



**MANAV RACHNA UNIVI**  
**DEPARTMENT OF COMPUTER SCIEN**  
**B.TECH-CSE (CSUC**  
**3 Weeks Induction Programme (I**

SEMESTER - 1				
SUBJECT CODES	SUBJECT NAME	PRE-REQUISITE	OVERLAPPING/ EQUIVALENT COURSES	**OFFERING DEPARTMENT
PHH101B- T& P	QUANTAM MECHANICS FOR ENGINEERS	NIL	NA	PH
MAH101B-T & P	CALCULUS & LINEAR ALGEBRA	NIL	NA	MA
CSH101B-T&P	PROGRAMMING FOR PROBLEM SOLVING USING C	NIL	NA	CS
HLS103B/HLS104B	PROFESSIONAL ENGLISH-ADVANCE/ PROFESSIONAL ENGLISH-BASIC	NIL	NA	HL
CSW102B	USER INTERFACE-I (HTML5,CSS,JAVASCRIPT,JQUERY)	NIL	NA	CS
CHH137	ENVIRONMENTAL STUDIES	NIL	NA	CH
<b>TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)</b>				

SUBJECT CODES	SUBJECT NAME	PRE-REQUISITE	OVERLAPPING/ EQUIVALENT COURSES	**OFFERING DEPARTMENT
CHH144	CHEMISTRY-I	NIL	NA	CH

MAH104B-T & P	DISCRETE MATHS	NIL	NA	MA
ECH103B-T/P	Basics of Electronics & Electrical Engineering	NIL	NA	EC
CSH103B-T&P	DATA STRUCTURES & ALGORITHMS	NIL	NA	CS
MEW102B	ENGINEERING GRAPHICS & DRAWING	NIL	NA	ME
<b>TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)</b>				

CSO104B	Post 2nd Sem Summer Training (M
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SUBJECT CODES	SUBJECT NAME	PRE-REQUISITE	OVERLAPPING/ EQUIVALENT	OFFERING DEPARTMENT
CSH201B-T&P	OOPS USING JAVA	PROGRAMMING FOR PROBLEM SOLVING USING C	NA	CS
CSH202B-T&P	DATABASE MANAGEMENT SYSTEM	NIL	NA	CS
CSH209B-T&P	COMPUTER ARCHITECTURE & ORGANISATION	NIL	NA	CS
CSH204-B-T&P	ANALYSIS & DESIGN OF ALGORITHMS	Data Structures	NA	CS
CSW203B	USER INTERFACE-II (MONGODB,TYPESCRIPT,ANGULAR JS)	USER INTERFACE-I (HTML5,CSS,JAVASCRIPT,JQUERY)	NA	CS
FLS101B/FLS102B/FLS103B	FOREIGN LANGUAGE	NIL	NA	FL
CDO201	CDC	NIL	NA	CDC

**TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)**

<b>SUBJECT CODES</b>	<b>SUBJECT NAME</b>	<b>PRE-REQUISITE</b>	<b>OVERLAPPING/ EQUIVALENT COURSES</b>	<b>**OFFERING DEPARTMENT</b>
MAH202B-T & P	PROBABILITY & STATISTICS	NIL	NA	MA
CSH205B-T&P	ARTIFICIAL INTELLIGENCE	NIL	NA	CS
CSH206B-T&P	OPERATING SYSTEM	NIL	NA	CS
CSH207B-T&P	SOFTWARE ENGG.	NIL	NA	CS
CSW208B	PROGRAMMING FOR PROBLEM SOLVING USING PYTHON	NIL	NA	CS
FLS104/FLS105/FLS106	FOREIGN LANGUAGE	NIL	NA	FL
CDO202	CDC	NIL	NA	CDC
MC7	ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE	NIL	NA	ED
<b>TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)</b>				

SUBJECT CODES	SUBJECT NAME	PRE-REQUISITE	OVERLAPPING/ EQUIVALENT COURSES	**OFFERING DEPARTMENT
CSH301B-T&P	Computer Networks	NIL	NA	CS
ECH308B-T/P	Digital System Design & Microcontroller	NIL	NA	EC
CSH303B-T&P	Mobile Computing with Android	Object Oriented Programming Uing Java	NA	CS
CSH304B-T&P	Advanced Database Management Systems	Database Management Systems	NA	CS
CSH305B-T&P	Neural Network & Fuzzy Logic	NIL	NA	CS
CSH306B-T&P	System Network & Administration	NIL	NA	CS
CSH307B-T&P	Software Project management	Software Engineering	NA	CS

