



VIMAL JYOTHI ENGINEERING COLLEGE, CHEMPERI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Course Outcomes and CO-PO/PSO mapping

SL No	SCHEME	PARTICULARS
1	2019	Subject List
2		Program level Courses - PO/PSO matrix
3		Semester 8
4		Semester 7
5		Semester 6
6		Semester 5
7		Semester 4
8		Semester 3
9		Semester 2
10		Semester 1


HEAD OF THE DEPARTMENT
Dept. of Computer science & Engg.
Vimal Jyothi Engineering College
Chempери-670 634



VIMAL JYOTHI ENGINEERING COLLEGE, CHEMPERI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

2019 SCHEME SUBJECT LIST

SL No	SEMESTER	SUBJECT	
1	1	CYT100	ENGINEERING CHEMISTRY
2		EST100	ENGINEERING MECHANICS
3		HUN101	LIFE SKILLS
4		EST120	BASICS OF CIVIL & MECHANICAL ENGINEERING
5		MAT101	LINEAR ALGEBRA AND CALCULUS
6		CYL120	ENGINEERING CHEMISTRY LAB
7		ESL120	CIVIL & MECHANICAL WORKSHOP
8	2	MAT102	VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS
9		PHT100	ENGINEERING PHYSICS A
10		EST102	PROGRAMMING IN C
11		EST110	ENGINEERING GRAPHICS
12		EST130	BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING
13		HUN102	PROFESSIONAL COMMUNICATION
14		ESL130	ELECTRICAL & ELECTRONICS WORKSHOP
15	PHL120	ENGINEERING PHYSICS LAB	
16	3	CST201	DATA STRUCTURES
17		CST203	LOGIC SYSTEM DESIGN
18		CST205	OBJECT ORIENTED PROGRAMMING USING JAVA
19		EST200	DESIGN AND ENGINEERING
20		MAT203	DISCRETE MATHEMATICAL STRUCTURES
21		MCN201	SUSTAINABLE ENGINEERING
22		CSL201	DATA STRUCTURES LAB
23		CSL203	OBJECT ORIENTED PROGRAMMING LAB (IN JAVA)

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VIMAL JYOTHI ENGINEERING COLLEGE, CHEMPERI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

SL No	SEMESTER	SUBJECT		
24	4	CST202	COMPUTER ORGANIZATION AND ARCHITECTURE	
25		CST204	DATABASE MANAGEMENT SYSTEMS	
26		CST206	OPERATING SYSTEMS	
27		MAT206	GRAPH THEORY	
28		MCN202	CONSTITUTION OF INDIA	
29		HUT200	PROFESSIONAL ETHICS	
30		CSL202	DIGITAL LAB	
31		CSL204	OPERATING SYSTEMS LAB	
32		5	CST301	FORMAL LANGUAGES AND AUTOMATA THEORY
33			CST303	COMPUTER NETWORKS
34	CST305		SYSTEM SOFTWARE	
35	CST307		MICROPROCESSORS AND MICROCONTROLLERS	
36	CST309		MANAGEMENT OF SOFTWARE SYSTEMS	
37	MCN301		DISASTER MANAGEMENT	
38	CSL331		SYSTEM SOFTWARE AND MICROPROCESSORS LAB	
39	CSL333		DATABASE MANAGEMENT SYSTEMS LAB	
40	6	CST302	COMPILER DESIGN	
41		CST304	COMPUTER GRAPHICS AND IMAGE PROCESSING	
42		CST306	ALGORITHM ANALYSIS AND DESIGN	
43		CST308	COMPREHENSIVE COURSE WORK	
44		CST362	PROGRAMMING IN PYTHON	
45		HUT300	INDUSTRIAL ECONOMICS & FOREIGN TRADE	
46		CSL332	NETWORKING LAB	
47		CSD334	MINI PROJECT	

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VIMAL JYOTHI ENGINEERING COLLEGE, CHEMPERI
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

SL No	SEMESTER	SUBJECT	
48	7	CST401	ARTIFICIAL INTELLIGENCE
49		CST463	WEB PROGRAMMING
50		CSQ415	PROJECT
51		MCN401	INDUSTRIAL SAFETY ENGINEERING
52		CSQ413	SEMINAR
53		CSL411	COMPILER LAB
54		8	CST402
55	CST426		CLIENT SERVER ARCHITECTURE
56	CST428		BLOCKCHAIN TECHNOLOGIES
57	CST434		NETWORK SECURITY PROTOCOLS
58	CST458		SOFTWARE TESTING
59	CSD416		PROJECT PHASE II
60	CST404		COMPREHENSIVE COURSE WORK


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Computer Science and Engineering

3.1.3 Program level Course-PO matrix of all courses

2019 Regulation

Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CYT100	1	1.25	1	1	2	-	3	-	-	-	-	-	-	-
CY110	1.17	1.33	1.5	-	-	-	-	-	-	-	-	-	-	-
CYL120	3	-	-	-	2.17	-	-	-	-	-	-	3	-	-
EST100	2.8	2.8	-	-	-	-	-	-	-	-	-	-	1	1
ESL120	1.38	-	-	-	1	1	-	2	2	2	1	1	-	-
EST120	3	1.67	-	1	3	2.5	2.5	2.5	2	-	-	-	-	-
HUN101	-	1	1.5	-	2.5	-	-	2	2	2	-	1.67	-	-
MAT101	3	2.6	3	2.8	1.8	1	-	-	1	2	-	2	-	-
EST102	3	2.17	1.83	1.83	3	-	-	-	-	1.17	1.83	1	1.83	1.83
EST110	3	1	-	-	3	-	-	-	-	2	-	-	-	-
ESL130	2.6	-	-	1	2	2	-	1	2.5	1.67	-	1.67	-	-
EST130	2.5	1	-	-	-	-	-	-	-	-	-	2	1	1
HUN102	1	1	-	-	-	1	-	-	1.33	2.67	-	2	-	-
MAT102	3	3	3	3	2	1	-	-	1	2	-	2	-	-
PHT100	3	1.6	-	-	-	-	-	1	2	-	-	1	-	-
PHL120	3	-	-	-	2	-	-	1	2	-	-	1	-	-
CSL201	3	2	3	2	-	-	-	2	-	2	-	2	2	2
CST201	3	2.17	2.17	1.17	2.33	1	-	-	2	-	-	3	2.5	3
CSL203	3	2	2	2	2	-	-	3	3	1	-	3	3	3
CST203	1.8	1.8	2.5	3	-	2	-	-	-	-	-	1	3	2.4
CST205	2.83	1.83	1.83	1.83	2	-	-	-	2.83	3	-	2.83	2.83	2.83
EST200	2	1.5	2	-	-	1	1	1	2	1.5	-	1.5	1	1
MAT203	3	2	2.6	1.5	2	-	-	-	-	2	-	1.5	-	-
MCN201	-	-	-	-	-	2	3	-	-	-	-	2	-	-
CSL202	1.5	2	2.5	2.25	2.5	-	-	2.25	1	-	-	1.25	1.5	1.75
CST202	2.33	2.33	2.17	1.8	-	2	-	1	-	1	-	2.17	1.5	1.83
CSL204	2	1.67	1.67	1.75	-	-	-	1.83	-	1	-	1.83	2	2
CST204	3	3	3	3	3	-	-	-	3	2.83	3	3	3	3
CST206	1.83	1.83	1.67	1.8	-	-	-	-	-	1.83	-	2	2	2
CST294	3	3	3	3	3	3	-	-	-	3	-	3	3	3
HUT200	-	-	-	-	-	-	-	2.6	-	-	-	2	-	-
MAT206	1.83	1.67	2	2	-	1	-	-	-	1	-	1.17	1.67	2
MCN202	-	-	-	-	-	2.83	2.33	2.83	-	2.67	-	-	-	-

CST301	2.6	2	2	1.75	2	-	-	-	-	-	-	2	2	2.6
CST303	2	2	2.4	-	-	-	-	-	-	-	-	2.17	-	-
CST305	2.5	2.5	3	3	2	-	-	-	-	-	-	2.5	2.67	1.67
CST307	2	2.8	2.8	2.75	-	-	-	-	-	-	-	2.8	3	1.4
CST309	3	2.6	2	2.4	-	1.33	-	1	3	3	2	3	2.6	2.6
CSL331	2	3	3	2.8	-	-	-	1	-	1	-	1	3	1
CSL333	3	3	3	3	3	3	-	3	3	3	3	3	3	3
CST395	3	3	3	3	3	2	-	-	-	-	-	3	3	3
CST302	3	2	2	2	2	-	-	-	-	-	-	2	2	2
CST304	2	2.75	2.4	1.75	-	3	-	-	-	-	-	2	1.67	2.33
CST306	2.83	2.83	2.8	3	1	1	-	1	-	-	-	3	2	3
CST308	3	3	-	-	-	-	-	-	-	-	-	3	2.17	2
CSL332	2.8	2.8	2.8	3	3	2	-	3	-	2	-	3	2.8	2.8
CSD334	3	3	3	3	3	3	3	3	3	3	3	3	2.4	2.4
CST362	3	2	2	2	3	2	-	-	-	-	-	3	2.67	2.67
HUT300	2	2	1	-	2	1.5	3	-	-	-	3	-	-	-
CST401	2.4	2.5	3	3	2	-	-	-	-	-	-	2.5	1	2.4
CSL411	2	2	2	2	2	-	-	2	-	2	2	-	2	2
CSQ413	2.8	2.5	2	2.33	2.33	2	1	1.33	-	2.67	-	3	2.4	1
CSD415	2	2.33	2.33	1	1.8	2.5	2.5	1.75	1.8	2	1.6	1.33	2.67	2.67
CST463	2.2	2.75	3	2	1.6	-	-	-	-	-	-	2	2.6	2
MCN401	2	1.8	2	1	1	1.2	1.2	1.2	1	1	-	1	-	-
CST402	2.17	2.17	2.17	3	-	-	-	-	-	-	-	2	2.67	2.5
CSD416	2	2.33	2.33	1	1.8	2.5	2.5	1.75	1.8	2	1.6	1.33	3	3
CST426	2	2.25	2	-	3	-	-	-	-	-	-	2.6	2.8	2.2
CST428	2.17	2.17	3	2	2	-	-	-	-	-	-	3	2.17	2.17
CST434	3	1.75	2.2	-	-	1	-	-	-	-	-	1	2	2
CST458	2.6	2.2	2.6	2.33	3	-	-	-	-	2	-	2.4	2.2	2.2


