B.Tech. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
Minimum Credits to be Earned 207.0

First Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
20AI101	ENGINEERING MATHEMATICS I	I	a,b	3	1	0	4
20AI102	ENGINEERING PHYSICS I	I,III	a,b,i	2	0	2	3
20AI103	ENGINEERING CHEMISTRY I	I	a,b,g	2	0	2	3
20AI104	PROGRAMMING FOR PROBLEM SOLVING	I,II	a,b,d	2	0	2	3
20AI105	BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING	I,II	a,b,c,d,l	2	0	2	3
20HS101	COMMUNICATIVE ENGLISH I	III	i,j	1	0	2	2
			Total	12	1	10	18.0

Second Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
20AI201	ENGINEERING MATHEMATICS II	I	a,b	3	1	0	4
20AI202	ENGINEERING PHYSICS II	I,III	a,b,i	2	0	2	3
20AI203	ENGINEERING CHEMISTRY II	I	a,b,g	2	0	2	3
20AI204	APPLICATION BASED PROGRAMMING IN PYTHON	I,II	a,b,c	3	0	2	4
20AI205	DIGITAL SYSTEM DESIGN	I,II	a,b,c	3	0	2	4
	LANGUAGE ELECTIVE	-	-	-	-	-	2
			Total	13	1	8	20.0

Third Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
20AI301	PROBABILITY AND STATISTICS	I,II	a,b,c,d	3	1	0	4
20AI302	DATA STRUCTURES USING CPP	I,II	a,b,c	3	0	0	3
20AI303	PRINCIPLES OF OPERATING SYSTEM	I,II	a,b,c	3	0	0	3
20AI304	COMPUTER ORGANIZATION AND ARCHITECTURE	I,II	a,b,c	3	0	0	3
20AI305	DATABASE MANAGEMENT SYSTEMS	I,II	a,b,c,e	3	0	0	3
20AI306	JAVA PROGRAMMING	I,II	a,b,c,e	2	0	2	3
20AI307	DATA STRUCTURES LABORATORY	I,II	a,b,c	0	0	4	2
20AI308	DATABASE MANAGEMENT SYSTEMS LABORATORY	I,II	a,b,c,e	0	0	4	2
18GE301	SOFT SKILLS - VERBAL ABILITY	I,III	i,j,k	2	0	0	0
			Total	19	1	10	23.0

Fourth Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
18HS001	ENVIRONMENTAL SCIENCE	-	-	2	0	0	0
20AI401	APPLIED LINEAR ALGEBRA	I	a,b	3	1	0	4
20AI402	DESIGN AND ANALYSIS OF ALGORITHMS	I,II	a,b,c	3	0	0	3
20AI403	DATA WAREHOUSING AND DATA MINING	I,II	a,b,d,e	2	0	2	3
20AI404	COMPUTER NETWORKS	I,II,III	a,b,c,e,h,j,l	3	0	0	3
20AI405	ARTIFICIAL INTELLIGENCE	I,II	a,b,c,d	3	0	0	3
20AI406	STATISTICAL MACHINE LEARNING	I,II	a,b,c,d,e,f,l	3	0	0	3
20AI407	ARTIFICIAL INTELLIGENCE LABORATORY	I,II	a,b,c,d	0	0	4	2
20AI408	STATISTICAL MACHINE LEARNING LABORATORY	I,II	a,b,c,d,e	0	0	4	2
18GE401	SOFT SKILLS-REASONING	I,II,III	a,e,h,j,l	2	0	0	0
			Total	21	1	10	23.0

Fifth Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
21AI501	SOFTWARE ENGINEERING AND TESTING METHODOLOGIES	-	-	3	0	0	3
21AI502	DEEP LEARNING	-	-	3	1	0	4
21AI503	ANALYTICS IN COUD COMPUTING	-	-	3	0	0	3
21AI504	PROGRAMMING FOR DATA SCIENCE	-	-	3	0	0	3
21AI507	PROGRAMMING FOR DATA SCIENCE LABORATORY	-	-	0	0	4	2
21AI508	ANALYTICS IN COUD COMPUTING LABORATORY	-	-	0	0	4	2
21AI018	MALWARE ANALYSIS	-	-	3	0	0	3
21AI019	ROBOTIC PROCESS AUTOMATION	-	-	3	0	0	3
21AI036	DIGITAL MARKETING AND TECHNIQUES	-	-	3	0	0	3
21AIH01	AGILE SOFTWARE DEVELOPMENT	-	-	3	0	0	3
21AIH02	UI AND UX DESIGN	-	-	3	0	0	3
21AI020	REINFORCEMENT LEARNING	-	-	3	0	0	3
20AI501	SOFTWARE ENGINEERING AND TESTING METHODOLOGIES	-	-	3	0	0	3

