	14/03/23			
16	3.4	MPI, network virtualization, overlay networks			13/03/2023	15/03/23			
17	3.5	Coordination: Clock synchronization, logical clocks, mutual exclusion			14/03/2023	16/03/23			
18	3.6	election algorithms, Gossip based coordination Case Study: IBM WebSphere Message Queuing			15/03/2023	20/03/23			



UNIT 4 : Replication and Fault Tolerance

19	4.1	Replication: Reasons for replication, Replica management – Finding the best server location	CEO410.4	CO410.4	20/03/2023	21/03/23				
20	4.2	Content replication and placement, Content distribution, Managing replicated objects			21/03/2023	27/03/23				
21	4.3	Consistency protocols: Primary based protocols, replicated write protocols			27/03/2023	12/04/23				
22	4.4	Fault Tolerance: Introduction to fault tolerance, Reliable client server communication, Reliable group communication			28/03/2023	17/04/23				
23	4.5	Distributed commit, Recovery – Check pointing, Message logging			29/03/2023	18/04/23				
24	4.6	Case Study: Caching and replication in web			03/04/2023	19/04/23				
		Class Test II								

UNIT 5 : Distributed Files, Multimedia and Web Based System

25	5.1	Distributed Files: Introduction, File System Architecture, Sun Network File System and HDFS	CEO410.5	CO410.5	04/04/2023	20/04/23				
26	5.2	Distributed Multimedia Systems: Characteristics of Multimedia Data, Quality of Service Management, Resource Management			05/04/2023	24/04/23				
27	5.3	Distributed Web Based Systems: Architecture of Traditional Web-Based Systems, Apache Web Server			10/04/2023	25/04/23				
28	5.4	Web Server Clusters, Communication by Hypertext Transfer Protocol,			11/04/2023	26/04/23				
29	5.5	Synchronization, Web Proxy Caching			12/04/2023	27/04/23				



30	5.6	Case Study: The Global Name Service, The X.500 Directory Service, BitTorrent			17/04/2023	27/04/23			
UNIT 6 : Recent Trends in Distributed Systems									
31	6.1	Recent Trends: Introduction, Portable and handheld Devices, Wearable devices	CEO410.6	CO410.6	18/04/2023	08/05/23			
32	6.2	Devices embedded in appliances, Parallel Virtual Machine (PVM)			19/04/2023	09/05/23			
33	6.3	Jini, Service Oriented Architecture			24/04/2023	10/05/23			
34	6.4	The Future of Recent Trends.			25/04/2023	10/05/23			
35	6.5	Tools for Distributed System Monitoring: Prometheus, Zabbix, Nagios			26/04/2023	11/05/23			
36	6.6	Case Studies: Mach, Chorus			26/04/2023	11/05/23			
		Class Test III							

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	01/02/23
HoD : <i>[Signature]</i>	

End of Semester

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Course Faculty : <i>[Signature]</i>	
HoD : <i>[Signature]</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

Course Code: 414454				Class: BE 2019		Name of Faculty: Sayali Sabale			
Course Name: Lab Practice V				Batch: A		Teaching Scheme:	Pr : 2 Hrs - week		
Sr. No.	Experiment - Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Implement multi-threaded client-server Process communication using RMI.	CEO414.1	CO414.1	6/2/2023	06/02/23				
2	Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).	CEO414.1	CO414.2	13/2/2023	13/02/23				
3	Develop a distributed system, to find sum of N elements in an array by distributing N-n elements to n number of processors MPI or OpenMP. Demonstrate by displaying the intermediate sums calculated at different processors.	CEO414.1	CO414.3	20/02/2023, 27/02/2023	20/02/23 27/02/23				



4	Implement Berkeley algorithm for clock synchronization.	CEO414.2	CO414.4	6/3/2023	06/03/23		<i>for</i>		
5	Implement token ring based mutual exclusion algorithm.	CEO414.2	CO414.4	13/3/2023	13/03/23		<i>2</i>		
6	Implement Bully and Ring algorithm for leader election.	CEO414.2	CO414.5	20/3/2023	20/03/23		<i>for</i>		<i>Dev</i>
7	Create a simple web service and write any distributed application to consume the web service.	CEO414.1	CO414.2	27/03/2023, 3/04/2023	27/03/23		<i>for</i>	<i>for</i>	
8	Mini Project (In group): A Distributed Application for Interactive Multiplayer Games	CEO414.2	CO414.6	10/04/2023, 17/04/2023	17/04/23		<i>for</i>		

Start of Semester

Signature	Date
Course Faculty : <i>for</i>	01/02/23
HoD : <i>for</i>	

End of Semester

Signature	Date
Course Faculty : <i>for</i>	11/05/23
HoD : <i>for</i>	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

Course Code: 414454				Class: BE 2019		Name of Faculty: Sayali Sabale			
Course Name: Lab Practice V				Batch: B		Teaching Scheme:	Pr : 2 Hrs - week		
Sr. No.	Experiment - Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Implement multi-threaded client-server Process communication using RMI.	CEO414.1	CO414.1	07/02/2023, 14/02/2023	07/02/23				
2	Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).	CEO414.1	CO414.2	21/02/2023, 28/02/2023	21/02/23, 28/02/23		OK 11/5	OK 11/11	OK
3	Develop a distributed system, to find sum of N elements in an array by distributing N-n elements to n number of processors MPI or OpenMP. Demonstrate by displaying the intermediate sums calculated at different processors.	CEO414.1	CO414.3	14/03/2023, 21/03/2023	14/03/23, 21/03/23		OK 5/4	OK 12/4	OK
4	Implement Berkeley algorithm for clock synchronization.	CEO414.2	CO414.4	28/03/2023	29/03/23		OK		
5	Implement token ring based mutual exclusion algorithm.	CEO414.2	CO414.4	4/4/2023	17/04/23		OK		



6	Implement Bully and Ring algorithm for leader election.	CEO414.2	CO414.5	11/4/2023	24/04/23			
7	Create a simple web service and write any distributed application to consume the web service.	CEO414.1	CO414.2	18/04/2023	08/05/23			
8	Mini Project (In group): A Distributed Application for Interactive Multiplayer Games	CEO414.2	CO414.6	25/4/2023	11/05/23			

Start of Semester

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Course Faculty : <i>[Signature]</i>	01/02/23
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End of Semester

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Hope Foundation's
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DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD

Course Code: 414454				Class: BE 2019		Name of Faculty: Sayali Sabale			
Course Name: Lab Practice V				Batch: C		Teaching Scheme:	Pr : 2 Hrs - week		
Sr. No.	Experiment - Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Implement multi-threaded client-server Process communication using RMI.	CEO414.1	CO414.1	1/2/2023	01/02/23				
2	Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).	CEO414.1	CO414.2	08/02/2023	08/02/23				
3	Develop a distributed system, to find sum of N elements in an array by distributing N-n elements to n number of processors MPI or OpenMP. Demonstrate by displaying the intermediate sums calculated at different processors.	CEO414.1	CO414.3	15/02/2023, 22/02/2023	01/03/23				
4	Implement Berkeley algorithm for clock synchronization.	CEO414.2	CO414.4	1/3/2023	08/03/23				
5	Implement token ring based mutual exclusion algorithm.	CEO414.2	CO414.4	8/3/2023	15/03/23				



6	Implement Bully and Ring algorithm for leader election.	CEO414.2	CO414.5	15/03/2023	12/04/23			
7	Create a simple web service and write any distributed application to consume the web service.	CEO414.1	CO414.2	29/03/2023, 05/04/2023	19/04/23			
8	Mini Project (In group): A Distributed Application for Interactive Multiplayer Games	CEO414.2	CO414.6	12/04/2023, 19/04/2023	26/04/23			

Start of Semester

Signature	Date
Course Faculty : <i>[Signature]</i>	01/02/23
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End of Semester

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Course Faculty : <i>[Signature]</i>	11/05/23
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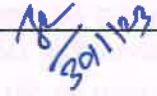
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DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

