

CURRICULUM

**B.E. COMPUTER SCIENCE AND ENGINEERING
REGULATION 2022**

SEMESTER I							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credits	Ext/Int	Category
THEORY CUM PRACTICAL							
1	22IT101	Application Development Practices	3/0/2	5	4	50/50	PCC
2	22CS101	Problem Solving using C++	3/0/2	5	4	50/50	PCC
3	22EN101	Technical Communication Skills	2/0/2	4	3	50/50	HSMC
4	22CH101	Engineering Chemistry	3/0/2	5	4	50/50	BSC
THEORY							
5	22MA102	Mathematics I	3/1/0	4	4	60/40	BSC
6	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	60/40	ESC
PRACTICAL							
7	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	40/60	ESC
MANDATORY COURSE							
8	22MC101	Mandatory Course I (Induction Programme)	Three weeks		0	0/100	MC
Total				28	23	800	

SEMESTER II							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY CUM PRACTICAL							
1	22CS201	Data Structures and Algorithms	3/0/2	5	4	50/50	PCC
2	22IT201	Database Management Systems	3/0/2	5	4	50/50	PCC
3	22AD201	Java Programming	3/0/2	5	4	50/50	PCC
4	22PH201	Physics	3/0/2	5	4	50/50	BSC
THEORY							
5	22GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
6	22MA202	Mathematics II	3/1/0	4	4	60/40	BSC
7	22TA101	Heritage of Tamils	1/0/0	1	1	60/40	HSMC
MANDATORY COURSE							
8	22MC102	Mandatory Course 2 (Environmental Sciences)	2/0/0	2	0	0/100	MC
Total				30	24	800	

SEMESTER III							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1	22IT301	Computer Architecture	3/0/0	3	3	60/40	ESC
2	22EC111	Digital Logic and Design	3/0/0	3	3	60/40	ESC
3	22MA302	Random variable & Statistics	3/1/0	4	4	60/40	BSC
4	22AD301	Design and analysis of algorithms	3/0/0	3	3	60/40	PCC
5	22IT302	Web Technology	3/0/0	3	3	60/40	PCC
6	22CS302	Advanced Java Programming	3/0/0	3	3	60/40	PCC
7	22TA201	Tamils and Technology	1/0/0	1	1	60/40	HSMC
PRACTICAL							
8	22IT303	Web Technology Laboratory	0/0/3	3	1.5	40/60	PCC
9	22CS303	Advanced Java Programming Laboratory	0/0/3	3	1.5	40/60	PCC
MANDATORY COURSE							
10	22MC1XX	Mandatory Course 3	2/0/0	2	0	0/100	MC
Total				28	23	1000	

SEMESTER IV							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY CUM PRACTICAL							
1	22CS403	Operating Systems	3/0/2	5	4	50/50	PCC
THEORY							
2	22MA401	Optimization and Project Management	3/1/0	4	4	60/40	BSC
3	22CS401	Theory of Computation	3/0/0	3	3	60/40	PCC
4	22AD402	Cloud Computing	3/0/0	3	3	60/40	PCC
5	22IT402	Software Testing	3/0/0	3	3	60/40	PCC
6	22CS402	Web Frameworks	3/0/0	3	3	60/40	PCC
PRACTICAL							
7	22AD403	Cloud Computing Laboratory	0/0/3	3	1.5	40/60	PCC
8	22CS404	Web Frameworks Laboratory	0/0/3	3	1.5	40/60	PCC
MANDATORY COURSE							
9	22MC1XX	Mandatory Course 4	2/0/0	2	0	0/100	MC
Total				30	23	900	

