CURRICULA FOR B.TECH. CSE PROGRAM: 2022-26

Semester – I							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1	CSET101	Computational Thinking and Programming		2	1	4	5
2	EMAT101	Engineering Calculus		3	1	0	4
3	EPHY105L	Electromagnetics		2	0	2	3
4	CSET108	Environment and Sustainability		3	0	0	3
5	CSET107	Foundations of Innovation and Entrepreneurship		2	0	0	2
6	CSET103	New Age Life Skills		2	0	0	2
		Credits in Semester-I		14	2	6	19
*CSET102, CSET103, CSET107 will be run in both Sem-I and Sem-II. Half of CSE students will get CSET102 and other half (CSET103+CSET107) in Semester - I and vice versa in Semester - II.							
Semester – II							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1	CSET109	Object Oriented Programming using Java		3	1	4	6
2	CSET105	Digital Design		3	0	2	4
3	CSET106	Discrete Mathematical Structures		3	1	0	4
4	EMAT102	Linear Algebra and Ordinary Differential Equations		3	1	0	4
5	EPHY108L	Mechanics		2	0	2	3
6	CSET102	Introduction to Electrical and Electronics Engineering		2	1	2	4
		Credits in Semester-II		16	4	10	25

S.No.	Code	Title	Pre-requisite	L	T	P	Cr
Semester – III							
1	CSET201	Information Management Systems		3	0	2	4
2	CSET202	Data Structures using C++		3	1	4	6
3	CSET203	Microprocessors and Computer Architecture		3	0	2	4
4	CSET240	Probability and Statistics		3	1	2	5
5	CSET205	Software Engineering		3	0	2	4
6		Specialization Core - I		3	0	2	4
	Credits in Semester-III			18	2	14	27
Semester – IV							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1	CSET206	Design and Analysis of Algorithms	CSET202	3	1	4	6
2	CSET207	Computer Networks		3	0	2	4
3	CSET208	Ethics for Engineers, Patents, Copyrights and IPR		1	0	0	1
4	CSET209	Operating Systems	CSET203	3	0	2	4
5	CSET210	Design Thinking & Innovation		0	0	4	2
6		Specialization Core - II		3	0	2	4
7		Open Elective - I		3	0	0	3
	Credits in Semester-IV			16	1	14	24
*For AI Specialization students CSET301 will run in sem IV and (Specialization Core-II+CSET208) will run in Semester V							
1	CSET398	Refresher Course for Industry Career					

Semester – V							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1	CSET301	Artificial Intelligence and Machine Learning		3	0	4	5
2	CSET302	Automata Theory and Computability		3	1	0	4
3	CSET305	High Performance Computing		3	0	2	4
4	CSET303	Seminar on Special Topics in Emerging Areas		0	1	0	1
5	CSET304	Competitive Programming		0	0	4	2
6		Specialization Elective - I		2	0	2	3
7		Elective - II		2	0	2	3
	Credits in Semester-V			13	2	14	22
Semester – VI							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1	CSET306	Undergraduate Research in Computer Science Engineering		0	1	0	1
2		HSS - Elective		3	0	0	3
3		Specialization Elective – III		2	0	2	3
4		Elective - IV		2	0	2	3
5		Open Elective - II		3	0	0	3
6		Elective - V		2	0	2	3
7		Open Elective-III		3	0	0	3
	Credits in Semester-VI			15	1	6	19
1	CSET399	Summer Internship					

Semester – VII								
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
2	CSET402	Capstone Project		0	0	12	6
3		Specialization Elective – VI		2	0	2	3
4		Open Elective - IV		3	0	0	3
	Credits in Semester-VII			5	0	14	12
Or							
1	CSET497	Professional Practical Internship		0	0	24	12
Semester – VIII							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1	CSET499	Industrial Project/R&D Project/Start-up Project		0	0	24	12
	Credits in Semester-VIII			0	0	24	12
Total credits from semester I to VIII							160