PRACTICAL TEACHING RECORD


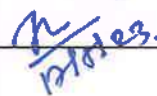
Course Code: 414454			Class: BE 2019		Name of Faculty: Dr. Bhavana Kanawade					
Course Name: Laboratory Practice-V					Batch: A		Teaching Scheme:		Pr : 2 Hrs / week	
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Implement multi-threaded client/server Process communication using RMI.	CEO414.1	CO414.1	06-02-2023, 13/02-2023	6/2	Hackathon on 13/2, 14/2				
2	Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).	CEO414.1	CO414.2	20-02-2023, 27-02-2023	20/2					
3	Develop a distributed system, to find sum of N elements in an array by distributing N/n elements to n number of processors MPI or OpenMP. Demonstrate by displaying the intermediate sums calculated at different processors.	CEO414.1	CO414.2	6-03-2023, 13-02-2023	6/3					
4	Implement Berkeley algorithm for clock, synchronization.	CEO414.1	CO414.3	20-03-2023	15/3					
5	Implement token ring based mutual exclusion algorithm	CEO414.2	CO414.4	17-03-2023	20/3					
6	Implement Bully and Ring algorithm for leader election.	CEO414.2	CO414.4	03-04-2023	27/3					

7	Create a simple web service and write any distributed application to consume the web service.	CEO414.2	CO414.5	10-04-2023, 17-04-2023	1715 24/4				
8	A Distributed Application for Interactive Multiplayer Games	CEO414.2	CO414.6	24-04-2023	815				

Start of Semester

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Course Faculty : 	30/1/23
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End of Semester

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DEPARTMENT OF INFORMATION TECHNOLOGY
Academic Year 2022-23 Semester II

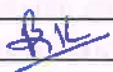

PRACTICAL TEACHING RECORD

Course Code: 414454				Class: BE 2019		Name of Faculty: Dr. Bhavana Kanawade			
Course Name: Laboratory Practice-V				Batch: E		Teaching Scheme:	Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
							AC	HOD	APMC
1	Implement multi-threaded client/server Process communication using RMI.	CEO414.1	CO414.1	07-02-2023	7/2				
2	Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).	CEO414.1	CO414.2	14-02-2023	2/2	Hackathon 13/2 - 14/2			
3	Develop a distributed system, to find sum of N elements in an array by distributing N/n elements to n number of processors MPI or OpenMP. Demonstrate by displaying the intermediate sums calculated at different processors.	CEO414.1	CO414.2	21-02-2023, 28-02-2023	28/2		SK 11/5		
4	Implement Berkeley algorithm for clock synchronization.	CEO414.1	CO414.3	14-03-2023	15/3				
5	Implement token ring based mutual exclusion algorithm	CEO414.2	CO414.4	21-03-2023	2/3		SK 5/4		


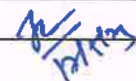


6	Implement Bully and Ring algorithm for leader election.	CEO414.2	CO414.4	28-03-2023	12/4 18/4				
7	Create a simple web service and write any distributed application to consume the web service.	CEO414.2	CO414.5	4-04-2023, 11-04-2023	25/4				
8	A Distributed Application for Interactive Multiplayer Games	CEO414.2	CO414.6	18-04-2023	2/5 9/5				

Start of Semester

Signature	Date
Course Faculty : 	30/1/23
HoD : 	

End of Semester

Signature	Date
Course Faculty : 	12/5
HoD : 	



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Academic Year 2022-23 Semester II


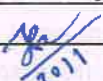
PRACTICAL TEACHING RECORD

Course Code: 414454			Class: BE 2019		Name of Faculty: Dr. Bhavana Kanawade					
Course Name: Laboratory Practice-V				Batch: A		Teaching Scheme:		Pr : 2 Hrs / week		
Sr. No.	Experiment / Assignment	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMC	
1	Implement multi-threaded client/server Process communication using RMI.	CEO414.1	CO414.1	01-02-2023	8/2	Leave on 1/2				
2	Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).	CEO414.1	CO414.2	08-02-2023	15/2					
3	Develop a distributed system, to find sum of N elements in an array by distributing N/n elements to n number of processors MPI or OpenMP. Demonstrate by displaying the intermediate sums calculated at different processors.	CEO414.1	CO414.2	15-02-2023, 1-03-2023	22/2					
4	Implement Berkeley algorithm for clock synchronization.	CEO414.1	CO414.3	08-03-2023	1/3					
5	Implement token ring based mutual exclusion algorithm	CEO414.2		15-03-2023	8/3					


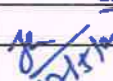


6	Implement Bully and Ring algorithm for leader election.	CEO414.2	CO414.4	29-03-2023	19/4				
7	Create a simple web service and write any distributed application to consume the web service.	CEO414.2	CO414.5	5-04-2023, 12-04-2023	26/4				
8	A Distributed Application for Interactive Multiplayer Games	CEO414.2	CO414.6	19-04-2023	10/5				

Start of Semester

Signature	Date
Course Faculty : 	30/1/23
HoD : 	

End of Semester

Signature	Date
Course Faculty : 	12/5
HoD : 	





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester I

COURSE FILE INDEX

Sr. No.	Format	DISCRIPTION
1	Vision, Mission of Institute	
2	Vision Mission of Department	
3	Program Educational Objectives, Program Outcomes, and Program Specific Outcomes	
4	Institute Academic Calendar	
5	Department Academic Calendar	I2IT / ACAD / SP / 01
6	Class wise Time Table	I2IT / ACAD / TT / 01
7	Faculty wise Time Table	I2IT / ACAD / TT / 02
8	Lab wise Time Table in case of Lab – In charge	I2IT / ACAD / TT / 04
9	University Syllabus	
10	Lesson Plan Resources	I2IT / ACAD / CP / 05
11	Course Objectives and Outcomes (Theory)	I2IT / ACAD / CP / 01
12	Correlation of COs with POs (Theory)	I2IT / ACAD / CP / 02
13	CO-PO mapping Justification (Theory)	I2IT / ACAD / CP / 02A
14	Course Objectives and Outcomes (Laboratory)	I2IT / ACAD / CP / 01
15	Correlation of COs with POs (Laboratory)	I2IT / ACAD / CP / 02
16	CO-PO mapping Justification (Laboratory)	I2IT / ACAD / CP / 02A
17	Theory Teaching Plan	I2IT / ACAD / CP / 03
18	Laboratory Teaching Plan	I2IT / ACAD / CP / 04
19	List of Laboratory Assignments	I2IT / ACAD / CP / 04A
20	Rubrics for Continuous evaluation	I2IT / ACAD / CP / 06
21	Previous University Question Papers	
22	Theory Question Bank	I2IT / ACAD / CP / 21
23	Objective Question Bank	
24	List of Theory Assignments	I2IT / ACAD / CP / 18
25	Class Test Question Papers with solutions	I2IT / ACAD / CP / 07
26	Class Test Attendance	I2IT / ACAD / CP / 08
27	Course Outcomewise Class Test Marksheet	I2IT / ACAD / CP / 08A
28	Class Test Evaluation Record	I2IT / ACAD / CP / 12
29	Slow Learner and Advanced Learner Identification	I2IT / ACAD / CP / 09
30	Schedule of Slow Learner Activities	I2IT / ACAD / CP / 10
31	Assignments to Advanced Learners	I2IT / ACAD / CP / 11
32	List of Slow Learners	I2IT / ACAD / CP / 13
33	List of Advanced Learners	I2IT / ACAD / CP / 14
34	Slow Learner Attendance Record	I2IT / ACAD / CP / 15
35	Performance Improvement of Slow Learner	I2IT / ACAD / CP / 16
36	Innovative Practices in Teaching-Learning and ICT	I2IT / ACAD / CP / 19