MOOC	NPTEL Courses from MOOC			
CHS234/ECS306B/CSS325B-T&P	ENVIRONMENTAL ETHICS & SUSTAINABLE DEVELOPMENT/ GREEN COMPUTING/ E-WASTE MANAGEMENT	NIL	NA	CH/CS/EC
MOOC	NPTEL Courses from MOOC			
CSW308B	ADVANCED JAVA	NIL	NA	CS
MCS368B	ENTREPRENEURSHIP	NIL	NA	MC
MOOC	NPTEL Courses from MOOC			
CSS309B/CSS326B/CSS327B/CSS328B	RESEARCH PAPER WRITING-I (Copyright/Patent/Startup/Project Work)	NIL	NA	CS
CDO305	PROFESSIONAL COMPETANCY ENHANCEMENT-III	NIL	NA	CDC
<b>TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)</b>				

SUBJECT CODES	SUBJECT NAME	PRE-REQUISITE	OVERLAPPING/ EQUIVALENT COURSES	**OFFERING DEPARTMENT
CSH310B-T&P	COMPUTER GRAPHICS & MULTIMEDIA	NIL	NA	CS
CSH311B-T&P	THEORY OF AUTOMATA & COMPILER DESIGN	NIL	NA	CS
CSH312B-T&P	Advanced Android Development	Mobile Computing with Android	NA	CS
CSH313B-T&P	DATA WAREHOUSE & DATA MINING	NIL	NA	CS
CSH314B-T&P	MACHINE LEARNING	NIL	NA	CS
CSH315-B-T&P	N/W Security & Cryptography	Computer Networks	NA	CS
CSH316B-T&P	Object Oriented Software Engineering	Software Engineering	NA	CS
MOOC	NPTEL Courses from MOOC			

ECW312B/MEW314B / MEW315B / MEW316B /CSW317B	ELECTRONIC DESIGN WORKSHOP/ Manufacturing Workshop/ 3-D Software/ Computer Numeric Coding / AGILE TECHNOLOGIES	NIL	NA	ME/CS/EC
MOOC	NPTEL Courses from MOOC			
ECW310B/MEH439/MEW318B/M EW319B/CSW318B	SENSORS & IOT/ Basic of Robotics/ 3 D Printing/SAP R PROGRAMMING	NIL	NA	EC/ME/CS
MOOC	NPTEL Courses from MOOC			
EDH422	BIOLOGY	NIL	NA	ED
CSS319B/CSS329B/CSS330B/C SS331B	RESEARCH PAPER WRITING - II (Copyright/Patent/Startup/Project Work)	NIL	NA	CS
CDO306	ENHANCEMENT-IV	NIL	NA	CDC
	<b>TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)</b>			
CSO320B	SUMMER TRAINING PC			

SUBJECT CODES	SUBJECT NAME	PRE-REQUISITE	OVERLAPPING/ EQUIVALENT COURSES	**OFFERING DEPARTMENT
CSH401B-T&P	Progressive Web Applications	NIL	NA	CS
CSH402B-T&P	Big Data	NIL	NA	CS
CSH403B-T&P	Image Processing	NIL	NA	CS
CSH404B-T&P	Cloud Computing	NIL	NA	CS
CSH405B-T&P	Software Testing	Software Engineering	NA	CS
MOOC	NPTEL Courses from MOOC			
ECH403B/ ECH401B-T/P/ MEH401B/ MEH402B/MEH403B/CSH414B	Introduction to Robotics/ Ergonomics/ Heating, Ventilation and Air Conditioning (HVAC)/	NIL	NA	ECE/ME/CSE
MOOC	NPTEL Courses from MOOC			
LWS321/LWS323	CYBER LAW/ LAW RELATING TO INTELLECTUAL PROPERTY RIGHTS	NIL	NA	LW
MOOC	NPTEL Courses from MOOC			



