

Coimbatore Institute of Technology, Coimbatore - 14.
(Government Aided Autonomous Institution Affiliated to Anna University)
Department of Computing
M. Sc. DATA SCIENCE
Five year Integrated Programme
Curriculum for the Academic Year 2021 – 2026

Semester 1

Subject code	Name of the Subject	L	T	P	C	CAT
	THEORY					
21MDS11	Technical English	2	0	0	2	HS
21MDS12	Algebra and Applications	3	1	0	4	BS
21MDS13	Statistical Methods	3	0	0	3	PC
21MDS14	Problem Solving and Programming in Python	3	0	0	3	PC
21MDS15	Principles of Digital Electronics	3	0	0	3	PC
	PRACTICALS					
21MDS16	Computing Laboratory I	0	0	4	2	PC
21MDS17	Programming Laboratory in Python	0	0	4	2	PC
21MDS18	Digital Electronics Laboratory	0	0	4	2	PC
21MDS19	English for Employability	0	0	2	1	EEC
	Total Credits				22	

Semester 2

Subject code	Name of the Subject	L	T	P	C	CAT
	THEORY					
	Language Elective	2	0	0	2	HS
21MDS21	Calculus and Applications	3	1	0	4	BS
21MDS22	Probability Distributions and Applications	3	0	0	3	PC
21MDS23	Data Structures and Algorithms I	3	0	0	3	PC
21MDS24	Object Oriented Programming	3	0	0	3	PC
	PRACTICALS					
21MDS25	Computing Laboratory II	0	0	4	2	PC
21MDS26	Data Structures and Algorithms Laboratory I	0	0	4	2	PC
21MDS27	Object Oriented Programming Laboratory	0	0	4	2	PC
21MDS28	Employability Skills	0	0	2	1	EEC
	Total Credits				22	

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Semester 3

Subject code	Subject Name	L	T	P	C	CAT
	THEORY					
21MDS31	Business Statistics	3	0	0	3	PC
21MDS32	Discrete Structures and Automata Theory	3	0	0	3	PC
21MDS33	Operating Systems	3	0	0	3	PC
21MDS34	Database Systems	3	0	0	3	PC
21MDS35	Data Structures and Algorithms II	3	0	0	3	PC
	PRACTICALS					
21MDS36	Database Systems Laboratory	0	0	4	2	PC
21MDS37	Data Structures and Algorithms Laboratory II	0	0	4	2	PC
21MDS38	Web Technology Framework Laboratory	0	0	4	2	PC
	Total Credits				21	

Semester 4

Subject code	Subject Name	L	T	P	C	CAT
	THEORY					
21MDS41	Multivariate Data Analysis	3	0	0	3	PC
21MDS42	Graph Theory	3	0	0	3	PC
21MDS43	Design and Analysis of Algorithms	3	0	0	3	PC
21MDS44	Computer Networks	3	0	0	3	PC
21MDS45	Machine Learning	3	0	0	3	PC
	PRACTICALS					
21MDS46	Predictive Analytics Laboratory	0	0	4	2	PC
21MDS47	Design and Analysis of Algorithms Laboratory	0	0	4	2	PC
21MDS48	Machine Learning Laboratory	0	0	4	2	PC
21MDS49	Personality Development	0	0	2	1	EEC
	Total Credits				22	

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Semester 5

Subject code	Subject Name	L	T	P	C	CAT
	THEORY					
21MDS51	Operations Research	3	0	0	3	PC
21MDS52	Deep Learning	3	0	0	3	PC
21MDS53	Big Data Computing	3	0	0	3	PC
21MDS54	Artificial Intelligence	3	0	0	3	PC
	Elective - I	3	0	0	3	PE
	PRACTICALS					
21MDS55	Deep Learning Laboratory	0	0	4	2	PC
21MDS56	Big Data Computing Laboratory	0	0	4	2	PC
	Elective Lab - I	0	0	4	2	PE
21MDS57	Communication Skills	0	0	2	1	EEC
	Total Credits				22	

Semester 6

Subject code	Subject Name	L	T	P	C	CAT
	THEORY					
21MDS61	Stochastic Models	3	0	0	3	PC
21MDS62	Cloud Computing	3	0	0	3	PC
21MDS63	Data Mining	3	0	0	3	PC
21MDS64	Software Engineering	3	0	0	3	PC
	Elective- II	3	0	0	3	PE
	PRACTICALS					
21MDS65	Cloud Computing Laboratory	0	0	4	2	PC
21MDS66	Data Mining and Visualization Laboratory	0	0	4	2	PC
	Elective Lab - II	0	0	4	2	PE
21MDS67	Hackathon	0	0	2	1	EEC
	Total Credits				22	