Sr. No.	Format	DISCRIPTION
37	Content Beyond Syllabus (CBS)	I2IT / ACAD / CP / 17
38	CBS Attendance Record	I2IT / ACAD / CP / 17A
39	Previous University Result	I2IT / ACAD / CP / 21
40	TW Calculation Sheet	I2IT / ACAD / CP / 20
41	Course End Survey (Theory & Laboratory)	I2IT / ACAD / CP / 22
42	Theory Attendance Record	I2IT / ACAD / BB / 01
43	Practical Attendance Record	I2IT / ACAD / BB / 02
44	Continuous Assessment Record	I2IT / ACAD / BB / 03
45	Assignment Assessment Record	I2IT / ACAD / BB / 04
46	Average University Result	I2IT / ACAD / AT / 01
47	CO Attainment through University Result	I2IT / ACAD / AT / 02
48	CO Attainment through Class Test & Theory Assignment	I2IT / ACAD / AT / 03
49	CO Attainment through Course End Survey	I2IT / ACAD / AT / 04
50	CO Attainment through Continuous Evaluation	I2IT / ACAD / AT / 05
51	PO & PSO Attainment through CO for Theory	I2IT / ACAD / AT / 06
52	PO & PSO Attainment through CO for Practical	I2IT / ACAD / AT / 06





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 107001				Class: FE 2019		Name of Faculty: Prof.Suvarna Bhagwat					
Course Name: ENGINEERING MATHEMATICS-I						Teaching Scheme:		Th: 3 Hrs / week			
0	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
									AC	HOD	APMC
UNIT - I DIFFERENTIAL CALCULUS											
1	1.1	Introduction to functions, Rolle's theorem, Lagrange's mean value theorem		CEO101.1	CO101.1	22/11/2022	22/11/2022		}	}	}
2	1.2	Examples on Rolle's Theorem				23/11/2022	23/11/2022				
3	1.3	Examples on LMVT & CMVT Theorems				24/11/2022	23/11/2022	Extra lecture			
4	1.4	Introduction to Taylor's theorem, Taylor's series & examples				25/11/2022	24/11/2022	Extra lecture			
5	1.5	Examples on Taylor's series				28/11/2022	25/11/2022				
6	1.6	Maclaurin's Series & examples				28/11/2022	28/11/2022				
7	1.7	Solving indeterminate forms by using L'Hospital's rule, Examples on				29/11/2022	30/11/2022				
8	1.8	Indeterminate forms and evaluation of limits.				5/12/2022	05/12/2022				

UNIT – II Fourier Series

9	2.1	Introduction and Dirichlet's condition for Fourier series	CEO101.2	CO101.2	6/12/2022	06/12/2022				
10	2.2	Full range Fourier series for even, odd			8/12/2022	08/12/2022				
11	2.3	Examples on Full range Fourier series for even, odd functions			12/12/2022	12/12/2022				
12	2.4	Half range Fourier series for sine and cosine functions			13/12/2022	13/12/2022				
13	2.5	Examples on Half range Fourier series for even, odd functions			15/12/2022	15/12/2022				
14	2.6	Introduction to Harmonic Analysis			19/12/2022	19/12/2022				
15	2.7	Examples on harmonic analysis			20/12/2022	20/12/2022				
16	2.8	Fourier Series application to engineering			22/12/2022	22/12/2022				

UNIT III: PARTIAL DIFFERENTIATION

17	3.1	Introduction to Partial Derivatives, direct differentiation	CEO101.3	CO101.3	26/12/2022	26/12/2022				
18	3.2	Examples on direct differentiation			27/12/2022	27/12/2022				
19	3.3	Homogeneous functions of 2 variables: Euler's theorem			29/12/2022	29/12/2022				
20	3.4	Homogeneous functions of 3			2/1/2023	02/01/2023				
21	3.5	Problems on Euler's Theorem			3/1/2023	03/01/2023				
22	3.6	Partial derivative of Composite functions and problems			5/1/2023	04/01/2023				
23	3.7	Total derivatives & examples			9/1/2023	16/01/2023				
24	3.8	Examples on change of independent variables			10/1/2023	17/01/2023				

UNIT -IV : APPLICATIONS OF PARTIAL DIFFERENTIATION

25	4.1	Definition of Jacobian with examples. Jacobian of composite functions	CEO101.4	CO101.4	12/1/2023	18/01/2023			
26	4.2	Problems on verification of $JJ'=1$			16/01/2023	19/01/2023			
27	4.3	Problems on partial differentiation			17/01/2023	23/01/2023			
28	4.4	Functional dependence and			19/01/2023	24/01/2023			
29	4.5	Jacobian of implicit functions			23/01/2023	30/01/2023			
30	4.6	Application of Jacobian.			24/01/2023	31/01/2023			
31	4.7	Applications of partial derivatives to find approximate values and error detection.			30/01/2023	02/02/2023			
32	4.8	Extreme values of functions of two variables, examples and geometrical interpretation.			31/01/2023	06/02/2023			
		Lagrange's undetermined multipliers.							

UNIT- V : LINEAR ALGEBRA-MATRICES

33	5.1	Introduction to rank ,methods to find	CEO101.5	CO101.5	31/01/2023	07/02/2023			
34	5.2	Normal form, rank using normal form			2/2/2023	09/02/2023			
35	5.3	System of Linear equations, solution of S.L.E. by using row echelon form of the augmented matrix.			6/2/2023	13/02/2023			
36	5.4	Problems on Linear independence and dependence.			7/2/2023	14/02/2023			
37	5.5	Problems on Linear independence and dependence.			9/2/2023	15/02/2023			
38	5.6	Linear Transformations. Rotation ,			13/02/2023	16/02/2023			
39	5.7	Orthogonal Matrices and their properties			14/02/2023	17/02/2023			
40	5.8	Application to problems in engineering.			16/02/2023	20/02/2023			

UNIT -VI : INTRODUCTION TO JACOBIAN, MAXIMA AND MINIMA									
41	6.1	Definition of Eigen values and Eigen vectors. Finding characteristic polynomial of given matrix.	CEO101.6	CO101.6	20/02/2023	21/02/2023			
42	6.2	Examples on Eigen value Eigen Vector.			21/02/2023	22/02/2023			
43	6.3	Cayley-Hamilton theorem and examples			23/02/2023	23/02/2023			
44	6.4	Application of Cayley-Hamilton theorem to find inverse of A, to			27/02/2023	24/02/2023			
45	6.5	Dogonalisation of a matrix			28/02/2023	27/02/2023			
46	6.6	Dogonalisation of a matrix			2/3/2023	28/02/2023			
47	6.7	Reduction of quadratic forms to canonical form by linear transformation			6/3/2023	01/03/2023			
48	6.8	Reduction of quadratic forms to canonical form by orthogonal transformation.			9/3/2023	02/03/2023			

Start of Semester

Signature	Date
Course Faculty : <i>S. S. Chavhan</i>	
HoD : <i>[Signature]</i>	22/11/22



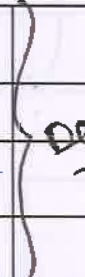


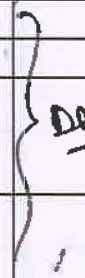
End of Semester

Signature	Date
Course Faculty : <i>S. S. Chavhan</i>	06/03/2023
HoD : <i>[Signature]</i>	06/03/23



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 107009			Class: FE A (IT)		Name of Faculty: Prof. Dr.Smita Nande						
Course Name: Engineering Chemistry					Teaching Scheme:		Th: 3 Hrs / week				
Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
								AC	HOD	APMC	
UNIT 1 : Water Technology											
1	1.1	Introduction, sources and types of water	CEO109.1	CO109.1	22-11-2022	22-11-2022					
2	1.2	Hardness of water			23-11-2022	23-11-2022					
3	1.3	Hardness determination by EDTA method			24-11-2022	24-11-2022					
4	1.4	Numericals by Hardness determination by EDTA method			25-11-2022	25-11-2022					
5	1.5	Alkalinity of water, its determination			28-11-2022	29-11-2022					
6	1.6	Alkalinity of water Numericals			29-11-2022	30-11-2022					
7	1.7	Effects and treatment of hardness in boilers priming faoming, caustic embrittlement			30-11-2022	05-12-2022					
8	1.8	Desalination of Brackish water,Zeolite treatment,Purificatin of water			05-12-2022	06-12-2022					