MCS232/MCS231	BASICS OF ECONOMICS	NIL	NA	MC
MOOC	NPTEL Courses from MOOC			
CSW406B/CSW407B	USER EXPERIENCE	NIL	NA	CS
MOOC	NPTEL Courses from MOOC			
LWH324	INDIAN CONSTITUTION	NIL	NA	ED
	<b>TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)</b>			

SUBJECT CODES	SUBJECT NAME	PRE-REQUISITE	OVERLAPPING/ EQUIVALENT COURSES	**OFFERING DEPARTMENT
EDS 288/EDS 289/EDS 235	APP. PHILOSOPHY/APP. PSYCHOLOGY/ APP. SOCIOLOGY	NIL	NA	ED
MOOC	NPTEL Courses from MOOC			
CSH408B-T&P	Mobile App. Analytics	NIL	NA	CS
CSH409B-T&P	Business Intelligence & Analytics	NIL	NA	CS
CSH410B-T&P	Convolutional Neural Network for Visual Recognition	NIL	NA	CS
CSH411B-T&P	Cloud Security	Cloud Computing	NA	CS
CSH412B-T&P	Software Requirement Engineering	Software Engineering	NA	CS
MOOC	NPTEL Courses from MOOC			
CSN413B	PROJECT	NIL	NA	CS
<b>TOTAL (L-T-P-O/CONTACT HOURS/CREDITS)</b>				

<b>*COURSE NATURE</b>			Hard course (H): A co
			Soft Course (S): A co
			Workshop course(W):
			Audit Course (A):Are
			Non Teaching Credit

<b>**OFFERING DEPARTMENT NAMES</b>			
EC			DEPARTMENT OF ELI
PH			DEPARTMENT OF PH
CS			DEPARTMENT OF CO
HL			DEPARTMENT OF HU
CH			DEPARTMENT OF CH
MA			DEPARTMENT OF MA
ME			DEPARTMENT OF ME
MC			DEPARTMENT OF MA
ED			DEPARTMENT OF ED
LW			DEPARTMENT OF LA
MRCFL			MANAV RACHNA CEN

\*\*\* Electives are subject to ch

UNIVERSITY  
 OF TEXAS AT DALLAS  
 COLLEGE OF BUSINESS  
 MANAGEMENT  
 DEPARTMENT OF MANAGEMENT  
 INFORMATION SYSTEMS

1) (Mandatory)

*COURSE NATURE (Hard/Soft/ Workshop/ NTCC/Audit/Outcome)	COURSE TYPE (Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER WEEK	NO. OF CREDITS
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
SOFT	CORE	2	0	2	0	4	3
WORKSHOP	CORE	0	0	3	0	3	1.5
AUDIT	CORE	2	0	0	2	2	0
		<b>13</b>	<b>3</b>	<b>11</b>	<b>2</b>	<b>27</b>	<b>19.5</b>

SEMESTER - 2							
*COURSE NATURE (Hard/Soft/ Workshop/ NTCC/Audit/Outcome)	COURSE TYPE (Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER WEEK	NO. OF CREDITS
HARD	CORE	3	1	2	0	6	5

HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
WORKSHOP	CORE	0	0	3	0	3	1.5
		<b>12</b>	<b>4</b>	<b>11</b>	<b>0</b>	<b>27</b>	<b>21.5</b>

andatory) (Project Management)	2
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SEMESTER - 3							
COURSE NATURE (Hard/Soft)	(Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER	NO. OF CREDITS
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
WORKSHOP	CORE	0	0	3	0	3	1.5
AUDIT	ELECTIVE	1	1	0	0	2	0
OUTCOME	CORE	0	0	1	0	1	0.5

	13	5	12	0	30	22
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**SEMESTER - 4**

*COURSE NATURE (Hard/Soft/ Workshop/ NTCC/Audit/Outcom e)	COURSE TYPE (Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER WEEK	NO. OF CREDITS
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
WORKSHOP	CORE	0	0	3	0	3	1.5
AUDIT	ELECTIVE	1	1	0	0	2	0
OUTCOME	CORE	0	0	1	0	1	0.5
AUDIT	CORE	1	0	0	0	1	0
		13	5	12	0	31	22