 HEAD OF THE DEPARTMENT
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 Vinal Jyothi Engineering College
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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 8

Course Name : DISTRIBUTED COMPUTING - Course Code : CST402 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Summarize various aspects of distributed computation model and logical time
CO2	Illustrate election algorithm, global snapshot algorithm and termination detection algorithm.
CO3	Compare token based, non-token based and quorum based mutual exclusion algorithms.
CO4	Recognize the significance of deadlock detection and shared memory in distributed systems
CO5	Explain the concepts of failure recovery and consensus
CO6	Illustrate distributed file system architectures

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST402.1	2	2	2	-	-	-	-	-	-	-	-	2	2	2
CST402.2	3	3	3	3	-	-	-	-	-	-	-	2	3	3
CST402.3	2	2	2	-	-	-	-	-	-	-	-	2	3	3
CST402.4	2	2	2	-	-	-	-	-	-	-	-	2	3	3
CST402.5	2	2	2	-	-	-	-	-	-	-	-	2	3	2
CST402.6	2	2	2	-	-	-	-	-	-	-	-	2	2	2
Average	2.17	2.17	2.17	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	2.67	2.5

Tirth Devassan
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Verified
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Computer Science and Engineering

CO-PO Mapped Data

2019 Scheme

Semester : 8

Course Name : COMPREHENSIVE COURSE VIVA - Course Code : CST404 (THEORY)

Course Outcome Number

Course Outcome Title

The students will be confident in discussing the fundamental aspects of any engineering problem/situation and give answers in dealing with them

CO1

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST404.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2	2	2	2	2	2	2

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 8

Course Name : CLIENT SERVER ARCHITECTURE - Course Code : CST426 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain the basics of client/server systems and the driving force behind the development of client/server systems
CO2	Outline the architecture and classifications of client/server systems
CO3	Choose the appropriate client/server network services for a typical application
CO4	Describe management services and issues in network
CO5	Compare and summarize the web extensions and choose appropriate web services standards for an application

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST426.1	2	2	-	-	-	-	-	-	-	-	-	3	3	2
CST426.2	2	2	-	-	-	-	-	-	-	-	-	3	3	2
CST426.3	2	3	-	-	3	-	-	-	-	-	-	3	3	2
CST426.4	2	-	-	-	-	-	-	-	-	-	-	2	2	2
CST426.5	2	2	2	-	-	-	-	-	-	-	-	2	3	3
Average	2.0	2.25	2.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.8	2.2

Sheelaashmi M

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme


Semester : 8
Course Name : BLOCKCHAIN TECHNOLOGIES - Course Code : CST428 (THEORY)

Course Outcome	Course Outcome Title
CO1	Illustrate the cryptographic building blocks of blockchain technology
CO2	Explain the fundamental concepts of blockchain technology
CO3	Summarize the classification of consensus algorithms
CO4	Explain the concepts of first decentralized cryptocurrency bitcoin
CO5	Explain the use of smart contracts and its use cases
CO6	Develop simple applications using Solidity language on Ethereum platform

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST428.1	2	2	-	-	-	-	-	-	-	-	-	3	2	2
CST428.2	2	2	-	-	-	-	-	-	-	-	-	3	2	2
CST428.3	2	2	-	-	-	-	-	-	-	-	-	3	2	2
CST428.4	2	2	-	-	-	-	-	-	-	-	-	3	2	2
CST428.5	2	2	-	-	-	-	-	-	-	-	-	3	2	2
CST428.6	3	3	3	2	2	-	-	-	-	-	-	3	3	3
Average	2.16	2.16	3	2	2	0.0	0.0	0.0	0.0	0.0	0.0	3	2.16	2.16

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 8

Course Name : NETWORK SECURITY PROTOCOLS - Course Code : CST434 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain authentication protocols, X.509 authentication service and Public Key Infrastructure (PKI)
CO2	Identify the security mechanisms in E mail security services
CO3	Summarize the network and transport layer security services provided in a secure communication scenario
CO4	Describe real time communication security and application layer security protocols
CO5	Explain the concepts of firewalls and wireless network security

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST434.1	3	-	2	-	-	-	-	-	-	-	-	1	2	2
CST434.2	3	1	2	-	-	-	-	-	-	-	-	1	2	2
CST434.3	3	2	3	-	-	-	-	-	-	-	-	1	1	1
CST434.4	3	2	3	-	-	1	-	-	-	-	-	1	3	3
CST434.5	3	2	1	-	-	-	-	-	-	-	-	1	2	2
Average	3.0	1.75	2.2	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	2.0

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Computer Science and Engineering

CO-PO Mapped Data

2019 Scheme

Semester : 8

Course Name : SOFTWARE TESTING - Course Code : CST458 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	List a range of different software testing techniques and be able to apply specific unit testing method to the projects using Junit
CO2	Illustrate using appropriate tools the mutation testing method for a given piece of code to identify hidden defects that can't be detected using other testing methods
CO3	Explain graph coverage criteria in terms of control flow graph and data flow graph for a given program
CO4	Demonstrate the importance of black-box approaches in terms of domain and functional testing
CO5	Illustrate the use of PEX tool with symbolic execution

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST458.1	2	2	2	-	-	-	-	-	-	-	-	2	2	2
CST458.2	3	2	3	2	3	-	-	-	-	-	-	3	3	3
CST458.3	2	2	2	-	-	-	-	-	-	2	-	2	2	2
CST458.4	3	3	3	3	-	-	-	-	-	-	-	3	2	2
CST458.5	3	2	3	2	3	-	-	-	-	2	-	2	2	2
Average	2.6	2.2	2.6	2.33	3	0	0.0	0.0	0.0	2	0.0	2.4	2.2	2.2

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Computer Science and Engineering

CO-PO Mapped Data

2019 Scheme

Semester : 8

Course Name : PROJECT PHASE II - Course Code : CSD416 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Model and solve real world problems by applying knowledge across domains
CO2	Develop products, processes or technologies for sustainable and socially relevant applications
CO3	Function effectively as an individual and as a leader in diverse teams and to comprehend and execute designated tasks
CO4	Plan and execute tasks utilizing available resources within timelines, following ethical and professional norms
CO5	Identify technology/research gaps and propose innovative/creative solutions
CO6	Organize and communicate technical and scientific findings effectively in written and oral forms

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSD416.1	2	2	2	1	2	2	2	1	1	1	1	2	3	3
CSD416.2	2	2	2	-	1	3	3	1	1	-	1	1	3	3
CSD416.3	-	-	-	-	-	-	-	-	3	2	2	1	3	3
CSD416.4	-	-	-	-	2	-	-	3	2	2	3	2	3	3
CSD416.5	2	3	3	1	2	-	-	-	-	-	-	1	3	3
CSD416.6	-	-	-	-	2	-	-	2	2	3	1	1	3	3
Average	2.0	2.33	2.33	1.0	1.8	2.5	2.5	1.75	1.8	2.0	1.6	1.33	3.0	3.0

CP-Pre-112

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 7

Course Name : ARTIFICIAL INTELLIGENCE - Course Code : CST401 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain the fundamental concepts of intelligent systems and their architecture
CO2	Illustrate uninformed and informed search techniques for problem solving in intelligent systems.
CO3	Solve Constraint Satisfaction Problems using search techniques.
CO4	Represent AI domain knowledge using logic systems and use inference techniques for reasoning in intelligent systems.
CO5	Illustrate different types of learning techniques used in intelligent systems.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST401.1	2	-	-	-	-	-	-	-	-	-	-	-	1	2
CST401.2	2	2	-	-	-	-	-	-	-	-	-	2	1	2
CST401.3	3	3	3	3	-	-	-	-	-	-	-	3	1	3
CST401.4	3	3	3	3	-	-	-	-	-	-	-	3	1	3
CST401.5	2	2	-	-	2	-	-	-	-	-	-	2	1	2
Average	2.4	2.5	3.0	3.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.0	2.4

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 7

Course Name : WEB PROGRAMMING - Course Code : CST463 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Use HyperText Markup Language (HTML) for authoring web pages and understand the fundamentals of WWW.
CO2	Construct and visually format responsive, interactive web pages using CSS and JavaScript (JS)
CO3	Construct websites using advanced server side programming tool PHP
CO4	Develop dynamic web applications using PHP and perform MySQL database operations.
CO5	Explain the importance of object exchange formats using JSON and the MVC based web application development frameworks (Laravel)

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST463.1	3	-	-	-	1	-	-	-	-	-	-	2	2	2
CST463.2	2	3	3	-	2	-	-	-	-	-	-	2	3	2
CST463.3	2	3	3	2	2	-	-	-	-	-	-	2	3	2
CST463.4	2	3	3	2	2	-	-	-	-	-	-	2	3	2
CST463.5	2	2	-	-	1	-	-	-	-	-	-	2	2	2
Average	2.2	2.75	3.0	2.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.6	2.0

Diya Rameshan

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 7

Course Name : PROJECT PHASE I - Course Code : CSD415 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Model and solve real world problems by applying knowledge across domains
CO2	Develop products, processes or technologies for sustainable and socially relevant applications
CO3	Function effectively as an individual and as a leader in diverse teams and to comprehend and execute designated tasks
CO4	Plan and execute tasks utilizing available resources within timelines, following ethical and professional norms
CO5	Identify technology/research gaps and propose innovative/creative solutions
CO6	Organize and communicate technical and scientific findings effectively in written and oral forms

