COIMBATORE INSTITUTE OF TECHNOLOGY, COIMBATORE – 641 014
(Autonomous Institution affiliated to ANNA UNIVERSITY, CHENNAI)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B. E. Computer Science and Engineering

REGULATIONS 2023 - CHOICE BASED CREDIT SYSTEM
CURRICULA AND SYLLABI
SEMESTER I

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23FYH111	Technical English	HSC	2	2	0	4	4
2	23FYM115	Matrices and Vector Calculus	BSC	3	1	0	4	4
3	23FYP115	Applied Physics	BSC	3	0	0	3	3
4	23FYC115	Applied Chemistry -I	BSC	3	0	0	3	3
5	23CS111	C Programming	ESC	3	0	0	3	3
PRACTICALS								
1	23FYH122	English Communication Skills Laboratory	BSC	0	0	2	2	1
2	23CS121	Engineering Graphics	BSC	0	0	2	2	1
3	23CS122	C Programming Laboratory	ESC	0	0	4	4	2
MANDATORY COURSES								
1	23FYH121	Heritage of Tamils	HSC	15 Hours			15 Hours	1
2	23MC101	Induction Programme	MC	15 Days			15 Days	--
3	23MC102	Soft Skills	EEC	15 Hours			15 Hours	--
			TOTAL	14	3	8	25	22

SEMESTER II

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23FYM215	Fourier Series and Differential Equations	BSC	3	1	0	4	4
2	23CS211	Electron Devices	BSC	3	0	0	3	3
3	23FYC211	Applied Chemistry -II	BSC	3	0	0	3	3
4	23CS212	Digital Design	ESC	3	0	0	3	3
5	23CS213	Object Oriented Programming	ESC	3	0	0	3	3
PRACTICALS								
1	23CS221	Digital Design Laboratory	ESC	0	0	2	2	1
2	23CS222	Object Oriented Programming Laboratory	ESC	0	0	2	2	1
3	23FPC221	Basic Sciences Laboratory	HSC	0	0	4	4	2
MANDATORY COURSES								
1	23CC221/ 23CC222/ 23CC223/ 23CC224	Co-Curricular Activities-NSS/YRC/RSP/Sports	MC	15 Hours			15 Hours	1
2	23FYC221	Environmental Science and Engineering	HSC	15 Hours			15 Hours	1

3	23FYH222	Tamils and Technology	HSC	15 Hours			15 Hours	1
TOTAL				**15**	**1**	**08**	**24**	**23**

SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23M315	Linear Algebra and Complex Variables	BSC	3	1	0	4	4
2	23CS311	Data Structures and Algorithms	PCC	3	1	0	4	4
3	23CS312	Discrete Mathematics	BSC	3	0	0	3	3
4	23CS313	Operating Systems	PCC	3	0	0	3	3
5	23CS314	Java Programming	PCC	3	0	0	3	3
PRACTICALS								
1	23CS321	Data Structures and Algorithms Laboratory	PCC	0	0	3	3	1.5
2	23CS322	Operating Systems Laboratory	PCC	0	0	3	3	1.5
3	23CS323	Java Programming Laboratory	PCC	0	0	2	2	1
MANDATORY COURSES								
1	23MC301	Induction Programme	MC	1 Week			1 Week	-
2	23MC321	Human Values and Professional Ethics	MC	15 Hours			15 Hours	1
3	23MC322	Design Thinking	EEC	15 Hours			15 Hours	1
TOTAL				**15**	**2**	**8**	**25**	**23**

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23CS411	Design and Analysis of Algorithm	PCC	3	1	0	4	4
2	23CS412	Database Management Systems	PCC	3	0	0	3	3
3	23CS413	Statistical Data Analysis	BSC	3	0	0	3	3
4	23CS414	Computer Architecture	PCC	3	0	0	3	3
5	23CS415	Formal Languages and Automata Theory	PCC	3	0	0	3	3
PRACTICALS								
1	23CS421	Database Management Systems Laboratory	PCC	0	0	3	3	1.5
2	23CS422	Design and Analysis of Algorithm Laboratory	PCC	0	0	3	3	1.5
3	23CS423	Python Programming	BSC	0	0	4	4	2
MANDATORY COURSES								
1		Value Added Course - I	EEC	15 Hours			15 Hours	1
2	23MC401	Community Service and Engineering	MC	15 Hours			15 Hours	-
TOTAL				**15**	**1**	**10**	**26**	**22**

