



SCHOOL OF ENGINEERING AND TECHNOLOGY
Bachelor of Technology- Computer Science & Engineering
And
Specialization

Programme Code: SET0101
Duration- 4 Years Full Time

PROGRAM STRUCTURE
AND
CURRICULUM & SCHEME OF EXAMINATION
2021

Program and Course Structure

OF

Bachelor of Technology- Computer Science & Engineering

B.Tech (CSE) with Specialization in Artificial Intelligence & Machine Learning

B.Tech (CSE) with Specialization in IoT & Application

B.Tech (CSE) with Specialization in Data Science & Analytics

B.Tech (CSE) with Specialization in Cyber Security & Forensics in association with Microsoft

B.Tech (CSE) with Specialization in Blockchain Technology

B.Tech (CSE) with Specialization in Cloud Computing and Information Security in association with Ali Baba

B.Tech (CSE) with Specialization in Cloud Technology and Virtualization in association with AWS

B.Tech (CSE) with Specialization in Banking & Insurance

B.Tech (CSE) with Specialization in Business Analytics

1. Standard Structure of the Program at University Level

1.1 Vision, Mission and Core Values of the University

Vision of the University

To serve the society by being a global University of higher learning in pursuit of academic excellence, innovation and nurturing entrepreneurship.

Mission of the University

- 1. Transformative educational experience**
- 2. Enrichment by educational initiatives that encourage global outlook**
- 3. Develop research, support disruptive innovations and accelerate entrepreneurship**
- 4. Seeking beyond boundaries**

Core Values

- Integrity**
- Leadership**
- Diversity**
- Community**

Note: Detailed Mission Statements of University can be used for developing Mission Statements of Schools/ Departments.

Vision and Mission of the School

Vision of the School

To become a globally acclaimed institution of higher learning in engineering and technology promoting excellence in research, innovation and entrepreneurship

Mission of the School

- 1. To impart quality education with strong industry & academic connectivity in the expanding fields of Engineering and Technology in a conducive and enriching learning environment.**
- 2. To product technocrats equipped with technical & soft skills and experiential learning required to stay current with the modern tools in emerging technologies to fulfill professional responsibilities and uphold ethical values.**
- 3. To inculcate a culture of interdisciplinary research, innovation and entrepreneurship to provide sustainable solutions to meet the growing challenges and societal needs.**
- 4. To foster collaborative learning and to play adaptive leadership role in professional career and pursuit of higher education through effective mentoring and counseling.**

Core Values

- Industry & Academic Connectivity**
- Experiential learning**
- Interdisciplinary research**
- Global**

1.2 Vision and Mission of the Department

Vision of the Department

To be recognized as the fountainhead of excellence in technical knowledge and research in computer science and engineering to attract students and scholars across the globe

Mission of the Department

- 1. To strengthen core competency of students to be successful, ethical, effective problem solver in Computer Science & Engineering through analytical learning.**
- 2. To promote interdisciplinary research & innovation-based activities in emerging areas of technology globally**
- 3. To facilitate and foster the industry-academia collaboration to enhance entrepreneurship skills and acquaintance with corporate culture.**
- 4. To inculcate in them a higher degree of social consciousness and moral values towards solving interdisciplinary societal problems using industry-academia collaboration**

Core Values

- Competency**
- Global**
- Entrepreneurship Skills**
- Interdisciplinary research**

1.3 Programme Educational Objectives (PEO)

1.3.1 Writing Programme Educational Objectives (PEO)

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

The Program Educational Objectives (PEOs) of UG Program in Computer Science & Engineering are:

PEO-1 The graduates will establish themselves as professionals by solving real-life problems using exploratory and analytical skills acquired in the field of Computer Science and Engineering.

PEO-2 The graduates will provide sustainable solutions to ever changing interdisciplinary global problems through their Research & Innovation capabilities.

PEO-3 The graduates will become employable, successful entrepreneur as an outcome of Industry-Academia collaboration.

PEO-4 The graduates will embrace professional code of ethics while providing solution to multidisciplinary social problems in industrial, entrepreneurial and research environment to demonstrate leadership qualities

Methods of Forming PEO's

- STEP 1 : The needs of the Nation and society are identified through scientific publications, industry interaction and media.
- STEP 2. Taking the above into consideration, the PEOs are established by the Coordination Committee of the department.
- STEP 3. The PEOs are communicated to the alumni and their suggestions are obtained.
- STEP 4. The PEOs are communicated to all the faculty members of the department and their feedback is obtained.
- STEP 5. The PEOs are then put to the Board of Studies of the department for final approval.

[Note: Prepare a file for the same, how you arrive for PEO's]

1.3.2 Map PEOs with Mission Statements:

DEPARTMENT PEOs DEPT OF CSE MISSION STATEMENTS	1. The graduates will establish themselves as professionals by solving real-life problems using exploratory and analytical skills acquired in the field of Computer Science and Engineering.	2. The graduates will be able to provide sustainable solutions to ever changing interdisciplinary global problems through their Research & Innovation capabilities.	3. The graduates will become employable, successful entrepreneur and innovator as an outcome of Industry-Academia collaboration.	4. The graduates will be able to embrace professional code of ethics while providing solution to multidisciplinary social problems in industrial, entrepreneurial and research environment to demonstrate leadership qualities.	
1. To strengthen core competency of students to be successful, ethical, effective problem solver in Computer Science & Engineering through analytical learning.	3	3	2	2	10/12
2. To promote interdisciplinary research & innovation based activities in emerging areas of technology globally.	2	3	2	2	9/12
3. To facilitate and foster the industry-academia collaboration to enhance entrepreneurship skills and acquaintance with corporate culture.	2	2	3	3	10/12
4: To inculcate in them a higher degree of social consciousness and moral values towards solving interdisciplinary societal problems using industry-academia collaboration	2	2	2	3	9/12
	9/12	10/12	9/12	10/12	83%

Enter correlation levels 1, 2, or 3 as defined below:

- 1. Slight (Low) 2. Moderate (Medium) 3. Substantial (High)**

If there is no correlation, put “-“

1.3.3 Program Outcomes (PO's)

PO1:	Engineering knowledge:	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2:	Problem analysis:	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3:	Design/development of solutions:	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4:	Conduct investigations of complex problems:	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5:	Modern tool usage:	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6:	The engineer and society:	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7:	Environment and sustainability:	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8:	Ethics:	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9:	Individual and team work:	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10:	Communication:	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11:	Project management and finance:	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12:	Life-long learning:	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
PSO1 :		Experiment and prepare programming concepts and provide new ideas and innovations towards research and societal issues.
PSO2 :		Analyse and develop computer programs in the areas related to algorithms, system software, cloud computing, artificial intelligence & machine learning, bioinformatics, big data analytics, block chain, cyber security and networking for efficient design of computer-based systems of varying complexity.

PSO3 :		Apply standard Software Engineering practices and strategies in software project development using open-source programming environment to deliver a quality product for business success.
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1.3.4 Mapping of Program Outcome Vs Program Educational Objectives

Mapping	PEO1	PEO2	PEO3	PEO4
PO1	3	3	2	1
PO2	3	3	3	1
PO3	2	2	3	3
PO4	2	2	3	2
PO5	2	3	2	2
PO6	1	2	2	3
PO7	1	1	2	3
PO8	1	1	2	3
PO9	1	2	3	1
PO10	1	1	3	2
PO11	3	2	3	1
PO12	2	3	1	1
PSO1	2	3	1	3
PSO2	3	3	2	2
PSO3	3	3	2	2

1. Slight (Low)

2. Moderate (Medium)

3. Substantial (High)

1.3.5 Program Outcome Vs Courses Mapping Table¹:

Course Code	Course Name	Course Outcome Statement	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3	
			Engineering knowledge	Problem analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The engineer and society	Environment and sustainability	Ethics	Individual and team work	Communication:	Project management and finance	Lifelong learning	Familiarity and practical proficiency	Understand, analyse and develop	Apply standard Software	
CSE113	Programming for Problem Solving	CO1	1	2	2						2				1	2		
		CO2	2		3	2	2					1		1		2	2	
		CO3	3		2	1						3					2	
		CO4	1		2	1						1					3	
		CO5	1		1												1	
		CO6	3	3	3	2						2		2		2	3	1
MTH142	Calculus and Abstract Algebra	CO1	3	3	2	2	3	1				1	1	1				
		CO2	3	3	3	2	2	2				1	1	2				
		CO3	3	3	2	2	2	1				1	1	1				
		CO4	3	3	2	2	2	1				1	1	1				
		CO5	3	3	2	2	2	1				1	1	2				
		CO6	3	3	2	3	2	2				1	1	2				
PHY125	Engineering Physics-I	CO1	3	3	2	2	2	1	1	1	2	1	1	1				
		CO2	3	3	2	3	3	2	1	1	1	1	1	1				

¹ Cel value will contain the correlation value of respective course with PO.

		CO3	3	3	2	3	3	2	1	1	1	1	1	1			
		CO4	3	3	3	2	3	2	1	1	1	1	1	1			
		CO5	3	3	3	2	3	2	1	1	1	1	1	1			
		CO6	3	3	3	3	3	2	1	1	1	1	1	1			
EVS103	Environmental Studies	CO1	2	2	3	3	3	3									
		CO2	2	2	2	2	2	3									
		CO3	2	2	3	2	3	3									
		CO4	2	2	3	2	3	3									
		CO5	2	2	2	2	3	3									
		CO6	2	2	3	2	2	3									
ARP101	Communicative English-1	CO1										3			3		
		CO2								2	2	2			3		
		CO3				2				2	2				3		
		CO4		2	2							2	2		3		
		CO5		3	2	2									2		
		CO6		2											3		
CSP113	Programming for Problem Solving Lab	CO1	2		3	2	2				2				3	2	2
		CO2	3		3	2	2				3				3	3	1
		CO3	2		3	1	2				2				2	3	2
		CO4	1		2	1	1				2				2	2	
		CO5	2		3	2	2				3				3	2	2
		CO6	3		3	3	1				2				2	3	2
CSP101	Introduction to Computer Science and Engineering	CO1	3	2										3	3		3
		CO2	3	2										3		3	2
		CO3	3	2										3		2	3
		CO4	3											3		3	2
		CO5	3					2		2				3		3	3

		CO6															
MEP106	Computer Aided Design & Drafting	CO1	2	2	2		3							3	3	3	
		CO2	2	2	2		3							3	3	3	
		CO3	2	2	2		3							3	3	3	
		CO4	2	2	2	2	3				2	2		3	3	3	
		CO5	2	2	2	2	3				2	2		3	3	3	
		CO6	2	2	2	2	3				2	2		3	3	3	
PHY162	Physics Lab	CO1	2	2	2	1	1	1	2	3	3	3	2	3	2		
		CO2	2	2	2	1	1	1	2	3	3	3	2	3	2		
		CO3	2	2	2	1	1	1	2	3	3	3	2	3	2		
		CO4	2	2	2	1	1	1	2	3	3	3	2	3	2		
		CO5	2	2	2	1	1	1	2	3	3	3	2	3	2		
		CO6	2	2	2	1	1	1	2	3	3	3	2	3	2		
Semester II																	
CSE114	Application based Programming in Python	CO1	2	1	1					2				2		1	
		CO2	2	2	2	1				2				2		2	1
		CO3	2	2	1					2				2	1	2	1
		CO4	2	2	2	2	1	2		2				2	1	2	2
		CO5	2	2	2	2	3	2		2				2	2	2	1

		CO6	3	3	2	2	2	2		2				2	2	3	2
MTH145	Probability and Statistics	CO1	3	3	2	2	3	1				1	1	1			
		CO2	3	2	3	2	2	2				1	1	2			
		CO3	3	3	2	2	2	1				1	1	1			
		CO4	3	2	2	2	2	1				1	1	1			
		CO5	3	3	2	2	2	1				1	1	2			
		CO6	3	3	2	3	2	2				1	1	2			
EEE112	Principles of Electrical and Electronics Engineering	CO1	3	3	2	2											
		CO2	1	1	2												
		CO3	2	2	1												
		CO4	2	1	2								1				
		CO5	3	2	1								1				
		CO6	2	2	3	1							1				
HMM111	Human Value & Ethics	CO1	1	1	1	1	2	1	2			2	3	1	1	3	
		CO2	1	3	2	2	1	3	1	1	2		3	3	2	2	1
		CO3		2	2	2		2	2		1		1		1	3	2
		CO4	1		1	2	3				2	3		2			1
		CO5		3		1	2	3	2	1		2	2	1	3	1	
		CO6	2		1			1			1	1				2	3
ARP102	Communicative English -2	CO1										3		3			
		CO2										3		3			
		CO3										3		3			
		CO4										3		3			
		CO5								3		3		3			
		CO6								3		3		3			
CSP105	Design and creativity Lab	CO1	3	3		3					3	3	2	3	2	2	1
		CO2	3	2		3				2		3	3	2	3		1

