

**B. TECH ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
REGULATION 2022**

SEMESTER I							
S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	22AD101	Introduction to Artificial Intelligence	3/0/0	3	3	60/40	PC
2.	22MA102	Mathematics I	3/1/0	4	4	60/40	BSC
THEORY CUM PRACTICAL							
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
5.	22IT101	Application Development Practices	3/0/2	5	4	50/50	PC
6.	22CS101	Problem Solving using C++	3/0/2	5	4	50/50	PC
MANDATORY COURSE							
7.	22MC101	Mandatory Course-I (Induction Programme)	3 weeks				MC
Total				26	22	700	
SEMESTER II							
S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	22MA202	Mathematics II	3/1/0	4	4	60/40	BSC
2.	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	60/40	ESC
3.	22TA101	Heritage of Tamils	1/0/0	1	1	60/40	HSMC
THEORY CUM PRACTICAL							
4.	22PH201	Physics	3/0/2	5	4	50/50	BSC
5.	22CS201	Data Structures and Algorithms	3/0/2	5	4	50/50	PC
6.	22IT201	Data Base Management Systems	3/0/2	5	4	50/50	PC
7.	22AD201	Java Programming	3/0/2	5	4	50/50	PC
PRACTICAL							

8.	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	40/60	ESC
MANDATORY COURSE							
9.	22MC102	Mandatory Course-II (Environmental Sciences)	2/0/0	2	0	0/100	MC
Total				32	25	900	

SEMESTER III							
S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	22GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
2.	22MA302	Random Variables and Statistics	3/1/0	4	4	60/40	BSC
3.	22AD301	Design and Analysis of Algorithms	3/0/0	3	3	60/40	PC
4.	22IT302	Web Technology	3/0/0	3	3	60/40	PC
5.	22CS302	Advanced Java Programming	3/0/0	3	3	60/40	PC
6.	22AD302	Operating System Concepts	3/0/0	3	3	60/40	PC
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	PC
9.	22CS303	Advanced Java Programming Laboratory	0/0/3	3	1.5	40/60	PC
MANDATORY COURSE							
10.	22MCXXX	Mandatory Course-III	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							
1.	22AD401	Data Warehousing and Data Mining	3/0/0	3	3	60/40	PC

2.	22MA401	Optimization and Project Management	3/1/0	4	4	60/40	BSC
3.	22CS502	Computer Networks	3/0/0	3	3	60/40	ESC
4.	22IT402	Software Testing	3/0/0	3	3	60/40	PC
5.	22AD402	Cloud Computing	3/0/0	3	3	60/40	PC
6.	22CS402	Web Frameworks	3/0/0	3	3	60/40	PC
PRACTICAL							
7.	22AD403	Cloud Computing Laboratory	0/0/3	2	1.5	40/60	PC
8.	22CS404	Web Frameworks Laboratory	0/0/3	2	1.5	40/60	PC
MANDATORY COURSE							
9.	22MCXXX	Mandatory Course-IV	2/0/0	2	0	0/100	MC
Total				25	22	900	

SEMESTER V

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	22AD501	Fundamentals of Signals and Systems	3/0/0	3	3	60/40	ESC
2.	22AD502	Machine Learning	3/0/0	3	3	60/40	PC
3.	22AD503	Data Science Using R	3/0/0	3	3	60/40	PC
4.	22AD9XX	Professional Elective –I	3/0/0	3	3	60/40	PEC
5.	22AD9XX	Professional Elective –II	3/0/0	3	3	60/40	PEC
6.	22XXXXX	Open Elective –I	2/0/2	4	3	60/40	OEC
PRACTICAL							
7.	22AD504	Machine Learning Laboratory	0/0/3	3	1.5	40/60	PC
MANDATORY COURSE							
8.	22MCXXX	Mandatory Course-V	2/0/0	2	0	0/100	MC
PROJECT WORK							
9.	22AD506	Mini Project –I	0/0/2	2	1	40/60	PW
Total				26	20.5	900	

SEMESTER VI							
S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	22AD601	Data visualization using Tableau	3/0/0	3	3	60/40	PC
2.	22AD602	IoT Design and Applications	3/0/0	3	3	60/40	ESC
3.	22AD9XX	Professional Elective –III	3/0/0	3	3	60/40	PEC
4.	22AD9XX	Professional Elective –IV	3/0/0	3	3	60/40	PEC
5.	22ADXXX	Emerging Elective –I	3/0/0	3	3	60/40	EEC
THEORY CUM PRACTICAL							
6.	22AD603	AI in Natural Language Processing	3/0/2	5	4	50/50	PC
PRACTICAL							
7.	22AD604	Data Visualization Laboratory	0/0/3	3	1.5	40/60	PC
PROJECT WORK							
8.	22AD605	Mini Project –II	0/0/2	2	1	40/60	PW
Total				25	21.5	800	

