



**Curriculum and Credit Framework
For
Undergraduate Program**

(Academic Year 2025-26)

AURO UNIVERSITY
#earthspace, Opp. ONGC, Bhatpore, Hazira Road
Surat 394510, Gujarat

Name of Program:

Bachelor of Science in Data Science and Analytics

Year I

Semester - 1

S.No.	Course Title	Credits
1	Computer Fundamental & Problem Solving	4
2	Data Science Fundamentals	4
3	Mathematics for Data Science	2
4	Fundamentals of Information Technology	2
5	Thinking & Communication Skills	3
6	VAC 1 : Science of Living I	2
7	VAC - Physical Education, Sports & Yoga - I	1
Total of SEMESTER 1		18

Semester - 2

S.No.	Course Title	Credits
1.	Data Engineering with Python	4
2.	Data and File Structure	4
3.	Data Preparation and Data Cleaning	3
4.	Cybersecurity for Data Science	2
6.	AEC-2 : Communication Skills/ French /FL	2
7.	VAC II : Science of Living I	2
8.	VAC : Physical Education, Sports & Yoga - II	1
Total of SEMESTER II		18
Total Credits for FIRST YEAR		36

Exit 1: Award of UG certificate in Major course with 36 credits with additional 4 credits of Summer Internship in core specific NSQF defined course OR continue with Major and Minor course for next NCrf credit level

Year 2

Semester-3

S.No.	Course Title	Credits
1	Object Oriented Programming	4
2	Database & Datamining	4
3	Major-01	4
4	Minor-01	3
5	Logical Building & Soft Skills	2
6	Science of Living III	2
7	VAC - Physical Education, Sports & Yoga - III	1
8	Summer Internship-I	2
Total of SEMESTER 3		22

Semester - 4

S.No.	Course Title	Credits
1	Big Data and NoSQL	4
2	Software Engineering and Testing Methodologies	4
3	Major-02	4
4	Minor-02	4
5	Quantitative and Qualitative Aptitude Skill Building	3
6	Science of Living - IV	2
7	Health Education & Wellness-II	1
Total of SEMESTER 4		22

Exit 2: Award of UG Diploma in Major course with 80 credits with additional 4 credits of Summer Internship in core specific NSQF defined course OR continue with Major and Minor course for next NCrf credit level

Year 3

Semester - 5

S.No.	Course Title	Credits
1	Deep Learning	4
2	Next Generation Databases	4
3	Major-03	4
4	Minor-03	4
5	Technical Skill Enhancement	2
6	VAC 5 : Foundation of Indian Culture – I	2
7	Summer Internship-II	2
Total of SEMESTER 5		22

Semester - 6

S.No.	Course Title	Credits
1	MOOC-01	3
2	MOOC-02	3
3	MOOC-03	3
4	Capstone	9
Total of SEMESTER 6		18

Exit 3: Award of UG Degree in Major Course with 120 credits and Internship in core discipline OR continue with Major and Minor course for next NCrF credit level

Semester-7

S.No.	Course Title	Credits
1.	Generative AI	4
2.	Soft Computing	4
3.	Analysis of (Algorithms for) Big Data	4
4.	Introduction to AR/VR	2
5.	OJT 1 / Research Project 1 : On the Job Training – Major Project II	6
Total of SEMESTER 7		20

Semester-8

S.No.	Course Title	Credits
1.	Computer Vision	4
2.	Deep Learning-II	4
3.	Big data Programming using Hadoop and Spark	4
4.	Research and Publication Ethics	2
5.	OJT 2 / Research Project 1 On the Job Training – Major Project III / Research Project	6
Total of SEMESTER 8		20

Four-Year Bachelor of Science in Data Science and Analytics

Honours Degree with 160 credits.

List of Electives

Subject	Elect-1	Elect-2	Elect-3	Elect-4	Elect-5	Elect-6	Elect-7
DATA	Programming for Data Science	Applied Computational Statistics	Advanced Big Data and Text Analytics	Business Intelligence and Data Visualization	Machine Learning	Big Data	Introduction to R Programming
CLOUD	Introduction to Cloud Computing	Cloud Architecture	Virtualization & Cloud Computing	Big Data on Cloud	Artificial Intelligence & Machine Learning on Cloud	Cloud Application Development & Deployment	Cloud Security
BLOCKCHAIN	Mathematics of Modern Cryptography	Intro. to Block chain technologies	Bitcoin and Cryptocurrency Technologies	Smart Contracts	Web and Mobile Security	Risk Analysis and Assessment	
GAME	Game Design & Asset Creation	Programing for Games	Advanced Programming for Games	Designing Human Computer Interfaces	AR / VR Development	XR Studio	
CYBER	Fundamentals of Cyber Security	Network Security	Cryptography	Data Security	Ethical Hacking	Security Testing	Cyber Forensic
AI/ML	Introduction to Python Programming	AI	ML	Deep Learning	NLP	ML Application	Pattern Recognition