		CO3	3	2			2				3	3	2	3	2	2		
		CO4	3	3				2			3	3	2	3		2		
		CO5	3	3	2	2	2	2	3	3	3	3	2	3	2	2		
		CO6	3	3		3					3	3	2	3				1
CSP114	Application based Programming in Python	CO1	1	1	1	1				2				2		1		
		CO2	2	2	1	1	2			2				2		1	1	
		CO3	2	2	1	1	1	1		2				2	1	2	1	
		CO4	2	2	2	2	1	1		2				2	2	2	1	
		CO5	2	2	2	2	2	2		2				2	2	2	2	
		CO6	3	3	2	2	2	3		2				2	2	2	2	
MEP105	Mechanical Workshop	CO1	1					2						2				
		CO2	1				1	2						1	1		1	
		CO3	2		1		1	2						2	1		1	
		CO4	2		1		2	2						2	1		1	
		CO5	2		1		2	2						2	2		1	
		CO6	2		1		2	2						2	2		1	
EEP112	Principles of Electrical and Electronics Engineering	CO1	3	3	2	2												
		CO2	1	1	2													
		CO3	2	2	1													
		CO4	2	1	2								1					
		CO5	3	2	1								1					
		CO6	2	2	3	1							1					

Semester III

CSE242	Data Structures	CO1	2		2					2				2	2	
		CO2	1	2	3					1				3	1	2
		CO3	2	3	3	2				2				2	3	
		CO4			2					3			1	2	2	
		CO5	3	2	3	2	1			2				3	2	2
		CO6	2		3	3	2			1				2	3	3
CSE245	Discrete Structures	CO1	2	3	3	1		3		3			3	3	3	
		CO2	2	2	3			2					3	3	2	
		CO3	3	2	3	3	3			2					3	2
		CO4	2	2	3	3	3					3	3	3		3
		CO5	2	2	2	3		3		3		3	3		2	3
		CO6	1	2	1	2	3			3		3		3	3	2
CSE247	Computer Organization and Architecture	CO1	3	1	1			2					2		1	3
		CO2	3	3	3			3					3		2	3
		CO3	3	2	3			2					3		2	3
		CO4	3	2	2			1					3		3	2
		CO5	3	3	3			2					3		2	2
		CO6	3	3	3			2					3		1	2
CSE253	Object Oriented Programming Using Java	CO1					2						2			
		CO2					2									
		CO3	2	3	3		2			3			2	2	3	
		CO4					2									
		CO5					2									

		CO6	3	3	3		2	3	2		3		2	3	3	3	2
CSE254	Principles of Operating System	CO1	3	3	3	3				2	2	1	2	1	3	2	2
		CO2	3	2	3	3				2	2	2	1	1	2	3	2
		CO3	3	3	3	3				1	1	1	3	2	3	2	1
		CO4	2	2	2	2	1			2	3	3	3	1	2	2	2
		CO5	2	2	3					3	3	1	2		3		
		CO6	3	2								2	3		2	2	
				CO1													
CSE255	Introduction of Entrepreneurship	CO2															
		CO3															
		CO4															
		CO5															
		CO6															
				CO1		2	3										
ARP207	Logical Skills Building and Soft Skills	CO2						2		2	3						
		CO3							2	2							
		CO4									2			3			
		CO5										2					
		CO6		2													
				CO1	2	2	3					3			2	3	2
CSP242	Data Structures Lab	CO2	3	2	2	2	2				2				2	3	3
		CO3	3	1	3	3					3			1	3	2	2
		CO4	3	2	3	2					2			2	2	3	2
		CO5	2	2	2										1	2	2
		CO6	3	3	2	3					3				2	3	2
				CO1					2						2		
CSP243		CO2					2										

	Object Oriented Programming Using Java	CO3	2	3	3		2				3			2	2	3		
		CO4					2											
		CO5					2											
		CO6	3	3	3		2	3	2		3		2	3	3	3	3	2
CSP244	Principles of Operating System Lab	CO1	3	3	3	3				2	2	1	2	1	3	2	2	
		CO2	3	2	3	3				2	2	2	1	1	2	3	2	
		CO3	3	3	3	3				1	1	1	3	2	3	2	1	
		CO4	2	2	2	2	1			2	3	3	3	3	1	2	2	2
		CO5	2	2	3					3	3	1	2		3			
		CO6	3	2								2	3		2	2		
CSP254	Project Based Learning (PBL) -1	CO1	3	3		3					3	3	2	3	2	2	1	
		CO2	3	2		3			2		3	3	2	3			1	
		CO3	3	2			2				3	3	2	3	2	2		
		CO4	3	3				2			3	3	2	3		2		
		CO5	3	3	2	2	2	2	3	3	3	3	2	3	2	2		
		CO6	3	3		3					3	3	2	3			1	
CSP292	Summer Internship-I	CO1	2															
		CO2		3	2		2								2	2		
		CO3	2	2	3						3				1			
		CO4										3						
		CO5						2		3								
		CO6												2	1			

Semester IV

BTY223	Introduction to Biology for Engineers	CO1	3	1				1	3					3				
		CO2	3	2				2						3				
		CO3	3	3	3	1	1	3	3	2	1	3		3	1	1		
		CO4	3	2				2	2	3	1	2		3	1			
		CO5	3	1	1	1	3	1	3	2	1	2	1	3	1	1		
		CO6	3	3	1	1	2	3	5	1	1	1		3	1			
CSE249	Data Base Management System	CO1	3					2						3	3	3		
		CO2	2				3	2			2			3	3	3		
		CO3	3	3	3		3	2						2	2	3		
		CO4	3	3	3	3		2		2	3			2			3	
		CO5	2	3	2		2	2		2				1		3		
		CO6	3	3	3	3	3	3		3	3	3	2	3			3	
CSE251	Theory of Computation	CO1	3	3	3	3	2				3			3	3	2		
		CO2	3		3	3	2				2			2		3	2	
		CO3	3	3	3	3					2				3	2		
		CO4	2	2	2		2				3			2			3	
		CO5	3	3	3	3	3							3	3	2	2	
		CO6	3	2	3	3	3				2			3	3	3	2	
CSE252	Computer Networks	CO1		2									2	3		3		
		CO2	2		2	2	3						2	3		3		
		CO3	3	2		2		2							2		2	
		CO4		2	2											2	2	
		CO5	2	2	2	2										2		

		CO6	2			2				2			2		2		
CSE011	Mathematical Techniques	CO1	3	2										2			
		CO2	2	3	1	1	1		1			1	2	1	1	1	
		CO3	3	1	1	1			1			2	1	1	3	1	
		CO4	2	3	2	1	1		1			1	1	1	2	1	
		CO5	1	1	1	2	2		1			1	2	1	2	1	
		CO6	3	1	3	1	2		2			2	2	3	3	1	
CSE012	Introduction to Graph Theory and its Applications	CO1	3	3	2	2	1	2	2			2	1	2	3	1	
		CO2	3	3	3	2		1	1			1		2	3	1	
		CO3	1	3	1	3	2	2				1		2	2	2	
		CO4	1	3	1	3	1	1				2		1	3	2	
		CO5	2	2	2	3	2	1				1		2	1	2	
		CO6	1	1	2	3	1	2				2		2	1	2	2
OE1	Open Elective – 1	CO1															
		CO2															
		CO3															
		CO4															
		CO5															
		CO6															
ARP208	Quantitative and Qualitative Aptitude Skill Building	CO1								2		3		3			
		CO2										2					
		CO3									2	2					
		CO4										2					
		CO5										2					
		CO6		2	2							2					
CSP249		CO1	3				2							2	3	2	
		CO2		3	3	3	2				3			2	3	3	

	Data Base Management System Lab	CO3		2	2	2	2				3				2	2	3	
		CO4		2	2	2	2				3					2	2	3
		CO5		2	2	2	2				3					2	2	3
		CO6		2	3	2	3				3			2		3	3	3
CSP252	Computer Networks Lab	CO1		2									2	3		3		
		CO2	2		2	2	3						2	3		3		
		CO3	3	2		2		2								2		2
		CO4		2	2												2	2
		CO5	2	2	2	2											2	
		CO6	2			2				2				2			2	
CSP297	Project Based Learning (PBL) -2	CO1	3	3		3					3	3	2	3	2	2	1	
		CO2	3	2		3			2		3	3	2	3				1
		CO3	3	2			2				3	3	2	3	2	2		
		CO4	3	3				2			3	3	2	3		2		
		CO5	3	3	2	2	2	2	3	3	3	3	2	3	2	2		
		CO6	3	3		3						3	3	2	3			
Semester V																		
CSE354		CO1	2	3	1	2					2				3	2	2	
		CO2	2	2	2	2					3				2	3	2	

	Design and Analysis of Algorithm	CO3	2	1	2							1				3	2		
		CO4	1	2	2	3							2				2	2	2
		CO5	3	3	1	3							3				2	1	3
		CO6	2	2	3	2	2						2				3	2	
CSE355	Software Engineering and Testing Methodologies	CO1																	
		CO2																	
		CO3																	
		CO4																	
		CO5																	
		CO6																	
CSE356	Research Methodology	CO1																	
		CO2																	
		CO3																	
		CO4																	
		CO5																	
		CO6																	
CSE021	Introduction to Cloud Computing	CO1	2	3	1	2													
		CO2	2	2	2	3													
		CO3	1	3	1	2											2	3	
		CO4	3	1	2	2											3	2	
		CO5	2	2	3	1											2	2	
		CO6	1	3	1	2										2	3	3	
CSE023	Android Application Development	CO1					3					2			1			2	
		CO2					3					2			1			2	
		CO3			2		3					2			1	2		2	
		CO4					3					2		2	1			2	
		CO5			2	3	3		2			2		2	1			2	

		CO6	1	2	3	3	3	3	3	3		3		3	1	3	3	3	
CSE024	Web Technologies	CO1					1										1		
		CO2					3								1		1		
		CO3		1	3		2	1			2						1	2	2
		CO4		1	3		1	1			2						1	2	2
		CO5					2											1	
		CO6	2	3	3	1	3	3	1		3			2	2	1	2	2	3
OE-2	Open Elective – 2	CO1																	
		CO2																	
		CO3																	
		CO4																	
		CO5																	
		CO6																	
ARP305	Personality Development and Decision making Skills	CO1						2			2				3				
		CO2						2			2				3				
		CO3									2	2			3				
		CO4						2	2		2				3				
		CO5						2	2		2				3				
		CO6		2	2														
CSP350	Design and Analysis of Algorithm Lab	CO1	3	3	2	3	1				2				2	3	3		
		CO2	2	3	3	2	2				2				3	2	2		
		CO3	3	2	2		3				1				2	1			
		CO4	2	3	3	3	1				3				3	3	1		
		CO5	3	2	2	3	2				2				2	3	2		
		CO6	2	3	3	1	3				1				3	2	3		
CSP354		CO1	3	3		2		1		1	2		2	1	2	2	3		
		CO2	3	2	2	2	2			1	2		2	1	2	1	1		

	Project Based Learning (PBL) -3	CO3	3	2	2	2	2	3		1	2		2	1	2	2			
		CO4	3	3	2	2	3			1	2			1	2	2	2		
		CO5	3	2			3			1	2			1	2	2			
		CO6		1		1				2	2	3	3	3	1			1	
CSP355	Software Engineering and Testing Methodologies	CO1																	
		CO2																	
		CO3																	
		CO4																	
		CO5																	
		CO6																	
CSP023	Android Application Development Lab	CO1					3				2			1				2	
		CO2					3				2			1				2	
		CO3			2		3				2			1	2			2	
		CO4					3				2		2	1				2	
		CO5			2	3	3		2		2		2	1				2	
		CO6	1	2	3	3	3	3	3		3		3	1	3	3	3	3	
CSP024	Web Technologies Lab	CO1					1				2					1			
		CO2		1	1		3				2			1		1	2		
		CO3			1		2	1			2					1	2		
		CO4					1	1											
		CO5		1			2				2			1		1	2		
		CO6	2	3	3	1	3	3			3		2	2	1	2	3		
CSP391	Summer Internship-II	CO1	2	2		3	2		1	1	1				1	2	2		
		CO2	1	2	1	2	2		1	1	1				1	2			
		CO3	2		2	2	2				1	3		1	1	1	2	2	
		CO4									1		3						
		CO5						2			3								

		CO6												2	2	2	
CSP395	Technical Skill Enhancement Course-1 Simulation Lab	CO1	1		1		2							1	1	2	1
		CO2	1		1		2				2			1	1	2	1
		CO3	1	2	1		2							1	1	2	1
		CO4	1		1		2							1	1	2	1
		CO5	1		1		2							1	1	2	1
		CO6	2	2	3	3	2	2	1		2	3	2	2	2	3	3
ECC301	Community Connect	CO1															
		CO2															
		CO3															
		CO4															
		CO5															
		CO6															
Semester VI																	
CSE353	Compiler Design	CO1	3				3				2			3	2	1	
		CO2	2	2	3	3	2							2	3	2	
		CO3	3	3	3										3	2	
		CO4	1	2	3	3	3				3					3	2
		CO5	1	1	2	3	2				3				3	1	2