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23CS511	Computer Networks	PCC	3	0	0	3	3
2	23CS512	Software Engineering	PCC	2	0	2	4	3
3	23CS513	Compiler Design	PCC	3	1	0	4	4
4	T4	Elective –I	PEC	3	0	0	3	3
5	T5	Elective –II	PEC	3	0	0	3	3
PRACTICALS								
1	23CS521	Computer Networks Laboratory	PCC	0	0	2	2	1
2	23CS522	Compiler Design Laboratory	PCC	0	0	3	3	1.5
3	23CS523	Web Technology Laboratory	PCC	0	0	3	3	1.5
	23CS541	Inplant Training	EEC	2 weeks			2 weeks	1
MANDATORY COURSES								
1		Value Added Course - II	EEC	15 Hours			15 Hours	1
2	23MC501	Seminar And Technical Writing	EEC	15 Hours			15 Hours	1
TOTAL				14	1	10	25	23

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23CS611	Embedded Systems and Internet Of Things	PCC	3	0	0	3	3
2	23CS612	Machine Learning	PCC	3	0	0	3	3
3	23CS613	Data Mining and Data Warehousing	PCC	3	0	0	3	3
4	T4	Elective - III	PEC	3	0	0	3	3
5	T5	Elective - IV	PEC	3	0	0	3	3
PRACTICALS								
1	23CS621	Embedded Systems & Internet of Things Laboratory	PCC	0	0	3	3	1.5
2	23CS622	Machine Learning Laboratory	PCC	0	0	3	3	1.5
3	23CS623	Exploratory Data Analysis Laboratory	PCC	0	0	2	2	1
	23CS641	Innovation and Practices	EEC	0	0	4	4	2
MANDATORY COURSES								
1	23MC601	HACKATHON	EEC	15 Hours			15 Hours	1
TOTAL				15	0	12	27	22

SEMESTER VII

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	23CS711	Artificial Intelligence	PCC	3	1	0	4	4
2	23CS712	Cryptography and Network Security	PCC	3	1	0	4	4
3	23CS713	Big Data Analytics	PCC	3	0	0	3	3
4	T4	Elective -V	PEC	3	0	0	3	3
5	T5	Elective –VI	PEC	3	0	0	3	3
PRACTICALS								
1	23CS721	Artificial Intelligence Laboratory	PCC	0	0	3	3	1.5
2	23CS722	Network Security Laboratory	PCC	0	0	2	2	1
3	23CS723	Big Data Analytics Laboratory	PCC	0	0	3	3	1.5
TOTAL				**15**	**2**	**8**	**25**	**21**

SEMESTER VIII

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	T1	Elective –VII	PEC/O EC	3	0	0	3	3
2	T2	Elective –VIII	PEC/O EC	3	0	0	3	3
PRACTICALS								
1	23CS841	Project Work and Viva-Voce	EEC	0	0	12	12	6
TOTAL				**6**	**0**	**12**	**18**	**12**

LIST OF PROFESSIONAL ELECTIVE COURSES:

SI. No	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	CREDITS
1.	23CSPE01	UNIX INTERNALS	PE	3	0	0	3	3
2.	23CSPE02	DIGITAL MARKETING	PE	3	0	0	3	3
3.	23CSPE03	ENTERPRISE RESOURCE MANAGEMENT	PE	3	0	0	3	3
4.	23CSPE04	DIGITAL FORENSICS	PE	3	0	0	3	3
5.	23CSPE05	SOFTWARE PROJECT MANAGEMENT	PE	3	0	0	3	3
6.	23CSPE06	SOFTWARE TESTING AND QUALITY ASSURANCE	PE	3	0	0	3	3
7.	23CSPE07	RECOMMENDER SYSTEMS.	PE	3	0	0	3	3
8.	23CSPE08	ENGINEERING ECONOMICS AND MANAGEMENT	PE	3	0	0	3	3
9.	23CSPE09	CUSTOMER RELATIONSHIP AND MANAGEMENT	PE	3	0	0	3	3
10.	23CSPE10	SOFT COMPUTING	PE	3	0	0	3	3
11.	23CSPE11	MULTIMEDIA AND ANIMATION	PE	3	0	0	3	3
12.	23CSPE12	MOBILE COMPUTING	PE	3	0	0	3	3
13.	23CSPE13	OBJECT ORIENTED ANALYSIS AND DESIGN	PE	3	0	0	3	3
14.	23CSPE14	AD HOC NETWORKS	PE	3	0	0	3	3
15.	23CSPE15	WIRELESS SENSOR NETWORKS	PE	3	0	0	3	3
16.	23CSPE16	KNOWLEDGE ENGINEERING	PE	3	0	0	3	3
17.	23CSPE17	DATA SCIENCE	PE	3	0	0	3	3
18.	23CSPE18	ROBOTIC PROCESS AUTOMATION	PE	3	0	0	3	3
19.	23CSPE19	QUANTUM COMPUTING	PE	3	0	0	3	3
20.	23CSPE20	CYBER SECURITY	PE	2	0	2	4	3
21.	23CSPE21	CRYPTOCURRENCY AND BLOCKCHAIN TECHNOLOGIES	PE	3	0	0	3	3
22	23CSPE22	TEXT AND SPEECH ANALYSIS	PE	3	0	0	3	3
23	23CSPE23	EDGE AND FOG COMPUTING	PE	3	0	0	3	3
24	23CSPE24	AGILE TECHNOLOGY	PE	3	0	0	3	3
25	23CSPE25	SOCIAL NETWORK ANALYSIS	PE	3	0	0	3	3