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSD415.1	2	2	2	1	2	2	2	1	1	1	1	2	3	3
CSD415.2	2	2	2	-	1	3	3	1	1	-	1	1	3	3
CSD415.3	-	-	-	-	-	-	-	-	3	2	2	1	3	3
CSD415.4	-	-	-	-	2	-	-	3	2	2	3	2	2	2
CSD415.5	2	3	3	1	2	-	-	-	-	-	-	1	3	3
CSD415.6	-	-	-	-	2	-	-	2	2	3	1	1	2	2
Average	2.0	2.33	2.33	1.0	1.8	2.5	2.5	1.75	1.8	2.0	1.6	1.33	2.67	2.67

(Pg. No. 1/1)

Sreeraj

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 7

Course Name : INDUSTRIAL SAFETY ENGINEERING - Course Code : MCN401 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Describe the theories of accident causation and preventive measures of industrial accidents.
CO2	Explain about personal protective equipment, its selection, safety performance & indicators and importance of housekeeping.
CO3	Explain different issues in construction industries.
CO4	Describe various hazards associated with different machines and mechanical material handling.
CO5	Utilise different hazard identification tools in different industries with the knowledge of different types of chemical hazards.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
MCN401.1	2	2	-	-	-	2	2	2	-	-	-	1	-	-
MCN401.2	2	1	2	-	1	1	1	1	-	-	-	1	-	-
MCN401.3	2	2	2	-	1	1	1	1	1	1	-	1	-	-
MCN401.4	2	2	2	-	1	1	1	1	1	1	-	1	-	-
MCN401.5	2	2	2	1	1	1	1	1	1	1	-	1	-	-
Average	2.0	1.8	2.0	1.0	1.0	1.2	1.2	1.2	1.0	1.0	0.0	1.0	0.0	0.0

Rajitha. K. V

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 7

Course Name : SEMINAR - Course Code : CSQ413

Course Outcome Number	Course Outcome Title
CO1	Identify academic documents from the literature which are related to her/his areas of interest
CO2	Read and apprehend an academic document from the literature which is related to her/ his areas of interest
CO3	Prepare a presentation about an academic document
CO4	Give a presentation about an academic document
CO5	Prepare a technical report

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSQ413.1	2	2	1	1	-	2	1	-	-	-	-	3	3	1
CSQ413.2	3	3	2	3	-	2	1	-	-	-	-	3	3	1
CSQ413.3	3	2	-	-	3	-	-	1	-	2	-	3	2	-
CSQ413.4	3	-	-	-	2	-	-	1	-	3	-	3	2	1
CSQ413.5	3	3	3	3	2	2	-	2	-	3	-	3	2	1
Average	2.8	2.5	2.0	2.33	2.33	2.0	1.0	1.33	0.0	2.67	0.0	3.0	2.4	1.0

1.1/1.1
Abstract
Abstract

Sreeraji
Dr.

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Director of Computer Science and Engineering
Government Engineering College, Kozhikode

Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 7

Course Name : COMPILER LAB - Course Code : CSL411 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Implement lexical analyzer using the tool LEX.
CO2	Implement Syntax analyzer using the tool YACC.
CO3	Design NFA and DFA for a problem and write programs to perform operations on it.
CO4	Design and Implement Top-Down parsers.
CO5	Design and Implement Bottom-Up parsers.
CO6	Implement intermediate code for expressions.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSL411.1	2	2	2	2	2	-	-	2	-	2	-	2	2	2
CSL411.2	2	2	2	2	2	-	-	2	-	2	-	2	2	2
CSL411.3	2	2	2	2	-	-	-	2	-	2	-	2	2	2
CSL411.4	2	2	2	2	-	-	-	2	-	2	-	2	2	2
CSL411.5	2	2	2	2	-	-	-	2	-	2	-	2	2	2
CSL411.6	2	2	2	2	-	-	-	2	-	2	-	2	2	2
Average	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0

Sreevani Raju

Anil Thomas no 210118


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**Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme**

Semester : 6

Course Name : COMPILER DESIGN - Course Code : CST302 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain the phases in compilation process (lexical analysis, syntax analysis, semantic analysis, intermediate code generation, code optimization and code generation) and model a lexical analyzer
CO2	Model language syntax using Context Free Grammar and develop parse tree representation using leftmost and rightmost derivations
CO3	Compare different types of parsers (Bottom-up and Top-down) and construct parser for a given grammar
CO4	Build Syntax Directed Translation for a context free grammar, compare various storage allocation strategies and classify intermediate representations
CO5	Illustrate code optimization and code generation techniques in compilation

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST302.1	3	2	2	2	2	-	-	-	-	-	-	2	2	2
CST302.2	3	2	2	2	2	-	-	-	-	-	-	2	2	2
CST302.3	3	2	2	2	2	-	-	-	-	-	-	2	2	2
CST302.4	3	2	2	2	2	-	-	-	-	-	-	2	2	2
CST302.5	3	2	2	2	2	-	-	-	-	-	-	2	2	2
Average	3.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0

verified by Denoll Daniel.
QuilFair!

Dr. Jeeva
Dr. Jeeva


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**Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme**

Semester : 6

Course Name : COMPUTER GRAPHICS AND IMAGE PROCESSING - Course Code : CST304 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Describe the working principles of graphics devices
CO2	Illustrate line drawing, circle drawing and polygon filling algorithms
CO3	Demonstrate geometric representations, transformations on 2D & 3D objects, clipping algorithms and projection algorithms
CO4	Summarize visible surface detection methods
CO5	Summarize the concepts of digital image representation, processing and demonstrate pixel relationships
CO6	Solve image enhancement and segmentation problems using spatial domain techniques

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST304.1	2	-	-	-	-	-	-	-	-	-	-	2	2	1
CST304.2	2	3	3	2	-	-	-	-	-	-	-	2	2	3
CST304.3	2	3	3	2	-	-	-	-	-	-	-	2	2	3
CST304.4	2	-	2	-	-	-	-	-	-	-	-	2	1	2
CST304.5	2	2	2	1	-	-	-	-	-	-	-	-	1	2
CST304.6	2	3	2	2	-	3	-	-	-	-	-	2	2	3
Average	2.0	2.75	2.4	1.75	0.0	3.0	0.0	0.0	0.0	0.0	0.0	2.0	1.67	2.33

verified by *Demoll David*
deudavid

Savitri

Asha Baby

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**Computer Science and Engineering
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2019 Scheme**

Semester : 6

Course Name : ALGORITHM ANALYSIS AND DESIGN - Course Code : CST306 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Analyze any given algorithm and express its time and space complexities in asymptotic notations.
CO2	Derive recurrence equations and solve it using Iteration, Recurrence Tree, Substitution and Master's Method to compute time complexity of algorithms.
CO3	Illustrate Graph traversal algorithms & applications and Advanced Data structures like AVL trees and Disjoint set operations.
CO4	Demonstrate Divide-and-conquer, Greedy Strategy, Dynamic programming, Branch-and Bound and Backtracking algorithm design techniques
CO5	Classify a problem as computationally tractable or intractable, and discuss strategies to address intractability
CO6	Identify the suitable design strategy to solve a given problem.

Sveeraji Narayanan

(Signature)

Devall David
classmate

(Signature)

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Kannur University, Kerala, India

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST306.1	3	3	2	3	1	1	-	-	-	-	-	3	2	3
CST306.2	3	3	3	3	-	-	-	-	-	-	-	3	2	3
CST306.3	3	3	3	3	-	-	-	-	-	-	-	3	2	3
CST306.4	3	3	3	3	-	-	-	-	-	-	-	3	2	3
CST306.5	2	2	-	-	-	-	-	-	-	-	-	3	2	3
CST306.6	3	3	3	3	1	-	-	1	-	-	-	3	2	3
Average	2.83	2.83	2.8	3.0	1	1	0.0	1	0.0	0.0	0.0	3.0	2.0	3.0

Sreevaji Nasayam



Penell David
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Dr. Jeyaraj DEVASTIA

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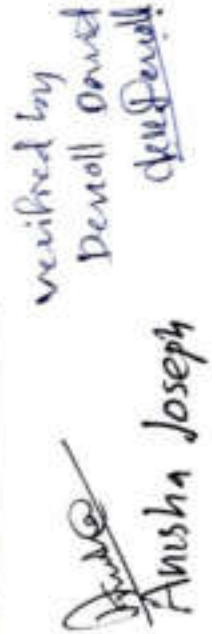
**Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme**

Semester : 6

Course Name : COMPREHENSIVE COURSE WORK - Course Code : CST308 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Comprehend the concepts of discrete mathematical structures
CO2	Comprehend the concepts and applications of data structures
CO3	Comprehend the concepts, functions and algorithms in Operating System
CO4	Comprehend the organization and architecture of computer systems
CO5	Comprehend the fundamental principles of database design and manipulation
CO6	Comprehend the concepts in formal languages and automata theory Cognitive Knowledge Level

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST308.1	3	3	-	-	-	-	-	-	-	-	-	3	2	2
CST308.2	3	3	-	-	-	-	-	-	-	-	-	3	2	2
CST308.3	3	3	-	-	-	-	-	-	-	-	-	3	2	2
CST308.4	3	3	-	-	-	-	-	-	-	-	-	3	2	2
CST308.5	3	3	-	-	-	-	-	-	-	-	-	3	3	2
CST308.6	3	3	-	-	-	-	-	-	-	-	-	3	2	2
Average	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	2.17	2.0



 verified by
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 Anisha Joseph
 Anisha Joseph

Computer Science and Engineering
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2019 Scheme

Semester : 6

Course Name : PROGRAMMING IN PYTHON - Course Code : CST362 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Write, test and debug Python programs
CO2	Illustrate uses of conditional (if, if-else and if-elif-else) and iterative (while and for) statements in Python programs.
CO3	Develop programs by utilizing the Python programming constructs such as Lists, Tuples, Sets and Dictionaries.
CO4	Develop graphical user interface for solutions using Python libraries.
CO5	Implement Object Oriented programs with exception handling.
CO6	Write programs in Python to process data stored in files by utilizing Numpy, Matplotlib, and Pandas.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST362.1	3	2	2	-	3	-	-	-	-	-	-	3	2	2
CST362.2	3	2	2	-	-	-	-	-	-	-	-	3	2	2
CST362.3	3	2	2	2	3	-	-	-	-	-	-	3	3	3
CST362.4	3	2	2	2	3	-	-	-	-	-	-	3	3	3
CST362.5	3	2	2	2	3	-	-	-	-	-	-	3	3	3
CST362.6	3	2	2	2	3	2	-	-	-	-	-	3	3	3
Average	3.0	2.0	2.0	2.0	3.0	2.0	0.0	0.0	0.0	0.0	0.0	3.0	2.67	2.67