		CO6	2		3	3	2				3			3	3	2	3
HMM305	Management for Engineers	CO1	2	1	2	2	2	2		2	1	3			1	1	2
		CO2	1	1	2	2	1	2	1			2	2	1	1	1	2
		CO3	3	1	1	2	3	2		2			1	2	1	2	2
		CO4		2	2	1		1		1		2	1		1	1	2
		CO5		1	2	2		2	3	1	2			1	2	2	1
		CO6	1	2	1	1	2	2	2		1			1	2	2	2
CSE031	Digital Image Processing	CO1	3	3	3	3	1	1	1	1	1	2	1	3	2	3	1
		CO2	3	3	3	3	2	1	1	1	1	2	1	3	2	3	2
		CO3	3	3	3	3	2	1	1	1	1	2	1	3	3	3	2
		CO4	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2
		CO5	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2
		CO6	3	3	3	3	2	3	3	1	3	2	1	3	3	3	3
CSE032	Cryptography and Network Security	CO1	3	2											3	1	
		CO2	2	3	2	1									3	2	
		CO3	2		2		3								2	2	1
		CO4	2			2		2	2						2	2	
		CO5					2			2	2	2			1		
		CO6										2	2	2	2		2
CSE041	Software Project Management	CO1	3		1		1				3	2	3	2			2
		CO2	2		2		2				3	3	3	3			2
		CO3	2		3		2			1	3	2	3	3			3
		CO4	2		2		2			1	3	2	3	3			3
		CO5	1		3		2	3		1	3	3	3	3			3
		CO6	2		3	3	2	2		1	3	3	3	2			2
CSE042	Software Testing	CO1	2	1							3		2			3	
		CO2	3	3	3	2	3	1		1	2	3		2	2		3

		CO3	3	3	3	2	2	2		1	2	3		2	2		3
		CO4	3	3	3	2	3	1		1	2	3		2	2		3
		CO5	3	3	2	2	2	2		1	2	3		2	2		3
		CO6	3	3	3	2	3	2	3	2	3	3	3	3	3	2	
CSE051	Wireless Networks	CO1	3		3					1							2
		CO2	3	2	3					1							2
		CO3	3	2	3					1							2
		CO4	3	2	3					1							2
		CO5	3	2	3	2	2			1							3
		CO6	3	2	3	2	2			1							3
CSE052	Risk Management	CO1	3						1					1	2		
		CO2	2	2		3	2			1	2	1	1	1			2
		CO3	2								2			1	1		
		CO4	1		2		3				2	2	2				1
		CO5	2	2		2	1		1		2	1	1				1
		CO6	2	2	2				1		2	1	1	1		1	
CSE053	Advanced Operating System	CO1	3	3	3	3				2	2	1	2	1	3	2	2
		CO2	3	2	3	3				2	2	2	1	1	2	3	2
		CO3	3	3	3	3				1	1	1	3	2	3	2	1
		CO4	2	2	2	2	1			2	3	3	3	1	2	2	2
		CO5	2	2	3					3	3	1	2		3		
		CO6	3	2								2	3		2	2	
OE-3	Open Elective – 3	CO1															
		CO2															
		CO3															
		CO4															
		CO5															

ARP306	Campus to Corporate	CO6																
		CO1							2	2		2	3		3			
		CO2							2	2		2	3		3			
		CO3							2	2		2	3		3			
		CO4							2	2		2	3		3			
		CO5							2	2		2	3		3			
		CO6		2	2													
CSP353	Compiler Design Lab	CO1	3				3				2			3	2	1		
		CO2	2	2	3	3	2							2	3	2		
		CO3	3	3	3										3	2		
		CO4	1	2	3	3	3				3					3	2	
		CO5	1	1	2	3	2				3				3	1	2	2
		CO6	2		3	3	2				3				3	3	2	3
CSP396	Technical Skill Enhancement Course-2(Application Development Lab)	CO1	1		1		2							1	1	2	1	
		CO2	1		1		2					2		1	1	2	1	
		CO3	1	2	1		2							1	1	2	1	
		CO4	1		2		2							1	1	2	1	
		CO5	2		1		2							1	1	2	1	
		CO6	2	2	3	2	2	2	1		2	3	2	2	2	3	1	
CSP398	Project Based Learning (PBL) -4	CO1	3	3		2		1		1	2		2	1	2	2	3	
		CO2	3	2	2	2	2			1	2		2	1	2	1	1	
		CO3	3	2	2	2	2	3			1	2		2	1	2	2	
		CO4	3	3	2	2	3				1	2			1	2	2	2
		CO5	3	2			3				1	2			1	2	2	
		CO6		1		1					2	2	3	3	3	1		1
Semester VII																		

CSE472	Artificial Intelligence	CO1	1	2	3	2	2					2		2	3	2	2
		CO2	2	3	3	2	3					2		2	3	3	2
		CO3	3	3	3	3	2	1	1			1	2	3	3	2	3
		CO4	3	3	3	3	2	2	1			2	1	3	3	2	3
		CO5	2	3	3	3	3	2	2	2	3	2	2	2	3	3	2
		CO6	2	3	3	3	3	2	2	2	3	2	2	2	3	3	2
CSE062	Mobile Computing	CO1	3	3		2	3					2			3	2	
		CO2	3	3		2	3					2			3	2	
		CO3	3	3		2	3					2			2	3	
		CO4	3	3		2	3					2			3	2	
		CO5	3	3		2	3					2			2	2	
		CO6	3	3		2	3					2			2	2	
CSE063	Quantum Computing	CO1	3	3			2			3				3			3
		CO2	3	3	2												3
		CO3	3	3	2		2				2			2	3		
		CO4	3	3		3	2	3		2						3	
		CO5	3	2	3					3	3					3	
		CO6	3	3		3	3	3	3			3	3		3		
CSE071		CO1	3	1	1			2	1					3	3		

	Introduction to Internet of Things	CO2	2	2	1			1	3					3	3		
		CO3	3	1	1	2		2	1					3	3		
		CO4	3	3	3	3	2	2		3	3	3	3	3	2	2	3
		CO5	3	3	3	3	3	2	3					3	3		
		CO6	2	2	2	2	3	2	3					3	3		
CSE072	Parallel Computing Algorithms	CO1	3	3			2			3				3			3
		CO2	3	3	2												3
		CO3	3	3	2		2				2			2	3		
		CO4	3	3		3	2	3		2							3
		CO5	3	2	3					3	3						3
		CO6	3	3		3	3	3	3			3	3			3	
CSE073	3D Printing and Software Tools	CO1	3	3			2			3				3			3
		CO2	3	3	2												3
		CO3	3	3	2		2				2			2	3		
		CO4	3	3		3	2	3		2							3
		CO5	3	2	3					3	3						3
		CO6	3	3		3	3	3	3			3	3			3	
OE4	Open Elective - 4	CO1															
		CO2															
		CO3															
		CO4															
		CO5															
		CO6															
OE4	Open Elective - 5	CO1															
		CO2															
		CO3															
		CO4															

		CO5															
		CO6															
CSP472	Artificial Intelligence Lab	CO1	1	2	3	2	2					2		2	3	2	2
		CO2	2	3	3	2	3					2		2	3	3	2
		CO3	3	3	3	3	2	1	1			1	2	3	3	2	3
		CO4	3	3	3	3	2	2	1			2	1	3	3	2	3
		CO5	2	3	3	3	3	2	2	2	3	2	2	2	3	3	2
		CO6	2	3	3	3	3	2	2	2	3	2	2	2	3	3	2
CSP496	Summer Internship-III	CO1	2	2		3	2		1	1	1				1	2	2
		CO2	1	2	1	2	2		1	1	1				1	2	
		CO3	2		2	2	2			1	3		1	1	1	2	2
		CO4								1		3					
		CO5						2		3							
		CO6												2	2	2	
CSP497	Capstone - 1	CO1	3	3	3	2	2	2	2	1	2	1	1	2	2	3	3
		CO2	3	3	3	3	2	1	1	1	2	1	1	2	3	3	3
		CO3	3	1	3	3	2	1	1	1	2	1	1	2	3	3	3
		CO4	1	1	2	1	2	3	3	1	2	3	1	2	1	2	3
		CO5	1	2	2	1	2	1	1	1	2	2	1	2	1	2	3
		CO6	2	1	2	1	3			1	2	3	1	2	3	3	3

Semester VIII

CSP498	Capstone - 2	CO1	2	1	2	2	3	2	2	2	2	2	2	2	3	3	3	
		CO2	2	2	3	2	3	2	2	2	2	2	2	2	2	11	3	3
		CO3	3	3	3	3	3	2	2	2	2	2	2	1	1	3	3	
		CO4	2	2	2	2	3	2	2	2	2	3	2	1	1	2	2	
		CO5	1	2	2	1	3	2	2	2	2	3	2	1	1	2	2	
		CO6	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
<p>B.Tech-Computer Science & Engineering with specialization in Artificial Intelligence & Machine Learning</p>																		
CSA103	Introduction To AI & ML	CO1	3	3	3	1	2	1	1	1	2	3	1	3	2	3	1	
		CO2	3	3	3	1	2	3	3	1	2	3	1	3	2	3	2	
		CO3	3	3	3	1	2	3	3	1	3	3	3	3	3	3	3	
		CO4	3	3	3	1	2	3	3	1	3	3	3	3	3	3	3	
		CO5	3	3	3	1	2	3	3	1	3	3	3	3	3	3	3	
		CO6	3	3	3	1	2	3	3	3	3	3	3	3	3	3	3	
CSA202	Concept of Machine Learning	CO1	3	3	3	3	3	3	2	1	1	3	1	3	2	2	1	
		CO2	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	
		CO3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	

		CO4	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3
		CO5	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CAL201	Concept of Machine Learning Lab	CO1	3	3	3	3	3	3	2	1	1	3	1	3	2	2	1
		CO2	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3
		CO3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3
		CO4	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3
		CO5	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CSA203	Concepts of Neural Networks	CO1	3	3	3	3	2	1	1	1	1	3	1	3	3	3	1
		CO2	3	3	3	3	3	3	3	1	3	3	3	3	3	3	3
		CO3	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO4	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO5	3	3	3	3	3	3	3	1	3	3	3	3	3	3	3
		CO6	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CSA301	Soft Computing	CO1	3	3	1	1	1	1	1	1	2	1	1	3	1	3	1
		CO2	3	3	3	3	2	3	2	2	2	2	3	3	3	3	3
		CO3	3	3	3	3	3	3	1	2	2	2	3	3	3	3	3
		CO4	3	3	3	3	3	3	3	2	2	2	3	3	3	3	3
		CO5	3	3	3	3	3	3	3	2	3	2	3	3	3	3	3
		CO6	3	3	3	3	3	1	3	2	3	2	3	3	3	3	3
CSA302	Pattern Recognition	CO1	3	3	3	3	2	1	1	1	1	3	1	3	3	3	1
		CO2	3	3	3	3	2	3	1	1	3	3	1	3	3	3	3
		CO3	3	3	3	3	2	2	2	1	2	3	1	3	3	3	3
		CO4	3	3	3	3	2	2	2	1	2	3	1	3	3	3	3
		CO5	3	3	3	3	2	3	1	1	2	3	1	3	3	3	3
		CO6	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3
CAL302		CO1	3	3	3	3	2	1	1	1	1	3	1	3	3	1	

	Pattern Recognition Lab	CO2	3	3	3	3	2	3	1	1	3	3	1	3	3	3	3
		CO3	3	3	3	3	2	2	2	1	2	3	1	3	3	3	3
		CO4	3	3	3	3	2	2	2	1	2	3	1	3	3	3	3
		CO5	3	3	3	3	2	3	1	1	2	3	1	3	3	3	3
		CO6	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3
CSA303	Deep Learning and Its Applications	CO1	3	3	3	3	2	1	1	1	1	3	1	3	3	3	1
		CO2	3	3	3	3	3	3	3	1	3	3	3	3	3	3	3
		CO3	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO4	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO5	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3
		CO6	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CAL303	Deep Learning and Its Applications Lab	CO1	3	3	3	3	2	1	1	1	1	3	1	3	3	3	1
		CO2	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3
		CO3	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO4	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO5	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3
		CO6	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3
CSA402	Applications of AIML in healthcare/ ICT/ Computer Networks	CO1	3	3	3	3	3	1	2	3	1	3	1	3	3	3	1
		CO2	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3
		CO3	3	3	3	3	3	2	2	3	2	3	3	3	3	3	3
		CO4	3	3	3	3	3	2	2	3	2	3	3	3	3	3	3
		CO5	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3
		CO6	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3
CSA401	Computer Vision	CO1	3	3	3	3	1	1	1	1	1	2	1	3	2	3	1
		CO2	3	3	3	3	2	1	1	1	1	2	1	3	2	3	2
		CO3	3	3	3	3	2	1	1	1	1	2	1	3	3	3	2
		CO4	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2

