SETHU INSTITUTE OF TECHNOLOGY

PULLOOR, KARIAPATTI – 626 115.

(AN AUTONOMOUS INSTITUTION)

REGULATION – 2021

B.TECH-Artificial Intelligence and Data Science

BATCH 2022-2026

CURRICULUM

Chairperson **Board of Studies**	**Chairman** **Academic Counci**

B.TECH-Artificial Intelligence and Data Science

OVERALL COURSE STRUCTURE

S.No	Course Category	Total No. of Courses	Credits	Credit Percentage
1	Humanities and Social Sciences (HS)	5	9	6
2	Basic Science courses (BS)	11	32	20
3	Engineering Science courses (ES)	8	18.5	11
4	Professional Core courses (PC)	24	57.5	35
5	Professional Elective (PE)	6	18	11
6	Open Elective (OE)	4	12	7
7	Project work (PW)	3	13	8
8	Mandatory Courses (MC)	10	2	1
	TOTAL	**71**	**162**	**100**

SEMESTER-WISE COURSE STRUCTURE – NUMBER OF COURSES

Semester	HS	BS	ES	PC	PE	OE	P	MC	TOTAL
I	1	4	4	-	-	-	-	1	**10**
II	1	3	3	-	-	-	-	2	**9**
III	-	1	-	7	-	-	-	2	**10**
IV	-	1	1	6	-	-	-	1	**9**
V	1	2		3	1	1	1		**9**
VI	1			4	2	1	1	1	**10**
VII	1			4	2	1		2	**10**
VIII					1	1	1	1	**4**
TOTAL	**5**	**11**	**8**	**24**	**6**	**4**	**3**	**10**	**71**

SEMESTER-WISE COURSE STRUCTURE – CREDITS

Semester	HS	BS	ES	PC	PE	OE	P	MC	TOTAL
I	2	11	8	-	-	-	-	-	**21**
II	1.5	8	7.5	-	-	-	-	1	**18**
III	-	4	-	18	-	-	-	1	**23**
IV	-	4	3	14	-	-	-	-	**21**
V	1	5		7	3	3	1		**20**
VI	1.5			10.5	6	3	4		**25**
VII	3			8	6	3			**20**
VIII					3	3	8		**14**
TOTAL	**9**	**32**	**18.5**	**57.5**	**18**	**12**	**13**	**2**	**162**

Semester I

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
21UEN101	English for Technical Communication (Common to ALL Branches except CSBS)	2	0	0	2	HSS
21UMA102	Matrix and Calculus (Common to ALL Branches except CSBS)	3	1	0	4	BS
21UPH103	Engineering Physics (Common to ALL Branches except CSBS)	3	0	0	3	BS
21UCY105	Applied Chemistry (Common to CSE, ECE , EEE IT, ,BME,BT,AIDS,CSD)	3	0	0	3	BS
21UCS107	Problem Solving and C Programming (Common to All Branches Except CSBS)	3	0	0	3	ES
21UEE125	Principles of Electrical Engineering	3	0	0	3	ES
PRACTICAL						
21UCS111	Problem Solving and C Programming Laboratory (Common to All Branches Except CSBS)	0	0	2	1	ES
21UEE128	Electrical Engineering Laboratory	0	0	2	1	ES
21UGS113	Basic Sciences Laboratory I (Common to All BranchesExcept CSBS)	0	0	2	1	BS
MANDATORY						
21UGM131	Induction Programme (Common to All Branches)	0	3	0	P/F	MC
	TOTAL	**17**	**5**	**6**	**21**	
Total No of Credits - 21						

Semester II

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
21UEN201	Communication Skills for Professionals (Integrated Course) (Common to All Branches except CSBS)	1	0	1	1.5	HSS
21UMA210	Differential Equations, Fourier series and Transforms(Common to AI&DS,CSD)	3	1	0	4	BS
21UPH205	Physics for Information Science (Common to CSE, IT & EEE ,AIDS,CSD)	3	0	0	3	BS
OTHER THEORY COURSES						
21UAD204	Foundations of Data Science	3	0	0	3	ES
21UAD205	Digital Logic and Design	3	0	0	3	ES
PRACTICAL						
21UGS210	Basic Sciences Laboratory II (Common to All Branches Except CSBS)	0	0	2	1	BS
21UAD212	Data Science using R Programming Laboratory	0	0	3	1.5	ES
MANDATORY						
21UGT140	Heritage of Tamil (Common to All Branches)	1	0	0	1	MC
21UGM331	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						
21UMA328	Discrete Mathematics (Common to AI& DS,CSD)	3	1	0	4	BS
21UIT302	Data Structures (Common to CSE,IT,AIDS&CSD)	3	0	0	3	PC
21UAD303	Object Oriented Programming using Python (Integrated Course)	3	0	2	4	PC
21UIT304	Principles of Operating Systems (Common to CSE ,IT,AIDS&CSD)	3	0	0	3	PC
21UCS305	Computer Organization (Common to CSE ,IT,CSBS &AIDS)	3	0	0	3	PC
21UCD306	Database system Design (Common to CSE,IT, AIDS& CSD)	3	0	0	3	PC
PRACTICAL						
21UIT307	Data Structures Laboratory (Common to CSE,IT, AIDS&CSD	0	0	2	1	PC
21UCD308	Database system Design Laboratory (Common to CSE,IT, AIDS & CSD)	0	0	2	1	PC
MANDATORY						
21UGT241	Tamil and Technology (Common to All Branches)	1	0	0	1	MC
21UGM231	Environmental Science (Common to All Branches)	3	0	0	P/F	MC
	TOTAL	**20**	**1**	**6**	**23**	
Total No of Credits - 23						