Specialization Core I and II							
S.No.	Code	Title		L	T	P	Cr
1	CSET211	Statistical Machine Learning	AI-1	3	0	2	4
2	CSET212	Blockchain Foundations	Blockchain-1	3	0	2	4
3	CSET213	Linux and Shell Programming	Cyber Security-1	2	0	4	4
4	CSET214	Data Analysis using Python	Data Science-1	2	0	4	4
5	CSET215	Graphics and Visual Computing	Gaming-1	3	0	2	4
6	CSET216	UI/UX Design for Human Computer Interface	CSE-1	2	0	4	4
7	CSET217	Software Development with DevOps	DevOps-1	3	0	2	4
8	CSET218	Full Stack Development	Full Stack-1	2	0	4	4
9	CSET219	Quantum Computing Foundations	Quantum Computing-1	3	0	2	4
10	CSET220	Unmanned Aerial Vehicles	Drones-1	2	0	4	4
11	CSET221	Robotic Process Automation Essentials	RPA-1	2	0	4	4
12	CSET222	Microcontrollers, Robotics & Embedded Systems	IOT-1	2	0	4	4
13	CSET223	Augmented Reality Foundations	AR & VR -1	3	0	2	4
14	CSET238	Product Design Principles and Practices	PDT-1	3	0	2	4
15	CSET224	Cloud Computing	Cloud Computing -1	3	0	2	4

15	CSET224	Cloud Computing	CSE-2	3	0	2	4
16	CSET225	Intelligent Model Design using AI	AI-2	3	0	2	4
17	CSET226	Blockchain Engineering	Blockchain-2	3	0	2	4
18	CSET227	System and Network Security	Cyber Security-2	3	0	2	4
19	CSET228	Data Mining and Predictive Modelling	Data Science-2	3	0	2	4
20	CSET229	Game Engine and Architecture	Gaming-2	3	0	2	4
21	CSET230	DevOps Practices and Principles	DevOps-2	3	0	2	4
22	CSET231	Programming Methodologies for Backend Development	Full Stack-2	2	0	4	4
23	CSET232	Design of Cloud Architectural Solutions	Cloud Computing-2	3	0	2	4
24	CSET233	Machine Learning with Quantum Computing	Quantum Computing-2	2	0	4	4
25	CSET234	Drone Remote Sensing	Drones-2	2	0	4	4
26	CSET235	Digital Bots Development	RPA-2	2	0	4	4
27	CSET236	IoT Networks and Protocols	IOT-2	2	0	4	4
28	CSET237	VR and 360 Video Production	AR & VR -2	3	0	2	4
29	CSET239	Product Design Architecture and Delivery	PDT-2	3	0	2	4

Elective-I, III, VI						
Specialization Electives: Artificial Intelligence						
S.	Code	Title		L	T	P	Cr
1	CSET340	Advanced Computer Vision and Video Analytics		2	0	2	3
2	CSET341	Cognitive Modelling		2	0	2	3
3	CSET342	Probability and Random Processes		2	0	2	3
4	CSET343	AI in Healthcare		2	0	2	3
5	CSET344	Image and Video Processing		2	0	2	3
6	CSET345	Information Retrieval and Search Engine		2	0	2	3
7	CSET346	Natural Language Processing		2	0	2	3
8	CSET347	Social Network Analysis		2	0	2	3
9	CSET348	Reinforcement Learning		2	0	2	3
10	CSET349	Special Topics in Artificial Intelligence		2	0	2	3
Specialization Electives: Blockchain						
S.	Code	Title		L	T	P	Cr
1	CSET350	Blockchain Technologies: Platforms & Applications		2	0	2	3
2	CSET351	Smart Contracts and Solidity Programming		2	0	2	3
3	CSET352	Digital Currencies and Blockchain		2	0	2	3
4	CSET353	Blockchain Policy: Legal, Social and Economic Impact		2	0	2	3
5	CSET354	Cyber Security with Blockchain		2	0	2	3
6	CSET355	Web Development for Blockchain Applications		2	0	2	3
7	CSET356	Security and Privacy for Big Data Analytics		2	0	2	3
8	CSET357	Modern Cryptography		2	0	2	3
9	CSET358	Cloud Infrastructure and Services		2	0	2	3
10	CSET359	Special Topics in Blockchain		2	0	2	3