		CO5	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2
		CO6	3	3	3	3	2	3	3	1	3	2	1	3	3	3	3
CAL401	Computer Vision Lab	CO1	3	3	3	3	1	1	1	1	1	2	1	3	2	3	1
		CO2	3	3	3	3	2	1	1	1	1	2	1	3	2	3	2
		CO3	3	3	3	3	2	1	1	1	1	2	1	3	3	3	2
		CO4	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2
		CO5	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2
		CO6	3	3	3	3	2	3	3	1	3	2	1	3	3	3	3
		CO7	3	3	3	3	2	3	3	1	3	2	1	3	3	3	3
CSA021	Human Computer Interaction	CO1	3	3	2	2	1	1	1	1	1	2	1	3	2	2	1
		CO2	3	3	3	3	2	1	1	1	1	2	1	3	2	3	2
		CO3	3	3	3	3	2	1	1	1	1	2	1	3	3	3	2
		CO4	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2
		CO5	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2
		CO6	3	3	3	3	2	1	1	1	1	2	1	3	3	3	3
CSA022	Introduction to Cloud Computing with Machine learning	CO1	3	3	3	3	3	3	3	1	2	3	1	3	3	3	3
		CO2	3	3	3	3	3	3	3	1	2	3	1	3	3	3	3
		CO3	3	3	3	3	3	3	3	1	2	3	1	3	3	3	3
		CO4	3	3	3	3	3	3	3	1	2	3	1	3	3	3	3
		CO5	3	3	3	3	3	3	3	1	2	3	1	3	3	3	3
		CO6	3	3	3	3	3	3	3	1	2	3	1	3	3	3	3
CSA041	Introduction to Natural Language Processing	CO1	3	3	3	3	3	1	1	1	1	3	1	3	2	3	1
		CO2	3	3	3	3	3	1	1	1	1	3	1	3	3	3	2
		CO3	3	3	3	3	3	2	1	1	1	3	1	3	3	3	1
		CO4	3	3	3	3	3	1	2	1	1	3	1	3	3	3	3
		CO5	3	3	3	3	3	2	2	1	2	3	1	3	3	3	3
		CO6	3	3	3	3	3	3	3	1	3	3	2	3	3	3	3
CSA051		CO1	3	3	2	3	2	1	1	1	2	1		3	3	2	2

	Recommender Systems	CO2	3	3	3	3	3	2	2	1	2	2		3	3	3	2
		CO3	3	3	3	3	3	3	3	1	3	2		3	3	2	2
		CO4	3	3	3	3	3	2	2	1	3	2		3	3	3	2
		CO5	3	3	3	3	3	3	3	1	3	2		3	3	3	2
		CO6	3	3	3	3	3	3	3	1	3	3		3	3	3	3
CSA061	Robotics and Intelligent Systems	CO1	3	3	3	3	3	1	1	1	1	2	3	2	3	3	1
		CO2	3	3	3	3	3	1	2	1	2	2	3	2	3	3	2
		CO3	3	3	3	3	3	2	1	1	2	2	3	3	3	3	3
		CO4	3	3	3	3	3	1	1	1	2	2	3	2	3	3	3
		CO5	3	3	3	3	3	1	1	1	2	2	3	2	3	3	3
		CO6	3	3	3	3	3	2	2	2	3	3	2	2	3	3	3
CSE011	Mathematical Techniques	CO1	3	2											2		
		CO2	2	3	1	1	1		1			1	2	1	1	1	
		CO3	3	1	1	1			1			2	1	1	3	1	
		CO4	2	3	2	1	1		1			1	1	1	2	1	
		CO5	1	1	1	2	2		1			1	2	1	2	1	
		CO6	3	1	3	1	2		2			2	2	3	3	1	
CSE021	Introduction to Cloud Computing	CO1	2	3	1	2											
		CO2	2	2	2	3											
		CO3	1	3	1	2										2	3
		CO4	3	1	2	2										3	2
		CO5	2	2	3	1										2	2
		CO6	1	3	1	2										2	3
CSE022	Android Application Development	CO1					3				2			1			2
		CO2					3				2			1			2
		CO3			2		3				2			1	2		2
		CO4					3				2		2	1			2

		CO5			2	3	3		2		2		2	1		2		
		CO6	1	2	3	3	3	3	3		3		3	1	3	3		
CSA031	Digital Image Processing	CO1	3	3	3	3	1	1	1	1	1	2	1	3	2	3	1	
		CO2	3	3	3	3	2	1	1	1	1	2	1	3	2	3	2	
		CO3	3	3	3	3	2	1	1	1	1	2	1	3	3	3	2	
		CO4	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2	
		CO5	3	3	3	3	2	2	1	1	1	2	1	3	3	3	2	
		CO6	3	3	3	3	2	3	3	1	3	2	1	3	3	3	3	
		CO1	3		3					1							2	
CSA051	Wireless Networks	CO2	3	2	3					1						2		
		CO3	3	2	3					1						2		
		CO4	3	2	3					1						2		
		CO5	3	2	3	2	2			1						3		
		CO6	3	2	3	2	2			1						3		
		CO1	3	3		2	3					2			3	2		
CSE062	MOBILE COMPUTING	CO2	3	3		2	3				2			3	2			
		CO3	3	3		2	3				2			2	3			
		CO4	3	3		2	3				2			3	2			
		CO5	3	3		2	3				2			2	2			
		CO6	3	3		2	3				2			2	2			
		CO1	3	1	1			2	1					3	3			
0	Basics of Internet of Things and Raspberry Pi	CO2	3	1	1	2		2	1				3	3				
		CO3	2	1	1		3	1	1		1	1	2	2	1	1		
		CO4	2	2	2		3	2	2	2	2	1	1	1	2	3	2	2
		CO5	3	2	2	3	3	2	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
		CO1	3	1	1			2	1					3	3			
CSI104		CO1	3	1	1			2	1				3	3				

Introduction to IoT	CO2	2	2	1			1	3					3	3		
	CO3	3	1	1	2		2	1					3	3		
	CO4	3	2	3	2		1	2					3	3		
	CO5	3	3	3	3	3	2	3					3	3		
	CO6	2	2	2	2	3	2	3					3	3		

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CSI104	Introduction to IoT	CO1	3	1	1	-	-	2	1	-	-	-	-	3	3	-	-
		CO2	2	2	1	-	-	1	3	-	-	-	-	3	3	-	-
		CO3	3	1	1	2	-	2	1	-	-	-	-	3	3	-	-
		CO4	3	2	3	2	-	1	2	-	-	-	-	3	3	-	-
		CO5	3	3	3	3	3	2	3	-	-	-	-	3	3	-	-
		CO6	2	2	2	2	3	2	3	-	-	-	-	3	3	-	-
CSI201	Embedded System	CO1	3	-	-	-	-	1	1	-	-	-	-	3	-	1	-
		CO2	3	2	-	-	3	-	-	-	2	2	1	3	2	2	-
		CO3	3	3	-	2	2	-	2	-	2	2	-	3	2	-	-
		CO4	3	3	3	3	3	2	3	2	3	3	3	3	3	2	3
		CO5	3	-	2	2	-	-	-	-	2	2	-	3	-	-	-
		CO6	3	3	3	3	3	3	3	2	3	3	2	3	3	3	3
CIP201		CO1	3	-	-	1	1	1	1	-	3	1	-	3	1	1	1

	Embedded System Lab	CO2	3	2	2	2	3	-	2	2	2	2	1	3	2	2	2
		CO3	3	3	2	2	2	-	2	2	2	2	3	3	2	-	3
		CO4	3	3	3	3	3	1	3	2	3	3	3	3	3	2	3
		CO5	3	-	2	2	-	-	1	1	2	2	3	3	2	-	-
		CO6	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3
CSI202	IoT Architecture and Programming	CO1	2	-	-	-	-	-	-	-	1	-	-	2	-	2	-
		CO2	2	-	-	-	-	-	-	-	2	-	-	2	2	2	-
		CO3	2	3	2	3	3	-	2	1	2	3	-	2	3	2	-
		CO4	2	-	-	2	2	-	2	-	2	2	-	2	-	2	-
		CO5	2	2	-	-	3	-	-	-	2	3	-	2	-	2	2
		CO6	3	3	3	3	3	2	3	3	3	3	2	2	3	3	3
CIP202	IoT Architecture and Programming Lab	CO1	2	2	1	2	2	2	2	-	2	1	3	3	2	2	-
		CO2	2	2	2	1	2	-	-	-	2	-	2	3	2	2	-
		CO3	2	2	2	1	2	-	-	-	2	-	3	3	2	2	-
		CO4	2	2	2	1	2	-	-	2	2	-	3	3	2	2	-
		CO5	2	2	2	2	2	-	-	2	2	-	3	3	3	3	-
		CO6	2	2	2	2	2	3	2	2	3	1	3	3	3	3	2
CSI301	Programming with SENSEnuts IoT Platform	CO1	2	-	-	1	2	2	-	-	1	1	1	2	2	1	1
		CO2	2	2	2	1	2	2	2	-	1	1	1	2	2	1	1
		CO3	2	2	2	2	3	2	2	-	2	2	2	2	3	2	1
		CO4	2	3	2	2	3	2	2	-	2	2	2	2	3	2	1
		CO5	2	3	3	3	3	2	2	2	2	2	2	2	3	3	1
		CO6	3	3	3	3	3	2	2	3	3	3	3	3	3	3	2
CIP301	Programming with SENSEnuts	CO1	2	1	1	-	3	1	1	-	2	2	2	2	1	1	-
		CO2	2	2	2	1	3	2	2	2	1	1	1	2	3	2	2
		CO3	2	2	2	1	3	2	2	2	2	3	3	3	3	2	2
		CO4	2	2	2	2	3	2	2	2	2	3	3	3	3	2	2

	IoT Platform Lab	CO5	3	2	2	3	3	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CSI302	IoT: Sensing & Actuator Devices	CO1	2	1	1	1	1	1	1	1	-	1	-	2	1	-	-
		CO2	2	2	1	1	1	2	2	1	2	2	2	2	2	1	1
		CO3	2	2	1	1	1	2	3	1	2	2	2	2	2	1	1
		CO4	2	2	1	1	1	2	1	1	2	2	2	2	2	1	1
		CO5	2	2	1	1	1	2	1	1	2	2	2	2	2	1	1
		CO6	3	3	3	3	2	3	2	1	3	3	3	3	3	3	3
CIP302	IoT: Sensing & Actuator Devices Lab	CO1	3	2	2	2	3	1	1	-	3	3	3	2	1	-	-
		CO2	3	3	2	2	3	2	2	-	3	3	3	2	2	2	-
		CO3	3	3	2	2	3	2	3	-	3	3	3	2	2	2	-
		CO4	3	3	2	2	3	2	1	-	3	3	3	2	2	2	-
		CO5	3	3	2	2	3	2	1	2	3	3	3	2	2	2	-
		CO6	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3
CSI303	Wireless Technologies for IoT	CO1	3	-	2	-	-	-	-	-	1	2	-	1	-	-	-
		CO2	3	2	-	-	-	-	-	1	1	2	-	1	-	-	-
		CO3	3	2	-	2	-	-	-	2	2	2	2	2	-	-	-
		CO4	3	2	2	-	-	-	-	2	2	2	2	2	-	-	-
		CO5	3	2	-	2	3	-	3	2	3	2	3	3	2	-	-
		CO6	3	3	3	3	3	-	3	3	3	3	3	3	3	2	3
CIP303	Wireless Technologies for IoT Lab	CO1	3	3	-	-	2	-	-	-	2	-	-	3	-	-	-
		CO2	3	3	2	-	3	3	-	-	2	-	-	3	3	2	-
		CO3	3	3	3	2	3	3	-	-	3	-	2	3	3	2	-
		CO4	3	3	3	2	3	3	-	-	3	-	2	3	3	2	-
		CO5	3	3	3	2	3	3	-	-	3	-	3	3	3	3	-
		CO6	3	3	3	3	3	3	-	-	3	-	3	3	3	3	3
CSI401	IoT Security	CO1	3	1	2	1	-	-	-	2	-	-	-	2	-	-	-

		CO2	3	1	1	1	-	-	-	2	-	-	-	2	-	-	-
		CO3	3	2	2	2	2	-	-	2	-	-	-	2	-	-	-
		CO4	3	3	3	3	2	2	-	3	3	3	3	3	2	2	3
		CO5	3	3	3	3	2	2	-	1	2	-	2	3	2	-	-
		CO6	3	3	3	3	3	3	-	2	3	3	3	3	2	3	3
CSI023	Micro-controller programming using Arduino	CO1	2	-	-	1	2	2	-	-	1	1	1	2	2	1	1
		CO2	2	2	2	1	2	2	2	-	1	1	1	2	2	1	1
		CO3	2	2	2	2	3	2	2	-	2	2	2	2	3	2	1
		CO4	2	3	2	2	3	2	2	-	2	2	2	2	3	2	1
		CO5	2	3	3	3	3	2	2	2	2	2	2	2	3	3	1
		CO6	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3
CIP023	Micro-controller programming using Arduino Lab	CO1	2	1	1	-	3	1	1	-	2	2	2	2	1	1	-
		CO2	2	2	2	1	3	2	2	2	1	1	1	2	3	2	2
		CO3	2	2	2	1	3	2	2	2	3	3	3	3	3	2	2
		CO4	2	2	2	2	3	2	2	2	3	3	3	3	3	2	2
		CO5	3	2	2	3	3	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CSI024	Raspberry Pi and its Programming	CO1	2	1	1	-	3	1	1	-	1	1	2	2	1	1	-
		CO2	2	2	2	-	3	2	2	2	1	1	1	2	3	2	2
		CO3	2	2	2	2	3	2	2	2	3	3	3	3	3	2	2
		CO4	2	2	2	2	3	2	2	2	3	3	3	3	3	2	2
		CO5	3	2	2	3	3	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CIP024	Raspberry Pi and its Programming Lab	CO1	2	1	1	-	3	1	1	-	2	2	2	2	1	1	-
		CO2	2	2	2	1	3	2	2	2	1	1	1	2	3	2	2
		CO3	2	2	2	1	3	2	2	2	3	3	3	3	3	2	2
		CO4	2	2	2	2	3	2	2	2	3	3	3	3	3	2	2