SEMESTER V							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1	22XXXXX	Open Elective 1	3/0/0	3	3	60/40	OEC
2	22EC512	Microcontrollers and Embedded Systems	3/0/0	3	3	60/40	ESC
THEORY CUM PRACTICAL							
3	22CS501	Principles of Compiler Design	3/0/2	5	4	50/50	PCC
4	22CS502	Computer Networks	3/0/0	3	3	60/40	PCC
5	22XXXXX	Professional Elective 1	3/0/0	3	3	60/40	PEC
6	22XXXXX	Professional Elective 2	3/0/0	3	3	60/40	PEC
PRACTICAL							
7	22CS505	Computer Networks Laboratory	0/0/3	3	1.5	40/60	PCC
PROJECT WORK							
8	22CS503	Mini Project	0/0/2	2	1	40/60	PW
MANDATORY COURSE							
9	22MCXXX	Mandatory Course 5	2/0/0	2	0	0/100	MC
Total				27	21.5	900	

SEMESTER VI							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1	22CSXXX	Emerging Elective 1	3/0/0	3	3	60/40	EEC
2	22CS601	Object Oriented Analysis and Design	3/0/0	3	3	60/40	PCC
3	22CS602	Cryptography and Network Security	3/0/0	3	3	60/40	PCC
4	22CS603	Artificial Intelligence	3/0/0	3	3	60/40	PCC
5	22XXXXX	Professional Elective 3	3/0/0	3	3	60/40	PEC
6	22XXXXX	Professional Elective 4	3/0/0	3	3	60/40	PEC
PRACTICAL							
7	22CS604	Object Oriented Analysis and Design Laboratory	0/0/3	3	1.5	40/60	PCC
8	22CS605	Artificial Intelligence Laboratory	0/0/3	3	1.5	40/60	PCC
Total				24	21	800	

SEMESTER VII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1	22IT702	Computational Biology	3/0/0	3	3	60/40	ESC
2	22XXXXX	Open Elective 2	3/0/0	3	3	60/40	OEC
3	22CSXXX	Emerging Elective 2	3/0/0	3	3	60/40	EEC
4	22CS701	Internet of Everything	3/0/0	3	3	60/40	PCC
5	22XXXXX	Professional Elective 5	3/0/0	3	3	60/40	PEC
6	22XXXXX	Professional Elective 6	3/0/0	3	3	60/40	PEC
PRACTICAL							
7	22CS702	Internet of Everything Laboratory	0/0/3	3	1.5	40/60	PCC
EMPLOYABILITY ENHANCEMENT SKILLS							
8	22EES01	Employability Enhancement Skills			2	0/100	EES
Total				21	21.5	800	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
PROJECT WORK							
1	22CS801	Project	0/0/24	24	12	40/60	PW
Total				24	12	100	

Humanities and Management Courses (8 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	22EN101	Technical Communication Skills	2/0/2	4	3	50/50	HSMC
2	22GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
3	22TA101	Heritage of Tamils	1/0/0	1	1	60/40	HSMC
4	22TA201	Tamils and Technology	1/0/0	1	1	60/40	HSMC

Basic Science Courses (24 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	22MA102	Mathematics I	3/1/0	4	4	60/40	BSC
2	22CH101	Engineering Chemistry	3/0/2	5	4	50/50	BSC
3	22MA202	Mathematics II	3/1/0	4	4	60/40	BSC
4	22PH201	Physics	3/0/2	5	4	50/50	BSC
5	22MA302	Random variable & Statistics	3/1/0	4	4	60/40	BSC
6	22MA401	Optimization and Project Management	3/1/0	4	4	60/40	BSC

Engineering Science Courses (18 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	60/40	ESC
2	22IT301	Computer Architecture	3/0/0	3	3	60/40	ESC
3	22EC111	Digital Logic and Design	3/0/0	3	3	60/40	ESC
4	22EC512	Microcontrollers and Embedded Systems	3/0/0	3	3	60/40	ESC
5	22IT702	Computational Biology	3/0/0	3	3	60/40	ESC
6	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	40/60	ESC

Professional Core Courses(75 credits)