Specialization Electives: Cyber Security							
S.	Code	Title		L	T	P	Cr
1	CSET354	Cyber Security with Blockchain		2	0	2	3
2	CSET360	Malware Analysis for Mobile Devices		2	0	2	3
3	CSET357	Modern Cryptography		2	0	2	3
4	CSET356	Security and Privacy for Big Data Analytics		2	0	2	3
5	CSET361	Device Level IoT Security		2	0	2	3
6	CSET362	Vulnerability Analysis in Network Protocols		2	0	2	3
7	CSET363	Penetration Testing, Auditing and Ethical Hacking		2	0	2	3
8	CSET364	Forensics and Cyber Law		2	0	2	3
9	CSET365	Web Security		2	0	2	3
10	CSET366	Special Topics in Information Security		2	0	2	3
11	CSET462	Cloud Security and Compliances		2	0	2	3
Specialization Electives: Data Science							
S.	Code	Title		L	T	P	Cr
1	CSET367	Digital Marketing and Trend Analysis		2	0	2	3
2	CSET368	Structural Equation Modelling		2	0	2	3
3	CSET369	Time Series Analysis		2	0	2	3
4	CSET370	Data Visualization and Dashboards		2	0	2	3
5	CSET356	Security and Privacy for Big Data Analytics		2	0	2	3
6	CSET347	Social Network Analysis		2	0	2	3
7	CSET371	Big Data Analytics and Business Intelligence		2	0	2	3
8	CSET372	Advanced Database Management System		2	0	2	3
9	CSET373	Satellite Data Analysis		2	0	2	3
10	CSET374	Special Topics in Data Science		2	0	2	3

Specialization Electives: Gaming							
S.	Code	Title		L	T	P	Cr
1	CSET375	VR Gaming		2	0	2	3
2	CSET337	Augmented Reality		2	0	2	3
3	CSET377	Game Mechanics and Game Physics		2	0	2	3
4	CSET378	Game Programming with HTML5		2	0	2	3
5	CSET379	AI for Games		2	0	2	3
6	CSET380	Animation and Rendering Techniques		2	0	2	3
7	CSET440	Pixel and Poly Arts for Games		2	0	2	3
8	CSET441	Game Design, Development and Programming		2	0	2	3
9	CSET442	Special Topics in Gaming		2	0	2	3
Specialization Electives: Robotic Process Automation							
S.	Code	Title		L	T	P	Cr
1	CSET443	Digital Process Automation Architecture		1	0	4	3
2	CSET444	Enterprise Process Automation Frameworks		2	0	2	3
3	CSET358	Cloud Infrastructure and Services		2	0	2	3
4	CSET445	Continuous Integration and Deployment in DevOps		2	0	2	3
5	CSET446	Server-Side Development Frameworks: Express and Spring		2	0	2	3
6	CSET447	Special Topics in RPA		2	0	2	3

S.	Code	Title		L	T	P	Cr
Specialization Electives: DevOps							
S.	Code	Title		L	T	P	Cr
1	CSET448	Build and Release Management in DevOps		2	0	2	3
2	CSET449	Cloud Services Development and Operations		2	0	2	3
3	CSET450	Source and Version Control in DevOps		2	0	2	3
4	CSET445	Continuous Integration and Deployment in DevOps		2	0	2	3
5	CSET451	Software Craftsmanship in DevOps		2	0	2	3
6	CSET452	Software Containerization in DevOps		2	0	2	3
7	CSET453	System Provisioning and Configuration Management in DevOps		2	0	2	3
8	CSET454	Test Automation in DevOps		2	0	2	3
9	CSET358	Cloud Infrastructure and Services		2	0	2	3
10	CSET456	Special Topics in DevOps		2	0	2	3
Specialization Electives: Full Stack							
S.	Code	Title		L	T	P	Cr
1	CSET457	Front-End Web UI Frameworks and Tools: Bootstrap		2	0	2	3
2	CSET458	Front-End Web UI Frameworks and Tools: React Native		1	0	4	3
3	CSET446	Server-Side Development Frameworks: Express and Spring		2	0	2	3
4	CSET355	Web Development for Blockchain Applications		2	0	2	3
5	CSET358	Cloud Infrastructure and Services		2	0	2	3
6	CSET372	Advanced Database Management System		2	0	2	3
7	CSET459	Front-End UI Frameworks and Tools: Flutter and Django		1	0	4	3
8	CSET460	Special Topics in Full Stack		2	0	2	3