		CO5	3	2	2	3	3	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CSI021	Sensor-Cloud for Internet of Things	CO1	2	2	-	2	-	1	-	-	1	-	-	2	-	1	-
		CO2	2	2	-	2	-	1	-	-	1	-	-	2	-	1	-
		CO3	2	1	1	2	-	1	-	-	1	1	-	2	-	2	-
		CO4	2	2	1	2	-	1	2	-	2	1	-	3	-	2	-
		CO5	2	2	2	2	-	1	2	-	2	1	2	3	2	2	-
		CO6	3	3	3	2	3	2	2	2	2	2	2	3	3	3	2
		CO1	2	1	1	-	3	1	1	-	2	2	2	2	1	1	-
CIP021	Sensor-Cloud for Internet of Things Lab	CO2	2	2	2	1	3	2	2	2	1	1	1	2	3	2	2
		CO3	2	2	2	1	3	2	2	2	3	3	3	3	3	2	2
		CO4	2	2	2	2	3	2	2	2	3	3	3	3	3	2	2
		CO5	3	2	2	3	3	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
		CO1	2	2	-	2	-	2	-	-	1	-	-	2	-	1	-
CSI022	Wireless Sensor Networks	CO2	2	2	-	2	-	2	-	-	1	-	-	2	-	1	-
		CO3	2	1	1	2	-	2	-	-	2	2	-	2	-	2	-
		CO4	2	2	1	2	-	2	2	-	2	2	-	3	-	2	-
		CO5	2	2	3	2	-	2	2	-	3	2	2	3	2	3	-
		CO6	3	3	3	2	3	2	2	2	3	2	2	3	3	3	2
		CO1	2	1	-	-	2	-	-	-	-	-	-	-	2	-	-
CIP022	Wireless Sensor Networks Lab	CO2	3	2	1	1	3	-	2	-	1	1	1	2	1	2	2
		CO3	3	1	2	2	3	1	3	-	2	2	2	2	3	2	2
		CO4	3	2	2	2	2	1	3	-	2	2	2	2	1	2	2
		CO5	3	2	2	2	3	2	3	-	3	3	3	3	2	3	3
		CO6	3	2	3	2	3	2	3	2	3	3	3	3	3	3	3
		CO1	3	-	-	-	-	-	-	-	2	-	-	-	2	-	-
CSI031		CO1	3	-	-	-	-	-	-	2	-	-	-	2	-	-	-

	Artificial Intelligence for IoT	CO2	3	2	2	2	3	2	-	-	2	2	2	2	2	2	2	
		CO3	3	2	2	2	3	2	3	2	2	2	2	2	2	2	2	-
		CO4	3	3	3	3	3	-	-	-	2	2	-	2	2	2	2	2
		CO5	3	3	3	3	3	3	3	3	2	2	2	3	3	2	3	2
		CO6	3	3	3	3	3	3	3	-	2	3	3	3	3	2	3	3
CIP031	Artificial Intelligence for IoT Lab	CO1	2	2	1	-	3	1	1	-	2	2	2	2	1	1	-	
		CO2	3	3	2	2	3	2	2	2	1	1	1	3	3	2	3	
		CO3	3	2	2	2	3	2	2	2	3	3	3	3	3	2	3	
		CO4	3	3	2	2	3	2	2	2	3	3	3	3	3	2	3	
		CO5	3	3	2	3	3	2	2	2	2	3	3	3	3	3	2	3
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CSI032	Data Analytics for IoT	CO1	2	3	-	2	-	-	-	-	-	-	-	2	-	1	-	
		CO2	3	-	-	2	2	-	-	-	-	-	2	2	2	1	-	
		CO3	3	2	3	2	2	-	-	-	-	2	2	2	2	1	-	
		CO4	2	-	-	2	-	-	-	-	-	2	2	2	-	1	-	
		CO5	3	3	3	2	2	3	2	-	2	2	2	2	2	2	2	-
		CO6	3	3	3	2	3	3	2	2	2	2	2	2	2	3	2	-
CSI033	Image Processing with IoT	CO1	3	-	-	-	2	-	-	2	-	-	-	2	-	2	-	
		CO2	3	2	2	2	3	2	-	-	2	2	2	2	2	2	2	
		CO3	3	2	2	2	3	2	-	2	2	2	-	2	2	2	-	
		CO4	3	3	3	3	3	-	-	-	2	2	-	2	2	2	2	
		CO5	3	3	3	3	3	3	-	2	2	2	-	3	2	3	2	
		CO6	3	3	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CIP033	Image Processing with IoT Lab	CO1	2	1	1	-	3	1	1	-	2	2	2	2	1	1	-	
		CO2	2	2	2	1	3	2	2	2	1	1	1	2	3	2	2	
		CO3	2	2	2	1	3	2	2	2	2	3	3	3	3	2	2	
		CO4	2	2	2	2	3	2	2	2	2	3	3	3	3	2	2	

		CO5	3	2	2	3	3	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CSI011	Android with IoT	CO1	2	-	-	-	2	-	-	-	-	1	2	2	-	-	-
		CO2	2	-	-	-	2	-	-	-	-	-	2	2	-	-	1
		CO3	2	2	-	2	2	2	3	-	2	2	2	3	-	-	-
		CO4	2	2	-	2	2	-	-	-	2	2	2	3	1	1	3
		CO5	2	2	2	3	2	3	2	2	3	3	2	3	3	3	3
		CO6	2	3	3	3	2	3	2	2	3	3	2	3	3	3	3
		CO1	2	1	1	-	3	1	1	-	2	2	2	2	1	1	-
CIP011	Android with IoT Lab	CO2	2	2	2	1	3	2	2	2	1	1	1	2	3	2	2
		CO3	2	2	2	1	3	2	2	2	3	3	3	3	3	2	2
		CO4	2	2	2	2	3	2	2	2	3	3	3	3	3	2	2
		CO5	3	2	2	3	3	2	2	2	3	3	3	3	3	2	2
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		CO1	2	2	-	-	-	-	-	-	-	-	-	-	2	-	-
CSI041	Fog Computing in IoT	CO2	3	2	2	2	-	-	1	-	-	-	-	2	-	-	-
		CO3	3	2	2	2	2	-	2	-	2	2	2	3	2	2	-
		CO4	3	2	2	2	-	-	2	-	2	2	2	3	2	2	-
		CO5	3	3	3	2	3	2	2	3	3	3	3	3	2	2	2
		CO6	3	3	3	2	3	3	2	3	3	3	3	3	2	2	3
		CO1	1	-	-	-	-	1	2	2	-	-	-	2	-	-	-
CSI042	Industrial IoT 4.0	CO2	2	2	-	1	-	1	2	2	1	-	-	2	-	-	-
		CO3	2	1	-	1	2	1	2	2	2	1	2	2	1	2	-
		CO4	2	2	1	2	2	1	2	2	2	1	2	2	1	2	-
		CO5	2	2	-	2	2	1	2	2	2	2	2	2	2	3	2
		CO6	2	2	2	2	3	1	2	2	3	2	3	3	2	3	2
		CO1	3	2	2	-	2	3	3	2	2	2	2	2	3	2	2
CSI051		CO1	3	2	2	-	2	3	3	2	2	2	2	3	2	2	-

	IoT in Healthcare	CO2	3	3	3	2	2	3	3	2	2	3	2	3	2	2	-
		CO3	3	3	3	3	2	3	3	2	3	3	3	3	3	3	-
		CO4	3	3	3	3	2	3	3	2	3	3	3	3	3	3	-
		CO5	3	3	3	3	2	3	3	2	3	3	3	3	3	3	-
		CO6	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3
CSI052	Drones in IoT	CO1	3	2	2	-	3	2	2	2	2	2	-	3	2	2	-
		CO2	3	3	3	2	3	3	3	2	2	3	-	3	2	2	-
		CO3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
		CO4	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
		CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	3	-
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CSI061	Industrial IoT: Smart Manufacturing	CO1	2	2	2	2	-	2	2	-	-	1	-	2	-	-	-
		CO2	2	2	2	3	-	2	2	-	-	-	2	2	-	-	-
		CO3	3	2	2	3	3	2	2	2	-	-	-	2	-	-	2
		CO4	3	2	2	3	-	2	2	-	-	2	2	2	-	-	2
		CO5	3	2	3	3	-	2	2	-	2	2	-	2	-	-	-
		CO6	3	3	3	3	3	2	2	3	2	2	2	3	3	2	2
CSI062	IoT Applications	CO1	3	3	2	3	3	3	3	2	3	3	3	3	3	2	2
		CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	2	2
		CO3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
		CO4	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
		CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
		CO6	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
CIP062	IoT Applications Lab	CO1	3	3	2	3	3	3	3	2	3	3	3	3	3	2	2
		CO2	3	3	3	3	3	3	3	2	3	3	3	3	3	2	2
		CO3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
		CO4	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2

		CO5	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2
		CO6	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2

B.Tech-Computer Science & Engineering with specialization in Cyber Security & Forensics

0	Introduction to Cyber Security & Laws	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	-
0	Digital Forensics	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3	
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	-
0	Digital forensics Lab	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3	
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-	-

		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-	
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	
0	Ethical Hacking	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	
0	ETHICAL HACKING LAB	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	
0	Security Threats Intelligence and Risk Management	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	
CSC302	Cryptography and Network Security	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	
CCP302		CO1	3	3	-	-	2	-	-	3	-	-	3	-	-	3	3	

	Cryptography and Network Security Lab	CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	3	3	
		CO3	3	3	2	-	2	-	-	-	2	-	2	3	-	-	3	3
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	3	-	3	3
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	3	-	3	3
		CO6	3	3	-	3	3	3	3	-	-	3	-	3	-	-	3	3
0	Intrusion Detection and Prevention System	CO1	3	3	-	-	2	-	-	3	-	-	3	-	-	3	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	3	3	
		CO3	3	3	2	-	2	-	-	-	2	-	2	3	-	-	3	3
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	3	-	3	3
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	3	-	3	3
		CO6	3	3	-	3	3	3	3	-	-	3	-	3	-	-	3	3
0	Intrusion Detection and Prevention System Lab	CO1	3	3	-	-	2	-	-	3	-	-	3	-	-	3	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	3	3	
		CO3	3	3	2	-	2	-	-	-	2	-	2	3	-	-	3	3
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	3	-	3	3
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	3	-	3	3
		CO6	3	3	-	3	3	3	3	-	-	3	-	3	-	-	3	3
0	Introduction to IoT and It's Security	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3	
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	3
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-	3
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-	3
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-	3
0	Machine Learning	CO1	3	3	3	3	3	3	2	1	1	3	1	3	2	2	1	
		CO2	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	
		CO3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	
		CO4	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	

		CO5	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3
		CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
0	Machine Learning Lab	CO1															
		CO2															
		CO3															
		CO4															
		CO5															
		CO6															
0	Open source Tools for Cyber Security & Forensics	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-
0	Open source Tools for Cyber Security & Forensics Lab	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-
0	Packet Analysis	CO1	3	3	3	3	2	1	1	1	1	3	1	3	3	3	1
		CO2	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3
		CO3	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO4	3	3	3	3	3	2	2	1	2	3	3	3	3	3	3
		CO5	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3
		CO6	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3
0		CO1	3	3	3	3	--	--	--	2	2	1	2	1	3	2	2

	Packet Analysis Lab	CO2	3	2	3	3	--	--	--	2	2	2	1	1	2	3	2
		CO3	3	3	3	3	--	--	--	1	1	1	3	2	3	2	1
		CO4	2	2	2	2	1	--	--	2	3	3	3	1	2	2	2
		CO5	2	2	3	-	-	-	-	3	3	1	2	-	3	-	-
		CO6	3	2	-	-	-	-	-	-	-	2	3	-	2	2	-
0	Mobile and Wireless Security	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-
0	Exploit Writing	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-
CSC-032	Malware Analysis	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-
0	Cloud Security	CO1															
		CO2															
		CO3															
		CO4															

		CO5																	
		CO6																	
0	Penetration Testing	CO1		3	3	-	-	2	-	-	3	-	-	-	3	-	-		
		CO2		3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	
		CO3		3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	
		CO4		3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-
		CO5		3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-
		CO6		3	3	-	3	3	3	3	-	-	3	3	-	3	-	3	-
0	Penetration Testing Lab	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	-	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3	-
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	3	-	-
CSC-062	Web Application Security	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	-	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3	-
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	3	-	-
CSC-022	Disaster Recovery Management	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	-	
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3	-
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	-	3	-	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	-	3	-	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	3	-	-
0		CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3	-	