SEMESTER VII							
S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	22AD701	Data Analytics	3/0/0	3	3	60/40	PC
2.	22AD702	Deep Learning and its Applications	3/0/0	3	3	60/40	PC
3.	22AD9XX	Professional Elective –V	3/0/0	3	3	60/40	PEC
4.	22AD9XX	Professional Elective –VI	3/0/0	3	3	60/40	PEC
5.	22XXXXX	Open Elective –II	2/0/2	4	3	60/40	OEC
6.	22ADXXX	Emerging Elective –II	3/0/0	3	3	60/40	EEC
PRACTICAL							
7.	22AD703	Data Analytics Laboratory	0/0/3	3	1.5	40/60	PC

8.	22AD704	Deep Learning Laboratory	0/0/3	3	1.5	40/60	PC
EMPLOYABILITY ENHANCEMENT SKILLS							
9.	22EES01	Employability Enhancement Skills (Summer Internship / Summer Training – 4 weeks)			2	0/100	EES
Total				25	23	900	

SEMESTER VIII							
S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
Project Work							
1	22AD801	Project	0/0/24	24	12	40/60	PW
Total				24	12	100	

HUMANITIES (8 CREDITS)

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

BASIC SCIENCES (24 CREDITS)

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

ENGINEERING SCIENCE (13 CREDITS)

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Category
1.	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	ESC
2.	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	ESC
3.	22CS502	Computer Networks	3/0/0	3	3	ESC
4.	22AD501	Fundamentals of Signals and Systems	3/0/0	3	3	ESC
5.	22AD602	IoT Design and Applications	3/0/0	3	3	ESC

PROFESSIONAL CORE (78 CREDITS)

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Category
1.	22AD101	Introduction to Artificial Intelligence	3/0/0	3	3	PC
2.	22IT101	Application Development Practices	3/0/2	5	4	PC
3.	22CS101	Problem Solving using C++	3/0/2	5	4	PC
4.	22CS201	Data Structures and Algorithms	3/0/2	5	4	PC
5.	22IT201	Data Base Management Systems	3/0/2	5	4	PC
6.	22AD201	Java Programming	3/0/2	5	4	PC
7.	22AD302	Operating System Concepts	3/0/0	3	3	PC
8.	22AD301	Design and Analysis of Algorithms	3/0/0	3	3	PC
9.	22IT302	Web Technology	3/0/0	3	3	PC
10.	22CS302	Advanced Java Programming	3/0/0	3	3	PC
11.	22IT303	Web Technology Laboratory	0/0/3	3	1.5	PC
12.	22CS303	Advanced Java Programming Laboratory	0/0/3	3	1.5	PC
13.	22AD401	Data Warehousing and Data Mining	3/0/0	3	3	PC

14.	22IT402	Software Testing	3/0/0	3	3	PC
15.	22AD402	Cloud Computing	3/0/0	3	3	PC
16.	22CS402	Web Frameworks	3/0/0	3	3	PC
17.	22AD403	Cloud Computing Laboratory	0/0/3	2	1.5	PC
18.	22CS404	Web Frameworks Laboratory	0/0/3	2	1.5	PC
19.	22AD502	Machine Learning	3/0/0	3	3	PC
20.	22AD503	Data Science Using R	3/0/0	3	3	PC
21.	22AD504	Machine Learning Laboratory	0/0/3	3	1.5	PC
22.	22AD603	AI in Natural Language Processing	3/0/2	5	4	PC
23.	22AD601	Data visualization using Tableau	3/0/0	3	3	PC
24.	22AD604	Data Visualization Laboratory	0/0/3	3	1.5	PC
25.	22AD701	Data Analytics	3/0/0	3	3	PC
26.	22AD702	Deep Learning and its Applications	3/0/0	3	3	PC
27.	22AD703	Data Analytics Laboratory	0/0/3	3	1.5	PC
28.	22AD704	Deep Learning Laboratory	0/0/3	3	1.5	PC

PROFESSIONAL ELECTIVES (18 CREDITS)

PROFESSIONAL ELECTIVE STREAM I (SOFTWARE DEVELOPMENT)

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credits	Category
1.	22AD901	Artificial Neural Networks	3/0/0	3	3	PEC
2.	22AD902	Semantic Web	3/0/0	3	3	PEC
3.	22AD903	Virtual Reality and Augmented Reality	3/0/0	3	3	PEC
4.	22AD904	Bio Informatics	3/0/0	3	3	PEC

5.	22CS901	API Development using MVC Architecture	3/0/0	3	3	PEC
6.	22AD905	APP Development	3/0/0	3	3	PEC
7.	22IT901	UI / UX Application Development	3/0/0	3	3	PEC
8.	22CS902	Cloud services and Integration	3/0/0	3	3	PEC
9.	22IT902	Cloud Infrastructure Management	3/0/0	3	3	PEC

