

KGISL INSTITUTE OF TECHNOLOGY COIMBATORE
REGULATIONS 2024 (for students admitted from AY2024-25)
CHOICE BASED CREDIT SYSTEM
B.E. CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)
CURRICULUM AND SYLLABI FOR I TO VIII SEMESTERS

SEM	HSMC	BSC	ESC	PCC	PEC	OEC	EEC	Total
I	4	10	9					23
II	4	9	9				3	25
III		4	4	16			2	26
IV		4		15			6	25
V	2			10	6		3	21
VI				6	9	3	4	22
VII	3			4		3	6	16
VIII							10	10
Total	13	27	22	51	15	6	34	168
% of Category	7.7%	16.1%	13.1%	30.4%	8.9%	3.6%	20.2%	100%

CATEGORY OF COURSES

HSMC	Humanities Science and Management Course	PEC	Professional Elective Course
BSC	Basic Science Course	OEC	Open Elective Course
ESC	Engineering Science Course	EEC	Employability Enhancement Course
PCC	Professional Core Course	MC	Mandatory Course

TYPE OF COURSE

LIT	Laboratory Integrated Theory	PCD	Personality Character Development
T	Theory	VC	Value Added Course
L	Laboratory Course	COT	Community Outreach and Intervention through Technical Activities
IP	Internship Programme	IT	Industrial Training/ Internship
MC	Mandatory Course	CC	Comprehension Course
NCC	NCC Credit Course	PW	Project Work

S.No	Category	Suggested Breakup of Credits	Credits
1	Humanities, Social Sciences and Management Courses (HSMC)	10-13	13
2	Basic Science Courses (BSC)	23 – 27	27
3	Engineering Science Courses (ESC)	11-22	22
4	Professional Core Courses (PCC)	50-62	51
5	Professional Elective Courses (PEC)	15-18	15
6	Open Elective Courses (OEC)	6	6
7	Employability Enhancement Courses (EEC)	30-36	34
8	Mandatory Courses (MC)	Non-Credit	Non-Credit
	Total	165 - 170	168

SEMESTER I							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UTA161	தமிழர் மரபு/Heritage of Tamils	T	1-0-0	1	1	HSMC
2	24UEN171	Communicative English for Engineers and Professionals - I	LIT	2-0-2	4	3	HSMC
3	24UMA161	Calculus and Matrix Algebra	T	3-1-0	4	4	BSC
4	24UPY171	Physics for Engineering and Technology	LIT	2-0-2	4	3	BSC
5	24UCH171	Engineering Chemistry	LIT	2-0-2	4	3	BSC
6	24UCS161	Computational Thinking	LIT	2-1-0	3	3	ESC
7	24UCS171	Python Programming	LIT	3-0-2	5	4	ESC
8	24UME266	Engineering Practices Laboratory	L	0-0-4	4	2	ESC
9	24UPD191	Personality and Character Development	PCD	-	2	-	EEC
10	24UIP181	Induction Programme	IP	-	-	-	MC
11	24UMC001	Mandatory Course I - Yoga and Meditation Fundamentals	MC	2-0-0	2	-	MC
Total						23	

SEMESTER II							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UTA261	தமிழரும் தொழில்நுட்பமும்/ Tamils and Technology	T	1-0-0	1	1	HSMC
2	24UEN271	Communicative English for Engineers and Professionals - II	LIT	2-0-2	4	3	HSMC
3	24UMA261	Statistics and Numerical Methods	T	3-1-0	4	4	BSC
4	24UPY261	Physics for Information Science	T	3-0-0	3	3	BSC
5	24UCH261	Environmental Sciences and Sustainability	T	2-0-0	2	2	BSC
6	24UCS271	Programming in C	LIT	3-0-2	5	4	ESC
7	24UEC272	Basic Electrical and Electronics Engineering	LIT	2-0-2	4	3	ESC
8	24UME166	Engineering Graphics	L	0-0-4	4	2	ESC
9	24USD296	Skill Development Course	LIT	2-0-2	4	3	EEC
10	24UPD291	Personality and Character Development	PCD	-	2	-	EEC
11	24UMC002	Mandatory Course II – Emotional Balance and Mental Wellness	MC	1-0-0	1	-	MC
12	24UNC201	NCC Credit Course Level 1	NCC	-	-	1	-
Total						25	

