



**Curriculum and Credit Framework
For
Undergraduate Programmes**

(Academic Year 2024-25)

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

School of Information Technology

Part A: Programme Structure

Name of Program: BSc.IT

Specialization:

Artificial Intelligence and Machine Learning

And

Cyber Security and Forensics

Year wise Distribution of Total Credits among Different Courses

S.No	Category of Course(s)	Credits Required			
		3-year UG programme as per Govt of Gujarat Guidelines	AURO	4-year UG programme as per Govt of Gujarat Guidelines	AURO
1	Major (Core) Courses (with internship)	68	68	92	92
2	Minor (Elective) Courses	24	24	32	32
3	Multidisciplinary/Interdisciplinary/Allied courses	12	12	12	12
4	AEC (Ability Enhancement Courses)	10	10	10	10
5	SEC (Skill Enhancement Courses)	10	10	10	10
6	VAC (Value Added Courses) including Indian/Knowledge System (IKS)	08	12	08	16
7	Research Project / OJT	00	00	12	12(OJT)
	Total Credits	132	136	176	184

Name of Program: BSc.IT

Specialization:

Artificial Intelligence and Machine Learning

And

Cyber Security and Forensics

Year I

Semester - 1

S.No.	Course Title	Credits
1.	Major 1 Specialization:	4
	Artificial Intelligence and Machine Learning	Introduction to Python Programming (IBM)
	Cyber security and Forensics	Information Security Fundamentals (IBM)
2	Major 2 Problem Solving and Programming using C	4
3	Minor 1 Computer System Architecture	4
4.	MD-1 Fundamentals of Mathematics	2
5.	MD-2 Dynamics of Human Behavior	2
6.	AEC 1 Communication Skills / Sanskrit	2
7.	SEC 1 E - Commerce	2
8.	VAC 1 Science of Living I	2
9.	VAC - Physical Education, Sports & Yoga - I	1
Total of SEMESTER 1		23

Semester - 2

S.No.	Course Title	Credits
1.	Major 3 Specialization:	4
	Artificial Intelligence and Machine Learning	Introduction to Artificial Intelligence and Machine Learning (IBM)
	Cyber security and Forensics	IT Network Security (IBM)
2.	Major 4 Data Structure & Algorithm	4
3.	Minor 2 Database Management System	4
4.	MD 3 Fundamentals of Statistics	2
	MD 4 (Any one course to be chosen from the following pool of courses)	
	Course Name	Offered By
	Environment and Sustainability in Hospitality and Tourism	School of Hospitality
	Environmental Education	School of Design
5.	Short Film Making	School of Journalism Mass Comm.
	Financial Literacy	School of Business
	Introduction to IPR	School of Law
	Digital Literacy	School of Information Technology
	Sculpture	School of Design
	The Art of Expressive Writing	School of Liberal Arts & Human Sciences
6.	AEC 2 Communication Skills/ French / Sanskrit / Gujarati / Hindi	2
7.	SEC 2 Internet Concepts and Web Designing	2
8.	VAC 2 Science of Living II	2
9.	VAC - Physical Education, Sports & Yoga - II	1

Total of SEMESTER II	23
Total Credits for FIRST YEAR	46

Exit 1: Award of UG certificate in Major course with 44 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.	Major 5 Specialization:	4
	Artificial Intelligence and Machine Learning	Machine Learning (IBM)
	Cyber security and Forensics	IT Application Security (IBM)
2.	Major 6 Operating System	4
3.	Major 7 Relational Database Management System	4
4	MD 5 Computer Networks	2
	MD-6 : (Any one course to be chosen from the following pool of courses)	
	Course	Offered by
	Digital Literacy	School of IT
	Environmental Education	School of Design
	Financial Literacy	School of Business
	Introduction to IPR	School of Law
	Sculpture	School of Design
	Short Film Making	School of Journalism and Mass Communication
	The Art of Expressive Writing	School of Liberal Arts and Human Sciences
	Environment and Sustainability in Hospitality and Tourism	School of Hospitality
5		2
6	AEC 3 Communication Skills/ French / Sanskrit / Gujarati / Hindi	2
7	SEC 3 Data Science using R	2
8	VAC 3 Science of Living III	2
9.	Health Education & wellness - I	1
Total of SEMESTER III		23

Semester - 4

S.No.	Course Title	Credits
1.	Major 8 Specialization:	4
	Artificial Intelligence and Machine Learning	Deep Learning (IBM)
	Cyber security and Forensics	IT Data Security (IBM)
2.	Major 9 JAVA Programming	4
3.	Major 10 ASP.net	4
4.	Minor 3 Design and Analysis of Algorithm	4
5.	AEC 4 Communication Skills/ French / Sanskrit / Gujarati / Hindi	2
6.	SEC 4 UI/UX Design and Animation	2
7.	VAC 4 Science of Living IV	2
8.	Health Education & wellness - II	1
Total of SEMESTER IV		23
Total Credits for SECOND YEAR		46

Exit 2: Award of UG Diploma in Major course with 88 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.	Major 11 Specialization:	4
	Artificial Intelligence and Machine Learning	Computational Linguistic and Natural Language Processing (IBM)
	Cyber security and Forensics	Ethical Hacking & Penetration Testing (IBM)
2.	Major 12 Block chain Technologies	4
3.	Major 13 Web Technologies using PHP	4
4.	Minor 4 Software Engineering	4
5.	Minor 5 Service – Oriented Architecture	4
6.	SEC 5 Data Visualization	2
7.	VAC 5 Foundation of Indian Culture – I	2
Total of SEMESTER V		24

Semester - 6

S.No.	Course Title	Credits
1.	Major 14 Specialization:	4
	Artificial Intelligence and Machine Learning	Application of Machine Learning in Industries (IBM)
	Cyber security and Forensics	Digital Forensic (IBM)
2.	Major 15 Android Programming	4
3.	Major 16 Full Stack Development	4

4.	Minor 6 Introduction to Cloud Computing	4
5.	AEC 5 Introduction to IoT and Security	2
6.	Internship 1 Major Project – I	4
7.	VAC 6 Foundation of Indian Culture – II	2
Total of SEMESTER VI		24
Total Credits for THIRD YEAR		48

Exit 3: Award of UG Degree in Major Course with 136 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.	Major 17 Specialization:	4
	Artificial Intelligence and Machine Learning	Pattern Recognition and Anomaly Detection (IBM)
	Cyber security and Forensics	Information Security Audit, Monitoring and Governance (IBM)
2.	Major 18 Cryptography & Network Security	4
3.	Major 19 Digital Image Processing	4
4.	Minor 7 System Simulation and Modelling	4
5.	OJT 1 On the Job Training – Major Project II	6
Total of SEMESTER VII		22

Semester-8

S.No.	Course Title	Credits
1.	Major 20 Big Data Analytics using Hadoop	4

2.	Major 21 Software Testing Tools	4
3.	Major 22 Mobile Computing	4
4.	Minor 8 Distributed System	4
5.	OJT 2 / Research Project 1 On the Job Training – Major Project III / Research Project	6
Total of SEMESTER VIII		22
Total Credits for THIRD YEAR		44

Four Years

BSc IT (Artificial Intelligence and Machine Learning) OR

BSc IT (Cyber security and Forensics)

Honours Degree with 184 credits.