PROFESSIONAL ELECTIVE STREAM II (DATA SCIENCE AND COMPUTATIONAL INTELLIGENCE)

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credits	Category
1.	22AD911	Statistics and Machine Learning	3/0/0	3	3	PEC
2.	22IT911	NLP with Predictive Analysis	3/0/0	3	3	PEC
3.	22AD912	Bayesian Data Analysis	3/0/0	3	3	PEC
4.	22AD913	Information Extraction and Retrieval	3/0/0	3	3	PEC
5.	22AD914	Biology for Engineers	2/0/2	3	3	PEC
6.	22AD915	Web and Social media Mining	3/0/0	3	3	PEC
7.	22AD916	Introduction to Brain and Neuroscience	3/0/0	3	3	PEC

PROFESSIONAL ELECTIVE STREAM III (NETWORKS AND SECURITY)

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credits	Category
1.	22AD921	Ethical Hacking	3/0/0	3	3	PEC
2.	22AD922	Ethical Hacking and Auditing Frameworks	3/0/0	3	3	PEC
3.	22IT921	Cyber Security	3/0/0	3	3	PEC
4.	22CS921	Cyber Threats and Vulnerabilities	3/0/0	3	3	PEC
5.	22AD923	Image Signal processing	3/0/0	3	3	PEC

6.	22AD924	Computational Statistics for Data Science	3/0/0	3	3	PEC
7.	22AD925	Ethics in Data Science	3/0/0	3	3	PEC
8.	22AD926	Business Intelligence	3/0/0	3	3	PEC
9.	22AD927	Intelligent Multi Agent and Expert systems	3/0/0	3	3	PEC

OPEN ELECTIVE COURSES (6 CREDITS)

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Category
1.	22AD001	Fundamentals of Database Systems	2/0/2	4	3	OEC
2.	22AD002	Information Retrieval Techniques	2/0/2	4	3	OEC
3.	22AD003	Machine Learning Algorithms in Python	2/0/2	4	3	OEC
4.	22AD004	Data Visualization using R	2/0/2	4	3	OEC
5.	22AD005	Introduction to Data Analytics	2/0/2	4	3	OEC
6.	22AD006	Introduction to Deep Learning	2/0/2	4	3	OEC

EMERGING ELECTIVE COURSES (6 CREDITS)

S.No	Course Code	Course	L/T/P	Contact hrs/week	Credit	Category
1.	22AD007	Autonomous Systems and Drones	3/0/0	3	3	EEC
2.	22AD008	Crypto currencies	3/0/0	3	3	EEC
3.	22AD009	AI in Healthcare Applications	3/0/0	3	3	EEC
4.	22AD010	Scalable System for Data Science	3/0/0	3	3	EEC
5.	22AD011	Computer Vision	3/0/0	3	3	EEC
6.	22AD012	Data Engineering on Google Cloud Platform	3/0/0	3	3	EEC

EMPLOYABILITY ENHANCEMENT SKILLS (2 CREDITS)

S.No	Course Code	Course	Duration	Credit	Category
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1.	22EES01	Employability Enhancement Skills (Summer Internship / Summer Training)	4 WEEKS	2	EES
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MANDATORY COURSES (NON-CREDIT)

S.No	Course Code	Course	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

VALUE ADDED COURSES

S.No	Course Code	Course	Category
1.	22VA701	Data Representation and Interpretation using Python	VAC
2.	22VA702	Android Enterprise	VAC
3.	22VA703	Chatbot Development	VAC
4.	22VA704	Hardware and Troubleshooting	VAC
5.	22VA705	Rapid Development for AI	VAC
6.	22VA706	Robotic Process Automation	VAC
7.	22VA707	Spark and Scala	VAC
8.	22VA130	Effective Communication Skills	VAC

Scheme of Distribution

S.NO	Stream	Credits/Semester								Credits	AICTE Norms
		I	II	III	IV	V	VI	VII	VIII		
1.	Humanities (HSMC)	3	1	4						8	12
2.	Basic Sciences (BSC)	8	8	4	4					24	24
3.	Engineering Sciences (ESC)		4		3	3	3			13	29
4.	Professional Core (PC)	11	12	15	15	7.5	8.5	9		78	49
5.	Professional Electives (PEC)					6	6	6		18	18
6.	Open Elective (OEC)					3		3		6	12
7.	Emerging Electives (EEC)						3	3		6	
8.	Project work (PW)					1	1		12	14	15
9.	Employability Skills							2		2	
10.	Mandatory Course (MC)									-	
Total		22	25	23	22	20.5	21.5	23	12	169	
AICTE(CSE)		17.5	20.5	23	22	21	22	20	15		159