SEMESTER III							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMA361	Algebra and Combinatorics	T	3-1-0	4	4	BSC
2	24UEC341	Digital Principles and Computer Organization	LIT	3-0-2	5	4	ESC
3	24UAD311	Foundations of Data Science	LIT	3-0-2	5	4	PCC
4	24UTI311	Data Structures and Algorithms	LIT	3-0-2	5	4	PCC
5	24UCS312	Object Oriented Programming	LIT	3-0-2	5	4	PCC
6	24UCS412	Database Management Systems	LIT	3-0-2	5	4	PCC
7		Skill Development Elective - I	L	0-0-4	4	2	EEC
8	24UPD391	Personality and Character Development	PCD	-	2	-	EEC
9	24UVC386	Value Added Course	VC	-	-	2	EEC
Total						26	

SEMESTER IV							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMA463	Optimization Techniques	T	3-1-0	4	4	BSC
2	24UAM411	Artificial Intelligence	LIT	3-0-2	5	4	PCC
3	24UCB513	Object Oriented Software Engineering	LIT	2-0-2	4	3	PCC
4	24UCS511	Computer Networks	LIT	3-0-2	5	4	PCC
5	24UCS414	Operating Systems	LIT	3-0-2	5	4	PCC
6		Career Progression Elective	T	3-0-0	3	3	EEC
7		Skill Development Elective - II	L	0-0-4	4	2	EEC
8	24UCO492	Community Outreach and Intervention through Technical Activities	COT	-	1	1	EEC
9	24UPD491	Personality and Character Development	PCD	-	2	-	EEC
	24UVC486	Value Added Course	VC	-	-	2	EEC
11	24UNC401	NCC Credit Course Level 2	NCC	-	-	2	-
Total						25	

SEMESTER V							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UHV501	Universal Human Values	T	2-0-0	2	2	HSMC
2	24UAM511	Natural Language Processing	LIT	2-0-2	4	3	PCC
3	24UAM512	Machine Learning	LIT	3-0-2	5	4	PCC
4	24UIT411	Web Technologies	LIT	2-0-2	4	3	PCC
5		Professional Elective I	T/LIT	-	-	3	PEC
6		Professional Elective II	T/LIT	-	-	3	PEC
7		Skill Development Elective - III	L	0-0-4	4	2	EEC

MANDATORY COURSES							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMC001	Yoga and Meditation Fundamentals	T	1-0-0	1	-	MC
2	24UMC002	Emotional Balance and Mental Wellness	T	1-0-0	1	-	MC
3	24UMC003	Ethical behavior and code of conduct for Engineers	T	2-0-0	2	-	MC
4	24UMC004	Disaster Management	T	2-0-0	2	-	MC
5	24UMC005	Indian Constitution and Knowledge System	T	2-0-0	2	-	MC
6	24UMC006	Ergonomics and Industrial Safety	T	2-0-0	2	-	MC
7	24UMC007	Introduction to Women and Gender Studies	T	2-0-0	2	-	MC

CAREER PROGRESSION ELECTIVE							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UCPE11	Entrepreneurship Development	T	3-0-0	3	3	EEC
2	24UCPE12	Research Methodology	T	3-0-0	3	3	EEC
3	24UCPE13	Career Development Course	T	3-0-0	3	3	EEC

PROFESSIONAL ELECTIVE COURSES (PEC)

VERTICAL I: CLOUD COMPUTING AND DATA CENTER TECHNOLOGIES							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UITP01	Cloud Computing and Virtualization	LIT	2-0-2	4	3	PEC
2	24UITP02	Cloud Services Management	LIT	2-0-2	4	3	PEC
3	24UITP03	Data Warehousing	LIT	2-0-2	4	3	PEC
4	24UITP04	Storage Technologies	LIT	2-0-2	4	3	PEC
5	24UITP05	Software Defined Networks	T	3-0-0	3	3	PEC
6	24UITP06	Security and Privacy in Cloud	LIT	2-0-2	4	3	PEC
7	24UITP07	Edge Computing and IoT	LIT	2-0-2	4	3	PEC
8	24UITP08	Serverless Computing	LIT	2-0-2	4	3	PEC

VERTICAL II: INFORMATION SECURITY AND PRIVACY							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UCYP09	Introduction to Information Security	T	3-0-0	3	3	PEC
2	24UCYP10	Data Privacy and Protection	LIT	2-0-2	4	3	PEC
3	24UCYP11	Information Security Governance	T	3-0-0	3	3	PEC
4	24UCYP12	Access Control and Identity Management	T	3-0-0	3	3	PEC
5	24UCYP13	Security Auditing and Compliance	T	3-0-0	3	3	PEC
6	24UCYP14	Incident Response and Management	LIT	2-0-2	4	3	PEC
7	24UCYP15	Security and Privacy Engineering	T	3-0-0	3	3	PEC
8	24UCYP16	Ethical and Legal Issues in Information Security	T	3-0-0	3	3	PEC