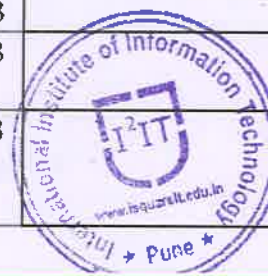


UNIT 2 : Instrumental Methods of Analysis

9	2.1	Basic concepts of electrode potential	CEO109.2	CO109.2	06-12-2022	06-12-2022		}	}	}
10	2.2	Types of reference electrode calomel electrode ,hydrogn electrode			08-12-2022	08-12-2022				
					09-12-2022	09-12-2022				
11	2.3	Electrode glass electrode,ion selective			12-12-2022	12-12-2022				
12	2.4	Ion Selective membrane such as solid membrane			15-12-2022	15-12-2022				
13	2.5	Ion Selective membrane such as enzyme based membrane and gas sensing membrane			19-12-2022	19-12-2022				
14	2.6	Conductometry,conductometric titrat			20-12-2022	20-12-2022				
15	2.7	Potentiometry, Introduction, Potentiometric titration			22-12-2022	22-12-2022				
16	2.8	pH metry, Preparation of Buffers, Standardization of pH meter			23-12-2022	23-12-2022				
Class Test I										

UNIT 3 : Engineering Materials

17	3.1	Speciality polymers introduction preperation and applications	CEO109.3	CO109.3	26-12-2022	26-12-2022			
18	3.2	Engineering Thermoplastics, polycarbonate			27-12-2022	27-12-2022			
19	3.3	Bio-degradable polymers Poly(hydroxybuyrate-hydroxyvalanate)			29-12-2022	29-12-2022			
20	3.4	Conducting polymers: polyacetylene			30-12-2022	30-12-2022			
21	3.5	Electroluminescent polymers : Polyphylene vinylene			02-01-2023	02-01-2023			
22	3.6	Polymer composites			05-01-2023	05-01-2023			
23	3.7	Nanomaterials Introduction classification			16-01-2023	16-01-2023			
24	3.8	Structure properties and application of graphene, carbon nanotubes and quantaum dots			17-01-2023	17-01-2023			

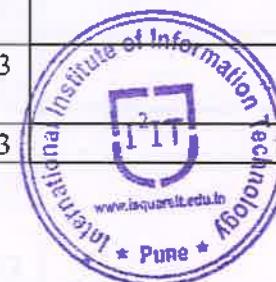


UNIT 4 : FUELS AND COMBUSTIONS

25	4.1	Introduction, Fossils fuels, definition, Calorific value	CEO109.4	CO109.4	19-01-2023	19-01-2023			
26	4.2	Determination- bomb calorimeter, boys gas calorimeter, numerical			20-01-2023	20-01-2023			
27	4.3	Solid fuels, proximate and alternative analysis and numerical			23-01-2023	23-01-2023			
28	4.4	Liquid fuels, petroleum, composition and refining Octane numbers			24-01-2023	24-01-2023			
29	4.5	Gaseous fuels: composition, properties of NG, CNG and LPG			27-01-2023	27-01-2023			
30	4.6	Combustion of fuels, reaction,			30-01-2023	31-01-2023			
31	4.7	Calculation of air required, numerical			01-02-2023	01-02-2023			
32	4.8	Fuel cell PAFC, PEMFC, MCQ			02-02-2023	02-02-2023			
		Class Test II							

UNIT 5 : Spectroscopic Techniques

33	5.1	UV-Visible spectroscopy introduction	CEO109.5	CO109.5	03-02-2023	03-02-2023			
34	5.2	Absorption of UV radiation by organic molecule leading to different			06-02-2023	06-02-2023			
35	5.3	Terms involved in UV-visible spectroscopy, Single beam UV-visible Spectrophotometer			07-02-2023	07-02-2023			
36	5.4	Application of UV-visible spectroscopy			08-02-2023	08-02-2023			
37	5.5	IR spectroscopy introduction			09-02-2023	09-02-2023			
38	5.6	Principle of IR spectroscopy, types of vibrations			10-02-2023	10-02-2023			
39	5.7	Conditions and instrumentation of IR spectroscophotometer			13-02-2023	13-02-2023			
40	5.8	Application of IR spectroscopy			14-02-2023	14-02-2023			



UNIT 6 : Corrosion science

41	6.1	Redox, anodic and cathodic reactions	CEO109.6	CO109.6	20-02-2023	20-02-2023			
42	6.2	Introduction: Type of corrosion, Dry corrosion and mechanism			21-02-2023	21-02-2023			
43	6.3	Pilling bed corrosion, worth rule,			22-02-2023	22-02-2023			
44	6.4	Wet corrosion mechanism			24-02-2023	24-02-2023			
45	6.5	Factors influencing corrosion, methods of corrosion			27-02-2023	27-02-2023			
46	6.6	Protecting coating, surface preparations,			28-02-2023	28-02-2023			
47	6.7	Metallic coating,			01-03-2023	01-03-2023			
48	6.8	Electroplating			02-03-2023	02-03-2023			
		Class Test III							

Start of Semester

Signature	Date
Course Faculty : <i>Anand</i>	21/11/2022
HoD : <i>[Signature]</i>	21/11/22



End of Semester

Signature	Date
Course Faculty : <i>Anand</i>	3/03/2023
HoD : <i>[Signature]</i>	06/03/23



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 107009				Class: FE B (IT)		Name of Faculty: Prof. Dr.Smita Nande						
Course Name: Engineering Chemistry					Teaching Scheme:		Th: 3 Hrs / week					
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
									AC	HOD	APMC	
UNIT 1 : Water Technology												
1	1.1	Introduction, sources and types of water			CEO109.1	CO109.1	22-11-2022	22-11-2022		}	}	}
2	1.2	Hardness of water					23-11-2022	23-11-2022				
3	1.3	Hardness determination by EDTA method					24-11-2022	24-11-2022				
4	1.4	Numericals by Hardness determination by EDTA method					25-11-2022	25-11-2022				
5	1.5	Alkalinity of water, its determination					29-11-2022	29-11-2022				
6	1.6	Alkalinity of water Numericals					30-11-2022	30-11-2022				
7	1.7	Effects and treatment of hardness in boilers priming faoming, caustic embrittlement					02-12-2022	02-12-2022				
8	1.8	Desalination of Brackish water,Zeolite treatment,Purificatin of water					05-12-2022	05-12-2022				



UNIT 2 : Instrumental Methods of Analysis

9	2.1	Basic concepts of electrode potential	CEO109.2	CO109.2	06-12-2022	06-12-2022			
					07-12-2022	07-12-2022			
10	2.2	Types of reference electrode calomel electrode ,hydrogn electrode			08-12-2022	08-12-2022			
11	2.3	Electrode glass electrode,ion selective			09-12-2022	09-12-2022			
12	2.4	Ion Selective membrane such as solid membrane			14-12-2022	14-12-2022			
13	2.5	Ion Selective membrane such as enzyme based membrane and gas sensing membrane			15-12-2022	15-12-2022			
14	2.6	Conductometry,conductometric titrat			21-12-2022	22-12-2022			
15	2.7	Potentiometry, Introduction, Potentiometric titration			22-12-2022	23-12-2022			
16	2.8	pH metry, Preparation of Buffers, Standardization of pH meter			23-12-2022	23-12-2022			
Class Test I									

UNIT 3 : Engineering Materials

17	3.1	Speciality polymers introduction preperation and applications	CEO109.3	CO109.3	27-01-2023	27-12-2022			
18	3.2	Engineering Thermoplastics,polycarbonate			28-12-2023	28-12-2022			
19	3.3	Bio-degradable polymersPoly(hydroxybuyrate-hydroxyvalanate)			29-12-2023	29-12-2022			
20	3.4	Conducting polymers:polyacetylene			30-12-2023	30-12-2022			
21	3.5	Electroluminescent polymers :Polyphylenevinylene			04-01-2023	04-01-2023			
22	3.6	Polymer composites			05-01-2023	05-01-2023			
23	3.7	Nanomaterials Introduction classification			06-01-2023	17-01-2023			
24	3.8	Structure properties and application of graphene,carbon nanotubes and quantaum dots			17-01-2023	18-01-2023			