DST 4TH SEMESTER	2
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**SEMESTER - 5**

*COURSE NATURE (Hard/Soft/ Workshop/ NTCC/Audit/Outcom e)	COURSE TYPE (Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER WEEK	NO. OF CREDITS
HARD	CORE	3	0	2	0	5	4
HARD	CORE	3	1	2	0	6	5
HARD	ELECTIVE	3	0	2	0	5	4

SOFT	ELECTIVE	1	0	2	0	3	2
WORKSHOP	CORE	0	0	3	0	3	1.5
SOFT	ELECTIVE	1	0	2	0	3	2
AUDIT	CORE	0	0	2	0	2	0
OUTCOME	CORE	0	0	1	0	1	0.5
		<b>11</b>	<b>1</b>	<b>16</b>	<b>0</b>	<b>28</b>	<b>19</b>



**SEMESTER - 6**

*COURSE NATURE (Hard/Soft/ Workshop/ NTCC/Audit/Outcom e)	COURSE TYPE (Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER WEEK	NO. OF CREDITS
HARD	CORE	3	1	2	0	6	5
HARD	CORE	3	1	2	0	6	5
HARD	ELECTIVE	3	0	2	0	5	4

WORKSHOP	ELECTIVE	0	0	3	0	3	1.5
WORKSHOP	ELECTIVE	0	0	3	0	3	1.5
HARD	CORE	2	0	0	0	2	2
AUDIT	CORE	0	0	2	0	2	0
OUTCOME	COE	0	0	1	0	1	0.5
		<b>60</b>	<b>14</b>	<b>71</b>	<b>0</b>	<b>28</b>	<b>19.5</b>

POST 6TH SEMESTER	3
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**SEMESTER - 7**

*COURSE NATURE (Hard/Soft/ Workshop/ NTCC/Audit/Outcom e)	COURSE TYPE (Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER WEEK	NO. OF CREDITS
HARD	ELECTIVE	3	0	2	0	5	4
HARD	ELECTIVE	3	1	2	0	6	5
SOFT	ELECTIVE	2	0	0	0	2	2

SOFT	ELECTIVE	1	0	2	0	3	2
WORKSHOP	ELECTIVE	0	0	3	0	3	1.5
AUDIT	CORE	1	0	2	0	3	0
		<b>9</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>19</b>	<b>14.5</b>

**SEMESTER - 8**

*COURSE NATURE (Hard/Soft/ Workshop/ NTCC/Audit/Outcom e)	COURSE TYPE (Core/Elective)	L	T	P	O	NO. OF CONTACT HOURS PER WEEK	NO. OF CREDITS	
SOFT	ELECTIVE	1	0	2	0	3	2	
HARD	ELECTIVE	3	0	2	0	5	4	
NTCC	CORE	320 TO 360 HOURS						8
		<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>14</b>	

course having L-T and P and/or O component ; L(Lecture), T(Tutorial), P(Practical) and O(Outcome)

course aimed at development of a person's emotional, social, ethical, professional and creative potentials. The course shall have L-P

: A completely 'hands on' course conducted in laboratory, aimed at developing application/ implementation/ designing skills of a

University compulsory courses for which no credit is assigned but are mandatory to earn the degree

**Course(N):** The course involves no teaching and has P and O component. Shall include projects, seminars, dissertations etc.

	<b>A course shall be assigned credits as under:</b>
ELECTRONICS & COMMUNICATION ENGINEERING	<p>One credit for each lecture hour;            One credit for each tutorial hour ;            One credit for each Outcome hour;            Two credits for each workshop/ laboratory/practical/project session of 3 hours;            One credit for each laboratory or practical or project session of 2 hours</p> <p><b>NOTE: FOR ENGG PROGRAMS AS PER AICTE REGULATIONS - For all workshop/lab courses one credit shall be assigned to a 2 hours engagement.</b></p>
PHYSICS	
COMPUTER SCIENCE & TECHNOLOGY	
HUMANITIES & LANGUAGES	
CHEMISTRY	
MATHEMATICS	
Mechanical ENGINEERING	
MANAGEMENT & COMMERCE	
EDUCATION	
W	
CENTRE OF FOREIGN LANGUAGES	

Change according to expertise available/ required.