20AI502	DEEP LEARNING	-	-	3	1	0	4
20AI503	ANALYTICS IN CLOUD COMPUTING	-	-	3	0	0	3
20AI504	PROGRAMMING FOR DATA SCIENCE	-	-	3	0	0	3
	PROFESSIONAL ELECTIVE I	-	-	-	-	-	3
	PROFESSIONAL ELECTIVE II	-	-	-	-	-	3
20AI507	PROGRAMMING FOR DATA SCIENCE LABORATORY	-	-	0	0	4	2
20AI508	ANALYTICS IN CLOUD COMPUTING LABORATORY	-	-	0	0	4	2
18GE501	SOFT SKILLS - APTITUDE I	-	-	0	0	2	0
			Total	42	2	18	58.0

Sixth Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
20AI601	DATA SECURITY	-	-	3	1	0	4
20AI602	COMPUTER VISION	-	-	3	0	0	3
20AI603	DATA VISUALIZATION	-	-	3	0	2	4
20AI604	NATURAL LANGUAGE PROCESSING	-	-	3	0	0	3
	PROFESSIONAL ELECTIVE III	-	-	-	-	-	3
	PROFESSIONAL ELECTIVE IV	-	-	-	-	-	3
20AI607	NATURAL LANGUAGE PROCESSING LABORATORY	-	-	0	0	4	2
20AI608	COMPUTER VISION LABORATORY	-	-	0	0	4	2
18GE601	SOFT SKILLS-APTITUDE II	-	-	0	0	2	0
			Total	12	1	12	24.0

Seventh Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
18HS002	PROFESSIONAL ETHICS IN ENGINEERING	-	-	2	0	0	2
20AI702	IOT ANALYTICS	-	-	3	0	0	3
20AI703	SOCIAL MEDIA ANALYSIS	-	-	3	0	0	3
20AI704	AI FOR ROBOTICS	-	-	3	1	0	4
	PROFESSIONAL ELECTIVE V	-	-	-	-	-	3
	PROFESSIONAL ELECTIVE VI	-	-	-	-	-	3
20AI707	IOT ANALYTICS LABORATORY	-	-	0	0	4	2
20AI708	PROJECT WORK I	-	-	0	0	6	3
			Total	11	1	10	23.0

Eight Semester

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
	PROFESSIONAL ELECTIVE VII	-	-	-	-	-	3
	PROFESSIONAL ELECTIVE VIII	-	-	-	-	-	3
	PROFESSIONAL ELECTIVE IX	-	-	-	-	-	3
20AI804	PROJECT WORK II	-	-	0	0	18	9
			Total	0	0	18	18.0

Electives

Code No.	Course	Objectives &Outcomes		L	T	P	C
		PEOs	POs				
CORE-THEORY							
20AI005	BLOCKCHAIN TECHNOLOGY	-	-	3	0	0	3
20AI017	TIME SERIES ANALYSIS AND FORECASTING	-	-	3	0	0	3
20AI0YA	FUNDAMENTALS OF DATA SCIENCE	-	-	3	0	0	3
DISCIPLINE ELECTIVES							
20AI011	HUMAN COMPUTER INTERACTION	-	-	3	0	0	3
20AI014	BIG DATA ANALYTICS	-	-	3	0	0	3
20AI021	PATTERN RECOGNITION	-	-	3	0	0	3
20AI023	BUSINESS ANALYTICS	-	-	3	0	0	3
20AI026	DIGITAL MARKETING	-	-	3	0	0	3
ONE CREDIT COURSES							
20AI0XA	TENSOR FLOW	-	-	1	0	0	1
20AI0XB	TABLEAU	-	-	1	0	0	1
ADDITIONAL ONE CREDIT COURSE							
18GE0XF	VEDIC MATHEMATICS	-	-	1	0	0	1
18GE0XL	NATIONAL CADET CORPS	-	-	1	0	0	1
18GE0XN	DISRUPTIVE INNOVATION BASED STARTUP ACTIVITIES	-	-	1	0	0	1
LANGUAGE ELECTIVES							
18HSH01	HINDI	-	-	1	0	2	2
18HSG01	GERMAN	-	-	1	0	2	2