UNIT 4 : FUELS AND COMBUSTIONS

25	4.1	Introduction, Fossils fuels, definition, Calorific value	CEO109.4	CO109.4	19-01-2023	19-01-2023			
26	4.2	Determination- bomb calorimeter, boys gas calorimeter, numerical			20-01-2023	20-01-2023			
27	4.3	Solid fuels, proximate and alternative analysis and numerical			23-01-2023	24-01-2023			
28	4.4	Liquid fuels, petroleum, composition and refining Octane numbers			24-01-2023	25-01-2023			
29	4.5	Gaseous fuels: composition, properties of NG, CNG and LPG			27-01-2023	27-01-2023			
30	4.6	Combustion of fuels, reaction,			30-01-2023	31-01-2023			
31	4.7	Calculation of air required, numerical			01-02-2023	01-02-2023			
32	4.8	Fuel cell PAFC, PEMFC, MCQ			02-02-2023	03-02-2023			
		Class Test II							

UNIT 5 : Spectroscopic Techniques

33	5.1	UV-Visible spectroscopy introduction	CEO109.5	CO109.5	03-02-2023	03-02-2023			
34	5.2	Absorption of UV radiation by organic molecule leading to different			07-02-2023	07-02-2023			
35	5.3	Terms involved in UV-visible spectroscopy, Single beam UV-visible Spectrophotometer			08-02-2023	07-02-2023			
36	5.4	Application of UV-visible spectroscopy			09-02-2023	09-02-2023			
37	5.5	IR spectroscopy introduction			10-02-2023	10-02-2023			
38	5.6	Principle of IR spectroscopy, types of vibrations			13-02-2023	13-02-2023			
39	5.7	Conditions and instrumentation of IR spectrophotometer			14-02-2023	13-02-2023			
40	5.8	Application of IR spectroscopy			20-02-2023	20-02-2023			



UNIT 6 : Corrosion science

41	6.1	Redox, anodic and cathodic reactions	CEO109.6	CO109.6	21-02-2023	21-02-2023			
42	6.2	Introduction: Type of corrosion, Dry corrosion and mechanism			22-02-2023	22-02-2023			
43	6.3	Pilling bed corrosion, worth rule,			24-02-2023	24-02-2023			
44	6.4	Wet corrosion mechanism			27-02-2023	27-02-2023			
45	6.5	Factors influencing corrosion, methods of corrosion			28-02-2023	28-02-2023			
46	6.6	Protecting coating, surface preparations,			01-03-2023	01-03-2023			
47	6.7	Metallic coating,			02-03-2023	02-03-2023			
48	6.8	Electroplating			03-03-2023	03-03-2023			
		Class Test III							

Start of Semester

Signature	Date
Course Faculty : <i>Shinde</i>	
HoD : <i>P</i>	21/11/22



End of Semester

Signature	Date
Course Faculty : <i>Shinde</i>	31/3/2023
HoD : <i>P</i>	06/03/23



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester I

THEORY TEACHING RECORD

Course Code: 107009			Class: FE C (E & Tc)		Name of Faculty: Prof. B. M. Tayde					
Course Name: Engineering Chemistry				Teaching Scheme:		Th: 4 Hrs / week				
Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
UNIT 1 : Water Technology										
1		Introduction to syllabus	CEO109.1	CO109.1	22-11-2022	22-11-2022		}	}	}
2	1.1	Impurities in water. Types, Units of Hardness.			23-11-2022	23-11-2022				
3	1.2	Determination of Hardness by EDTA & Numerical			24-11-2022	24-11-2022				
4	1.3	Determination of alkalinity, numerical			25-11-2022	11/25/2022 & 11/28/2022	Students have asked for more practice of numericals			
5	1.4	Ill effects of hard water (Scale & sludge & Priming foaming)			28-11-2022	29-11-2022				
6	1.5	Boiler Corrosion, Caustic Embrittlement			29-11-2022	30-11-2022				
7	1.6	Softening of water by zeolite & its numerical.			30-11-2022	01-12-2022				
8	1.7	Softening of water by ion exchange			01-12-2022	05-12-2022				
9	1.8	Purification of water: Reverse osmosis and Electrodialysis.			05-12-2022	06-12-2022				



UNIT 2 : Instrumental Methods of Analysis

10	2.1	Introduction of electrochemistry,	CEO109.2	CO109.2	06-12-2022	07-12-2022			
11	2.2	Types of electrodes Halfcell & complete cell reaction. Reference Electrode			07-12-2022	08-12-2022			
12	2.3	ISE & its types			08-12-2022	12-12-2022			
13	2.4	Introduction of conductometry			12-12-2022	14-12-2022			
14	2.5	Basic Terms Involved in Conductometry			13-12-2022	15-12-2022			
15	2.6	Applications of Conductometric titration			14-12-2022	19-12-2022			
16	2.7	pHmetry: Introduction, standardization of pH meter			15-12-2022	20-12-2022			
17	2.8	pH metric titration of strong acid versus strong base with titration curve			19-12-2022	23-12-2022			
		Revision on Unit I and II				12/26/2022 & 12/27/2022			
		Class Test I			12/19/2022 to 12/23/2022				

UNIT 3 : Engineering Materials

18	3.1	Speciality polymers: Introduction, Basic Concept of polymerization with examples.	CEO109.3	CO109.3	20-12-2022	28-12-2022			
19	3.2	Engineering Thermoplastic, Bio-degradable polymers			21-12-2022	29-12-2022			
20	3.3	Conducting Polymer, Electroluminescent polymer			22-12-2022	02-01-2023			
21	3.4	Polymer Composite			02-01-2023	03-01-2023			
22	3.5	Nanomaterials: introduction, classification. Zero, one, two, three Dimensional			03-01-2023	04-01-2023			
23	3.6	Structure, properties and applications of graphene			04-01-2023	05-01-2023			
24	3.7	Structure, properties and applications of carbon nanotubes			05-01-2023	16-01-2023			
25	3.8	Structure, properties and applications of quantum dots (semiconductor nanoparticles).			09-01-2023	17-01-2023			



UNIT 4 : Fuels

26	4.1	Introduction (definition, classification of fuel based on chemical reactions and characteristics of good fuel)	CEO109.4	CO109.4	10-01-2023	18-01-2023			
27	4.2	CV, HCV, LCV and its determination by Bomb calorimeter			11-01-2023	19-01-2023			
28	4.3	Boys calorimeter, Numerical on bomb and boys calorimeter			12-01-2023	23-01-2023			
29	4.4	Solid fuel: Coal: Analysis of Coal-Proximate and numericals,			16-01-2023	24-01-2023			
30	4.5	Solid fuel: Coal: Analysis of Coal- Ultimate analysis, numericals,			17-01-2023	25-01-2023			
31	4.6	Liquid fuel: Petroleum: Refining of petroleum /crude oil and composition, boiling range and uses of various fractions,			18-01-2023	30-01-2023			
32	4.7	Gaseous fuel: Composition, properties and applications of CNG. Hydrogen gas as a future fuel			19-01-2023	01-02-2023			
33	4.8	Alternative fuels: Power alcohol and biodiesel.			23-01-2023	02-02-2023			
		Class Test II				2/13/2023 & 2/17/2023			

