

SETHU INSTITUTE OF TECHNOLOGY

PULLOOR, KARIAPATTI

(AN AUTONOMOUS INSTITUTION)



REGULATION–2021 (Revised)

B.TECH-Artificial Intelligence and Data Science

BATCH: 2023-2027

CURRICULUM

**Chairperson
Board of Studies**

**Chairman
Academic Council**



SETHU INSTITUTE OF TECHNOLOGY
Pulloor, Kariapatti-626115
(An Autonomous Institution)
B.E. Degree Programme CURRICULUM
Regulation 2021 (Revised)



B.TECH-Artificial Intelligence and Data Science

OVERALL COURSE STRUCTURE

Code	Category	Total No. of Courses	Credits	Percentage
BS	Basic Sciences	5	9	6
ES	Engineering Sciences	10	29	18
HSS	Humanities and Social Sciences	7	15.5	10
PC	Professional Core (Including Lab Courses)	25	63.5	39
PE	Professional Elective	6	18	11
OE	Open Elective	4	12	7
PW	Project Work, Seminar & Internship	3	13	8
MC	Mandatory Courses	10	2	1
TOTAL		70	162	100

SEMESTER-WISE COURSE STRUCTURE – NUMBER OF COURSES

Semester	HS	BS	ES	PC	PE	OE	P	MC	TOTAL
I	1	3	4					2	10
II	1	3	3					2	09
III	-	1	-	7	-	-	-	1	09
IV	-	1	-	7	-	-	-	1	09
V	1	2	-	3	1	1	1	-	09
VI	1	-	-	4	2	1	1	1	10
VII	1	-	-	4	2	1	-	2	10
VIII	-	-	-	-	1	1	1	1	4
TOTAL	5	10	7	25	6	4	3	10	70

SEMESTER-WISE COURSE STRUCTURE – CREDITS

Semester	HS	BS	ES	PC	PE	OE	P	MC	TOTAL
I	2	8	8	-	-	-	-	1	19
II	1.5	8	7.5	-	-	-	-	1	18
III	-	4	-	18	-	-	-	-	22
IV	-	4	-	17	-	-	-	-	21
V	1	5	-	10	3	3	1	-	23
VI	1.5	-	-	10.5	6	3	4	-	25
VII	3	-	-	8	6	3	-	-	20
VIII	-	-	-	-	3	3	8	-	14
TOTAL	9	29	15.5	63.5	18	12	13	2	162

Semester I

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
R21UEN101	English for Technical Communication(Common to ALL Branches except CSBS)	2	0	0	2	HSS
R21UMA102	Matrix and Calculus (Common to ALL Branchesexcept CSBS)	3	1	0	4	BS
R21UPH103	Physics for information science (Common to CSE,IT,CSBS,AIDS,CSD,AIML,IOT,CyberSecurity)	3	0	0	3	BS
R21UCS107	Problem Solving and C Programming (Common to All Branches Except CSBS)	3	0	0	3	ES
R21UEE125	Principles of Electrical Engineering	3	0	0	3	ES
PRACTICAL						
R21UCS111	Problem Solving and C Programming Laboratory (Common to All Branches Except CSBS)	0	0	2	1	ES
R21UEE128	Electrical Engineering Laboratory	0	0	2	1	ES
R21UGS113	Physics Laboratoroy (Common to CSE,IT,CSBS,AIDS,CSD,AIML,IOT,CyberSecurity)	0	0	2	1	BS
MANDATORY						
21UGM131	Induction Programme(Common to All Branches)	0	3	0	P/F	MC
R21UGT140	Heritage of Tamil (Common to all Branches)	1	0	0	1	MC
	TOTAL	17	5	6	19	
Total No of Credits - 19						

Semester II

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
R21UEN201	Communication Skills for Professionals(Integrated Course)(Common to All Branches except CSBS)	1	0	1	1.5	HSS
R21UMA210	Differential Equations, Fourier series and Transforms(Common to AI&DS,CSD)	3	1	0	4	BS
R21UCY205	Applied Chemistry (Common to CSE,IT,CSBS,AIDS,CSD,AIML,IOT,CyberSecurity)	3	0	0	3	BS
OTHER THEORY COURSES						
R21UAD204	Foundations of Data Science	3	0	0	3	ES
R21UAD205	Digital Logic and Design	3	0	0	3	ES
PRACTICAL						
R21UGS210	Chemistry Laboratory (Common to CSE,IT,CSBS,AIDS,CSD,AIML,IOT,CyberSecurity)	0	0	2	1	BS
R21UAD212	Data Science using R Programming Laboratory	0	0	3	1.5	ES
MANDATORY						
R21UGT241	Tamil and Technology (Common to All Branches)	1	0	0	1	MC
R21UGM331	Biology for Engineers(Common to All except BME & BT)	2	0	0	P/F	MC
	TOTAL	16	1	6	18	
Total No of Credits - 18						