Vidhya S S
Date: _____

Devall prasad
Date: _____

Computer Science and Engineering
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2019 Scheme
Semester : 6
Course Name : INDUSTRIAL ECONOMICS & FOREIGN TRADE - Course Code : HUT300 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain the problem of scarcity of resources and consumer behaviour, and to evaluate the impact of government policies on the general economic welfare.
CO2	Take appropriate decisions regarding volume of output and to evaluate the social cost of production.
CO3	Determine the functional requirement of a firm under various competitive conditions.
CO4	Examine the overall performance of the economy, and the regulation of economic fluctuations and its impact on various sections in the society.
CO5	Determine the impact of changes in global economic policies on the business opportunities of a firm.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
HUT300.1	2	-	-	-	-	-	-	-	-	-	3	-	-	-
HUT300.2	2	2	-	-	2	2	3	-	-	-	3	-	-	-
HUT300.3	2	2	1	-	-	-	-	-	-	-	3	-	-	-
HUT300.4	2	2	1	-	-	1	-	-	-	-	3	-	-	-
HUT300.5	2	2	1	-	-	-	-	-	-	-	3	-	-	-
Average	2.0	2.0	1.0	0.0	2.0	1.5	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0

Smita Swasthi Chandra
 verified.
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Chauhan

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Computer Science and Engineering

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2019 Scheme

Semester : 6

Course Name : NETWORKING LAB - Course Code : CSL332 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Use network related commands and configuration files in Linux Operating System
CO2	Develop network application programs and protocols
CO3	Analyze network traffic using network monitoring tools
CO4	Design and setup a network and configure different network protocols
CO5	Develop simulation of fundamental network concepts using a network simulator

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSL332.1	2	2	2	-	-	-	-	3	-	2	-	3	2	2
CSL332.2	3	3	3	3	-	-	-	3	-	2	-	3	3	3
CSL332.3	3	3	3	3	3	-	-	3	-	2	-	3	3	3
CSL332.4	3	3	3	3	3	2	-	3	-	2	-	3	3	3
CSL332.5	3	3	3	3	3	-	-	3	-	2	-	3	3	3
Average	2.8	2.8	2.8	3.0	3.0	2.0	0.0	3.0	0.0	2.0	0.0	3.0	2.8	2.8

Ms. Rangab

*Pandit Parit
Chaudhary*

Dr. [Signature]

Dept. of Computer Science & Engineering
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Computer Science and Engineering
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2019 Scheme

Semester : 6

Course Name : MINI PROJECT - Course Code : CSD334 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Identify technically and economically feasible problems
CO2	Identify and survey the relevant literature for getting exposed to related solutions and get familiarized with software development processes
CO3	Perform requirement analysis, identify design methodologies and develop adaptable & reusable solutions of minimal complexity by using modern tools & advanced programming techniques
CO4	Prepare technical report and deliver presentation
CO5	Apply engineering and management principles to achieve the goal of the project

CO - PO M	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSD334.1	3	3	3	3	-	3	3	3	3	3	3	3	2	2
CSD334.2	3	3	3	3	3	3	-	3	3	3	3	3	2	2
CSD334.3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CSD334.4	3	3	3	3	3	-	-	3	3	3	3	3	2	2
CSD334.5	3	3	3	3	3	3	3	3	3	-	3	3	3	3
Average	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.4	2.4



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Computer Science and Engineering

CO-PO Mapped Data

2019 Scheme

Semester : 5

Course Name : FORMAL LANGUAGES AND AUTOMATA THEORY - Course Code : CST301 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Classify a given formal language into Regular, Context-Free, Context Sensitive, Recursive or Recursively Enumerable.
CO2	Explain a formal representation of a given regular language as a finite state automaton, regular grammar, regular expression and Myhill-Nerode relation.
CO3	Design a Pushdown Automaton and a Context-Free Grammar for a given context-free language.
CO4	Design Turing machines as language acceptors or transducers.
CO5	Explain the notion of decidability.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST301.1	2	2	2	-	-	-	-	-	-	-	-	2	2	2
CST301.2	3	2	2	2	2	-	-	-	-	-	-	2	2	3
CST301.3	3	2	2	2	2	-	-	-	-	-	-	2	2	3
CST301.4	3	2	2	2	2	-	-	-	-	-	-	2	2	3
CST301.5	2	2	2	1	-	-	-	-	-	-	-	2	2	2
Average	2.6	2.0	2.0	1.75	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.6

Naama V.K

verified by
Denoll David
Denoll

Dr. *[Signature]*
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Computer Science and Engineering

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2019 Scheme

Semester : 5

Course Name : COMPUTER NETWORKS - Course Code : CST303 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain the features of computer networks, protocols, and network design models
CO2	Describe the fundamental characteristics of the physical layer and identify the usage in network communication
CO3	Explain the design issues of data link layer, link layer protocols, bridges and switches
CO4	Illustrate wired LAN protocols (IEEE 802.3) and wireless LAN protocols (IEEE 802.11)
CO5	Select appropriate routing algorithms, congestion control techniques, and Quality of Service requirements for a network
CO6	Illustrate the functions and protocols of the network layer, transport layer, and application layer in inter-networking

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST303.1	2	3	-	-	-	-	-	-	-	-	-	1	1	2
CST303.2	2	3	2	-	-	-	-	-	-	-	-	2	1	2
CST303.3	2	1	3	-	-	-	-	-	-	-	-	2	2	2
CST303.4	2	1	3	-	-	-	-	-	-	-	-	3	2	3
CST303.5	2	3	3	2	-	-	-	-	-	-	-	2	2	3
CST303.6	2	1	1	-	-	2	-	-	-	-	-	3	1	1
Average	2.0	2.0	2.4	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.17	1.5	2.17


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Computer Science and Engineering
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2019 Scheme

Semester : 5

Course Name : SYSTEM SOFTWARE - Course Code : CST305 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Distinguish softwares into system and application software categories.
CO2	Identify standard and extended architectural features of machines.
CO3	Identify machine dependent features of system software
CO4	Identify machine independent features of system software.
CO5	Design algorithms for system softwares and analyze the effect of data structures.
CO6	Understand the features of device drivers and editing & debugging tools.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST305.1	2	2	-	-	2	-	-	-	-	-	-	2	3	1
CST305.2	3	3	3	-	-	-	-	-	-	-	-	3	2	1
CST305.3	3	3	3	-	-	-	-	-	-	-	-	3	3	1
CST305.4	2	2	-	-	-	-	-	-	-	-	-	2	3	1
CST305.5	3	3	3	3	-	-	-	-	-	-	-	3	3	3
CST305.6	2	2	-	-	2	-	-	-	-	-	-	2	2	3
Average	2.5	2.5	3.0	3.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.67	1.67

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 5

Course Name : MICROPROCESSORS AND MICROCONTROLLERS - Course Code : CST307 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Illustrate the architecture, modes of operation and addressing modes of microprocessors
CO2	Develop 8086 assembly language programs.
CO3	Demonstrate interrupts, its handling and programming in 8086.
CO4	Illustrate how different peripherals (8255,8254,8257) and memory are interfaced with microprocessors.
CO5	Outline features of microcontrollers and develop low level programs.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST307.1	2	2	2	-	-	-	-	-	-	-	-	2	3	1
CST307.2	2	3	3	3	-	-	-	-	-	-	-	3	3	1
CST307.3	2	3	3	3	-	-	-	-	-	-	-	3	3	1
CST307.4	2	3	3	2	-	-	-	-	-	-	-	3	3	2
CST307.5	2	3	3	3	-	-	-	-	-	-	-	3	3	2
Average	2.0	2.8	2.8	2.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	3.0	1.4

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 5

Course Name : MANAGEMENT OF SOFTWARE SYSTEMS - Course Code : CST309 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Demonstrate Traditional and Agile Software Development approaches
CO2	Prepare Software Requirement Specification and Software Design for a given problem.
CO3	Justify the significance of design patterns and licensing terms in software development, prepare testing, maintenance and DevOps strategies for a project.
CO4	Make use of software project management concepts while planning, estimation, scheduling, tracking and change management of a project, with a traditional/agile framework.
CO5	Utilize SQA practices, Process Improvement techniques and Technology advancements in cloud based software models and containers & microservices

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST309.1	3	2	1	1	-	1	-	-	-	-	-	3	3	3
CST309.2	3	3	2	2	-	1	-	-	-	3	1	3	3	3
CST309.3	3	3	2	3	-	-	-	1	-	3	2	3	2	2
CST309.4	3	3	2	3	-	-	-	-	3	3	3	3	2	2
CST309.5	3	2	3	3	-	2	-	-	-	-	-	3	3	3
Average	3.0	2.6	2.0	2.4	0.0	1.33	0.0	1.0	3.0	3.0	2.0	3.0	2.6	2.6

verified by
Denrol David
Denrol David

Audith Thomas vs *Shail*

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 Dept. ...
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Computer Science and Engineering

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2019 Scheme

Semester : 5

Course Name : DISASTER MANAGEMENT - Course Code : MCN301 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Define and use various terminologies in use in disaster management parlance and organise each of these terms in relation to the disaster management cycle
CO2	Distinguish between different hazard types and vulnerability types and do vulnerability assessment
CO3	Identify the components and describe the process of risk assessment, and apply appropriate methodologies to assess risk
CO4	Explain the core elements and phases of Disaster Risk Management and develop possible measures to reduce disaster risks across sector
CO5	Identify factors that determine the nature of disaster response and discuss the various disaster response actions
CO6	Explain the various legislations and best practices for disaster management and risk reduction at national and international level

