Study & Evaluation Scheme

Of

Bachelor of Technology
B.Tech (AI and ML)

[Applicable w.e.f. Academic Session 2025-26]

Approved by Academic Council

FUTURE UNIVERSITY

18th Milestone, Bareilly-Lucknow Highway NH-24
Near Faridpur, Bareilly, Uttar Pradesh 243503
Website: www.futureuniversity.in

SUMMARY

<table>
<tr><td>Programme</td><td>Bachelor of Technology
B. Tech. (AI and ML)</td></tr>
<tr><td>Duration</td><td>Four years Full Time (Eight semesters)</td></tr>
<tr><td>Medium</td><td>English</td></tr>
<tr><td>Minimum Required Attendance</td><td>75%</td></tr>
<tr><td>Maximum Credit</td><td>170</td></tr>
<tr><td>Minimum Credit (required for the degree)</td><td>160</td></tr>
<tr><td>Assessment (Theory)</td><td>
<table>
<tr><th>Internal</th><th>External</th><th>Total</th></tr>
<tr><td>30%</td><td>70%</td><td>100%</td></tr>
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<tr><td>Assessment (Practical)</td><td>
<table>
<tr><th>Internal</th><th>External</th><th>Total</th></tr>
<tr><td>50%</td><td>50%</td><td>100%</td></tr>
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<tr><td>Internal Evaluation (Theory Papers)</td><td>
<table>
<tr><th>Class Test I</th><th>Class Test 2</th><th>Assignment(s)</th><th>Other Activity (including attendance)</th><th>Total</th></tr>
<tr><td>10 marks</td><td>10 marks</td><td>5 marks</td><td>5 marks</td><td>30 marks</td></tr>
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</td></tr>
<tr><td>Internal Evaluation (Practical Papers)</td><td>
<table>
<tr><th>Experiment File Viva</th><th>Exam</th><th>Attendance</th><th>Total</th></tr>
<tr><td>10 marks</td><td>30 marks</td><td>10 marks</td><td>50 marks</td></tr>
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</td></tr>
<tr><td>Duration of Examination (Theory)</td><td>
<table>
<tr><th>External</th><th>Internal</th></tr>
<tr><td>3 hrs.</td><td>1 ½ hrs</td></tr>
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</td></tr>
<tr><td>Duration of Examination (Practical)</td><td>As per the requirement of the practical paper</td></tr>
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To qualify the course a student is required to secure a minimum of 40% marks in aggregate including the semester end examination and teachers' continuous evaluation. (i.e. both internal and external).
A candidate who secures less than of 40% of marks in a course shall be deemed to have failed in that course. The student should have at least 50% marks in aggregate to clear the semester. In case a student has more than 40% in each course, but less than 50% overall in a semester, he/she shall re-appear in courses where the marks are less than 50% to achieve the required aggregate percentage of 50% in the semester.

Question Paper Structure

1. ***The question paper shall consist of six questions. Out of which first question shall be of short answer type (not exceeding 50 words) and will be compulsory. Question No. 1 shall contain 8 parts representing all units of the syllabus and students shall have to answer any five (weight age 4 marks each).***
2. ***Out of the rest five questions, students shall be required to attempt all five questions, but there will be an internal choice of A or B. Each question will be from one unit of the syllabus. The weight age of Question No. 2 to 6 shall be 10 marks each.***

Faculty of Engineering and Technology (Code: 05)

Department of Computer Science and Engineering

Bachelor of Technology in AI and ML

Credit Framework for the B. Tech. (AI and ML) -NEP-2020, Future University									Total
Sem.	Major (Core)	Minor Stream	Multidisciplinary	Ability Enhancement Course	Skill Enhancement Course	Value Added	Summer Internship	Research Project/ Dissertation	
1	10	4	5	0	2	2			23
2	10	2	5	0	2	2			21
Students exiting the programme after securing 40 credits will be awarded UG Certificate in the relevant Discipline / Subject provided they secure 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester									
3	10	1	2	2	2				17
4	15	1		3					19
Students exiting the programme after securing 80 credits will be awarded UG Diploma in the relevant Discipline / Subject provided they secure 4 credits in skill based vocational courses offered during first year or second year summer term.									
5	17	4			4				25
6	17	1							18
Students who want to undertake 3-year UG Programme will be awarded UG Degree in the relevant Discipline/ Subject Upon securing 120 credits									
7	14	1						06	21
8	9	1						16	26
Students will be awarded UG Degree(Honors) with Research in the relevant Discipline/ Subject provided they secure 160 credits (As per NEP guidelines)									

Total= 170 credit

			Future University									
			B. Tech. in AI and ML (Undergraduate Regular)									
			Course Structure 2025-2029									
Program Name			**B. Tech. (AI and ML)**				**Program Code:**	**07**				
			Total Credit of Program: 170				**Branch Code:**	**06**				
		Theory		**Week**			**Evaluation Scheme**			**Total**	**Credit**	
SN	**Course Category**	**Code**	**Course Title**	**L**	**T**	**P**	**CA**	**EE**				
Semester –I												
1	Multidisciplinary Course	HSS1101	Engineering Mathematics-1	3	0	0	30	70		100	3	
2	Minor Course	HSS1102	Advanced Engineering Physics	2	0	0	30	70		100	2	
3	Major Core Courses	EEE1103/ EEC1103	Essentials of Electrical Engineering / Essentials of Electronics Engineering	3	0	0	30	70		100	3	
4	Major Core Courses	ECS1104/ EME1104	Principles of Problem Solving Using Advance C / Elements of Mechanical Engineering	3	0	0	30	70		100	3	
5	Value Added Course	ECS1105	AI for Everyone	2	0	0	30	70		100	3	
	Minor Course	ECS1106	MOOC	Self-Paced Learning						100	3	
Practical												

