



Bachelor of Science in Data Science and AI

Indian Institute of Technology Guwahati

Curriculum

First Year

Trimester I

Code	Title of the Course	L	T	P	C
DA 101	Basic English	3	0	0	6
DA 102	Data Analysis Basics	2	0	4	8
DA 103	Introduction to Statistics	3	0	0	6
DA 104	C Programming	2	0	4	8
		10	0	8	28

Trimester II

Code	Title of the Course	L	T	P	C
DA 105	Linear Algebra	3	0	0	6
DA 106	Data Science: An Introduction	3	0	0	6
DA 107	Computer System Tools	1	0	4	6
DA 108	Python Programming	2	0	4	8
		9	0	8	26

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Trimester III

Code	Title of the Course	L	T	P	C
DA 109	AI Basics	3	0	0	6
DA 110	Data Structures	3	0	0	6
DA 111	Algorithm Design & Analysis	3	0	0	6
DA 112	Introduction to R	2	0	4	8
		11	0	4	26

Second Year

Trimester I

Code	Title of the Course	L	T	P	C
DA 201	Relational Database Management Systems	3	0	3	9
DA 202	Java Programming	2	0	4	8
DA 203	Optimization	3	0	0	6
DA 204	Basic Econometrics	3	0	0	6
		11	0	7	29

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Trimester II

Code	Title of the Course	L	T	P	C
DA 205	Data Mining & Warehousing	3	0	0	6
DA 206	Statistical Inferencing	3	0	0	6
DA 207	Signal and Systems	3	0	0	6
DA 208	Social Media Tools and Techniques	3	0	2	8
		12	0	2	26

Trimester III

Code	Title of the Course	L	T	P	C
DA 209	Data Modeling & Visualization	3	0	0	6
DA 210	Time Series Analysis & Forecasting	3	0	0	6
DA 261	Machine Learning Fundamentals	3	0	0	6
DA 262	Recommender Systems	3	0	0	6
		12	0	0	24

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Third Year

Trimester I

Code	Title of the Course	L	T	P	C
DA 301	Cloud Computing	3	0	0	6
DA 302	Deep Learning Essentials	3	0	0	6
DA 3xx	Elective 1	3	0	0	6
DA 377	Internship-I/ Term-Project-I	0	0	6	6
		9	0	6	24

Trimester II

Code	Title of the Course	L	T	P	C
DA 303	Ethics in AI	3	0	0	6
DA 3xx	Elective 2	3	0	0	6
DA 3xx	Elective 3	3	0	0	6
DA 378	Internship-II/ Term-Project-II	0	0	6	6
		9	0	6	24

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Trimester III

Code	Title of the Course	L	T	P	C
DA 304	Soft Skill Enhancement	2	0	0	4
DA 3xx	Elective 4	3	0	0	6
DA 3xx	Elective 5	3	0	0	6
DA 379	Internship-III/ Term-Project-III	0	0	6	6
		8	0	6	22

Fourth Year

Trimester I

Code	Title of the Course	L	T	P	C
DA 401	Big Data Analytics	3	0	0	6
DA 3xx	Elective 6	3	0	0	6
DA 487	Capstone Project - Phase I	0	0	12	12
		6	0	12	24

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Trimester II

Code	Title of the Course	L	T	P	C
DA 405	Basics of Reinforcement Learning	3	0	0	6
DA 4xx	Elective 7	3	0	0	6
DA 488	Capstone Project - Phase II	0	0	12	12
		6	0	12	24

Trimester III

Code	Title of the Course	L	T	P	C
DA 406	Entrepreneurship and Startup	2	0	0	4
DA 4xx	Elective 8	3	0	0	6
DA 489	Capstone Project - Phase III	0	0	12	12
		5	0	12	22

*L - Lectures
T - Tutorials
P - Practicals
C - Credits

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Basket of Electives:

Applied Theory Bucket	L	T	P	C
Natural Language Processing	3	0	0	6
Social Media & Text Analytics	3	0	0	6
Speech Processing & Recognition	3	0	0	6
Vision Intelligence	3	0	0	6
Advanced Applications in AI	3	0	0	6

Systems Bucket	L	T	P	C
Machine Learning Framework	3	0	0	6
NoSQL	3	0	0	6
Big Data on Cloud	3	0	0	6
AI Tools and Applications	3	0	0	6

Business Applications Bucket	L	T	P	C
Banking & Financial Service Analytics	3	0	0	6
Business Variables Analysis	3	0	0	6
Analytics in Securities & Insurance	3	0	0	6
Analytics & ML in Financial Technologies	3	0	0	6

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Bucket of Online Courses	L	T	P	C
Design Thinking	3	0	0	6
Innovation & Entrepreneurship	3	0	0	6
Leadership Essentials	3	0	0	6
Business Research Methods	3	0	0	6
Agile Development Methods	3	0	0	6

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