UNIT 5 : Spectroscopic Techniques

34	5.1	[A]UV-Visible Spectroscopy:Introduction, interaction of emr with matter	CEO109.5	CO109.5	24-01-2023	02-02-2023			
35	5.2	statement of Beer's law and Lambert's law, different electronic transitions,			25-01-2023	06-02-2023			
36	5.3	terms involved in UV-visible Spectroscopy			30-01-2023	06-02-2023			
37	5.4	Instrumentation and basic principle of single beam spectrophotometer, applications			31-01-2023	14-02-2023			
38	5.5	[B] Infra red Spectroscopy:Introduction and Principle			01-02-2023	14-02-2023			
39	5.6	types of vibrations, conditions of absorption of IR radiations			02-02-2023	15-02-2023			
40	5.7	vibration of diatomic and polyatomic molecules and Instrumentation			06-02-2023	16-02-2023			
41	5.8	Parts of IR spectrum, fundamental group region, fingerprint region, applications of IR spectroscopy.			07-02-2023	17-02-2023	was at FDP from 7th to 11th Feb at MMCCE, Pune		



UNIT 6 : Corrosion

42	6.1	Introduction, Types of corrosion	CEO109.6	CO109.6	08-02-2023	20-02-2023		}	}
43	6.2	mechanism of dry corrosion, nature of oxide films and Pilling-Bedworth's rule			09-02-2023	21-02-2023			
44	6.3	wet corrosion – mechanism: galvanic and concentration cell corrosion			13-02-2023	21-02-2023	was at Nss Camp		
45	6.4	Factors influencing rate of corrosion			14-02-2023	23-02-2023			
46	6.5	cathodic and anodic protection			15-02-2023	27-02-2023	only two lectures per day due to class test II (13th feb to 17th feb)		
47	6.6	metallic coatings and its types			16-02-2023	28-02-2023			
48	6.7	surface preparation, methods to apply metallic coatings-hot dipping			20-02-2023	01-03-2023			
49	6.8	Cladding, electroplating, cementation.			21-02-2023	02-03-2023			
		Class Test III			3/1/2023 & 03/03/2023				

Start of Semester: 22/11/2022

Signature	Date
Course Faculty : Mrs. B. M. Tayde	
HoD : Prof. Rakhi Wagh	21/11/22



End of Semeste : 03/03/23

Signature	Date
Course Faculty : Mrs. B. M. Tayde	
HoD : Prof. Rakhi Wagh	06/03/23



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester II

COURSE FILE INDEX

Sr. No.	Format	DISCRIPTION
1	Vision, Mission of Institute	
2	Vision Mission of Department	
3	Program Educational Objectives, Program Outcomes, and Program Specific Outcomes	
4	Institute Academic Calendar	
5	Department Academic Calendar	I2IT / ACAD / SP / 01
6	Class wise Time Table	I2IT / ACAD / TT / 01
7	Faculty wise Time Table	I2IT / ACAD / TT / 02
8	Lab wise Time Table in case of Lab – In charge	I2IT / ACAD / TT / 04
9	University Syllabus	
10	Lesson Plan Resources	I2IT / ACAD / CP / 05
11	Course Objectives and Outcomes (Theory)	I2IT / ACAD / CP / 01
12	Correlation of COs with POs (Theory)	I2IT / ACAD / CP / 02
13	CO-PO mapping Justification (Theory)	I2IT / ACAD / CP / 02A
14	Course Objectives and Outcomes (Laboratory)	I2IT / ACAD / CP / 01
15	Correlation of COs with POs (Laboratory)	I2IT / ACAD / CP / 02
16	CO-PO mapping Justification (Laboratory)	I2IT / ACAD / CP / 02A
17	Theory Teaching Plan	I2IT / ACAD / CP / 03
18	Laboratory Teaching Plan	I2IT / ACAD / CP / 04
19	List of Laboratory Assignments	I2IT / ACAD / CP / 04A
20	Rubrics for Continuous evaluation	I2IT / ACAD / CP / 06
21	Previous University Question Papers	
22	Theory Question Bank	I2IT / ACAD / CP / 21
23	Objective Question Bank	
24	List of Theory Assignments	I2IT / ACAD / CP / 18
25	Class Test Question Papers with solutions	I2IT / ACAD / CP / 07
26	Class Test Attendance	I2IT / ACAD / CP / 08
27	Course Outcomewise Class Test Marksheet	I2IT / ACAD / CP / 08A
28	Class Test Evaluation Record	I2IT / ACAD / CP / 12
29	Slow Learner and Advanced Learner Identification	I2IT / ACAD / CP / 09
30	Schedule of Slow Learner Activities	I2IT / ACAD / CP / 10
31	Assignments to Advanced Learners	I2IT / ACAD / CP / 11
32	List of Slow Learners	I2IT / ACAD / CP / 13
33	List of Advanced Learners	I2IT / ACAD / CP / 14
34	Slow Learner Attendance Record	I2IT / ACAD / CP / 15

Sr. No.	Format	DISCRIPTION
35	Performance Improvement of Slow Learner	I2IT / ACAD / CP / 16
36	Innovative Practices in Teaching-Learning and ICT	I2IT / ACAD / CP / 19
37	Content Beyond Syllabus (CBS)	I2IT / ACAD / CP / 17
38	CBS Attendance Record	I2IT / ACAD / CP / 17A
39	Previous University Result	I2IT / ACAD / CP / 21
40	TW Calculation Sheet	I2IT / ACAD / CP / 20
41	Course End Survey (Theory & Laboratory)	I2IT / ACAD / CP / 22
42	Theory Attendance Record	I2IT / ACAD / BB / 01
43	Practical Attendance Record	I2IT / ACAD / BB / 02
44	Continuous Assessment Record	I2IT / ACAD / BB / 03
45	Assignment Assessment Record	I2IT / ACAD / BB / 04
46	Average University Result	I2IT / ACAD / AT / 01
47	CO Attainment through University Result	I2IT / ACAD / AT / 02
48	CO Attainment through Class Test & Theory Assignment	I2IT / ACAD / AT / 03
49	CO Attainment through Course End Survey	I2IT / ACAD / AT / 04
50	CO Attainment through Continuous Evaluation	I2IT / ACAD / AT / 05
51	PO & PSO Attainment through CO for Theory	I2IT / ACAD / AT / 06
52	PO & PSO Attainment through CO for Practical	I2IT / ACAD / AT / 06





Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 107009				Class: FE D (Comp)		Name of Faculty: Prof. B. M. Tayde						
Course Name: Engineering Chemistry					Teaching Scheme:		Th: 4 Hrs / week					
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
									AC	HOD	APMC	
UNIT 1 : Water Technology												
1		Introduction to syllabus			CEO109.1	CO109.1	11/4/2023	11/4/2023				
2	1.1	Impurities in water. Types, Units of Hardness.					12/4/2023	12/4/2023				
3	1.2	Determination of Hardness by EDTA & Numerical					13/4/2023	13/4/2023 & 15/4/2023	Less number of students were present for previous class so, revised the topics			Den
4	1.3	Determination of alkalinity, numerical					15/4/2023	17/4/2023 & 18/4/2023	Students have asked for more practice of numericals			
5	1.4	Ill effects of hard water (Scale & sludge & Priming foaming)					17/4/2023	19/4/2023				
6	1.5	Boiler Corrosion, Caustic Embrittlement					18/4/2023	20/4/2023				
7	1.6	Softening of water by zeolite & its numerical.					19/4/2023	21/4/2023				Den
8	1.7	Softening of water by ion exchange					20/4/2023	24/4/2023				
9	1.8	Purification of water: Reverse osmosis and Electrodialysis.					21/4/2023	25/4/2023				