VERTICAL III: FULL STACK DEVELOPMENT							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UCSP01	Web Development	LIT	2-0-2	4	3	PEC
2	24UCSP02	UI and UX Design	LIT	2-0-2	4	3	PEC
3	24UCSP03	Responsive Web Design	T	3-0-0	3	3	PEC
4	24UCSP04	Mobile Application Development	LIT	2-0-2	4	3	PEC
5	24UCSP05	Software Testing and Automation	LIT	2-0-2	4	3	PEC
6	24UCSP06	Agile Methodologies	T	3-0-0	3	3	PEC
7	24UCSP07	IOT Concepts and Applications	T	3-0-0	3	3	PEC
8	24UCSP08	Web Application Security	LIT	2-0-2	4	3	PEC

VERTICAL IV: INTELLIGENCE SYSTEMS & MACHINE LEARNING							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UAMP01	Knowledge Engineering	T	3-0-0	3	3	PEC
2	24UAMP02	Soft Computing	LIT	2-0-2	4	3	PEC
3	24UAMP03	Text and Speech Analysis	LIT	2-0-2	4	3	PEC
4	24UAMP04	Optimization Methods for ML Algorithms	T	3-0-0	3	3	PEC
5	24UAMP05	Game Theory	T	3-0-0	3	3	PEC
6	24UAMP06	Cognitive Science	T	3-0-0	3	3	PEC
7	24UAMP07	Reinforcement Learning	T	3-0-0	3	3	PEC
8	24UAMP08	Security in AI	T	3-0-0	3	3	PEC
9	24UAMP09	Ethical AI	T	3-0-0	3	3	PEC
10	24UAMP10	MLOps	LIT	2-0-2	4	3	PEC

VERTICAL V: DATA SCIENCE & ANALYTICS							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UCBP18	Predictive Analytics	T	3-0-0	3	3	PEC
2	24UCBP19	Recommender Systems	LIT	2-0-2	4	3	PEC
3	24UCBP20	Neural Networks and Deep Learning	T	3-0-0	3	3	PEC
4	24UCBP21	Image and Video Analytics	LIT	2-0-2	4	3	PEC
5	24UCBP22	Computer Vision	T	3-0-0	3	3	PEC
6	24UCBP23	DevOps and Software Deployment	LIT	2-0-2	4	3	PEC
7	24UCBP24	Business Intelligence	LIT	2-0-2	4	3	PEC
8	24UCBP25	Parallel and Distributed Computing	LIT	2-0-2	4	3	PEC
9	24UAMP24	Big Data and Analytics and Management	LIT	2-0-2	4	3	PEC

VERTICAL VI: CREATIVE MEDIA							
S.NO	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UADP01	Design Thinking	T	3-0-0	3	3	PEC
2	24UADP02	Multimedia and Animation	LIT	2-0-2	4	3	PEC
3	24UADP03	Video Creation and Editing Techniques	LIT	2-0-2	4	3	PEC
4	24UADP04	Digital Marketing	LIT	2-0-2	4	3	PEC
5	24UADP05	Game Development	LIT	2-0-2	4	3	PEC
6	24UADP06	Visual Effects	LIT	2-0-2	4	3	PEC
7	24UADP07	Digital Photography	T	3-0-0	3	3	PEC
8	24UADP08	Media Ethics and Governance	T	3-0-0	3	3	PEC

VERTICAL VII: MANAGEMENT

S.NO.	COURSE CODE	COURSE NAME	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UCBP01	Customer Relation Management	T	3-0-0	3	3	HSMC
2	24UCBP02	Human Resource Management for Entrepreneurs	T	3-0-0	3	3	HSMC
3	24UCBP03	Supply Chain Management	T	3-0-0	3	3	HSMC
4	24UCBP04	IT Project Management	LIT	2-0-2	3	3	HSMC
5	24UCBP05	Behavioral Economics	T	3-0-0	3	3	HSMC
6	24UCBP06	E-Commerce	T	3-0-0	3	3	HSMC
7	24UCBP07	Enterprise Resource Planning	T	3-0-0	3	3	HSMC
8	24UCBP08	Financial Technology Innovations	T	3-0-0	3	3	HSMC