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
MCN301.1		2		-	-	2				2		2	-	-
MCN301.2	2	3	2	-	2	2	3			3		2	-	-
MCN301.3	2	3	3	2	2	2	3			3		2	-	-
MCN301.4	3	3	3	-	2	2	3					2	-	-
MCN301.5	3	3	-	-	2	2	3					2	-	-
MCN301.6	3	-	-	-	-	2	3	3				2	-	-
Average	3	2.8	2.6	2	2	2	3	3	0.0	2.6	0.0	2	0.0	0.0

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2019 Scheme

Semester : 5

Course Name : SYSTEM SOFTWARE AND MICROPROCESSORS LAB - Course Code : CSL331 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Develop 8086 and 8051 programs and execute it using a microprocessor/microcontroller kit.
CO2	Develop 8086 programs and, debug and execute it using MASM assemblers
CO3	Develop and execute programs to interface stepper motor, 8255, 8279 and digital to analog converters with 8086 trainer kit (Apply)
CO4	Implement and execute different scheduling and paging algorithms in OS
CO5	Design and implement assemblers, Loaders and macroprocessors.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSL331.1	2	3	3	3	-	-	-	1	-	1	-	1	3	1
CSL331.2	2	3	3	3	-	-	-	1	-	1	-	1	3	1
CSL331.3	2	3	3	3	-	-	-	1	-	1	-	1	3	1
CSL331.4	2	3	3	3	-	-	-	1	-	1	-	1	3	1
CSL331.5	2	3	3	3	-	-	-	1	-	1	-	1	3	1
Average	2.0	3.0	3.0	3.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	1.0	3.0	1.0

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2019 Scheme

Semester : 4

Course Name : COMPUTER ORGANIZATION AND ARCHITECTURE - Course Code : CST202 (THEORY)

Course Outcome Title

CO1 Recognize and express the relevance of basic components, I/O organization and pipelining schemes in a digital computer (Cognitive knowledge: Understand)

CO2 Explain the types of memory systems and mapping functions used in memory systems (Cognitive Knowledge Level: Understand)

CO3 Demonstrate the control signals required for the execution of a given instruction (Cognitive Knowledge Level: Apply)

CO4 Illustrate the design of Arithmetic Logic Unit and explain the usage of registers in it (Cognitive Knowledge Level: Apply)

CO5 Explain the implementation aspects of arithmetic algorithms in a digital computer (Cognitive Knowledge Level: Apply)

CO6 Develop the control logic for a given arithmetic problem (Cognitive Knowledge Level: Apply)

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST202.1	3	1	1	1	-	-	-	-	-	-	-	2	1	1
CST202.2	2	3	2	1	-	2	-	1	-	1	-	3	1	1
CST202.3	3	2	2	2	-	-	-	-	-	1	-	2	2	2
CST202.4	2	3	3	2	-	-	-	-	-	1	-	2	2	3
CST202.5	2	2	2	-	-	-	-	-	-	1	-	2	2	2
CST202.6	2	3	3	3	-	-	-	-	-	-	-	2	1	2
Average	2.33	2.33	2.17	1.8	0	2	0	1	0	1	0	2.17	1.5	1.83

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Computer Science and Engineering

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2019 Scheme

Semester : 4

Course Name : OPERATING SYSTEMS - Course Code : CST206 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain the relevance, structure and functions of Operating Systems in computing devices. (Cognitive knowledge: Understand)
CO2	Illustrate the concepts of process management and process scheduling mechanisms employed in Operating Systems. (Cognitive knowledge: Understand)
CO3	Explain process synchronization in Operating Systems and illustrate process synchronization mechanisms using Mutex Locks, Semaphores and Monitors (Cognitive knowledge: Understand)
CO4	Explain any one method for detection, prevention, avoidance and recovery for managing deadlocks in Operating Systems. (Cognitive knowledge: Understand)
CO5	Explain the memory management algorithms in Operating Systems. (Cognitive knowledge: Understand)
CO6	Explain the security aspects and algorithms for file and storage management in Operating Systems. (Cognitive knowledge: Understand)

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST206.1	1	1	1	-	-	-	-	-	-	1	-	2	1	1
CST206.2	2	2	1	1	-	-	-	-	-	2	-	2	1	1
CST206.3	2	2	2	2	-	-	-	-	-	2	-	2	1	1
CST206.4	2	2	2	2	-	-	-	-	-	2	-	2	1	1
CST206.5	2	2	2	2	-	-	-	-	-	2	-	2	1	1
CST206.6	2	2	2	2	-	-	-	-	-	2	-	2	1	1
Average	1.83	1.83	1.67	1.8	0	0	0	0	0	1.83	0	2	1	1

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2019 Scheme

Semester : 4

Course Name : DATABASE MANAGEMENT SYSTEMS - Course Code : CST204 (THEORY)

Course Outcome Number	Course Outcome Title													
CO1	Summarize and exemplify fundamental nature and characteristics of database systems (Cognitive Knowledge Level: Understand)													
CO2	Model real world scenarios given as informal descriptions, using Entity Relationship diagrams. (Cognitive Knowledge Level: Apply)													
CO3	Model and design solutions for efficiently representing and querying data using relational model (Cognitive Knowledge Level: Analyze)													
CO4	Demonstrate the features of indexing and hashing in database applications (Cognitive Knowledge Level: Apply)													
CO5	Discuss and compare the aspects of Concurrency Control and Recovery in Database systems (Cognitive Knowledge Level: Apply)													
CO6	Explain various types of NoSQL databases (Cognitive Knowledge Level: Understand)													
CO-PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST204.1	3	3	3	3	3	-	-	-	3	3	3	3	3	3
CST204.2	3	3	3	3	3	-	-	-	3	3	3	3	3	3
CST204.3	3	3	3	3	3	-	-	-	3	3	3	3	3	3
CST204.4	3	3	3	-	-	-	-	-	-	2	-	3	3	3
CST204.5	3	3	3	-	-	-	-	-	-	3	-	3	3	3
CST204.6	3	3	3	-	3	-	-	-	-	3	-	3	3	3
Average	3	3	3	3	3	0	0	0	3	2.83	3	3	3	3


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2019 Scheme

Semester : 4

Course Name : OPERATING SYSTEMS LAB - Course Code : CSL204 (LAB)

Course Outcome Title															
Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	
CO1	Illustrate the use of systems calls in Operating Systems. (Cognitive knowledge: Understand)														
CO2	Implement Process Creation and Inter Process Communication in Operating Systems. (Cognitive knowledge: Apply)														
CO3	Implement First Come First Served, Shortest Job First, Round Robin and Prioritybased CPU Scheduling Algorithms. (Cognitive knowledge: Apply)														
CO4	Illustrate the performance of First In First Out, Least Recently Used and Least Frequently Used Page Replacement Algorithms. (Cognitive knowledge: Apply)														
CO5	Implement modules for Deadlock Detection and Deadlock Avoidance in Operating Systems. (Cognitive knowledge: Apply)														
CO6	Implement modules for Storage Management and Disk Scheduling in Operating Systems. (Cognitive knowledge: Apply)														
CO - PO Matrix															
CSL204.1	2	1	1	-	-	-	-	1	1	-	-	1	2	2	
CSL204.2	2	2	1	-	-	-	-	2	2	-	-	2	2	2	
CSL204.3	2	1	2	1	-	-	-	2	2	-	-	2	2	2	
CSL204.4	2	2	2	2	-	-	-	2	2	-	-	2	2	2	
CSL204.5	2	2	2	2	-	-	-	2	2	-	-	2	2	2	
CSL204.6	2	2	2	2	-	-	-	2	2	-	-	2	2	2	
Average	2	1.67	1.67	1.75	0	0	0	1.83	1.83	0	0	1.83	2	2	

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2019 Scheme

Semester : 4

Course Name : GRAPH THEORY - Course Code : MAT206 (THEORY)

Course Outcome Title															
Course Outcome Number	Course Outcome Title	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	Explain vertices and their properties, types of paths, classification of graphs and trees & their properties. (Cognitive Knowledge Level: Understand)														
CO2	Demonstrate the fundamental theorems on Eulerian and Hamiltonian graphs. (Cognitive Knowledge Level: Understand)														
CO3	Illustrate the working of Prim's and Kruskal's algorithms for finding minimum cost spanning tree and Dijkstra's and Floyd-Warshall algorithms for finding shortest paths. (Cognitive Knowledge Level: Apply)														
CO4	Explain planar graphs, their properties and an application for planar graphs. (Cognitive Knowledge Level: Apply)														
CO5	Illustrate how one can represent a graph in a computer. (Cognitive Knowledge Level: Apply)														
CO6	Explain the Vertex Color problem in graphs and illustrate an example application for vertex coloring. (Cognitive Knowledge Level: Apply)														
CO - PO Matrix															
MAT206.1		1	2	2	-	-	-	-	-	-	1	-	1	1	1
MAT206.2		2	2	2	2	-	-	-	-	-	1	-	1	1	2
MAT206.3		2	2	2	2	-	-	-	-	-	1	-	1	3	3
MAT206.4		2	1	2	2	-	-	-	-	-	1	-	1	2	2
MAT206.5		2	1	2	-	-	-	-	-	-	1	-	2	1	2
MAT206.6		2	2	2	-	-	1	-	-	-	1	-	1	2	2
Average		1.83	1.67	2	2	0	1	0	0	0	1	0	1.17	1.67	2

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2019 Scheme

Semester : 4

Course Name : CONSTITUTION OF INDIA - Course Code : MCN202 (THEORY)

Course Outcome Title

- CO1 Explain the background of the present constitution of India and features
- CO2 Utilize the fundamental rights and duties
- CO3 Understand the working of the union executive, parliament and judiciary
- CO4 Understand the working of the state executive, legislature and judiciary
- CO5 Utilize the special provisions and statutory institutions
- CO6 Show national and patriotic spirit as responsible citizens of the country

