

## SHANTABEN NAGINDAS KHANDWALA COLLEGE OF SCIENCE

**Programme:** Bachelor of Science Computer Science in Artificial Intelligence and Machine Learning

**Academic year:** 2025-26

### Curriculum Framework of First Year under NEP

Level	Sem.	Major		Minor	OE	VSC, SEC (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Credits	Cumulative Credits
		Mandatory (DSC 1 & DSC 2)	Electives							
4.5	I	Problem Solving using Programming (03) Computer Fundamentals (03)	----	----	Any ONE Open Elective I (02) 1.Principles of management 2.Basics of accounting Any ONE Open Elective II (02) 1.Introduction to Entrepreneurship 2.Necessary statics	Mathematics-I (VEC) (02)  Coding and Computational Thinking-I (SEC) (02)	English – I (AEC) (02) Environmental Science-I (VEC) (02) Indian Knowledge System (IKS) (02)	NSS, Yoga, Cultural, Sports, Music, Performing Arts, DLLE (CC) (02)	22	44 (UG Degree)
	Credits	6	0	0	4	4	6	2		
	II	Data Structures and Algorithms (03) Database Management Systems (03)	----	Foundations of AIML (02)	Any ONE Open Elective III (02) 1.Digital Marketing 2. Human Resource Management Any ONE Open Elective IV (02) 1.Principles of Banking 2.Production and Operations management	Mathematics – II (VEC) (02) Coding and Computational Thinking-II (SEC) (02)	English – II (AEC) (02) Environmental Science-II (VEC) (02)	NSS, Yoga, Cultural, Sports, Music, Performing Arts, DLLE (CC) (02)	22	
	Credits	6	0	2	4	4	4	2		
	Total credits in 1 <sup>st</sup> year	12	0	2	8	8	10	4	44	
	Cum Cr.	12	0	2	8	8	10	4	44	

\* Exit Option: Award of UG Degree in Major with 120-132 credits or Continue with Major and Minor

[FP = Field Project; CEP = Community Engagement and Service; OJT = On Job Training – Internship/Apprenticeship]

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Level	Sem.	Major		Minor	OE	VSC, SEC (VSEC)	AEC	OJT, FP, CEP, CC, RP	Cr	Cumulative Credits
		Mandatory (DSC 1 & DSC 2)	Electives							
5.0	III	Python Programming (03) Operating Systems (03) Knowledge Representation and Reasoning (02)		Data Preprocessing and Feature Engineering (03)  Probability and Statistics (03)	<u>Any ONE</u> 1. Personal Financial Planning 2. Design Thinking 3. Social Media Marketing Strategy 4. Introduction to Stock Markets – Trading, Investments & Automations	<b>VSC:</b> Discrete Mathematics (02)	<b>AEC:</b> Hindi/ Marathi/ Gujarati (02)	<b>Co-Curricular Courses (CC)</b> CC: (02)	22	88 (UG Diploma)
	<b>Credits</b>	<b>8</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>		
	IV	Computer Networks (03) Signals and Digital Image Processing (03) Inferential Statistics (02)		Machine Learning (03)  Data Visualisation (03)	<u>Any ONE</u> 1. Personal Financial Planning 2. Design Thinking 3. Social Media Marketing Strategy 4. Introduction to Stock Markets – Trading, Investments & Automations <b>(NOTE: Course opted in Sem III cannot be repeated in Sem IV)</b>	<b>SEC:</b> Coding and Computational Thinking – III	<b>AEC:</b> Hindi/ Marathi/ Gujarati (02)	<b>Co-Curricular Courses (CC)</b> CC: (02)	22	
	<b>Credits</b>	<b>8</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>		
	<b>Total credit in 2<sup>nd</sup> year</b>	<b>16</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>44</b>	
	<b>Cum Cr.</b>	<b>28</b>	<b>----</b>	<b>14</b>	<b>12</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>88</b>	

\* Exit Option: Award of UG Diploma in Major and Minor with 80-88 credits and an additional 4 credits core NSQF Course/Internship or Continue with Major and Minor

**Programme:** Bachelor of Science Computer Science in Artificial Intelligence and Machine Learning

**Academic year:** 2025-26

**Curriculum Framework of Third Year under NEP**

Level	Sem.	Major		Minor	OE	VSC, SEC (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Credits	Cumulative Credits
		Mandatory (DSC 1, 2 & DSC 3)	Electives							
5.5	V	Advanced Python Programming (04) Advanced Machine Learning (04) Deep Learning (03)	Robotic Process Automation/Pattern Recognition (04)	Responsible AI (03)	----	Introduction to IOT (02)	----	FP/CEP/Holistic Skill Development for Career Readiness (02)	22	132 (UG Degree)
	Credits	11	4	3	0	2	0	2		
	VI	Generative AI (04) MLOps (04) Financial Analytics (03)	Social Media Analytics / Big Data Analytics (04)	Soft Computing (03)	----	----	----	OJT/Internship/Project Work (04)	22	
	Credits	11	4	3	0	0	0	4		
	Total credits in 3 <sup>rd</sup> year	22	8	6	0	2	0	6	44	
	Cum Cr.	12+16+22=50	0+0+8=8	02+12+06=20	8+4+0=12	8+4+2=14	10+4+0=14	4+4+6=14	132	

**\* Exit Option: Award of UG Degree in Major with 120-132 credits or Continue with Major and Minor**

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