Specialization Electives: Cloud Computing				L	T	P	Cr
S.	Code	Title		L	T	P	Cr
1	CSET449	Cloud Services Development and Operations		2	0	2	3
2	CSET461	Cloud System Administration and Operations		2	0	2	3
3	CSET462	Cloud Security and Compliances		2	0	2	3
4	CSET463	AWS Cloud Support Associate		2	0	2	3
5	CSET464	Developing Solutions for Microsoft Azure		2	0	2	3
6	CSET465	Google Associate Cloud Engineer		2	0	2	3
7	CSET452	Software Containerization in DevOps		2	0	2	3
8	CSET358	Cloud Infrastructure and Services		2	0	2	3
9	CSET466	Special Topics in Cloud Computing		2	0	2	3
Specialization Electives: Drones				L	T	P	Cr
S.	Code	Title		L	T	P	Cr
1	CSET467	Drone Communication		2	0	2	3
2	CSET468	Drone Applications, Components and Assembly		2	0	2	3
3	CSET469	UAV Simulation		2	0	2	3
4	CSET470	Drone Swarming		2	0	2	3
5	CSET471	UAV Mission Planning and Deployments		2	0	2	3
6	CSET472	Auto Pilot and Flight Control		2	0	2	3
7	CSET473	Special Topics in Drone Technology		2	0	2	3

Specialization Electives: Quantum Computing						
S.	Code	Title		L	T	P	Cr
1	CSET474	Quantum Computing for Data Analysis		2	0	2	3
2	CSET475	Quantum Information Theory		2	0	2	3
3	CSET476	Quantum Computer Architecture		2	0	2	3
4	CSET477	Quantum Cryptography		2	0	2	3
5	CSET478	Special Topics in Quantum Computing		2	0	2	3
6	CSET358	Cloud Infrastructure and Services		2	0	2	3
7	CSET356	Security and Privacy for Big Data Analytics		2	0	2	3
Specialization Electives: IoT and Robotics						
S.	Code	Title		L	T	P	Cr
1	CSET479	Robotics: Dynamics and Controls		2	0	2	3
2	CSET480	IoT Analytics		2	0	2	3
3	CSET420	IoT: Security and Attacks		2	0	2	3
4	CSET361	Device Level IoT Security		2	0	2	3
5	CSET421	Humanoids		2	0	2	3
6	CSET422	Mobile IoT Networks		2	0	2	3
7	CSET423	Special Topics in IoT		2	0	2	3

Specialization Electives: Augmented & Virtual Reality						
S.	Code	Title		L	T	P	Cr
1	CSET425	Augmented Reality and ARCore		2	0	2	3
2	CSET380	Animation and Rendering Techniques		2	0	2	3
3	CSET376	3D Models for Augmented and Virtual Reality		2	0	2	3
4	CSET426	Building Social VR with 3D Characters		2	0	2	3
5	CSET427	Virtual Reality: Interface, Application and Design		2	0	2	3
6	CSET428	Special Topics in AR and VR		2	0	2	3
Specialization Electives: Product Design Technology						
S.	Code	Title		L	T	P	Cr
1	CSET434	Art, Craft and Design		2	0	2	3
2	CSET376	3D Models for Augmented and Virtual Reality		2	0	2	3
3	CSET455	Agile Software Development		2	0	2	3
4	CSET437	Product Design Technologies and Tools		0	0	6	3
5	CSET380	Animation and Rendering Techniques		2	0	2	3
6	CSET438	Special Topics in Product Design Technology		2	0	2	3
7	CSET433	Design and Manufacturing for Digital Products		2	0	2	3
8	CSET435	Fashion Design Technology		2	0	2	3
9	CSET436	Furniture Design		2	0	2	3

General Electives (Elective II, IV, V)							
S.	Code	Title		L	T	P	Cr
1	CSET344	Image and Video Processing		2	0	2	3
2	CSET320	Information Retrieval		2	0	2	3
3	CSET321	User Centered Design		2	0	2	3
4	CSET322	Secure Coding		2	0	2	3
5	CSET323	Compiler Construction		2	0	2	3
6	CSET324	Software Project Management		2	0	2	3
7	CSET325	Digital Communication		2	0	2	3
8	CSET326	Soft Computing		2	0	2	3
9	CSET327	Embedded Systems		2	0	2	3
10	CSET328	Distributed Computing		2	0	2	3
11	CSET455	Agile Software Development		2	0	2	3
12	CSET427	Virtual Reality: Interface, Application and Design		2	0	2	3
13	CSET329	Engineering Optimization		2	0	2	3
14	CSET330	Wireless Networks		2	0	2	3
15	CSET358	Cloud Infrastructure and Services		2	0	2	3
16	CSET331	Combinatorics		2	0	2	3
17	CSET332	Mobile and Networked Embedded Systems		2	0	2	3
18	CSET333	Problem Solving using C		2	0	2	3
19	CSET468	Drone Applications, Components and Assembly		2	0	2	3
20	CSET334	Programming using C++		2	0	2	3