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1	22IT101	Application Development Practices	3/0/2	5	4	50/50	PCC
2	22CS101	Problem Solving using C++	3/0/2	5	4	50/50	PCC
3	22CS201	Data Structures and Algorithms	3/0/2	5	4	50/50	PCC
4	22IT201	Database Management Systems	3/0/2	5	4	50/50	PCC
5	22AD201	Java Programming	3/0/2	5	4	50/50	PCC
6	22AD302	Design and analysis of algorithms	3/0/0	3	3	60/40	PCC
7	22IT302	Web Technology	3/0/0	3	3	60/40	PCC
8	22IT303	Web Technology Laboratory	0/0/3	3	1.5	40/60	PCC
9	22CS302	Advanced Java Programming	3/0/0	3	3	60/40	PCC
10	22CS303	Advanced Java Programming Laboratory	0/0/3	3	1.5	40/60	PCC
11	22CS401	Theory of Computation	3/0/0	3	3	60/40	PCC
12	22AD402	Cloud Computing	3/0/0	3	3	60/40	PCC
13	22AD403	Cloud Computing Laboratory	0/0/3	3	1.5	40/60	PCC
14	22IT402	Software Testing	3/0/0	3	3	60/40	PCC
15	22CS402	Web Frameworks	3/0/0	3	3	60/40	PCC
16	22CS404	Web Frameworks Laboratory	0/0/3	3	1.5	40/60	PCC
17	22CS403	Operating Systems	3/0/2	5	4	50/50	PCC
19	22CS501	Principles of Compiler Design	3/0/2	5	4	50/50	PCC

21	22CS502	Computer Networks	3/0/0	3	3	60/40	PCC
22	22CS505	Computer Networks Laboratory	0/0/3	3	1.5	40/60	PCC
23	22CS601	Object Oriented Analysis and Design	3/0/0	3	3	60/40	PCC
24	22CS604	Object Oriented Analysis and Design Laboratory	0/0/3	3	1.5	40/60	PCC
25	22CS602	Cryptography and Network Security	3/0/0	3	3	60/40	PCC
26	22CS603	Artificial Intelligence	3/0/0	3	3	60/40	PCC
27	22CS605	Artificial Intelligence Laboratory	0/0/3	3	1.5	40/60	PCC
28	22CS701	Internet of Everything	3/0/0	3	3	60/40	PCC
29	22CS702	Internet of Everything Laboratory	0/0/3	3	1.5	40/60	PCC

Mandatory Courses

S.No.	Course Code	Course Title	Category
1	22MC101	Induction Programme	MC
2	22MC102	Environmental Sciences	MC
3	22MC103	Soft Skills	MC
4	22MC104	Management Organizational Behaviour	MC
5	22MC105	General Aptitude	MC
6	22MC106	Life Skills and Ethics	MC
7	22MC107	Stress Management	MC
8	22MC108	Constitution of India	MC
9	22MC109	Essence of Indian Traditional Knowledge	MC
10	22MC110	Biology	MC

Professional Elective Courses (18 Credits)

S.No.	Course Code	Course	L	T	P	Credit	Ext/Int
Software Development							
1	22CS901	API development using MVC Architecture	3	0	0	3	60/40
2	22IT901	UI/UX Application development	3	0	0	3	60/40
3	22CS902	Cloud Services and Integration	3	0	0	3	60/40
4	22IT902	Cloud Infrastructure Management	3	0	0	3	60/40
5	22IT904	Professional Readiness for Innovation, Employability and Entrepreneurship	0	0	6	3	0/100
6	22IT905	Open Source Systems	3	0	0	3	60/40
7	22CS903	Software Project Management	3	0	0	3	60/40
8	22CS904	Software Quality Assurance	3	0	0	3	60/40
9	22CS905	Design of Software Agents	3	0	0	3	60/40
10	22CS906	Test Driven Software Development	3	0	0	3	60/40
Data Science and Computational Intelligence							
11	22CS914	Fundamentals of Data Science	3	0	0	3	60/40
12	22CS911	Artificial Intelligence and Machine learning	3	0	0	3	60/40
13	22AD912	Statistics and Machine Learning	3	0	0	3	60/40
14	22IT911	NLP with predictive analysis	3	0	0	3	60/40