UNIT 2 : Instrumental Methods of Analysis									
10	2.1	Introduction of electrochemistry,	CEO109.2	CO109.2	24/4/2023	26/4/2023			
11	2.2	Types of electrodes Halfcell & complete cell reaction. Reference Electrode			25/4/2023	27/4/2023			
12	2.3	ISE & its types			26/4/2023	28/4/2023			
13	2.4	Introduction of conductometry			28/4/2023	29/4/2023			
14	2.5	Basic Terms Involved in Conductometry			29/4/2023	2/5/2023			
15	2.6	Applications of Conductometric titration			1/5/2023	8/5/2023	CL on 3/5/2023 (holidays from 4/5/2023 to 7/5/2023 due to extra work done during NBA)		
16	2.7	pHmetry: Introduction, standardization of pH meter			2/5/2023	8/5/2023			
17	2.8	pH metric titration of strong acid versus strong base with titration curve			3/5/2023	9/5/2023 (2 hr.)	was CL from 10/5/2023 to 13/5/2023		
					15/5/2023 & 16/5/2023	Revision on both the units			
		Class Test I			2/5/2023 to 4/5/2023	15/5/2023 to 19/5/2023	(Insem 22/5/2023 to 25/5/2023)		
UNIT 3 : Engineering Materials									
18	3.1	Speciality polymers: Introduction, Basic Concept of polymerization with examples.	CEO109.3	CO109.3	8/5/2023	17/5/2023			
19	3.2	Engineering Thermoplastic, Bio-degradable polymers			9/5/2023	18/5/2023			
20	3.3	Conducting Polymer, Electroluminescent polymer			10/5/2023	29/5/2023			
21	3.4	Polymer Composite			12/5/2023	30/5/2023			
22	3.5	Nanomaterials: Introduction, classification. Zero, one, two, three Dimensional			15/5/2023	30/5/2023			
23	3.6	Structure, properties and applications of graphene			16/5/2023	31/5/2023			
24	3.7	Structure, properties and applications of carbon nanotubes			17/5/2023	2/6/2023			
25	3.8	Structure, properties and applications of quantum dots (semiconductor nanoparticles).			19/5/2023	5/6/2023			



UNIT 4 : Fuels									
26	4.1	Introduction (definition, classification of fuel based on chemical reactions and characteristics of good fuel)	CEO109.4	CO109.4	22/5/2023	6/6/2023			
27	4.2	CV, HCV, LCV and its determination by Bomb calorimeter			23/5/2023	7/6/2023			
28	4.3	Boys calorimeter, Numerical on bomb and boys calorimeter			24/5/2023	8/6/2023			
29	4.4	Solid fuel: Coal: Analysis of Coal-Proximate and numericals,			26/5/2023	13/6/2023			
30	4.5	Solid fuel: Coal: Analysis of Coal- Ultimate analysis, numericals,			29/5/2023	14/6/2023			
31	4.6	Liquid fuel: Petroleum: Refining of petroleum /crude oil and composition, boiling range and uses of various fractions,			30/5/2023	16/6/2023			
32	4.7	Gaseous fuel: Composition, properties and applications of CNG. Hydrogen gas as a future fuel			31/5/2023	19/6/2023			
33	4.8	Alternative fuels: Power alcohol and biodiesel.			2/5/2023	20/6/2023			
		Class Test II			5/6/2023 to 7/6/2023				
UNIT 5 : Spectroscopic Techniques									
34	5.1	[A]UV-Visible Spectroscopy:Introduction, interaction of emr with matter	CEO109.5	CO109.5	9/6/2023	21/6/2023			
35	5.2	statement of Beer's law and Lambert's law, different electronic transitions,			12/6/2023	22/6/2023			
36	5.3	terms involved in UV-visible Spectroscopy			13/6/2023	23/6/2023			
37	5.4	Instrumentation and basic principle of single beam spectrophotometer, applications			14/6/2023	23/6/2023 25/6/2023			
38	5.5	[B] Infra red Spectroscopy:Introduction and Principle			16/6/2023	25/6/2023 26/6/2023			
39	5.6	types of vibrations, conditions of absorption of IR radiations			19/6/2023	26/6/2023			
40	5.7	vibration of diatomic and polyatomic molecules and Instrumentation			20/6/2023	27/6/2023			
41	5.8	Parts of IR spectrum, fundamental group region, fingerprint region, applications of IR spectroscopy.			21/6/2023	27/6/2023			



UNIT 6 : Corrosion									
42	6.1	Introduction, Types of corrosion	CEO109.6	CO109.6	23/6/2023	3/7/2023			
43	6.2	mechanism of dry corrosion, nature of oxide films and Pilling-Bedworth's rule			26/6/2023	3/7/2023 & 4/7/2023			
44	6.3	wet corrosion – mechanism: galvanic and concentration cell corrosion			27/6/2023	4/7/2023			
45	6.4	Factors influencing rate of corrosion			28/6/2023	5/7/2023			
46	6.5	cathodic and anodic protection			30/6/2023	6/7/2023			
47	6.6	metallic coatings and its types, surface preparation,			3/7/2023	6/7/2023			
48	6.7	methods to apply metallic coatings-hot dipping			4/7/2023	7/7/2023			
49	6.8	Cladding, electroplating, cementation.			5/7/2023	7/7/2023			
		Class Test III			19/07/2023 to 21/07/2023				

Start of Semester: 11-04-2023

Signature	Date
Course Faculty : Mrs. B. M. Tayde	<i>[Signature]</i> 11.04.23
HoD : Prof. Rakhi Wagh	<i>[Signature]</i>

End of Semester : 7/7.2023

Signature	Date
Course Faculty : Mrs. B. M. Tayde	<i>[Signature]</i> 21.07.23
HoD : Prof. Rakhi Wagh	<i>[Signature]</i>

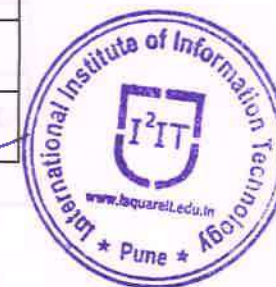




Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year 2022-23 Semester II

THEORY TEACHING RECORD

Course Code: 102012				Class:- F.E A(IT)		Faculty Name:- Prof.Rahul Joshi				
Course Name: Engineering Graphics					Teaching Scheme:		Th: 3 Hrs / week			
Sr. No.	Topics to be Delivered	CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by			
							AC	HOD	APMO	
UNIT 1 : Fundamentals of Engineering Graphics										
1	1.1	Introduction to Graphics	CEO111.1	CO111.1	12/4/2023	12/4/2023				
UNIT 2 : Introduction to 2D and 3D computer aided drafting packages										
2	2.1	Introduction to 2D and 3D	CEO111.2	CO111.2	13-04-2023	13-04-2023 15-04-2023				
3	2.2	Draw and Modify Menu and Basic Commands			17-04-2023	17-04-2023 18-04-2023				
UNIT 3 : Engineering curves										
4	3.1	Cycloid,Spiral,Helix,Involute	CEO111.3	CO111.3	19-04-2023	19-04-2023 20-04-2023				
5	3.2	Rectangular method:Ellipse,Parabola			2/5/2023	02-05-2023 03-05-2023				
6	3.3	Directrix Focus Method:Ellipse,Parabola,Hyperbola			8/5/2023	08-05-2023 09-05-2023				
7	3.4	Directrix Focus Method:Ellipse,Parabola,Hyperbola			10/5/2023	10-05-2023 11-05-2023				
UNIT 4 : Orthographic Projections										
8	4.1	Principle of projections			12/5/2023	12-05-2023 16-05-2023				



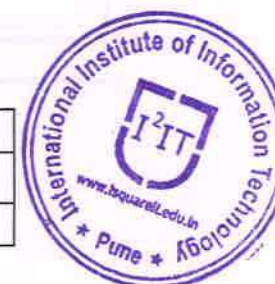
Sr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of variance)	Monitored by		
								AC	HOD	APMC
9	4.2	Introduction to First angle and Third angle method of projection	CEO111.4	CO111.4	18-05-2023	18-05-2023 29-05-2023				
10	4.3	Orthographic Projection of Point,line,plane,solid and Machine elements/parts			30-05-2023	30-05-2023 31-05-2023				Den
11	4.4	Front view,Top view and Side view of object			1/6/2023	01-06-2023 05-06-2023				
UNIT 5 :Isometric Projection										
12	5.1	Introduction to Isometric Projections	CEO111.5	CO111.5	6/6/2023	06-06-2023 08-06-2023				
13	5.2	Isometric Circle concept			12/6/2023	12-06-2023 13-06-2023				Den
14	5.3	Isometric projection from Orthographic Projection			15-06-2023	15-06-2023 16-06-2023				
15	5.4	Isometric projection from Orthographic Projection			19-06-2023	19-06-2023 20-06-2023				
UNIT 6 : Development of Lateral surfaces										
16	6.1	Development of Lateral surfaces of Cut section of Cone	CEO111.6	CO111.6	21-06-2023	21-06-2023 26-06-2023				
17	6.2	Development of Lateral surfaces of cut section of Prism			30-06-2023	26-06-2023 30-06-2023	Extra Lecture Conducted			Den
18	6.3	Development of Lateral surfaces of cut section of Pyramid			4/7/2023	03-07-2023 4/7/2023				