18HSJ01	JAPANESE	-	-	1	0	2	2
18HSC01	CHINESE	-	-	1	0	2	2
18HSF01	FRENCH	-	-	1	0	2	2
18HS201	COMMUNICATIVE ENGLISH II	-	-	1	0	2	2
OPEN ELECTIVES							
18AE0YA	NON-DESTRUCTIVE TESTING	-	-	3	0	0	3
18AE0YB	SMART MATERIALS	-	-	3	0	0	3
18AE0YC	FUNDAMENTALS OF AIRCRAFT ENGINEERING	-	-	3	0	0	3
18AG0YA	ENTREPRENEURSHIP DEVELOPMENT AND FOOD QUALITY MANAGEMENT FOOD INDUSTRY	-	-	3	0	0	3
18AG0YB	HUMAN ENGINEERING AND SAFETY IN AGRICULTURE	-	-	3	0	0	3
18AG0YC	ENERGY MANGEMENT IN AGRICULTURE	-	-	3	0	0	3
18AG0YD	FARM MECHANISATION	-	-	3	0	0	3
18AU0YA	AUTOMOTIVE ENGINEERING	-	-	3	0	0	3
18AU0YB	VEHICLE CONTROL SYSTEMS	-	-	3	0	0	3
18AU0YC	PUBLIC TRANSPORT MANAGEMENT	-	-	3	0	0	3
18AU0YD	TECHNOLOGIES FOR GREEN MOBILITY	-	-	3	0	0	3
18AU0YE	TROUBLE SHOOTING AND MAINTENANCE OF AUTOMOBILES	-	-	3	0	0	3
18BT0YA	BIOFUELS	-	-	3	0	0	3
18BT0YB	MUSHROOM CULTIVATION AND VERMICOMPOSTING	-	-	3	0	0	3
18BT0YC	FORENSIC TECHNOLOGY	-	-	3	0	0	3
18CE0YA	GREEN BUILDINGS	-	-	3	0	0	3
18CE0YB	DISASTER PREPAREDNESS AND PLANNING	-	-	3	0	0	3
18CE0YC	ENVIRONMENTAL IMPACT ASSESSMENT	-	-	3	0	0	3
18CE0YD	BUILDING SERVICES	-	-	3	0	0	3
18CE0YE	INDUSTRIAL WASTE MANAGEMENT	-	-	3	0	0	3
18CE0YF	WEALTH FROM WASTE	-	-	3	0	0	3
18CE0YG	RISK AND SAFETY MANAGEMENT	-	-	3	0	0	3
18CE0YH	ENERGY SCIENCE AND ENGINEERING	-	-	3	0	0	3
18CE0YI	CONCEPTS OF REMOTE SENSING	-	-	3	0	0	3
18CS0YA	E-LEARNING TECHNIQUES	-	-	3	0	0	3
18CS0YB	SOFTWARE TESTING AND QUALITY ASSURANCE	-	-	3	0	0	3
18CS0YC	JAVA FUNDAMENTALS	-	-	3	0	0	3
18CS0YD	NETWORK ENGINEERING AND MANAGEMENT	-	-	3	0	0	3
18CS0YE	AGENT BASED INTELLIGENT SYSTEMS	-	-	3	0	0	3
18CS0YF	E-BUSINESS	-	-	3	0	0	3
18CS0YG	KNOWLEDGE DISCOVERY IN DATABASES	-	-	3	0	0	3
18CS0YH	SOCIAL NETWORK ANALYSIS CONCEPTS	-	-	3	0	0	3
18CS0YI	OPERATING SYSTEM CONCEPTS	-	-	3	0	0	3
18CS0YJ	OBJECT ORIENTED PROGRAMMING	-	-	3	0	0	3
18EC0YA	BASICS OF ANALOG AND DIGITAL ELECTRONICS	-	-	3	0	0	3
18EC0YB	AUTOMOTIVE ELECTRONICS	-	-	3	0	0	3
18EC0YC	PCB DESIGN AND PROTOTYPING	-	-	3	0	0	3
18EC0YD	MICROCONTROLLER PROGRAMMING	-	-	3	0	0	3
18EC0YE	ENGINEERING COMPUTATION WITH MATLAB	-	-	3	0	0	3
18EC0YF	BASICS OF HARDWARE DESCRIPTION LANGUAGES	-	-	3	0	0	3
18EC0YG	FUNDAMENTALS OF EMBEDDED SYSTEMS	-	-	3	0	0	3
18EC0YH	PRINCIPLES OF COMMUNICATION SYSTEMS	-	-	3	0	0	3
18EC0YI	ELECTRONIC PRODUCT DESIGN AND PACKAGING	-	-	3	0	0	3
18EC0YJ	PRINCIPLES OF COMPUTER COMMUNICATION AND NETWORKS	-	-	3	0	0	3
18EE0YA	ENERGY CONSERVATION AND MANAGEMENT	-	-	3	0	0	3
18EE0YB	ELECTRICAL SAFETY	-	-	3	0	0	3
18EE0YC	INDUSTRIAL DRIVES AND CONTROL	-	-	3	0	0	3
18EI0YA	PROGRAMMABLE LOGIC CONTROLLERS	-	-	3	0	0	3
18EI0YB	SENSOR TECHNOLOGY	-	-	3	0	0	3
18EI0YC	FUNDAMENTALS OF VIRTUAL INSTRUMENTATION	-	-	3	0	0	3
18EI0YD	OPTOELECTRONICS AND LASER INSTRUMENTATION	-	-	3	0	0	3
18FD0YA	TRADITIONAL FOODS	-	-	3	0	0	3
18FD0YB	FOOD LAWS AND REGULATIONS	-	-	3	0	0	3
18FD0YC	POST HARVEST TECHNOLOGY OF FRUITS AND VEGETABLES	-	-	3	0	0	3
18FT0YA	FASHION CRAFTS	-	-	3	0	0	3
18FT0YB	FASHION ACCESSORIES	-	-	3	0	0	3
18FT0YC	FASHION VISUAL MERCHANDISING	-	-	3	0	0	3
18FT0YD	INTERIOR DESIGN	-	-	3	0	0	3
18FT0YE	SURFACE EMBELLISHMENT	-	-	3	0	0	3
18GE01	BUSINESS ANALYTICS	-	-	3	0	0	3
18GE02	INDUSTRIAL SAFETY	-	-	3	0	0	3
18GE03	OPERATIONS RESEARCH	-	-	3	0	0	3