15	22CS912	Secure Software Systems	3	0	0	3	60/40
16	22IT913	Blockchain Technology	3	0	0	3	60/40
17	22CS913	Business Analytics	3	0	0	3	60/40
18	22CS915	Knowledge Management Systems	3	0	0	3	60/40
19	22CS916	Social Network Mining and Analysis	3	0	0	3	60/40
20	22CS917	Computer Vision and Analysis	3	0	0	3	60/40
Networks and Security							
21	22IT921	Cyber Security	3	0	0	3	60/40
22	22AD921	Ethical hacking	3	0	0	3	60/40
23	22CS921	Cyber threats and vulnerabilities	3	0	0	3	60/40
24	22AD922	Ethical Hacking and Auditing frameworks	3	0	0	3	60/40
25	22CS922	Wireless Networks	3	0	0	3	60/40
26	22IT923	Mobile Adhoc Networks	3	0	0	3	60/40
27	22CS923	Fault Tolerant Computing	3	0	0	3	60/40
28	22CS924	Software defined networks	3	0	0	3	60/40
29	22CS925	Network Engineering and Management	3	0	0	3	60/40
30	22CS926	Telecommunication and Switching Techniques	3	0	0	3	60/40

Emerging Elective Courses (6 Credits)

S.No.	Course Code	Course	L	T	P	Credit	Ext/Int
Emerging Elective Courses – Stream 1							
1	22CS007	Design of Dependable Systems	3	0	0	3	60/40
2	22CS008	Networked Cyber-Physical Systems	3	0	0	3	60/40
3	22CS009	Serverless Computing	3	0	0	3	60/40
Emerging Elective Courses – Stream 2							
4	22CS010	Malware Reverse Engineering	3	0	0	3	60/40
5	22CS011	Adaptive Intelligent Systems	3	0	0	3	60/40
6	22CS012	Jenkins and Kubernetes	3	0	0	3	60/40

Open Elective Courses offered by CSE

S.No.	Course Code	Course	L	T	P	Credit	Ext/Int
1	22CS001	Fundamentals of Java Programming	3	0	0	3	60/40
2	22CS002	Software Product Development and Management	3	0	0	3	60/40
3	22CS003	Virtual Reality	3	0	0	3	60/40
4	22CS004	Network and Systems Security	3	0	0	3	60/40
5	22CS005	Green Computing	3	0	0	3	60/40
6	22CS006	Internet Marketing and E-Commerce	3	0	0	3	60/40

Value Added Courses

S.No.	Course Code	Course	Credit	Category
1	22VA200	Cassandra	1	VAC
2	22VA201	MongoDB	1	VAC
3	22VA130	Effective Communication Skills	2	VAC

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

S. No	Stream	Credits/Semester								Credits	AICTE Norms	
		I	II	III	IV	V	VI	VII	VIII			
1	Humanities and Management Courses (HSMC)	3	4	1						8	12	
2	Basic Science Courses (BSC)	8	8	4	4					24	24	
3	Engineering Science Courses (ESC)	4		6		3		3		16	29	
4	Professional Core Courses (PCC)	8	12	12	19	8.5	12	4.5		76	49	
5	Professional Elective Courses (PEC)					6	6	6		18	18	
6	Open Elective Courses (OEC)					3		3		6	12	
7	Emerging Elective Courses (EEC)						3	3		6		
8	Project Work(PW)					1			12	13	15	
9	Employability Enhancement Skills							2		2		
10	Mandatory Courses (MC)											Non credit
Total		23	24	23	23	21.5	21	21.5	12	169		
AICTE		17.5	20.5	24	22	21	22	18	15		159	