	Digital Water Marking and Steganography	CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-
0	Information Security and Audit Monitoring	CO1	2	2		-	-	-	-	-	-	-	-	-	2	2	-
		CO2	2	2	2	-	-	-	-	-	-	-	-	-	2	2	-
		CO3	2	-	2	-	2	-	-	-	-	-	-	-	2	2	-
		CO4	2	-	-	2	-	2	2	-	-	-	-	-	2	2	
		CO5	-	-	-	-	2	-	2	2	2		-	-	2	-	-
		CO6	-	-	-	-	-	-	-	-	-	2	2	2	2	-	2
0	Network & Cyber Forensics	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-
0	Data Privacy and Protection	CO1	3	3	-	-	2	-	-	3	-	-	-	3	-	-	3
		CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	3
		CO3	3	3	2	-	2	-	-	-	2	-	-	2	3	-	-
		CO4	3	3	-	3	2	3	-	2	-	-	-	-	-	3	-
		CO5	3	2	3	-	-	-	-	3	3	-	-	-	-	3	-
		CO6	3	3	-	3	3	3	3	-	-	3	3	-	3	-	-

1. Slight (Low)

2. Moderate (Medium)

3. Substantial (High)

1.3.5.2 COURSE ARTICULATION MATRIX²

Course Code	Course Name	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	PSO 3
		Engineering knowledge	Problem analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The engineer and society	Environment and sustainability	Ethics	Individual and team work	Communication:	Project management and finance	Life-long learning	Familiarity and practical proficiency	Understand, analyse and develop	Apply standard Software
CSE113	Programming for Problem Solving	1.8 3	2.5 0	2.1 7	1.5 0	2.0 0				1.8 0		1.5 0		1.67	2.17	1.00
MTH142	Calculus and Abstract Algebra	3.0 0	3.0 0	2.1 7	2.1 7	2.1 7	1.3 3				1.0 0	1.0 0	1.5 0			
PHY125	Engineering Physics-I	3.0 0	3.0 0	2.5 0	2.5 0	2.8 3	1.8 3	1.0 0	1.0 0	1.1 7	1.0 0	1.0 0	1.0 0			
EVS103	Environmental Studies	2.0 0	2.0 0	2.6 7	2.1 7	2.6 7	3.0 0									
ARP101	Communicative English-1		2.3 3	2.0 0	2.0 0				2.0 0	2.0 0	2.3 3	2.0 0	2.8 3			
CSP113	Programming for Problem Solving Lab	2.1 7		2.8 3	1.8 3	1.6 7				2.3 3				2.50	2.50	1.80
CSP101	Introduction to Computer Science and Engineering	3.0 0	2.0 0				2.0 0		2.0 0				3.0 0	3.00	2.75	2.60
MEP106	Computer Aided Design & Drafting	2.0 0	2.0 0	2.0 0	2.0 0	3.0 0				2.0 0	2.0 0		3.0 0	3.00	3.00	
PHY162	Physics Lab	2.0 0	2.0 0	2.0 0	1.0 0	1.0 0	1.0 0	2.0 0	3.0 0	3.0 0	3.0 0	2.0 0	3.0 0	2.00		
Semester II																
CSE114	Application based Programming in Python	2.1 7	2.0 0	1.6 7	1.7 5	2.0 0	2.0 0		2.0 0				2.0 0	1.50	2.00	1.40

² Each course outcome (Based on Blooms Taxonomy-CO1, CO2, CO3, CO4, CO5, and CO6) of the course needs to map with PO. This table evolves once faculty has mapped each course outcomes of their respective course with PO's.

MTH145	Probability and Statistics	3.0 0	2.6 7	2.1 7	2.1 7	2.1 7	1.3 3					1.0 0	1.0 0	1.5 0			
EEE112	Principles of Electrical and Electronics Engineering	2.1 7	1.8 3	1.8 3	1.5 0								1.0 0				
HMM111	Human Value & Ethics	1.2 5	2.2 5	1.4 0	1.6 0	2.0 0	2.0 0	1.7 5	1.0 0	1.5 0	2.0 0	2.2 5	1.7 5	1.75	2.20	1.75	
ARP102	Communicative English -2								3.0 0			3.0 0		3.0 0			
CSP105	Design and creativity Lab	3.0 0	2.6 7	2.0 0	2.7 5	2.0 0	2.0 0	2.5 0	3.0 0	3.0 0	3.0 0	2.0 0	3.0 0	2.00	2.00	1.00	
CSP114	Application based Programming in Python	2.0 0	2.0 0	1.5 0	1.5 0	1.6 0	1.7 5		2.0 0				2.0 0	1.75	1.67	1.40	
MEP105	Mechanical Workshop	1.6 7		1.0 0		1.6 0	2.0 0						1.8 3	1.40		1.00	
EEP112	Principles of Electrical and Electronics Engineering	2.1 7	1.8 3	1.8 3	1.5 0							1.0 0					
Semester III																	
CSE242	Data Structures	2.0 0	2.3 3	2.6 7	2.3 3	1.5 0					1.8 3			1.0 0	2.33	2.17	2.33
CSE245	Discrete Structures	2.0 0	2.1 7	2.5 0	2.4 0	3.0 0	2.6 7				2.7 5		3.0 0	3.0 0	3.00	2.60	2.50
CSE247	Computer Organization and Architecture	3.0 0	2.3 3	2.5 0			2.0 0							2.8 3		1.83	2.50
CSE253	Object Oriented Programming Using Java	2.5 0	3.0 0	3.0 0		2.0 0	3.0 0	2.0 0			3.0 0		2.0 0	2.3 3	2.50	3.00	2.00
CSE254	Principles of Operating System	2.6 7	2.3 3	2.8 0	2.7 5	1.0 0			2.0 0	2.2 0	1.6 7	2.3 3	1.2 5	2.50	2.20	1.75	
CSE255	Introduction of Entrepreneurship																
ARP207	Logical Skills Building and Soft Skills		2.0 0	3.0 0			2.0 0		2.0 0	2.3 3	2.0 0		3.0 0				
CSP242	Data Structures Lab	2.6 7	2.0 0	2.5 0	2.5 0	2.0 0					2.6 0			1.6 7	2.17	2.50	2.17
CSP243	Object Oriented Programming Using Java	2.5 0	3.0 0	3.0 0		2.0 0	3.0 0	2.0 0			3.0 0		2.0 0	2.3 3	2.50	3.00	2.00
CSP244	Principles of Operating System Lab	2.6 7	2.3 3	2.8 0	2.7 5	1.0 0			2.0 0	2.2 0	1.6 7	2.3 3	1.2 5	2.50	2.20	1.75	
CSP254	Project Based Learning (PBL) -1	3.0 0	2.6 7	2.0 0	2.7 5	2.0 0	2.0 0	2.5 0	3.0 0	3.0 0	3.0 0	2.0 0	3.0 0	2.00	2.00	1.00	
CSP292	Summer Internship-I	2.0 0	2.5 0	2.5 0		2.0 0	2.0 0		3.0 0	3.0 0	3.0 0		2.0 0	1.33	2.00		
Semester IV																	

BTY223	Introduction to Biology for Engineers	3.0 0	2.0 0	1.6 7	1.0 0	2.0 0	2.0 0	3.2 0	2.0 0	1.0 0	2.0 0	1.0 0	3.0 0	1.00	1.00	
CSE249	Data Base Management System	2.6 7	3.0 0	2.7 5	3.0 0	2.7 5	2.1 7		2.3 3	2.6 7	3.0 0	2.0 0	2.3 3	2.67	3.00	3.00
CSE251	Theory of Computation	2.8 3	2.6 0	2.8 3	3.0 0	2.4 0				2.4 0			2.6 0	3.00	2.40	2.25
CSE252	Computer Networks	2.2 5	2.0 0	2.0 0	2.0 0	3.0 0	2.0 0		2.0 0			2.0 0	3.0 0	2.00	2.40	2.00
CSE011	Mathematical Techniques	2.3 3	1.8 3	1.6 0	1.2 0	1.5 0		1.2 0			1.4 0	1.6 0	1.4 0	2.17	1.00	
CSE012	Introduction to Graph Theory and its Applications	1.8 3	2.5 0	1.8 3	2.6 7	1.4 0	1.5 0	1.5 0			1.5 0	1.0 0	1.8 3	2.17	1.67	2.00
OE1	Open Elective – 1															
ARP208	Quantitative and Qualitative Aptitude Skill Building		2.0 0	2.0 0					2.0 0	2.0 0	2.2 0		3.0 0			
CSP249	Data Base Management System Lab	3.0 0	2.2 0	2.4 0	2.2 0	2.1 7				3.0 0			2.0 0	2.17	2.50	2.83
CSP252	Computer Networks Lab	2.2 5	2.0 0	2.0 0	2.0 0	3.0 0	2.0 0		2.0 0			2.0 0	3.0 0	2.00	2.40	2.00
CSP297	Project Based Learning (PBL) -2	3.0 0	2.6 7	2.0 0	2.7 5	2.0 0	2.0 0	2.5 0	3.0 0	3.0 0	3.0 0	2.0 0	3.0 0	2.00	2.00	1.00
Semester V																
CSE354	Design and Analysis of Algorithm	2.0 0	2.1 7	1.8 3	2.4 0	2.0 0				2.1 7				2.50	2.00	2.25
CSE355	Software Engineering and Testing Methodologies															
CSE356	Research Methodology															
CSE021	Introduction to Cloud Computing	1.8 3	2.3 3	1.6 7	2.0 0									2.00	2.50	2.50
CSE023	Android Application Development	1.0 0	2.0 0	2.3 3	3.0 0	3.0 0	3.0 0	2.5 0		2.1 7		2.3 3	1.0 0	2.50	3.00	2.17
CSE024	Web Technologies	2.0 0	1.6 7	3.0 0	1.0 0	2.0 0	1.6 7	1.0 0		2.3 3		2.0 0	1.5 0	1.00	1.50	2.33
OE-2	Open Elective – 2															
ARP305	Personality Development and Decision making Skills		2.0 0	2.0 0			2.0 0	2.0 0		2.0 0	2.0 0		3.0 0			
CSP350	Design and Analysis of Algorithm Lab	2.5 0	2.6 7	2.5 0	2.4 0	2.0 0				1.8 3				2.50	2.33	2.20
CSP354	Project Based Learning (PBL) -3	3.0 0	2.1 7	2.0 0	1.8 0	2.5 0	2.0 0		1.1 7	2.0 0	3.0 0	2.2 5	1.3 3	1.83	1.80	1.75

CSP355	Software Engineering and Testing Methodologies																
CSP023	Android Application Development Lab	1.0 0	2.0 0	2.3 3	3.0 0	3.0 0	3.0 0	2.5 0		2.1 7		2.3 3	1.0 0	2.50	3.00	2.17	
CSP024	Web Technologies Lab	2.0 0	1.6 7	1.6 7	1.0 0	2.0 0	1.6 7			2.2 0		2.0 0	1.3 3	1.00	1.20	2.25	
CSP391	Summer Internship-II	1.6 7	2.0 0	1.5 0	2.3 3	2.0 0	2.0 0	1.0 0	1.4 0	1.6 7	3.0 0	1.0 0	1.5 0	1.25	2.00	2.00	
CSP395	Technical Skill Enhancement Course-1 Simulation Lab	1.1 7	2.0 0	1.3 3	3.0 0	2.0 0	2.0 0	1.0 0		2.0 0	2.5 0	2.0 0	1.1 7	1.17	2.17	1.00	
ECC301	Community Connect																
Semester VI																	
CSE353	Compiler Design	2.0 0	2.0 0	2.8 0	3.0 0	2.4 0				2.7 5			2.7 5	2.40	2.00	2.33	
HMM305	Management for Engineers	1.7 5	1.3 3	1.6 7	1.6 7	2.0 0	1.8 3	2.0 0	1.5 0	1.3 3	2.3 3	1.3 3	1.2 5	1.33	1.50	1.83	
CSE031	Digital Image Processing	3.0 0	3.0 0	3.0 0	3.0 0	1.8 3	1.6 7	1.3 3	1.0 0	1.3 3	2.0 0	1.0 0	3.0 0	2.67	3.00	2.00	
CSE032	Cryptography and Network Security	2.2 5	2.5 0	2.0 0	1.5 0	2.5 0	2.0 0	2.0 0	2.0 0	2.0 0	2.0 0	2.0 0	2.0 0	2.17	1.75	1.50	
CSE041	Software Project Management	2.0 0		2.3 3	3.0 0	1.8 3	2.5 0		1.0 0	3.0 0	2.5 0	3.0 0	2.6 7			2.50	
CSE042	Software Testing	2.8 3	2.6 7	2.8 0	2.0 0	2.6 0	1.6 0	3.0 0	1.2 0	2.2 0	3.0 0	3.0 0	2.1 7	2.00		3.00	
CSE051	Wireless Networks	3.0 0	2.0 0	3.0 0	2.0 0	2.0 0			1.0 0							2.33	
CSE052	Risk Management	2.0 0	2.0 0	2.0 0	2.5 0	2.0 0		1.0 0	1.0 0	2.0 0	1.2 5	1.2 5	1.0 0	1.50	1.00	1.33	
CSE053	Advanced Operating System	2.6 7	2.3 3	2.8 0	2.7 5	1.0 0			2.0 0	2.2 0	1.6 7	2.3 3	1.2 5	2.50	2.20	1.75	
OE-3	Open Elective – 3																
ARP306	Campus to Corporate		2.0 0	2.0 0			2.0 0	2.0 0		2.0 0	3.0 0		3.0 0				
CSP353	Compiler Design Lab	2.0 0	2.0 0	2.8 0	3.0 0	2.4 0				2.7 5			2.7 5	2.40	2.00	2.33	
CSP396	Technical Skill Enhancement Course-2(Application Development Lab)	1.3 3	2.0 0	1.5 0	2.0 0	2.0 0	2.0 0	1.0 0		2.0 0	2.5 0	2.0 0	1.1 7	1.17	2.17	1.00	
CSP398	Project Based Learning (PBL) -4	3.0 0	2.1 7	2.0 0	1.8 0	2.5 0	2.0 0		1.1 7	2.0 0	3.0 0	2.2 5	1.3 3	1.83	1.80	1.75	
Semester VII																	