OPEN ELECTIVES

B.E COMPUTER SCIENCE AND ENGINEERING

S.No	Course Code	Course Name	Course Type	Periods / Week		Credits
				L-T-P	TCP	
1	24UCSO01	Fundamentals of Data Structures	LIT	2-0-2	4	3
2	24UCSO02	Principles of Computer Networks	LIT	2-0-2	4	3
3	24UCSO03	Video Creation and Editing	LIT	2-0-2	4	3
4	24UCSO04	Fundamentals of Database Systems	LIT	2-0-2	4	3
5	24UCSO05	Basics of Web Development	LIT	2-0-2	4	3
6	24UCSO06	Introduction to Digital Currency	T	3-0-0	3	3

B.E. COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY)

S.No	Course Code	Course Name	Course Type	Periods / Week		Credits
				L-T-P	TCP	
1	24UCYO01	Cybersecurity Fundamentals	T	3-0-0	3	3
2	24UCYO02	Information Security Management	T	3-0-0	3	3
3	24UCYO03	Incident Response and Forensics	T	3-0-0	3	3
4	24UCYO04	Cyber Law and Ethics	T	3-0-0	3	3
5	24UCYO05	Security Operations	T	3-0-0	3	3
6	24UCYO06	Introduction to Open-Source Intelligence.	T	3-0-0	3	3

B. TECH. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

S.No	Course Code	Course Name	Course Type	Periods / Week		Credits
				L-T-P	TCP	
1	24UADO01	Introduction to Artificial Intelligence and Machine Learning	T	3-0-0	3	3
2	24UADO02	Introduction to Data Science	T	3-0-0	3	3
3	24UADO03	Introduction to Big Data Analytics	T	3-0-0	3	3
4	24UADO04	Data Visualization Techniques	T	3-0-0	3	3
5	24UADO05	Introduction to Devops Tools	T	3-0-0	3	3
6	24UADO06	Fundamentals of Storage Technologies	T	3-0-0	3	3
7	24UADO07	Basics of Cloud Services	T	3-0-0	3	3
8	24UADP08	Media Ethics and Governance	T	3-0-0	3	3

B.TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS

S.No	Course Code	Course Name	Course Type	Periods / Week		Credits
				L-T-P	TCP	
1	24UCBO01	Modern Web Applications	T	3-0-0	3	3
2	24UCBO02	Applied Design Thinking	T	3-0-0	3	3
3	24UCBO03	Human Computer Interaction	T	3-0-0	3	3
4	24UCBO04	Social Information Network	T	3-0-0	3	3
5	24UCBO05	Artificial Intelligence and Expert Systems	T	3-0-0	3	3
6	24UCBO06	Usability Design of Software Applications	T	3-0-0	3	3
7	24UCBO07	Data Mining and Analytics	T	3-0-0	3	3

B.TECH. INFORMATION TECHNOLOGY

S.No	Course Code	Course Name	Course Type	Periods / Week		Credits
				L-T-P	TCP	
1	24UITO01	Functional Programming	T	3-0-0	3	3
2	24UITO02	Fundamentals of Cryptography	T	3-0-0	3	3
3	24UITO03	Software Engineering	T	3-0-0	3	3
4	24UITO04	Concepts of Object Oriented Programming	LIT	2-0-2	4	3
5	24UITO05	Fundamentals of Computer Vision	T	3-0-0	3	3
6	24UITO06	Foundations of Block chain	T	3-0-0	3	3
7	24UITO07	Game Theory and Mechanism Design	T	3-0-0	3	3

B.E. ELECTRONICS AND COMMUNICATION ENGINEERING

S.No	Course Code	Course Name	Course Type	Periods / Week		Credits
				L-T-P	TCP	
1	24UECO01	Remote Sensing Concepts	T	3-0-0	3	3
2	24UECO02	Sensors and Actuators	T	3-0-0	3	3
3	24UECO03	Concepts in Mobile Robots	T	3-0-0	3	3
4	24UECO04	Drone Technologies	T	3-0-0	3	3
5	24UECO05	Geographical Information System	T	3-0-0	3	3
6	24UECO06	Introduction to Embedded C	LIT	2-0-2	4	3
7	24UECO07	Fundamentals of Microprocessors and Microcontrollers	LIT	2-0-2	4	3
8	24UECO08	Energy Storing Devices	T	3-0-0	3	3
9	24UECO09	Semiconductor and Devices	T	3-0-0	3	3

B.E. MECHANICAL ENGINEERING

S.No	Course Code	Course Name	Course Type	Periods / Week		Credits
				L-T-P	TCP	
1	24UMEO01	Fundamentals of Additive Manufacturing	T	3-0-0	3	3
2	24UMEO02	Renewable Energy Systems	T	3-0-0	3	3
3	24UMEO03	Principles of Safety Management	T	3-0-0	3	3
4	24UMEO04	Introduction to Mechatronics Systems	T	3-0-0	3	3
5	24UMEO05	Product Design and Development	T	3-0-0	3	3
6	24UMEO06	Fundamentals of Electrical Vehicle Technology	T	3-0-0	3	3