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
MCN202.1	-	-	-	-	-	2	2	2	-	2	-	-	-	-
MCN202.2	-	-	-	-	-	3	3	3	-	3	-	-	-	-
MCN202.3	-	-	-	-	-	3	2	3	-	3	-	-	-	-
MCN202.4	-	-	-	-	-	3	2	3	-	3	-	-	-	-
MCN202.5	-	-	-	-	-	3	2	3	-	3	-	-	-	-
MCN202.6	-	-	-	-	-	3	3	3	-	3	-	-	-	-
Average	0	0	0	0	0	2.83	2.33	2.83	0	2.67	0	0	0	0


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2019 Scheme

Semester : 4

Course Name : DIGITAL LAB - Course Code : CSL202 (LAB)

Course Outcome Title

CO1 Design and implement combinational logic circuits using Logic Gates (Cognitive Knowledge Level: Apply)

CO2 Design and implement sequential logic circuits using Integrated Circuits (Cognitive Knowledge Level: Apply)

CO3 Simulate functioning of digital circuits using programs written in a Hardware Description Language (Cognitive Knowledge Level: Apply)

CO4 Function effectively as an individual and in a team to accomplish a given task of designing and implementing digital circuits (Cognitive Knowledge Level: Apply)

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSL202.1	1	2	2	2	-	-	-	2	-	-	-	1	1	2
CSL202.2	1	2	2	2	-	-	-	2	-	-	-	1	2	2
CSL202.3	2	2	2	2	3	-	-	2	2	-	-	1	2	2
CSL202.4	1	1	3	2	2	-	-	2	2	-	-	1	1	1
Average	1.25	1.75	2.25	2	2.5	0	0	2	2	0	0	1	1.5	1.75

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2019 Scheme

Semester : 4

Course Name : PROFESSIONAL ETHICS - Course Code : HUT200 (THEORY)

Course Outcome Number		Course Outcome Title													
CO1	Understand the core values that shape the ethical behaviour of a professional.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO2	Adopt a good character and follow an ethical life	-	-	-	-	-	-	-	2	-	-	2	-	-	-
CO3	Explain the role and responsibility in technological development by keeping personal ethics and legal ethics	-	-	-	-	-	-	-	2	-	-	2	-	-	-
CO4	Solve moral and ethical problems through exploration and assessment by established experiments	-	-	-	-	-	-	-	3	-	-	2	-	-	-
CO5	Apply the knowledge of human values and social values to contemporary ethical values and global issues.	-	-	-	-	-	-	-	3	-	-	2	-	-	-
Average		0	0	0	0	0	0	0	2.6	0	0	2	0	0	0

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
HUT200.1	-	-	-	-	-	-	-	2	-	-	2	-	-	-
HUT200.2	-	-	-	-	-	-	-	2	-	-	2	-	-	-
HUT200.3	-	-	-	-	-	-	-	3	-	-	2	-	-	-
HUT200.4	-	-	-	-	-	-	-	3	-	-	2	-	-	-
HUT200.5	-	-	-	-	-	-	-	3	-	-	2	-	-	-
Average	0	0	0	0	0	0	0	2.6	0	0	2	0	0	0

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Computer Science and Engineering
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2019 Scheme

Semester : 3

Course Name : DATA STRUCTURES - Course Code : CST201 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Design an algorithm for a computational task and calculate the time/space complexities of that algorithm
CO2	Identify the suitable data structure (array or linked list) to represent a data item required to be processed to solve a given computational problem and write an algorithm to find the solution of the computational problem
CO3	Write an algorithm to find the solution of a computational problem by selecting an appropriate data structure (binary tree/graph) to represent a data item to be processed
CO4	Store a given dataset using an appropriate Hash Function to enable efficient access of data in the given set
CO5	Select appropriate sorting algorithms to be used in specific circumstances
CO6	Design and Implement Data Structures for solving real world problems efficiently

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST201.1	3	2	2	1	-	1	-	-	-	-	-	3	1	3
CST201.2	3	2	2	1	-	1	-	-	-	-	-	3	1	3
CST201.3	3	2	2	1	-	1	-	-	-	-	-	3	1	3
CST201.4	3	2	2	1	-	1	-	-	-	-	-	3	1	3
CST201.5	3	2	3	2	-	1	-	-	-	-	-	3	1	3
CST201.6	3	3	3	3	-	3	-	-	-	-	-	3	1	3
Average	3.0	2.17	2.33	1.5	0	1.5	0.0	0.0	0	0.0	0.0	3.0	1	3.0

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2019 Scheme

Semester : 3

Course Name : OBJECT ORIENTED PROGRAMMING USING JAVA - Course Code : CST205 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Write Java programs using the object oriented concepts - classes, objects, constructors, data hiding, inheritance and polymorphism
CO2	Utilise datatypes, operators, control statements, built in packages & interfaces, Input/Output Streams and Files in Java to develop programs
CO3	Illustrate how robust programs can be written in Java using exception handling mechanism
CO4	Write application programs in Java using multithreading and database connectivity
CO5	Write Graphical User Interface based application programs by utilising event handling features and Swing in Java
CO6	Practically apply knowledge of software engineering methods, such as object-oriented analysis and design methods with a clear emphasis on UML

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST205.1	3	2	2	2	2	-	-	-	3	-	-	3	3	3
CST205.2	3	2	2	2	2	-	-	-	3	-	-	3	3	3
CST205.3	3	2	2	2	2	-	-	-	3	3	-	3	3	3
CST205.4	3	2	2	2	2	-	-	-	3	-	-	3	3	3
CST205.5	3	2	2	2	2	-	-	-	3	-	-	3	3	3
CST205.6	3	2	2	2	2	-	-	-	3	-	-	3	3	3
Average	3	2	2	2	2.0	0.0	0.0	0.0	3	3.0	0.0	3	3	3

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2019 Scheme

Semester : 3

Course Name : LOGIC SYSTEM DESIGN - Course Code : CST203 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Illustrate decimal, binary, octal, hexadecimal and BCD number systems, perform conversions among them and do the operations - complementation, addition, subtraction, multiplication and division on binary numbers
CO2	Simplify a given Boolean Function and design a combinational circuit to implement the simplified function using Digital Logic Gates
CO3	Design combinational circuits - Adders, Code Convertors, Decoders, Magnitude Comparators, Parity Generator/Checker and design the Programmable Logic Devices -
CO4	Design sequential circuits - Registers, Counters and Shift Registers
CO5	Use algorithms to perform addition and subtraction on binary, BCD and floating point numbers

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CST203.1	1	1	-	-	-	-	-	-	1	-	-	1	-	1
CST203.2	3	3	3	3	3	2	-	-	3	-	-	3	-	3
CST203.3	3	3	3	3	3	2	-	-	3	-	-	3	3	3
CST203.4	3	3	3	3	3	2	-	-	3	-	-	1	3	3
CST203.5	1	1	1	-	-	-	-	-	1	-	-	1	-	2
Average	2.2	2.2	2.5	3.0	3.0	2.0	0.0	0.0	2.2	0.0	0.0	1.8	3.0	2.4

Handwritten notes:
 Help
 Design Logic

Handwritten signature:
 Chandan


 Dept. of Computer Science and Engineering
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Computer Science and Engineering
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2019 Scheme

Semester : 3

Course Name : DISCRETE MATHEMATICAL STRUCTURES - Course Code : MAT203 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Learn the fundamentals of propositional logic and predicate calculus and apply it to test the validity of statements
CO2	Learn the fundamentals of enumeration or counting techniques and method of arrangements and derangements
CO3	Learn the ideas of relation functions equivalence relation POSET and it's application
CO4	Understand recurrence relation and apply the method of solving different type of recurrence relation using generation functions
CO5	Understand fundamentals of Algebraic structures it's properties such as monoid groups and ring

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
MAT203.1	3	2	3	2	1	-	-	-	-	2	-	1	-	-
MAT203.2	3	2	3	2	3	-	-	-	-	2	-	2	-	-
MAT203.3	3	2	2	-	2	-	-	-	-	2	-	2	-	-
MAT203.4	3	2	3	1	-	-	-	-	-	2	-	-	-	-
MAT203.5	3	2	2	1	-	-	-	-	-	2	-	1	-	-
Average	3.0	2.0	2.6	1.5	2.0	0.0	0.0	0.0	0.0	2.0	0.0	1.5	0.0	0.0

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Computer Science and Engineering

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2019 Scheme


Semester : 3

Course Name : DESIGN AND ENGINEERING - Course Code : EST200 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Explain the different concepts and principles involved in design engineering
CO2	Apply design thinking while learning and practicing engineering
CO3	Develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
EST200.1	2	1	-	-	-	-	1	-	-	1	-	-	2	2
EST200.2	-	2	-	-	-	1	-	1	-	-	-	2	2	2
EST200.3	-	-	2	-	-	1	1	-	2	2	-	1	2	2
Average	2.0	1.5	2.0	0.0	0.0	1.0	1.0	1.0	2.0	1.5	0.0	1.5	2.0	2.0

Dr Manoj V.Thomas


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Computer Science and Engineering
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2019 Scheme

Semester : 3

Course Name : SUSTAINABLE ENGINEERING - Course Code : MCN201 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Understand the relevance and the concept of sustainability and the global initiatives in this direction
CO2	Explain the different types of environmental pollution problems and their sustainable solutions
CO3	Discuss the environmental regulations and standards
CO4	Outline the concepts related to conventional and non-conventional energy
CO5	Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
MCN201.1	-	-	-	-	-	2	3	-	-	-	-	3	-	-
MCN201.2	-	-	-	-	-	2	3	-	-	-	-	3	-	-
MCN201.3	-	-	-	-	-	2	3	-	-	-	-	3	-	-
MCN201.4	-	-	-	-	-	2	3	-	-	-	-	3	-	-
MCN201.5	-	-	-	-	-	2	3	-	-	-	-	3	-	-
Average	0.0	0.0	0.0	0.0	0.0	2.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0

Angel Vaughn

Denell David
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Computer Science and Engineering