LIST OF OPEN ELECTIVE COURSES OFFERED FOR THE STUDENTS OF OTHER UG PROGRAMMES:

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	L	T	P	CONTACT PERIODS	C	UG PROGRAMME
1.	23CSOE01	Introduction to Customer Relationship Management	OE	3	0	0	3	3	All Branches
2.	23CSOE02	Fundamentals of Software Engineering	OE	3	0	0	3	3	All Branches
3.	23CSOE03	Internet Programming	OE	3	0	0	3	3	All Branches
4.	23CSOE04	Introduction to Data Warehousing and Data Mining	OE	3	0	0	3	3	All Branches
5.	23CSOE05	Introduction to Embedded Systems	OE	3	0	0	3	3	All Branches

Professional Electives for Major Verticals

Vertical 1 - Web Technology Frameworks				
Course Code	**Course Name**	**L**	**T**	**P**	**C**
23CSV301	FRONT END WEB DEVELOPMENT	2	0	2	3
23CSV302	JAVASCRIPT FRAMEWORKS	2	0	2	3
23CSV303	BACKEND WEB DEVELOPMENT	2	0	2	3
23CSV304	WEB SERVER ADMINISTRATION	2	0	2	3
23CSV305	APPLICATION DEVELOPMENT	2	0	2	3
23CSV306	DEVOPS	2	0	2	3

Vertical 2 - Cloud Computing Technologies				
Course Code	**Course Name**	**L**	**T**	**P**	**C**
23CSV307	OPEN SOURCE SYSTEMS	2	0	2	3
23CSV101	DISTRIBUTED SYSTEMS	3	0	0	3
23CSV102	STORAGE TECHNOLOGIES	3	0	0	3
23CSV103	VIRTUALIZATION	3	0	0	3
23CSV104	CLOUD COMPUTING	3	0	0	3
23CSV105	SECURITY AND PRIVACY IN CLOUD	3	0	0	3

Vertical 3 - Artificial Intelligence, Machine Learning and Data Science				
Course Code	**Course Name**	**L**	**T**	**P**	**C**
23CSV106	EXPLORATORY DATA ANALYSIS	3	0	0	3
23CSV308	GENERATIVE AI	2	0	2	3
23CSV107	NEURAL NETWORKS AND DEEP LEARNING	3	0	0	3
23CSV309	NATURAL LANGUAGE PROCESSING	2	0	2	3
23CSV108	COMPUTER VISION	3	0	0	3

23CSV109	EVOLUTIONARY ALGORITHMS	3	0	0	3

Vertical 4 - Creative Media

Course Code	Course Name	L	T	P	C
23CSV110	MULTIMEDIA DATA COMPRESSION AND STORAGE	3	0	0	3
23CSV310	VIDEO CREATION AND EDITING	2	0	2	3
23CSV311	UI AND UX DESIGN	2	0	2	3
23CSV312	DIGITAL MARKETING	2	0	2	3
23CSV313	VISUAL EFFECTS	2	0	2	3
23CSV314	GAME DEVELOPMENT	2	0	2	3

Minor Vertical Offered for Other Departments

Minor Vertical – Cyber Physical Systems

Course Code	Course Name	L	T	P	C
23CSMV101	CYBER PHYSICAL SYSTEMS	3	0	0	3
23CSMV102	COMMUNICATIONS FOR CYBER PHYSICAL SYSTEMS	3	0	0	3
23CSMV103	MALWARE ANALYSIS	3	0	0	3
23CSMV301	SECURITY AND PRIVACY OF CYBER PHYSICAL SYSTEMS	2	0	2	3
23CSMV104	RISK ANALYSIS	3	0	0	3
23CSMV105	COMPUTER FORENSICS	3	0	0	3

Value added Courses

Course Code	Course Name	Hours
23CSOC01	ACCELERATING EDGE COMPUTING WITH GPU	
23CSOC02	BUILDING SCALABLE APPLICATIONS WITH CLOUD STORAGE INTEGRATION	
23CSOC03	REVOLUTIONIZING IOT WITH AI	15
23CSOC04	PROBLEM SOLVING AND OPTIMIZATION TECHNIQUES IN DSA USING C ++	
23CSOC05	PROBLEM SOLVING IN ADVANCED ALGORITHMS USING JAVA	