Semester III

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
R21UMA328	Discrete Mathematics (Common to AI& DS,CSD)	3	1	0	4	BS
R21UIT302	Data Structures (Common to CSE,IT,AIDS&CSD)	3	0	0	3	PC
R21UAD303	Object Oriented Programming using Python (Integrated Course)	3	0	2	4	PC
R21UIT304	Principles of Operating Systems (Common to CSE ,IT,AIDS&CSD)	3	0	0	3	PC
R21UCS305	Computer Organization(Common to CSE ,IT,CSBS &AIDS)	3	0	0	3	PC
R21UCD306	Database system Design (Common to CSE,IT, AIDS& CSD)	3	0	0	3	PC
PRACTICAL						
R21UIT307	Data Structures Laboratory(Common to CSE,IT, AIDS&CSD)	0	0	2	1	PC
R21UCD308	Database system Design Laboratory(Common to CSE,IT, AIDS & CSD)	0	0	2	1	PC
MANDATORY						
R21UGM231	Environmental Science (Common to All Branches)	3	0	0	P/F	MC
	TOTAL	20	1	6	22	
Total No of Credits - 22						

Semester IV

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
R21UMA426	Probability and Statistical Techniques (Common to AI&DS,CSD)	3	1	0	4	BS
R21UAD402	Artificial Intelligence	3	0	0	3	PC
R21UCS403	Algorithm Analysis(Common to CSE, IT,AIDS&CSD,AI&ML)	3	0	0	3	PC
R21UAD404	Data Warehousing and Data Mining	3	0	0	3	PC
R21UAD405	Internet of Things and Sensors	3	0	0	3	PC
R21UAD406	Computer Network and Security	3	0	0	3	ES
PRACTICAL						
R21UAD407	Data Warehousing and Data Mining Laboratory	0	0	2	1	PC
R21UAD408	Artificial Intelligence Laboratory	0	0	2	1	PC
MANDATORY						
R21UGM431	Gender Equality(Common to all)	1	0	0	P/F	MC
		19	1	4	21	
Total No of Credits -21						

Semester V

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
R21UMA501	Linear Algebra	3	1	0	4	BS
R21UAD502	Formal languages and Computation	3	0	0	3	PC
R21UAD503	Machine Learning Techniques	3	0	0	3	PC
R21UAD504	Essentials of Scrum	3	0	0	3	PC
PE1	Professional Elective–I	3	0	0	3	PE
OE1	Open Elective–III	3	0	0	3	OE
R21UGS531	Reasoning and Aptitude (Common to CSE, IT, CSBS, AIDS, CSD)	1	0	0	1	BS
PRACTICAL						
R21UGS532	Soft Skills Laboratory (Common to CSE,IT,CSBS,AIDS,EEE,CSD,AGRI)	0	0	2	1	HSS
R21UAD507	Creative Thinking and Innovation	0	0	2	1	PW
R21UAD508	Machine Learning Techniques Laboratory	0	0	2	1	PC
	TOTAL	17	1	6	23	
Total No of Credits –23						

Semester VI

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
R21UAD601	Intelligent Computer Vision	3	0	0	3	PC
R21UAD602	Deep Learning	3	0	0	3	PC
R21UAD603	Thinking in Java	2	0	2	3	PC
PE-II	Professional Elective–II	3	0	0	3	PE
PE-III	Professional Elective–III	3	0	0	3	PE
OE-II	OpenElective–II	3	0	0	3	OE
PRACTICAL						
R21UAD606	Deep Learning Laboratory	0	0	3	1.5	PC
R21UAD607	Product Development Project	0	0	8	4	PW
R21UGS633	Interpersonal Skills Development Lab (Common to CSE,EEE,IT,AGRI,CSBS, AIDS)	0	0	3	1.5	HSS
MANDATORY						
R21UGM631	Indian Constitution (Common to all)	1	0	0	P/F	MC
	TOTAL	18	0	16	25	
Total No of Credits - 25						

Semester VII

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
R21UME701	Project Management and Finance (Common to All Branches Except CSBS)	3	0	0	3	HSS
R21UAD702	Natural Language Processing	3	0	0	3	PC
R21UAD603	Big data visualization	3	0	0	3	PC
PE-IV	Professional Elective–IV	3	0	0	3	PE
PE-V	Professional Elective –V	3	0	0	3	PE
OE-III	Open Elective–III	3	0	0	3	OE
PRACTICAL						
R21UAD707	Natural Language Processing Lab	0	0	2	1	PC
R21UAD708	Intelligence and Analytics lab	0	0	2	1	PC
MANDATORY						
R21UGM731	Sports and Social Development (Common to all)	-	-	-	P/F	MC
R21UGM732	Skill Development	-	-	-	P/F	MC
	TOTAL	18	0	4	20	
Total No of Credits - 20						

Semester VIII

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
PE-VI	Professional Elective–VI	3	0	0	3	PE
OE-IV	Open Elective–IV	3	0	0	3	OE
PRACTICAL						
R21UIT801	Projectwork	0	0	16	8	PW
MANDATORY						
R21UGM831	Professional Ethics and Human values(Common to all branches)	2	0	0	P/F	MC
	TOTAL	8	0	16	14	
Total No of Credits - 14						