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2019 Scheme

Semester : 3

Course Name : DATA STRUCTURES LAB - Course Code : CSL201 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Write a time/space efficient program using arrays/linked lists/trees/graphs to provide necessary functionalities meeting a given set of user requirements
CO2	Write a time/space efficient program to sort a list of records based on a given key in the record
CO3	Examine a given Data Structure to determine its space complexity and time complexities of operations on it
CO4	Design and implement an efficient data structure to represent given data
CO5	Write a time/space efficient program to convert an arithmetic expression from one notation to another
CO6	Write a program using linked lists to simulate Memory Allocation and Garbage Collection

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSL201.1	3	2	3	2	-	1	-	2	2	2	-	2	2	2
CSL201.2	3	2	3	2	-	-	-	2	2	2	-	2	2	2
CSL201.3	3	2	3	2	-	-	-	2	2	2	-	2	2	2
CSL201.4	3	2	3	2	-	-	-	2	2	2	-	2	2	2
CSL201.5	3	2	3	2	-	-	-	2	2	2	-	2	2	2
CSL201.6	3	2	3	2	-	-	-	2	2	2	-	2	2	2
Average	3.0	2.0	3.0	2.0	0.0	1.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0

Vidhya SS

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Computer Science and Engineering

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2019 Scheme

Semester : 3

Course Name : OBJECT ORIENTED PROGRAMMING LAB (IN JAVA) - Course Code : CSL203 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Implement the Object Oriented concepts - constructors, inheritance, method overloading & overriding and polymorphism in Java
CO2	Implement programs in Java which use datatypes, operators, control statements, built in packages & interfaces, Input/Output streams and Files
CO3	Implement robust application programs in Java using exception handling
CO4	Implement application programs in Java using multithreading and database connectivity
CO5	Implement Graphical User Interface based application programs by utilizing event handling features and Swing in Java

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CSL203.1	3	2	2	2	2	-	-	3	3	1	-	3	3	3
CSL203.2	3	2	2	2	2	-	-	3	3	1	-	3	3	3
CSL203.3	3	2	2	2	2	-	-	3	3	1	-	3	3	3
CSL203.4	3	2	2	2	2	-	-	3	3	1	-	3	3	3
CSL203.5	3	2	2	2	2	-	-	3	3	1	-	3	3	3
Average	3.0	2.0	2.0	2.0	2.0	0.0	0.0	3.0	3.0	1.0	0.0	3.0	3.0	3.0

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Ms. Pooja B

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 2

Course Name : VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS - Course Code : MAT102 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Apply the concept of vector functions and learn to work with conservative vector field
CO2	Apply computing integrals of scalar and vector field over surfaces in three-dimensional space
CO3	Solve homogeneous and non-homogeneous linear differential equation with constant coefficients
CO4	Apply Laplace transforms to solve physical problems arising in engineering
CO5	Apply Fourier transforms to solve physical problems arising in engineering

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
MAT102.1	3	3	3	3	2	1	-	-	1	2	-	2	-	-
MAT102.2	3	3	3	3	2	1	-	-	1	2	-	2	-	-
MAT102.3	3	3	3	3	2	1	-	-	1	2	-	2	-	-
MAT102.4	3	3	3	3	2	1	-	-	1	2	-	2	-	-
MAT102.5	3	3	3	3	2	1	-	-	1	2	-	2	-	-
Average	3.0	3.0	3.0	3.0	2.0	1.0	0.0	0.0	1.0	2.0	0.0	2.0	0.0	0.0


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Computer Science and Engineering
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2019 Scheme

Semester : 2

Course Name : ENGINEERING PHYSICS - Course Code : PHT100 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Compute the quantitative aspects of waves and oscillations in engineering systems
CO2	Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments
CO3	Analyze the behaviour of matter in the atomic and subatomic level through the principles of quantum mechanics to perceive the microscopic processes in electronic devices
CO4	Classify the properties of magnetic materials and apply vector calculus to static magnetic fields and use Maxwell's equations to diverse engineering problems
CO5	Analyze the principles behind various superconducting applications, explain the working of solid state lighting devices and fibre optic communication system

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
PHT100.1	3	2	-	-	-	-	-	1	2	-	-	1	-	-
PHT100.2	3	2	-	-	-	-	-	1	2	-	-	1	-	-
PHT100.3	3	2	-	-	-	-	-	1	2	-	-	1	-	-
PHT100.4	3	1	-	-	-	-	-	1	2	-	-	1	-	-
PHT100.5	3	1	-	-	-	-	-	1	2	-	-	1	-	-
Average	3.0	1.6	0.0	0.0	0.0	0.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0	0.0

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2019 Scheme

Semester : 2

Course Name : PROGRAMMING IN C - Course Code : EST102

Course Outcome Number	Course Outcome Title
CO1	Analyze a computational problem and develop an algorithm/flowchart to find its solution
CO2	Develop readable* C programs with branching and looping statements, which uses Arithmetic, Logical, Relational or Bitwise operators
CO3	Write readable C programs with arrays, structure or union for storing the data to be processed
CO4	Divide a given computational problem into a number of modules and develop a readable multi-function C program by using recursion if required, to find the solution to the computational problem
CO5	Write readable C programs which use pointers for array processing and parameter passing
CO6	Develop readable C programs with files for reading input and storing output
CO7	Understand the basics of computer hardware and software.

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
EST102.1	3	3	3	2	-	2	-	-	3	3	2	2	2	2
EST102.2	3	3	3	3	3	-	-	-	3	3	2	3	2	2
EST102.3	3	3	3	3	3	-	-	-	3	3	2	3	2	2
EST102.4	3	3	3	3	3	-	-	-	3	3	2	3	2	2
EST102.5	3	3	3	3	3	-	-	-	3	3	2	3	2	2
EST102.6	3	3	3	3	3	-	-	-	3	3	2	3	2	2
EST102.7	2	2	2	2	-	-	-	-	2	2	-	2	2	-
Average	2.86	2.86	2.86	2.71	3.0	2.0	0.0	0.0	2.86	2.86	2.0	2.71	2.0	2.0

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Computer Science and Engineering
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2019 Scheme

Semester : 2

Course Name : ENGINEERING GRAPHICS - Course Code : EST110 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Draw the projection of points and lines located in different quadrants
CO2	Prepare multiview orthographic projections of objects by visualizing them in different positions
CO3	Draw sectional views and develop surfaces of a given object
CO4	Prepare pictorial drawings using the principles of isometric and perspective projections to visualize objects in three dimensions
CO5	Convert 3D views to orthographic views and vice versa
CO6	Obtain multiview projections and solid models of objects using CAD tools

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
EST110.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
EST110.2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
EST110.3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
EST110.4	3	-	-	-	-	-	-	-	-	1	-	-	-	-
EST110.5	3	-	-	-	-	-	-	-	-	2	-	-	-	-
EST110.6	3	-	-	-	-	-	-	-	-	3	-	-	-	-
Average	3.0	1.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0

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Computer Science and Engineering
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2019 Scheme

Semester : 2

Course Name : ELECTRICAL & ELECTRONICS WORKSHOP - Course Code : ESL130 (LAB)

Course Outcome	Course Outcome Title
CO1	Apply fundamental concepts and circuit laws to solve simple DC electric and magnetic circuits
CO2	Develop and solve models of magnetic circuits
CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits in steady state
CO4	Describe working of a voltage amplifier
CO5	Outline the principle of an electronic instrumentation system
CO6	Explain the principle of radio and cellular communication

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
ESL130.1	-	-	-	-	-	3	-	-	-	-	-	1	-	-
ESL130.2	2	-	-	-	-	-	-	-	-	1	-	-	-	-
ESL130.3	2	-	-	1	-	1	-	1	2	2	-	2	-	-
ESL130.4	3	-	-	-	-	-	-	-	-	-	-	2	-	-
ESL130.5	3	-	-	-	2	-	-	-	-	-	-	2	-	-
ESL130.6	3	-	-	-	2	-	-	-	-	-	-	1	-	-
ESL130.7	-	-	-	-	-	-	-	-	3	2	-	2	-	-
Average	2.6	0.0	0.0	1.0	2.0	2.0	0.0	1.0	2.5	1.67	0.0	1.67	0.0	0.0

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(Signature)

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Computer Science and Engineering
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2019 Scheme

Semester : 2

Course Name : PROFESSIONAL COMMUNICATION - Course Code : HUN102 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Develop vocabulary and language skills relevant to engineering as a profession
CO2	Analyze, interpret and effectively summarize a variety of textual content
CO3	Create effective technical presentations
CO4	Discuss a given technical/non-technical topic in a group setting and arrive at generalizations/consensus
CO5	Identify drawbacks in listening patterns and apply listening techniques for specific needs
CO6	Create professional and technical documents that are clear and adhering to all the necessary conventions

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
HUN102.1	-	-	-	-	-	-	-	-	-	3	-	2	-	-
HUN102.2	-	-	-	-	-	-	-	-	-	1	-	3	-	-
HUN102.3	-	-	-	-	-	1	-	-	1	3	-	-	-	-
HUN102.4	-	-	-	-	-	-	-	-	-	3	-	1	-	-
HUN102.5	-	1	-	-	-	-	-	-	2	3	-	-	-	-
HUN102.6	1	-	-	-	-	1	-	-	1	3	-	-	-	-
Average	1.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.33	2.67	0.0	2.0	0.0	0.0

Thomas John


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Computer Science and Engineering
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2019 Scheme

Semester : 2

Course Name : ENGINEERING PHYSICS LAB - Course Code : PHL120 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Apply modern instruments like CRO, strain gauge to measure the basic physical quantities viz. frequency and amplitude of a wave pattern, strain etc. Carryout measurement of wave pattern in a stretched string and the corresponding frequency values using a Melde's string apparatus
CO2	Determine the wavelength of monochromatic beam of light and thickness of micro-thin object etc. by forming Newton's rings pattern and an air wedge fringe pattern
CO3	Carryout the measurement of wavelength by diffraction of plane transmission grating and the spectra formed by a monochromatic beam of light and a laser
CO4	Determine the wavelength of a laser beam using the plane transmission grating. Measurement of numerical aperture of an optic fibre and evaluate the properties of a solar cell and LED through its I-V characteristics
CO5	Determine the velocity of ultrasonic waves in liquid using ultrasonic diffractometer. Compare the magnetic moment of various magnets and determine the magnetic flux density using deflection/vibration Magnetometer