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Semester 7

Subject code	Subject Name	L	T	P	C	CAT
21MDS71	Project Work and Viva Voce-I	0	0	0	18	EEC
	Total Credits				18	

Semester 8

Subject code	Subject Name	L	T	P	C	CAT
	THEORY					
21MDS81	Data Privacy and Security Analytics	3	0	0	3	PC
21MDS82	Quantum Machine Learning	3	0	0	3	PC
21MDS83	Ethics in Data Science	3	0	0	3	PC
	Elective - III	3	0	0	3	PE
	Elective - IV	3	0	0	3	PE
	PRACTICALS					
21MDS84	Data Privacy and Security Analytics Laboratory	0	0	4	2	PC
21MDS85	Quantum Machine Learning Laboratory	0	0	4	2	PC
	Elective Lab - III	0	0	4	2	PE
	Total Credits				21	

Semester 9

Subject code	Subject Name	L	T	P	C	CAT
	THEORY					
21MDS91	Econometric Analysis	3	1	0	4	PC
21MDS92	Web Analytics	3	0	0	3	PC
21MDS93	Healthcare Analytics	3	1	0	4	PC
	Elective - V	3	0	0	3	PE
	Elective - VI	3	0	0	3	PE
	PRACTICALS					
21MDS94	Econometric Analysis Laboratory	0	0	4	2	PE
21MDS95	Web Analytics Laboratory	0	0	4	2	PE
	Elective Lab - IV	0	0	4	2	PE
	Total Credits				23	

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Semester 10

Subject code	Subject Name	L	T	P	C	CAT
21MDS101	Project Work and Viva Voce- II	0	0	0	18	EEC
	Total Credits				18	
Grand Total of Credits					211	

Language Elective

Subject code	Subject Name	L	T	P	C	CAT
21MDSLE01	Professional English	2	0	0	2	HS
19FYG21	Basic German	2	0	0	2	HS
19FYF21	Basic French	2	0	0	2	HS

Professional Electives

Subject code	Subject Name	L	T	P	C	CAT
Data Analytics and Intelligent Systems Stream						
21MDSE1	Business Intelligence	3	0	0	3	PE
21MDSE2	Natural Language Processing	3	0	0	3	PE
21MDSE3	Computational Intelligence	3	0	0	3	PE
21MDSE4	Geographical Information Analysis	3	0	0	3	PE
21MDSE5	Robotic Process Automation	3	0	0	3	PE
21MDSE6	Machine Learning in Industry 4.0	3	0	0	3	PE
21MDSE7	Cyber Security Analytics	3	0	0	3	PE
21MDSE8	Knowledge Engineering	3	0	0	3	PE
21MDSE9	Recommender System	3	0	0	3	PE
21MDSE10	Social Network Analysis	3	0	0	3	PE
21MDSE11	Human Resource Analytics	3	0	0	3	PE
21MDSE12	Marketing Analytics	3	0	0	3	PE
21MDSE13	Data Analytics Software Development	3	0	0	3	PE
21MDSE14	Financial Analytics	3	0	0	3	PE
Technology Stream						
21MDSE15	GPU Computing	3	0	0	3	PE

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21MDSE16	Mobile Application Development	3	0	0	3	PE
21MDSE17	Blockchain Technology	3	0	0	3	PE
21MDSE18	Internet of Things	3	0	0	3	PE
21MDSE19	Fog and Edge Computing	3	0	0	3	PE
21MDSE20	Augmented and Virtual Reality	3	0	0	3	PE
21MDSE21	Design Thinking	3	0	0	3	PE
21MDSE22	Enterprise Computing	3	0	0	3	PE
21MDSE23	Business Process Management	3	0	0	3	PE
21MDSE24	Software Architecture and Design Patterns	3	0	0	3	PE

Professional Electives- Labs

Subject code	Subject Name	L	T	P	C	CAT
21MDSEL1	Business Intelligence Laboratory	0	0	4	2	PE
21MDSEL2	Natural Language Processing Laboratory	0	0	4	2	PE
21MDSEL3	Computational Intelligence Laboratory	0	0	4	2	PE
21MDSEL4	Geographical Information Analysis Laboratory	0	0	4	2	PE
21MDSEL5	Internet of Things Laboratory	0	0	4	2	PE
21MDSEL6	Robotic Process Automation Laboratory	0	0	4	2	PE
21MDSEL7	Mobile Application Development Laboratory	0	0	4	2	PE
21MDSEL8	Blockchain Technology Laboratory	0	0	4	2	PE
21MDSEL9	Enterprise Computing Laboratory	0	0	4	2	PE

CAT - Category, BS - Basic Sciences, HS - Humanities and Social Sciences,
 ES - Engineering Sciences, PC - Professional Core, PE - Professional Elective,
 EEC - Employability Enhancement Course, MC - Mandatory Course