CSE472	Artificial Intelligence	2.1 7	2.8 3	3.0 0	2.6 7	2.5 0	1.7 5	1.5 0	2.0 0	3.0 0	1.8 3	1.7 5	2.3 3	3.00	2.50	2.33
CSE062	Mobile Computing	3.0 0	3.0 0		2.0 0	3.0 0					2.0 0			2.50	2.17	
CSE063	Quantum Computing	3.0 0	2.8 3	2.3 3	3.0 0	2.2 5	3.0 0	3.0 0	2.6 7	2.5 0	3.0 0	3.0 0	2.5 0	3.00	3.00	3.00
CSE071	Introduction to Internet of Things	2.6 7	2.0 0	1.8 3	2.5 0	2.6 7	1.8 3	2.2 0	3.0 0	3.0 0	3.0 0	3.0 0	3.0 0	2.83	2.00	3.00
CSE072	Parallel Computing Algorithms	3.0 0	2.8 3	2.3 3	3.0 0	2.2 5	3.0 0	3.0 0	2.6 7	2.5 0	3.0 0	3.0 0	2.5 0	3.00	3.00	3.00
CSE073	3D Printing and Software Tools	3.0 0	2.8 3	2.3 3	3.0 0	2.2 5	3.0 0	3.0 0	2.6 7	2.5 0	3.0 0	3.0 0	2.5 0	3.00	3.00	3.00
OE4	Open Elective - 4															
OE4	Open Elective - 5															
CSP472	Artificial Intelligence Lab	2.1 7	2.8 3	3.0 0	2.6 7	2.5 0	1.7 5	1.5 0	2.0 0	3.0 0	1.8 3	1.7 5	2.3 3	3.00	2.50	2.33
CSP496	Summer Internship-III	1.6 7	2.0 0	1.5 0	2.3 3	2.0 0	2.0 0	1.0 0	1.4 0	1.6 7	3.0 0	1.0 0	1.5 0	1.25	2.00	2.00
CSP497	Capstone - 1	2.1 7	1.8 3	2.5 0	1.8 3	2.1 7	1.6 0	1.6 0	1.0 0	2.0 0	1.8 3	1.0 0	2.0 0	2.17	2.67	3.00
Semester VIII																
CSP498	Capstone - 2	1.8 3	2.0 0	2.3 3	2.0 0	2.8 3	2.0 0	2.0 0	2.0 0	2.0 0	2.3 3	2.0 0	1.5 0	3.17	2.50	2.50

B.Tech-Computer Science & Engineering with specialization in Artificial Intelligence & Machine Learning																
CSA103	Introduction To AI & ML	3.00	3.00	3.00	1.00	2.00	2.67	2.67	1.33	2.67	3.00	2.33	3.00	2.67	3.00	2.50
CSA202	Concept of Machine Learning	3.00	3.00	3.00	3.00	3.00	3.00	2.83	2.00	2.00	3.00	2.67	3.00	2.83	2.83	2.67
CAL201	Concept of Machine Learning Lab	3.00	3.00	3.00	3.00	3.00	3.00	2.83	2.00	2.00	3.00	2.67	3.00	2.83	2.83	2.67
CSA203	Concepts of Neural Networks	3.00	3.00	3.00	3.00	2.83	2.33	2.33	1.17	2.33	3.00	2.67	3.00	3.00	3.00	2.67
CSA301	Soft Computing	3.00	3.00	2.67	2.67	2.50	2.33	2.17	1.83	2.33	1.83	2.67	3.00	2.67	3.00	2.67
CSA302	Pattern Recognition	3.00	3.00	3.00	3.00	2.17	2.33	1.50	1.17	2.17	3.00	1.33	3.00	3.00	3.00	2.67
CAL302	Pattern Recognition Lab	3.00	3.00	3.00	3.00	2.17	2.33	1.50	1.17	2.17	3.00	1.33	3.00	3.00	3.00	2.67
CSA303	Deep Learning and Its Applications	3.00	3.00	3.00	3.00	2.83	2.33	2.33	1.17	2.33	3.00	2.67	3.00	3.00	3.00	2.67
CAL303	Deep Learning and Its Applications Lab	3.00	3.00	3.00	3.00	2.83	2.33	2.33	1.17	2.33	3.00	2.67	3.00	3.00	3.00	2.67
CSA402	Applications of AIML in healthcare/ ICT/ Computer Networks	3.00	3.00	3.00	3.00	3.00	1.83	2.00	3.00	2.33	3.00	2.67	3.00	3.00	3.00	2.67

CSA401	Computer Vision	3.00	3.00	3.00	3.00	1.83	1.67	1.33	1.00	1.33	2.00	1.00	3.00	2.67	3.00	2.00
CAL401	Computer Vision Lab	3.00	3.00	3.00	3.00	1.83	1.67	1.33	1.00	1.33	2.00	1.00	3.00	2.67	3.00	2.00
CSA021	Human Computer Interaction	3.00	3.00	2.83	2.83	1.83	1.33	1.00	1.00	1.00	2.00	1.00	3.00	2.67	2.83	2.00
CSA022	Introduction to Cloud Computing with Machine learning	3.00	3.00	3.00	3.00	3.00	3.00	3.00	1.00	2.00	3.00	1.00	3.00	3.00	3.00	3.00
CSA041	Introduction to Natural Language Processing	3.00	3.00	3.00	3.00	3.00	1.67	1.67	1.00	1.50	3.00	1.17	3.00	2.83	3.00	2.17
CSA051	Recommender Systems	3.00	3.00	2.83	3.00	2.83	2.33	2.33	1.00	2.67	2.00		3.00	3.00	2.67	2.17
CSA061	Robotics and Intelligent Systems	3.00	3.00	3.00	3.00	3.00	1.33	1.33	1.17	2.00	2.17	2.83	2.17	3.00	3.00	2.50
CSE011	Mathematical Techniques	2.33	1.83	1.60	1.20	1.50		1.20			1.40	1.60	1.40	2.17	1.00	
CSE021	Introduction to Cloud Computing	1.83	2.33	1.67	2.00									2.00	2.50	2.50
CSE022	Android Application Development	1.00	2.00	2.33	3.00	3.00	3.00	2.50		2.17		2.33	1.00	2.50	3.00	2.17
CSA031	Digital Image Processing	3.00	3.00	3.00	3.00	1.83	1.67	1.33	1.00	1.40	2.00	1.00	3.00	2.67	3.00	2.00
CSA051	Wireless Networks	3.00	2.00	3.00	2.00	2.00			1.00							2.33
CSE062	MOBILE COMPUTING	3.00	3.00		2.00	3.00					2.00			2.50	2.17	
0	Basics of Internet of Things and Raspberry Pi	2.67	1.67	1.67	2.67	3.00	2.00	1.67	2.33	2.00	2.00	2.25	2.67	2.67	2.00	2.00
CSI104	Introduction to IoT	2.67	1.83	1.83	2.25	3.00	1.67	2.17					3.00	3.00		
B.Tech-Computer Science & Engineering with specialization in Internet of Things & Applications																
CSI104	Introduction to IoT	2.67	1.83	1.83	2.25	3.00	1.67	2.17					3.00	3.00		
CSI201	Embedded System	3.00	2.75	2.67	2.50	2.75	2.00	2.25	2.00	2.40	2.40	2.00	3.00	2.50	2.00	3.00
CIP201	Embedded System Lab	3.00	2.75	2.40	2.17	2.40	1.67	2.00	1.80	2.50	2.17	2.40	3.00	2.17	2.00	2.40
CSI202	IoT Architecture and Programming	2.17	2.67	2.50	2.67	2.75	2.00	2.33	2.00	2.00	2.75	2.00	2.00	2.67	2.17	2.50
CIP202	IoT Architecture and Programming Lab	2.00	2.00	1.83	1.50	2.00	2.50	2.00	2.00	2.17	1.00	2.83	3.00	2.33	2.33	2.00
CSI301	Programming with SENSEnuts IoT Platform	2.17	2.60	2.40	2.00	2.67	2.00	2.00	2.50	1.83	1.83	1.83	2.17	2.67	2.00	1.17
CIP301	Programming with SENSEnuts IoT Platform Lab	2.33	2.00	2.00	2.00	3.00	2.00	2.00	2.20	2.50	2.50	2.50	2.67	2.67	2.00	2.00
CSI302	IoT: Sensing & Actuator Devices	2.17	2.00	1.33	1.33	1.17	2.00	1.67	1.00	2.20	2.00	2.20	2.17	2.00	1.40	1.20
CIP302	IoT: Sensing & Actuator Devices Lab	3.00	2.83	2.17	2.17	3.00	2.00	1.67	2.00	3.00	3.00	3.00	2.17	2.00	2.20	2.00
CSI303	Wireless Technologies for IoT	3.00	2.20	2.33	2.33	3.00		3.00	2.00	2.00	2.17	2.50	2.00	2.00	3.00	3.00
CIP303	Wireless Technologies for IoT Lab	3.00	3.00	2.80	2.25	2.83	3.00			2.67		2.50	3.00	3.00	2.40	
CSI401	IoT Security	3.00	2.17	2.33	2.17	2.25	2.33		2.00	2.67	3.00	2.67	2.50	2.00	2.50	3.00
CSI023	Micro-controller programming using Arduino	2.17	2.60	2.40	2.00	2.67	2.00	2.00	2.50	1.83	1.83	1.83	2.17	2.67	2.00	1.17

CIP023	Micro-controller programming using Arduino Lab	2.33	2.00	2.00	2.00	3.00	2.00	2.00	2.20	2.50	2.50	2.50	2.67	2.67	2.00	2.00
CSI024	Raspberry Pi and its Programming	2.33	2.00	2.00	2.50	3.00	2.00	2.00	2.20	2.33	2.33	2.50	2.67	2.67	2.00	2.00
CIP024	Raspberry Pi and its Programming Lab	2.33	2.00	2.00	2.00	3.00	2.00	2.00	2.20	2.50	2.50	2.50	2.67	2.67	2.00	2.00
CSI021	Sensor-Cloud for Internet of Things	2.17	2.00	1.75	2.00	3.00	1.17	2.00	2.00	1.50	1.25	2.00	2.50	2.50	1.83	2.00
CIP021	Sensor-Cloud for Internet of Things Lab	2.33	2.00	2.00	2.00	3.00	2.00	2.00	2.20	2.50	2.50	2.50	2.67	2.67	2.00	2.00
CSI022	Wireless Sensor Networks	2.17	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.50	2.50	2.00	2.00
CIP022	Wireless Sensor Networks Lab	2.83	1.67	2.00	1.80	2.67	1.50	2.80	2.00	2.20	2.20	2.20	2.33	2.00	2.40	2.40
CSI031	Artificial Intelligence for IoT	3.00	2.60	2.60	2.60	3.00	2.50	3.00	2.00	2.20	2.20	2.50	2.33	2.00	2.40	2.25
CIP031	Artificial Intelligence for IoT Lab	2.83	2.67	2.00	2.40	3.00	2.00	2.00	2.20	2.50	2.50	2.50	2.83	2.67	2.00	3.00
CSI032	Data Analytics for IoT	2.67	2.75	3.00	2.00	2.25	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.25	1.33	
CSI033	Image Processing with IoT	3.00	2.60	2.60	2.60	2.83	2.50	3.00	2.00	2.20	2.20	2.50	2.33	2.00	2.33	2.25
CIP033	Image Processing with IoT Lab	2.33	2.00	2.00	2.00	3.00	2.00	2.00	2.20	2.50	2.50	2.50	2.67	2.67	2.00	2.00
CSI011	Android with IoT	2.00	2.25	2.50	2.50	2.00	2.67	2.33	2.00	2.50	2.20	2.00	2.67	2.33	2.33	2.50
CIP011	Android with IoT Lab	2.33	2.00	2.00	2.00	3.00	2.00	2.00	2.20	2.50	2.50	2.50	2.67	2.67	2.00	2.00
CSI041	Fog Computing in IoT	2.83	2.33	2.40	2.00	2.67	2.50	1.80	3.00	2.50	2.50	2.50	2.67	2.00	2.00	2.50
CSI042	Industrial IoT 4.0	1.83	1.80	1.50	1.60	2.25	1.00	2.00	2.00	2.00	1.50	2.25	2.17	1.50	2.50	2.00
CSI051	IoT in Healthcare	3.00	2.83	2.83	2.80	2.00	3.00	3.00	2.17	2.67	2.83	2.67	3.00	2.67	2.67	3.00
CSI052	Drones in IoT	3.00	2.83	2.83	2.80	3.00	2.83	2.83	2.17	2.67	2.83	3.00	3.00	2.67	2.67	2.33
CSI061	Industrial IoT: Smart Manufacturing	2.67	2.17	2.33	2.83	3.00	2.00	2.00	2.50	2.00	1.75	2.00	2.17	3.00	2.00	2.00
CSI062	IoT Applications	3.00	3.00	2.83	3.00	3.00	3.00	3.00	2.00	3.00	3.00	3.00	3.00	3.00	2.67	2.00
CIP062	IoT Applications Lab	3.00	3.00	2.83	3.00	3.00	3.00	3.00	2.00	3.00	3.00	3.00	3.00	3.00	2.67	2.00