Start of Semester

Signature	Date
Course Faculty :Prof. Rahul Joshi	
HoD :Prof. Rakhi Wagh	

End of Semester

Signature	Date
Course Faculty :Prof. Rahul Joshi	
HoD :Prof. Rakhi Wagh	



Hope Foundation's
International Institute of Information Technology, Pune
DEPARTMENT OF ENGINEERING SCIENCES
Academic Year: 2022-23 Semester - II

THEORY TEACHING RECORD



Course Code : 107008				Class: FE E&TC		Name of Faculty: Pooja Khatkale					
Course Name: Engineering Mathematics-II						Teaching Scheme:		Th : 4 Hrs / week			
Lr. No.	Topics to be Delivered			CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (in case of	Monitored by		
									AC	HOD	APMC
UNIT - I ORDINARY DIFFERENTIAL EQUATION OF FIRST ORDER AND FIRST DEGREE											
1	1.1	Introduction to differential equation Definition applications in brief order and degree			CEO108.1	CO108.1	11-04-2023	11-04-2023	-	}	}
2	1.2	Concept of exact differential equations and solving exact equations					12-04-2023	12-04-2023	-		
3	1.3	Solving inexact equations by finding integrating factor					13-04-2023	13-04-2023	-		
4	1.4	Finding integrating factor to solve inexact equations					17-04-2023	17-04-2023	-		
5	1.5	Problems on Differential equations with Integrating Factor					18-04-2023	17-04-2023	extra class		
6	1.6	Solutions to Linear differential equations					19-04-2023	18-04-2023	"		
7	1.7	Problems on Linear Differential equations					20-04-2023	18-04-2023	"		
8	1.8	Equations reducible to linear form Bernoulli's Equation					22-04-2023	19-04-2023	"		
9	1.9	Equations reducible to linear form					24-04-2023	20-04-2023	"		
UNIT - II APPLICATION OF DIFFERENTIAL EQUATIONS											
10	2.1	Concept of orthogonal trajectories finding equations of orthogonal trajectories by using differential equations			CEO108.2	CO108.2	25-04-2023	24-04-2023	"	}	}
11	2.2	Application of Differential equations Newtons Law of Cooling					26-04-2023	25-04-2023	"		
12	2.3	Problems on Newtons Law of Cooling					27-04-2023	26-04-2023	"		
13	2.4	Application of Differential equations Kirchoffs Law of Electrical circuits					02-05-2023	27-04-2023	"		
14	2.5	Application of Differential equations Kirchoffs Law of Electrical circuits					03-05-2023	28-04-2023	"		
15	2.6	Application of Differential equations Rectilinear Motion					04-05-2023	29-04-2023	"		
16	2.7	Application of Differential equations Fouriers Law of heat conduction					08-05-2023	02-05-2023	"		
17	2.8	Problems on Fouriers Law of heat conduction					09-05-2023	03-05-2023	"		
18	2.9	Application of Differential equations Simple Harmonic Motion					10-05-2023	08-05-2023	"		





Lr. No.	Topics to be Delivered		CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (incase of	Monitored by		
								AC	HOD	APMC
UNIT III: INTEGRAL CALCULUS										
19	3.1	Reduction formula for standard trigonometric functions	CEO108.3	CO108.3	11-05-2023	09-05-2023	Extra lect	}	}	}
20	3.2	Problems based on Reduction formulae			15-05-2023	10-05-2023	"			
21	3.3	Definition of Gamma function and its properties			16-05-2023	11-05-2023	"			
22	3.4	Problems based on Gamma Function			17-05-2023	12-05-2023	"			
23	3.5	Definition of Beta function and its properties			18-05-2023	12-05-2023	"			
24	3.6	Problems based on Beta Function			22-05-2023	15-05-2023	"			
25	3.7	Differentiation under integral sign DUIS			23-05-2023	16-05-2023	"			
26	3.8	Problems based on DUIS			24-05-2023	17-05-2023	"			
27	3.9	Problems based on Error Function			05/25/2023	29-05-2023	leave			
UNIT -IV : CURVE TRACING										
28	4.1	Geometry of two dimensiona and three dimension plane	CEO108.4	CO108.4	01-06-2023	30-05-2023	Extra lect	}	}	}
29	4.2	Cartesian and polar form of equations and their conversions			05-06-2023	31-05-2023	"			
30	4.3	Tracing equation of a curve in cartesian form			06-06-2023	01-06-2023	"			
31	4.4	Problems on tracing curve in cartesian form			07-06-2023	02-06-2023	"			
32	4.5	Tracing curve in polar form			08-06-2023	05-06-2023	"			
33	4.6	Problems on tracing of curves in polar form			12-06-2023	06-06-2023	"			
34	4.7	Tracing of Rose curves Tracing of curves in Parametric form			13-06-2023	06-06-2023	"			
35	4.8	Rectification of Cartesian curves			14-06-2023	07-06-2023	"			
36	4.9	Rectification of Cartesian curves Rectification of Polar and Parametric curves			15-06-2023	08-06-2023	"			
UNIT -V : SOLID GEOMETRY										
37	5.1	Relation between Coordinate system	CEO108.5	CO108.5	1 st 06-2023	09-06-2023	"	}	}	}
38	5.2	Sphere Introduction and Different Forms			20-06-2023	13-06-2023	"			
39	5.3	General equation of Sphere Touching the Spheres			21-06-2023	14-06-2023	"			
40	4.4	Orthogonal Sphere and Tangent Plane to Sphere			22-06-2023	15-06-2023	"			
41	5.5	Cone Introductin and Different types of Cone			26-06-2023	16-06-2023	"			
42	5.6	Right Circular Cone			27-06-2023	19-06-2023	"			
43	5.7	Cylinder Introduction and Different types of Cylinder			28-06-2023	20-06-2023	"			
44	5.8	Right Circular Cylinder			03-07-2023	21-06-2023	"			
45	5.9	Discussion on some miscellaneous examples			04-07-2023	22-06-2023	"			

121 / ACAD / CP / U												
I r. No.	Topics to be Delivered				CEO	CO	Date of Plan	Date of Conduction	Remarks of Faculty (Incase of	Monitored by		
										AC	HOD	APMC
UNIT -VI : MULTIPLE INTEGRALS AND THEIR APPLICATIONS												
46	6.1	Introduction and Evaluation of Double Integration			CEO108.6	CO108.6	05-07-2023	23-06-2023	Extra Lect	}	}	
47	6.2	Evaluation of Double Integral when Limit is not given					06-07-2023	27-06-2023	"			
48	6.3	Change of Order of Integration					10-07-2023	27-06-2023	"			
49	6.4	Solving double integration by Transformation to polar form					11-07-2023	28-06-2023	"			
50	6.5	Application of double integration Area bounded by curves					12-07-2023	30-06-2023	"			
51	6.6	Evaluation of Tripple Integration					13-07-2023	03-07-2023	"			
52	6.7	Evaluation of Tripple Integral when the Limits are not given					17-07-2023	03-07-2023	"			
53	6.8	Application of triple integration to calculate Volume of solid					18-07-2023	04-07-2023	"			
54	6.9	Application of double and triple integration Mass Mean value and RMS value Centre of Gravity and Moment of Inertia					18-07-2023	04-07-2023	"			

Start of Semester

Signature	Date
Course Faculty : 	11/04/23
HoD : 	11/04/23

End of Semester

Signature	Date
Course Faculty : 	18/07/23
HoD : 	18/07/23

