



VIT[®]

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

M.Tech Computer Science and Engineering Spec. in Data Science – 5 Year Integrated

Curriculum – AY (2019 – 2020)

Sl.NO	Category	Total No. of Credits (2019 Batch)
1	University Core (UC)	61
2	Programme Core (PC)	76
3	University Elective (UE)	12
4	Programme Elective (PE)	71
	Total	220

University Core [61 Credits]

L – Lecture T- Tutorial P- Practical J- Project C- Credits
E –Engineering S – Science H – Humanities M - Management

Sl.No	Subject Code	Course Title	L	T	P	J	C	Category	Pre-Req	Course Equivalence
1	ENG1002	Effective English (Bridge Course)	0	0	4	0	Pass	NIL	-	NIL
2	CHY1002	Environmental Sciences	3	0	0	0	0	NIL	-	NIL
3	CHY1701	Engineering Chemistry	3	0	2	0	4	NIL	-	NIL
4	CSE1001	Problem Solving and Programming	0	0	6	0	3	NIL	-	NIL
5	CSE1002	Problem Solving and Object Oriented Programming	0	0	6	0	3	NIL	-	NIL
6	ENG1011	English for Engineers	0	0	4	0	2	NIL	-	NIL
7	HUM1021	Ethics and Values	2	0	0	0	2	NIL	-	NIL

8	MAT1011	Calculus for Engineers	3	0	2	0	4	NIL	-	NIL	
9	MAT2001	Statistics for Engineers	2	2	2	0	4	NIL	MAT1011	NIL	
10	MGT1022	Lean Start-up Management	1	0	0	4	2	NIL	-	NIL	
11	PHY1701	Engineering Physics	3	0	2	0	4	NIL	-	NIL	
12	PHY1999	Introduction to Innovative Projects	1	0	0	0	1	NIL	-	NIL	
13	MID3999	Technical Answers for Real World Problems (TARP)	1	0	0	8	2	NIL	PHY1999	NIL	
14	MID4098	Comprehensive Examination	0	0	0	0	1	NIL	-	NIL	
15	MID4099	Co-op/Capstone Project	0	0	0	0	18	NIL	-	NIL	
16	EXC4097	Co-Extra Curricular Basket	0	0	0	0	0	NIL		NIL	
17	FLC4097	Foreign Language Course Basket	0	0	0	0	2	NIL		NIL	
18	STS5097	Soft Skills	0	0	0	0	8	NIL		NIL	
19	MID3099	Industrial Internship	1	0	0	0	1	NIL		NIL	
		Total	61 Credits								

University Elective [12 Credits]

Course Title
University Elective – I
University Elective – II
University Elective – III
University Elective – IV

Program Core [76 credits]

Sl.No	Course Code	Course Title	L	T	P	J	C	Pre-Requisite	Category
1	MAT2002	Applications of Differential and Difference Equations	3	0	2	0	4	MAT1011	S
2	MAT1014	Discrete Mathematics and Graph Theory	3	1	0	0	4	-	S
3	MAT3004	Applied Linear Algebra	3	1	0	0	4	MAT2002	S
4	EEE1001	Basic Electrical and Electronics Engineering	2	0	2	0	3	-	E
5	CSE1003	Digital Logic and Design	3	0	2	0	4	-	E
6	CSE1004	Network and Communication	3	0	2	0	4	-	E
7	CSE1007	Java Programming	3	0	2	0	4	-	E
8	CSE2001	Computer Architecture and Organization	3	0	0	0	3	-	E
9	CSE2002	Theory of Computation and Compiler Design	4	0	0	0	4	-	E
10	CSE2003	Data Structures and Algorithms	2	0	2	4	4	-	E
11	CSE2004	Database Management System	2	0	2	4	4	-	E
12	CSE2005	Operating Systems	2	0	2	4	4	-	E
13.	CSE2006	Microprocessor and Interfacing	2	0	2	4	4	-	E
14	CSE3001	Software Engineering	2	0	2	4	4	-	E
15	CSE3002	Internet and Web Programming	2	0	2	4	4	CSE2004	E
16	CSE3020	Data Visualization	2	0	2	4	4	-	E
17	CSE4020	Machine Learning	2	0	2	4	4	MAT2001	E
18	CSE4***	Mathematical Modeling for Data Science	2	0	2	0	3	-	E
19	MID1***	Foundations of Data Science	2	0	2	0	3	-	E
20	CSE2***	Programming for Data Science	3	0	2	0	4	-	E

Total = 76 credits

LIST OF PROGRAM ELECTIVES [71 Credits]

Sl.No	Course Code	Course Title	L	T	P	J	C	Category
1	CSE2***	Advance Algorithms	2	0	2	0	3	E
2.	CSE1006	Block chain and Crypto Currency Technologies	3	0	0	0	3	E
3.	CSE2***	Advanced C Programming	2	0	2	0	3	E
4.	CSE3009	Internet of Things	3	0	0	4	4	E
5.	CSE3011	Robotics and its Applications	3	0	0	4	4	E
6.	CSE3013	Artificial Intelligence	3	0	0	4	4	E
7.	CSE3018	Content Based Image and Video retrieval	2	0	2	4	4	E
8.	CSE3021	Social and Information Networks	3	0	0	4	4	E
9.	CSE3024	Web Mining	3	0	2	0	4	E
10.	CSE3025	Large Scale Data Processing	2	0	2	4	4	E
11.	CSE3029	Game Programming	2	0	2	4	4	E
12.	CSE4022	Natural language processing	3	0	0	4	4	E
13.	CSE5007	Exploratory Data Analysis	2	0	0	4	3	E
14.	CSE6006	NoSQL Databases	2	0	2	4	4	E
15.	CSE6025	Analytics of Things	3	0	0	4	4	E
16.	CSE3XX	Predictive Analytics	2	0	0	4	3	E
17.	CSE3019	Data Mining	2	0	2	4	4	E
18	CSE4001	Parallel and Distributed Computing	2	0	2	4	4	E
19	CSE3***	Mobile Computing	3	0	0	4	4	E
20	CSE3***	Soft Computing	2	0	2	4	4	E
21	CSE3***	Software Quality and Testing	3	0	0	0	3	E
22	CSE3***	Principles of Cloud Computing	3	0	2	0	4	E
23	CSE3XXX	Deep Learning	3	0	0	4	4	E

24	CSE4XXX	Nature Inspired Computing	3	0	0	0	3	E
25	CSE4***	Open Source Programming	3	0	2	0	4	E
26	CSE4***	Advanced Java Programming	3	0	2	0	4	E
27	MID3***	Business Intelligence	3	1	0	0	4	E
28	MID3***	Statistical Inference and Modelling	3	0	2	0	4	E
29	MID3***	Statistics and Exploratory Analytics	3	0	0	0	3	E
30	MID4***	Intelligent Database Systems	3	0	0	4	4	E
31	MID4***	Medical Informatics	3	0	0	0	3	E
32	MID4***	Advances in Data Engineering	3	0	0	4	4	E
33	MID4***	Knowledge Engineering and Management	3	0	0	4	4	E
34	MID4***	Advanced Data Analytics	3	0	0	0	3	E
35	MID4***	Bayesian Statistical Methods	3	0	0	4	4	E
36	MID4***	Time Series Analysis	3	0	0	0	3	E
37	MID5***	Image and Video Analytics	3	0	0	4	4	E
38	MID5***	Cognitive Science and Decision making	3	0	0	0	3	E
39	MID5***	Advances in Database Administration and Security	3	0	0	0	3	E