18GE04	COST MANAGEMENT OF ENGINEERING PROJECTS	-	-	3	0	0	3
18GE05	COMPOSITE MATERIALS	-	-	3	0	0	3
18GE06	WASTE TO ENERGY	-	-	3	0	0	3
18IT0YA	DATABASE MANAGEMENT SYSTEMS	-	-	3	0	0	3
18IT0YB	DATA STRUCTURES AND ALGORITHMS	-	-	3	0	0	3
18IT0YC	DATA SCIENCES AND ANALYTICS	-	-	3	0	0	3
18IT0YD	OBJECT ORIENTED PROGRAMMING	-	-	3	0	0	3
18IT0YE	ARTIFICIAL INTELLIGENCE	-	-	3	0	0	3
18ME0YA	INDUSTRIAL PROCESS ENGINEERING	-	-	3	0	0	3
18ME0YB	SAFETY ENGINEERING	-	-	3	0	0	3
18ME0YC	MAINTENANCE ENGINEERING	-	-	3	0	0	3
18ME0YD	BASICS OF NON-DESTRUCTIVE TESTING	-	-	3	0	0	3
18ME0YE	DIGITAL MANUFACTURING	-	-	3	0	0	3
18ME0YF	WORK STUDY AND ERGONOMICS	-	-	3	0	0	3
18ME0YG	METROLOGY IN INDUSTRY	-	-	3	0	0	3
18ME0YH	PLANT LAYOUT AND MATERIAL HANDLING	-	-	3	0	0	3
18ME0YI	CONCEPTS OF ENGINEERING DESIGN	-	-	3	0	0	3
18ME0YJ	OIL HYDRAULICS AND PNEUMATICS	-	-	3	0	0	3
18ME0YK	ENERGY AUDITING AND MANAGEMENT	-	-	3	0	0	3
18ME0YL	LEAN SIX SIGMA	-	-	3	0	0	3
18ME0YM	HEATING VENTILATION AND AIRCONDITIONING	-	-	3	0	0	3
18TT0YA	YARN AND FABRIC MANUFACTURE	-	-	3	0	0	3
18TT0YB	COLOURATION OF TEXTILES	-	-	3	0	0	3
18TT0YC	TEXTILES IN ENGINEERING APPLICATION	-	-	3	0	0	3
18TT0YD	GENERAL TEXTILE TECHNOLOGY	-	-	3	0	0	3