Semester IV

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
21UMA426	Probability and Statistical Techniques (Common to AI&DS,CSD)	3	1	0	4	BS
21UAD402	Artificial Intelligence	3	0	0	3	PC
21UCS403	Algorithm Analysis (Common to CSE, IT,AIDS& CSD,AI&ML)	3	0	0	3	PC
21UAD404	Data Warehousing and Data Mining	3	0	0	3	PC
21UAD405	Internet of Things and Sensors	3	0	0	3	PC
21UAD406	Computer Network and Security	3	0	0	3	ES
PRACTICAL						
21UAD407	Data Warehousing and Data Mining Laboratory	0	0	2	1	PC
21UAD408	Artificial Intelligence Laboratory	0	0	2	1	PC
MANDATORY						
21UGM431	Gender Equality (Common to all)	1	0	0	P/F	MC
		19	**1**	**4**	**21**	
Total No of Credits -22						

Semester V

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
21UMA501	Linear Algebra	3	1	0	4	BS
21UAD502	Formal languages and Computation	3	0	0	3	PC
21UAD503	Machine Learning Techniques	3	0	0	3	PC
PE1	ProfessionalElective–I	3	0	0	3	PE
OE1	Open Elective–III	3	0	0	3	OE
21UGS531	Reasoning and Aptitude (Common to CSE, IT, CSBS, AIDS, CSD)	1	0	0	1	BS
PRACTICAL						
21UGS532	Soft Skills Laboratory (Common to CSE,IT,CSBS,AIDS,EEE,CSD,AGRI)	0	0	2	1	HSS
21UAD507	CreativeThinking and Innovation	0	0	2	1	PW
21UAD508	Machine Learning Techniques Laboratory	0	0	2	1	PC
	TOTAL	**17**	**1**	**6**	**20**	
	Total No of Credits –20					

Semester VI

Course Code	Course Title	L	T	P	C	Type of Course
THEORY						
21UAD601	Intelligent Computer Vision	3	0	0	3	PC
21UAD602	Deep Learning	3	0	0	3	PC
21UAD603	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						
21UAD606	Deep Learning Laboratory	0	0	3	1.5	PC
21UAD607	Product Development Project	0	0	8	4	PW
21UGS633	Interpersonal Skills Development Lab (Common to CSE,EEE,IT,AGRI,CSBS, AIDS)	0	0	3	1.5	HSS
MANDATORY						
21UGM631	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						
21UME701	Project Management and Finance (Common to All Branches Except CSBS)	3	0	0	3	HSS
21UAD702	Natural Language Processing	3	0	0	3	PC
21UAD603	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						
21UAD707	Natural Language Processing Lab	0	0	2	1	PC
21UAD708	Intelligence and Analytics lab	0	0	2	1	PC
MANDATORY						
21UGM731	Sports and Social Development (Common to all)	-	-	-	P/F	MC
21UGM732	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	ProfessionalElective–VI	3	0	0	3	PE
OE-IV	OpenElective–IV	3	0	0	3	OE
PRACTICAL						
21UIT801	Projectwork	0	0	16	8	PW
MANDATORY						
21UGM831	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						

Non Credit - Mandatory Courses

Course Code	Course Title	L	T	P	C	Type of Course
21UGM131	Induction Programme (Common to All Branches)	0	3	0	P/F	MC
21UGT140	Heritage of Tamil (Common to All Branches)	1	0	0	1	MC
21UGM331	Biology for Engineers (Common to All except BME & BT)	2	0	0	P/F	MC
21UGT241	Tamil and Technology (Common to All Branches)	1	0	0	1	MC
21UGM231	Environmental Science (Common to All Branches)	3	0	0	P/F	MC
21UGM431	Gender Equality (Common to all)	1	0	0	P/F	MC
21UGM631	Indian Constitution (Common to all)	1	0	0	P/F	MC
21UGM731	Sports and Social Development (Common to all)	-	-	-	P/F	MC
21UGM732	Skill Development	-	-	-	P/F	MC
21UGM831	Professional Ethics and Human values (Common to all branches)	2	0	0	P/F	MC