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
PHL120.1	3	-	-	-	2	-	-	1	2	-	-	1	-	-
PHL120.2	3	-	-	-	2	-	-	1	2	-	-	1	-	-
PHL120.3	3	-	-	-	2	-	-	1	2	-	-	1	-	-
PHL120.4	3	-	-	-	2	-	-	1	2	-	-	1	-	-
PHL120.5	3	-	-	-	2	-	-	1	2	-	-	1	-	-
Average	3.0	0.0	0.0	0.0	2.0	0.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0	0.0

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 1

Course Name : ENGINEERING CHEMISTRY - Course Code : CYT100 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields
CO2	Understand various spectroscopic techniques like UV-Visible, IR, NMR and its applications
CO3	Apply the knowledge of analytical method for characterizing a chemical mixture or a compound. Understand the basic concept of SEM for surface characterisation of nanomaterials
CO4	Learn about the basics of stereochemistry and its application. Apply the knowledge of conducting polymers and advanced polymers in engineering
CO5	Study various types of water treatment methods to develop skills for treating wastewater

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CYT100.1	1	2	1	-	-	-	-	-	-	-	-	-	-	-
CYT100.2	1	1	-	1	2	-	-	-	-	-	-	-	-	-
CYT100.3	1	1	-	1	2	-	-	-	-	-	-	-	-	-
CYT100.4	2	1	-	-	-	-	-	-	-	-	-	-	-	-
CYT100.5	1	-	-	1	-	-	3	-	-	-	-	-	-	-
Average	1	1.25	1.0	1.0	2.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme


Semester : 1

Course Name : ENGINEERING MECHANICS - Course Code : EST100 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Recall principles and theorems related to rigid body mechanics
CO2	Identify and describe the components of system of forces acting on the rigid body
CO3	Apply the conditions of equilibrium to various practical problems involving different force system
CO4	Choose appropriate theorems, principles or formulae to solve problems of mechanics.
CO5	Solve problems involving rigid bodies, applying the properties of distributed areas and masses

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
EST100.1	2	2	-	-	-	-	-	-	-	-	-	-	-	-
EST100.2	3	3	-	-	-	-	-	-	-	-	-	-	-	-
EST100.3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
EST100.4	3	3	-	-	-	-	-	-	-	-	-	-	-	-
EST100.5	3	3	-	-	-	-	-	-	-	-	-	-	-	-
Average	2.8	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0


Melvin Benny


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Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 1

Course Name : LIFE SKILLS - Course Code : HUN101 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Define and Identify different life skills required in personal and professional life
CO2	Develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Explain the basic mechanics of effective communication and demonstrate these through presentations.
CO4	Take part in group discussions
CO5	Use appropriate thinking and problem solving techniques to solve new problems
CO6	Understand the basics of teamwork and leadership

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
HUN101.1	-	-	-	-	-	-	-	2	2	2	-	-	-	-
HUN101.2	-	1	-	-	-	-	-	-	-	-	-	1	-	-
HUN101.3	-	-	-	-	2	-	-	-	2	2	-	2	-	-
HUN101.4	-	1	1	-	-	-	-	-	2	2	-	-	-	-
HUN101.5	-	1	2	-	3	-	-	-	-	-	-	-	-	-
HUN101.6	-	-	-	-	-	-	-	-	-	-	-	2	-	-
Average	0.0	1.0	1.5	0.0	2.5	0.0	0.0	2.0	2.0	2.0	0.0	1.67	0.0	0.0


 Dr. VISUDEVAN M. VANNIAR
 Dept. of Computer Science and Engineering
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Computer Science and Engineering

CO-PO Mapped Data

2019 Scheme

Semester : 1

Course Name : BASICS OF CIVIL & MECHANICAL ENGINEERING - Course Code : EST120 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Recall the role of civil engineer in society and to relate the various disciplines of Civil Engineering.
CO2	Explain different types of buildings, building components, building materials and building construction
CO3	Describe the importance, objectives and principles of surveying
CO4	Summarise the basic infrastructure services MEP, HVAC, elevators, escalators and ramps
CO5	Discuss the Materials, energy systems, water management and environment for green buildings
CO6	Analyse thermodynamic cycles and calculate its efficiency
CO7	Illustrate the working and features of IC Engines
CO8	Explain the basic principles of Refrigeration and Air Conditioning
CO9	Describe the working of hydraulic machines
CO10	Explain the working of power transmission elements
CO11	Describe the basic manufacturing, metal joining and machining processes

Signature
Chakraborty

Dr. JEEBAMBA DEVI
Dept. of Chemical Engineering
VIT-AP
Vellore, Andhra Pradesh - 520 015, India

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
EST120.1	3	-	-	-	-	3	2	2	-	-	-	-	-	-
EST120.2	3	2	-	1	3	-	-	3	-	-	-	-	-	-
EST120.3	3	2	-	-	3	-	-	-	2	-	-	-	-	-
EST120.4	3	2	-	-	3	-	-	-	2	-	-	-	-	-
EST120.5	3	2	-	-	3	2	3	-	2	-	-	-	-	-
EST120.6	3	2	-	-	-	-	-	-	-	-	-	-	-	-
EST120.7	3	1	-	-	-	-	-	-	-	-	-	-	-	-
EST120.8	3	1	-	-	-	-	-	-	-	-	-	-	-	-
EST120.9	3	2	-	-	-	-	-	-	-	-	-	-	-	-
EST120.10	3	1	-	-	-	-	-	-	-	-	-	-	-	-
EST120.11	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	3.0	1.67	0.0	1.0	3.0	2.5	2.5	2.5	2.0	0.0	0.0	0.0	0.0	0.0


 Dr. Jyoti S. Patil
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 Gokulnath

Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 1

Course Name : LINEAR ALGEBRA AND CALCULUS - Course Code : MAT101 (THEORY)

Course Outcome Number	Course Outcome Title
CO1	Solve the consistent system of linear equations and apply orthogonal to a quadratic form
CO2	Find the maxima and minima of multivariable functions
CO3	Find areas and volumes of geometrical shapes, mass and centre of gravity of plane laminas using double and triple integrals
CO4	Perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent
CO5	Determine the power series expansion of a given function

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
MAT101.1	3	3	3	3	2	1	-	-	1	2	-	2	-	-
MAT101.2	3	2	3	3	2	1	-	-	1	2	-	2	-	-
MAT101.3	3	3	3	3	2	1	-	-	1	2	-	2	-	-
MAT101.4	3	2	3	2	1	1	-	-	1	2	-	2	-	-
MAT101.5	3	3	3	3	2	1	-	-	1	2	-	2	-	-
Average	3.0	2.6	3.0	2.8	1.8	1.0	0.0	0.0	1.0	2.0	0.0	2.0	0.0	0.0

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Date: _____

Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 1

Course Name : ENGINEERING CHEMISTRY LAB - Course Code : CYL120 (LAB)

Course Outcome Number	Course Outcome Title
CO1	Understand and practice different techniques of quantitative chemical analysis to generate experimental skills and apply these skills to various analyses
CO2	Develop skills relevant to synthesize organic polymers and acquire the practical skill to use TLC for the identification of drugs
CO3	Develop the ability to understand and explain the use of modern spectroscopic techniques for analysing and interpreting the IR spectra and NMR spectra of some organic compounds
CO4	Acquire the ability to understand, explain and use instrumental techniques for chemical analysis
CO5	Learn to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments
CO6	Function as a member of a team, communicate effectively and engage in further learning. Also understand how chemistry addresses social, economical and environmental problems and why it is an integral part of curriculum

CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CYL120.1	3	-	-	-	2	-	-	-	-	-	-	3	-	-
CYL120.2	3	-	-	-	3	-	-	-	-	-	-	3	-	-
CYL120.3	3	-	-	-	3	-	-	-	-	-	-	3	-	-
CYL120.4	3	-	-	-	3	-	-	-	-	-	-	3	-	-
CYL120.5	3	-	-	-	1	-	-	-	-	-	-	3	-	-
CYL120.6	3	-	-	-	1	-	-	-	-	-	-	3	-	-
Average	3.0	0.0	0.0	0.0	2.17	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0

Shyeth Thomas *(Signature)*

(Signature)
 Dr. S. SATHISH KUMAR
 Head of Department
 Department of Chemistry
 Anna University, Chennai - 600 025, India

Computer Science and Engineering
CO-PO Mapped Data
2019 Scheme

Semester : 1

Course Name : CIVIL & MECHANICAL WORKSHOP - Course Code : ESL120 (LAB)

Course Outcome Number	Course Outcome Title
C01	Name different devices and tools used for civil engineering measurements
C02	Explain the use of various tools and devices for various field measurements
C03	Demonstrate the steps involved in basic civil engineering activities like plot measurement, setting out operation, evaluating the natural profile of land, plumbing and undertaking simple construction work
C04	Choose materials and methods required for basic civil engineering activities like field measurements, masonry work and plumbing
C05	Compare different techniques and devices used in civil engineering measurements
C06	Identify Basic Mechanical workshop operations in accordance with the material and objects
C07	Apply appropriate Tools and Instruments with respect to the mechanical workshop trades
C08	Apply appropriate safety measures with respect to the mechanical workshop trades

G. S. Kulkarni
Chitkulwith


Dr. JEETHA DEVASIA
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CO - PO Matrix	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
ESL120.1	1	-	-	-	1	1	-	-	2	2	-	-	-	-
ESL120.2	1	-	-	-	1	1	-	-	2	2	-	-	-	-
ESL120.3	1	-	-	-	1	1	-	2	2	2	1	-	-	-
ESL120.4	1	-	-	-	1	1	-	2	2	2	1	1	-	-
ESL120.5	1	-	-	-	1	1	-	-	2	2	-	1	-	-
ESL120.6	2	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL120.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL120.8	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	1.38	0.0	0.0	0.0	1.0	1.0	0.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0


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