Department of AI&ML

Guidelines for choosing Courses under PEC

	PEC- I	PEC- II		PEC- III		PEC- IV	PEC- V
	CC	ISP	FSD	IS&ML	DS	CM	MGMT
Cluster A	24UITP01 Cloud Computing and Virtualization	24UCYP09 Introduction to Information Security	24UCSP01 Web Development	24UAMP01 Knowledge Engineering	24UCBP22 Computer Vision	24UADP01 Design Thinking	24UCBP01 Customer Relation Management
	24UITP02 Cloud Services Management	24UCYP12 Access Control and Identity Management	24UCSP02 UI and UX Design	24UAMP06 Cognitive Science	24UCBP21 Image and Video Analytics	24UADP02 Multimedia and Animation	24UCBP03 Supply Chain Management
	24UITP06 Security and Privacy in Cloud	24UCYP10 Data Privacy and Protection	24UCSP03 Responsive Web Design			24UADP03 Video Creation and Editing Techniques	24UCBP06 E-Commerce
	24UITP08 Serverless Computing	24UCYP14 Incident Response and Management	24UCSP08 Web Application Security			24UADP06 Visual Effects	
	24UITP04 Storage Technologies						
Cluster B	24UITP05 Software Defined Networks	24UCYP15 Security and Privacy Engineering	24UCSP04 Mobile Application Development	24UAMP02 Soft Computing	24UCBP24 Business Intelligence	24UADP05 Game Development	24UCBP07 Enterprise Resource Planning
		24UCYP13 Security Auditing and Compliance		24UAMP03 Text and Speech Analysis	24UCBP18 Predictive Analytics		24UCBP08 Financial Technology Innovations
		24UCYP11 Information Security Governance		24UAMP04 Optimization Methods for ML Algorithms	24UCBP19 Recommender Systems		

		24UCYP16 Ethical and Legal Issues in Information Security		24UAMP05 Game Theory			
Cluster C	24UITP07 Edge Computing and IoT		24UCSP06 Agile Methodologies	24UAMP08 Security in AI	24UCBP23 DevOps and Software Deployment	24UADP04 Digital marketing	24UCBP02H uman Resource Management for Entrepreneurs
			24UCSP05 Software Testing and Automation	24UAMP09 Ethical AI		24UADP07 Digital Photography	24UCBP05 Behavioral Economics
Cluster D	24UITP03 Data Warehousing	24UCBP29 Quantum Computing	24UCSP07 IOT Concepts and Applications	24UCSP09 Evolutionary Computing	24UCBP25 Parallel and Distributed Computing	24UADP08 Media Ethics and Governance	24UCBP04 IT Project Management
Cluster E				24UAMP07 Reinforcement Learning	24UCBP20 Neural Networks and Deep Learning		
Pre- requisite Courses	24UEC341 Digital Principles and Computer Organization	24UCS511 Computer Networks	24UTI311 Data Structures and Algorithms	24UAD311 Foundations of Data Science	24UCS414 Operating Systems		
	24UCS412 Database Management Systems		24UCS312 Object Oriented Programming	24UAM411 Artificial Intelligence	24UAM511 Natural Language Processing		
			24UCB513 Object Oriented Software Engineering	24UAM512 Machine Learning			
			24UIT411 Web Technologies				

Criteria for Choosing Courses for Professional Electives

PEC – I : Any course from any cluster is fine

PEC – II: Any course from any cluster is fine

PEC – III: Any course from any cluster is fine

PEC – IV: Any course from any cluster is fine

PEC – V: Any course from any cluster is fine

*** It is better to choose Courses from a Cluster in the prescribed order**

Open elective - Course Preferences List

S.No	Departments	Course Preference
1	CSE	24UCSO06
2	AI & DS	24UADO03 24UADO04
3	CSBS	24UCBO03 24UCBO04 24UCBO06 24UCBO07
4	CYS	24UCYO01 24UCYO02 24UCYO03 24UCYO04 24UCYO05 24UCYO06
5	ECE	24UECO01 24UECO02 24UECO03 24UECO04 24UECO05 24UECO06 24UECO07 24UECO08
6	IT	24UITO02 24UITO03 24UITO06 24UITO07
7	Mechanical	24UMEO02 24UMEO06