B.Tech-Computer Science & Engineering with specialization in Cyber Security & Forensics

0	Introduction to Cyber Security & Laws	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Digital Forensics	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Digital forensics Lab	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Ethical Hacking	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00

0	ETHICAL HACKING LAB	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Security Threats Intelligence and Risk Management	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
CSC302	Cryptography and Network Security	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
CCP302	Cryptography and Network Security Lab	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	2.50	3.00	3.00	3.00	3.00
0	Intrusion Detection and Prevention System	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	2.50	3.00	3.00	3.00	3.00
0	Intrusion Detection and Prevention System Lab	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	2.50	3.00	3.00	3.00	3.00
0	Introduction to IoT and It's Security	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Machine Learning	3.00	3.00	3.00	3.0 0	3.00	3.0 0	2.8 3	2.0 0	2.00	3.00	2.67	3.00	2.83	2.83	2.67
0	Machine Learning Lab															
0	Open source Tools for Cyber Security & Forensics	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Open source Tools for Cyber Security & Forensics Lab	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Packet Analysis	3.00	3.00	3.00	3.0 0	2.83	2.3 3	2.3 3	1.1 7	2.33	3.00	2.67	3.00	3.00	3.00	2.67
0	Packet Analysis Lab	2.67	2.33	2.80	2.7 5	1.00			2.0 0	2.20	1.67	2.33	1.25	2.50	2.20	1.75
0	Mobile and Wireless Security	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Exploit Writing	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
CSC-032	Malware Analysis	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Cloud Security															
0	Penetration Testing		3.00	2.83	2.3 3	3.00	2.2 5	3.0 0	3.0 0	2.67	2.50	3.00	3.00	2.50	3.00	3.00
0	Penetration Testing Lab	3.00	2.83	2.33	3.0 0	2.25	3.0 0	3.0 0	2.6 7	2.50	3.00	3.00	2.50	3.00	3.00	3.00

CSC-062	Web Application Security	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00
CSC-022	Disaster Recovery Management	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Digital Water Marking and Steganography	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Information Security and Audit Monitoring	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
0	Network & Cyber Forensics	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00
0	Data Privacy and Protection	3.00	2.83	2.33	3.00	2.25	3.00	3.00	2.67	2.50	3.00	3.00	2.50	3.00	3.00	3.00

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

Course Outcome

- **Course Outcomes**–What is it?
 - Course outcomes (COs) are clear statements of what a student should be able to demonstrate on completion of a course.
 - COs should be assessable and measurable knowledge, skills, abilities and attitudes that student attains by the end of the course.
 - It is generally good idea to identify between 4 and 7 outcomes.
 - All courses in a particular programme shall have their own PO.
 - Each CO is mapped to relevant PO.
 - The teaching learning process and assessment process are to be designed in a way to achieve the COs.

Beginning words for Course Outcome:

Active verbs developed based on Bloom's Taxonomy

Knowledge	Understand	Apply	Analyze	Evaluate	Create
define	explain	solve	analyze	reframe	design
identify	describe	apply	compare	criticize	compose
describe	interpret	illustrate	classify	evaluate	create
label	paraphrase	modify	contrast	order	plan
list	summarize	use	distinguish	appraise	combine
name	classify	calculate	infer	judge	formulate
state	compare	change	separate	support	invent
match	differentiate	choose	explain	compare	hypothesize
recognize	discuss	demonstrate	select	decide	substitute
select	distinguish	discover	categorize	discriminate	write
examine	extend	experiment	connect	recommend	compile
locate	predict	relate	differentiate	summarize	construct
memorize	associate	show	discriminate	assess	develop
quote	contrast	sketch	divide	choose	generalize
recall	convert	complete	order	convince	integrate
reproduce	demonstrate	construct	point out	defend	modify
tabulate	estimate	dramatize	prioritize	estimate	organize
tell	express	interpret	subdivide	find errors	prepare
copy	Identify	Manipulate	survey	grade	produce
discover	indicate	Paint	advertise	measure	rearrange
duplicate	Infer	Prepare	appraise	predict	rewrite
enumerate	relate	produce	Break down	rank	role-play

(Reference: Retrieved from <http://www.teachthought.com/learning/249-blooms-taxonomy-verbs-for-critical-thinking/>)

School of Engineering and Technology							
Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: I		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
THEORY SUBJECTS							
1	CSE113	Programming for Problem Solving	3	0	0	3	
2	MTH142	Calculus and Abstract Algebra	3	1	0	4	
3	PHY125	Engineering Physics-I	3	1	0	4	
4	EVS103	Environmental Studies	2	0	0	2	
	OR						
	HMM111	Human Value & Ethics					
Practical/Viva-Voce/Jury							
5	ARP101	Communicative English-1	1	0	2	2	
6	CSP113	Programming for Problem Solving Lab	0	0	2	1	
7	CSP101	Introduction to Computer Science and Engineering	0	0	2	1	
8	MEP106	Computer Aided Design & Drafting	0	0	3	1.5	
	OR						
	MEP105	Mechanical Workshop	0	0	3		
9	PHY162	Physics Lab	0	0	2	1	
TOTAL CREDITS						19.5	

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Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: II		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
THEORY SUBJECTS							
1	CSE114	Application based Programming in Python	3	0	0	3	
2	MTH145	Probability and Statistics	3	1	0	4	
3	EEE112	Principles of Electrical and Electronics Engineering	2	1	0	3	
4	HMM111	Human Value & Ethics	2	0	0	2	
	OR						
	EVS103	Environmental Studies					
Practical/Viva-Voce/Jury							
5	ARP102	Communicative English -2	1	0	2	2	
6	CSP105	Design and creativity Lab	1	0	2	2	
7	CSP114	Application based Programming in Python	0	0	2	1	
8	MEP105	Mechanical Workshop	0	0	3	1.5	
	OR						
	MEP106	Computer Aided Design & Drafting	0	0	3		
9	EEP112	Principles of Electrical and Electronics Engineering	0	0	2	1	
TOTAL CREDITS						19.5	

School of Engineering and Technology							
Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: III		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
THEORY SUBJECTS							
1	CSE242	Data Structures	3	0	0	3	
2	CSE245	Discrete Structures	3	1	0	4	
3	CSE247	Computer Organization and Architecture	3	0	0	3	
4	CSE253	Object Oriented Programming Using Java	2	0	0	2	
5	CSE254	Principles of Operating System	2	0	0	2	
6	CSE255	Introduction of Entrepreneurship	2	0	0	2	
Practical/Viva-Voce/Jury							
7	ARP203	Aptitude Reasoning and Business Communication Skills - Basic	1	0	2	2	
8	CSP242	Data Structures Lab	0	0	2	1	
9	CSP243	Object Oriented Programming Using Java	0	0	2	1	
10	CSP244	Principles of Operating System Lab	0	0	2	1	
11	CSP254	Project Based Learning (PBL) -1	0	0	4	2	
12	CSP292	Summer Internship-I	-	-	-	2	
TOTAL CREDITS						25	

School of Engineering and Technology							
Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: IV		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
THEORY SUBJECTS							
1	BTY223	Introduction to Biology for Engineers	2	0	0	2	
2	CSE249	Data Base Management System	3	0	0	3	
3	CSE251	Theory of Computation	3	1	0	4	Discrete Structures
4	CSE252	Computer Networks	3	0	0	3	
5	PE-1	Program Elective-1	3	0	0	3	
	CSE011	Mathematical Techniques					
	CSE012	Introduction to Graph Theory and its Applications					
6	OE1	Open Elective – 1	2	0	0	2	
Practical/Viva-Voce/Jury							
7	ARP204	Aptitude Reasoning and Business Communication Skills-Intermediate	1	0	2	2	
8	CSP249	Data Base Management System Lab	0	0	2	1	
9	CSP252	Computer Networks Lab	0	0	2	1	PBL-I
10	CSP297	Project Based Learning (PBL) -2	0	0	4	2	
TOTAL CREDITS						23	

School of Engineering and Technology							
Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: V		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
THEORY SUBJECTS							
1	CSE354	Design and Analysis of Algorithm	3	0	0	3	Data Structure
2	CSE356	Software Engineering and Testing Methodologies	2	0	0	2	
3	CSE355	Research Methodology	2	0	0	2	
4	PE2	Program Elective-2				3	Operating System(3)
	CSE021	Introduction to Cloud Computing	3	0	0		Object Oriented Programming using Java
	CSE023/ CSP023	Android Application Development	2	0	2		
	CSE024/ CSP024	Web Technologies					
5	OE-2	Open Elective – 2	2	0	0	2	
Practical/Viva-Voce/Jury							
6	ARP301	Quantitative Aptitude Behavioral and Interpersonal Skills	1	0	2	2	
7	CSP350	Design and Analysis of Algorithm Lab	0	0	2	1	
8	CSP354	Project Based Learning (PBL) -3	0	0	4	2	
9	CSP355	Software Engineering and Testing Methodologies	0	0	2	1	Data Structure Lab
10	CSP391	Summer Internship-II	-	-	-	2	Operating system, DBMS
11	CSP395	Technical Skill Enhancement Course-1 Simulation Lab	0	0	2	1	PBL-2
12	ECC301	Community Connect	-	-	-	2	Summer Internship-I
TOTAL CREDITS						23	

School of Engineering and Technology							
Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: VI		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
THEORY SUBJECTS							
1	CSE353	Compiler Design	3	0	0	3	
2	HMM305	Management for Engineers	3	0	0	3	
3	PE3	Program Elective-3	3	0	0	3	
	CSE031	Digital Image Processing					
	CSE032	Cryptography and Network Security					
4	PE4	Program Elective-4	3	0	0	3	
	CSE041	Software Project Management					
	CSE042	Software Testing					
5	PE5	Program Elective-5	3	0	0	3	
	CSE051	Wireless Networks					
	CSE052	Risk Management					
	CSE053	Advanced Operating System					
6	OE-3	Open Elective – 3	3	0	0	3	
Practical/Viva-Voce/Jury							
7	ARP302	Higher Order Mathematics and Advanced People Skills	1	0	2	2	
8	CSP353	Compiler Design Lab	0	0	2	1	Principles of Operating system Lab
9	CSP396	Technical Skill Enhancement Course-2(Application Development Lab)	0	0	2	1	
10	CSP398	Project Based Learning (PBL) -4	0	0	4	2	PBL-3
TOTAL CREDITS						24	

School of Engineering and Technology							
Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: VII		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
THEORY SUBJECTS							
1	CSE472	Artificial Intelligence	3	0	0	3	
2		Program Elective-6	3	0	0	3	
	CSE062	Mobile Computing					
	CSE063	Quantum Computing					
3		Program Elective-7	2	0	0	2	
	CSE071	Introduction to Internet of Things					
	CSE072	Parallel Computing Algorithms					
	CSE073	3D Printing and Software Tools					
4		Comprehensive Examination	0	0	0	0	Audit
5	OE4	Open Elective - 4	2	0	0	2	
6	OE4	Open Elective - 5	3	0	0	3	
Practical/Viva-Voce/Jury							
7	CSP472	Artificial Intelligence Lab	0	0	2	1	
8	CSP496	Summer Internship-III	-	-	-	2	PBL-4
9	CSP497	Capstone - 1	-	-	-	2	Summer Internship-II
TOTAL CREDITS						18	

School of Engineering and Technology							
Department Of Computer Science & Engineering							
B.Tech-Computer Science Engineering , Integrated B-Tech (CSE) + MBA, Integrated B-Tech (CSE) + M-Tech (SE)							
Batch: 2021 Onwards					TERM: VIII		
S. No.	Course Code	Course	Teaching Load			Credits	Pre-Requisite/Co Requisite
			L	T	P		
Practical/Viva-Voce/Jury							
1	CSP498	Capstone - 2	-	-	-	8	Major Project - 1
TOTAL CREDITS						8	
		Term	L	T	P	Credits	TTH
		TERM-I.	12	2	14	19.5	28
		TERM-II.	12	2	14	19.5	28
		TERM-III.	16	1	12	25	29
		TERM-IV.	17	1	10	23	28
		TERM-V.	15	0	14	23	29
		TERM-VI.	19	0	10	24	29
		TERM-VII.	13	0	2	18	15
		TERM-VIII.	-	-	-	8	0
		TOTAL CREDITS				160	

C. Course Syllabuses