21	CSET335	Deep Learning		2	0	2	3
22	CSET336	Bioinformatics and Computational Genomics		2	0	2	3
23	CSET377	Game Mechanics and Game Physics		2	0	2	3
24	CSET338	Computational Geometry		2	0	2	3
25	CSET339	Advances in AI		2	0	2	3
26	CSET429	Network Drivers and Protocols		2	0	2	3
27	CSET430	Digital Signal Processing		2	0	2	3
28	CSET431	Special Topics in Computer Science		2	0	2	3
29	CSET432	Advanced Microprocessor		2	0	2	3
30	CSET373	Satellite Data Analysis		2	0	2	3
31	CSET348	Reinforcement Learning		2	0	2	3
32	CSET420	IoT: Security and Attacks		2	0	2	3
33	CSET378	Game Programming with HTML5		2	0	2	3
34	CSET379	AI for Games		2	0	2	3
35	CSET319	Current Technology Project		2	0	2	3

S.	Code	Title		L	T	P	Cr
Honours-I, II, III, IV, V, VI							
S.	Code	Title		L	T	P	Cr
		Semester IV					
1		Hons-I		2	0	2	3
		Semester V					
2		Hons-II		2	0	2	3
3		Hons-III		2	0	2	3
		Semester VI					
4		Hons-IV		2	0	2	3
5		Hons-V		2	0	2	3
		Semester VII					
6		Hons-VI		2	0	2	3
		Total Credits		12	0	12	18
Minor in AI (I, II, III, IV)							
S.	Code	Title		L	T	P	Cr
		Semester III					
1	CSET291	Data Structure Fundamentals		4	0	0	4
		Semester IV					
2	CSET292	Introduction to Algorithm Design and Development		4	0	0	4
		Semester V					
3	CSET391	Artificial Intelligence		4	0	0	4
		Semester VI					
4	CSET392	Applied AI		4	0	0	4
		Total Credits		16	0	0	16

CS Open Electives-I, II, III, IV						
S.	Code	Title		L	T	P	Cr
1	CSET381	Applications of AI		3	0	0	3
2	CSET382	Web Technologies		3	0	0	3
3	CSET383	Semantic Technology		3	0	0	3
4	CSET384	IT Support Technologies		3	0	0	3
5	CSET385	Software Engineering		3	0	0	3
6	CSET386	Programming Languages		3	0	0	3
7	CSET387	Artificial Intelligence for Creative Expression		3	0	0	3
8	CSET388	AI and Public Policy		3	0	0	3
9	CSET389	Linux Apache MySQL PHP (LAMP)		3	0	0	3
10	CSET390	Data Structures and Algorithms		3	0	0	3
11	CSET481	Software Testing		3	0	0	3
12	CSET482	Computing Start-ups		3	0	0	3
13	CSET483	Career Skills for IT Companies		3	0	0	3
14	CSET484	Cyber security: Impact on Govts, Policies and Economics		3	0	0	3
15	CSET485	AI and Society		3	0	0	3
16	CSET486	Special Topics in Computer Engineering		3	0	0	3
17	CSET489	Search Engine Optimization		3	0	0	3
18	CSET488	Growth Hacking		3	0	0	3
19	CSET487	Digital Marketing		3	0	0	3
20	CSET492	Advanced Skill Enhancement		3	0	0	3
21	CSET491	Advanced Industry Certification		6	0	0	6

*The course CSET491 will be considered equivalent to two open elective courses

HSS Electives						
S.	Code	Title		L	T	P	Cr
1	CSET307	Financial Accounting and Management		3	0	0	3
2	CSET308	Communication Skills for Global Professionals		3	0	0	3
3	CSET309	Organizational Behaviour		3	0	0	3
4	CSET310	Marketing Strategies and Planning		3	0	0	3
5	CSET311	Micro and Macro Economics		3	0	0	3

*In Special Circumstances Open Electives can be run as General Electives and Vice Versa. Also, Specialization Electives can

be run as General Electives and Vice Versa