6	Minor Course	HSS1170	Advanced Engineering Physics LAB	0	0	2	50	50	100	1	
7	Major Core Courses	ECS1171/EME1171	Programming using Advanced C LAB /EME Lab	0	0	2	50	50	100	1	
8	Major Core Courses	EEE1172/EEC1172	Essentials of Electrical Engineering LAB / Essentials of Electronics Engineering LAB	0	0	2	50	50	100	1	
9	Skill Enhancement Course	EME1173/EME1173	Workshop Practice Lab / Engineering Graphics Lab	0	1	2	50	50	100	2	
10	Multidisciplinary Course	IKS1101	IKS-1 (Indian Knowledge System-1)	1	0	0	50		50	1	
			TOTAL	**14**	**2**	**8**	**400**	**550**	**1050**	**23**	

			Theory	**Week**			**Evaluation Scheme**		**Total**	**Credit**
SN	**Course Category**	**Code**	**Course Title**	**L**	**T**	**P**	**CA**	**EE**		
Semester –II										
1	Multidisciplinary Course	HSS1201	Engineering Mathematics – II	3	0	0	30	70	100	3
2	Minor Course	HSS1202	Environmental Science	2	0	0	30	70	100	2
3	Major Core Courses	EEC1203/EEE1203	Essentials of Electronics Engineering / Essentials of Electrical Engineering	3	0	0	30	70	100	3
4	Major Core Courses	EME1204/ECS1204	Elements of Mechanical Engg. / Principles of Problem Solving Using Advance C	2	1	0	30	70	100	3
5	Value Added Course	ECS1205	AI for Engineers	2	0	0	30	70	100	3
	Minor Course	ECS1206	MOOC	Self-Paced Learning					100	3

Practical										
6	Major Core Courses	EME1271/ECS1271	EME Lab/Programming using advanced C Lab	0	0	2	50	50	100	1
7	Major Core Courses	EEC1272/EEE1272	Essentials of Electronics Engineering Lab / Essentials of Electrical Engineering Lab	0	0	2	50	50	100	1
8	Skill Enhancement Course	EME1273/EME1273	Engineering Graphics Lab / Workshop Practice Lab	0	0	2	50	50	100	1
9	Skill Enhancement Course	LSM1210	LSM-I (Life Skill & Mentoring I)	0	0	0				1
			TOTAL	**14**	**3**	**6**	**340**	**560**	**900**	**21**

				Week			**Evaluation Scheme**		**Total**	**Credit**
SN	**Course Category**	**Code**	**Course Title**	**L**	**T**	**P**	**CA**	**EE**		
Semester –III										
1	Multidisciplinary Course	HSS2301	Probability and Random Variables	2	0	0	30	70	100	2
2	Major Core Course	EAI2302	Data Structures & Algorithms	3	0	0	30	70	100	3
3	Major Core Course	EAI2303	Operating System	3	0	0	30	70	100	3
4	Skill Enhancement Course	EAI2304	Python Programming	2	1	0	30	70	100	3

6	Minor Course	EAI2305	MOOC	Self-Paced Learning					100	3
Practical										
6	Major Core Course	EAI2371	Data Structures & Algorithms Lab	0	0	4	50	50	100	2
7	Major Core Course	EAI2372	Operating System Lab	0	0	4	50	50	100	2
	Major Core Course	EAI2373	Python Programming	0	0	4	50	50	100	2
			TOTAL	**12**	**0**	**8**	**250**	**450**	**800**	**20**

				WEEK			**Evaluation Scheme**			
SN	**Course Category**	**Code**	**Course Title**	**L**	**T**	**P**	**CA**	**EE**	**Total**	**Credit**
Semester-IV										
1	Major Core Course	EAI2401	Introduction to Machine learning	2	1	0	30	70	100	3
2	Major Core Course	EAI2402	AI and Intelligent Agents	3	0	0	30	70	100	3
3	Major Core Course	EAI2403	Object Oriented Programming with Python	2	1	0	30	70	100	3
4	Ability Enhancement Course	EAI2404	Recent Advances in Technology	3	0	0	30	70	100	3
5	Minor Course	EAI2405	MOOC	Self-Paced Learning					100	3
Practical										
6	Major Core Course	EAI2471	Machine Learning Lab	0	0	4	50	50	100	2
7	Major Core Course	EAI2472	Object Oriented Programming with Python Lab	0	0	4	50	50	100	2

			TOTAL	**12**	**2**	**8**	**220**	**380**	**700**	**19**

				Week			**Evaluation Scheme**			
SN	**Course Category**	**Code**	**Course Title**	**L**	**T**	**P**	**CA**	**EE**	**Total**	**Credit**
Semester –V										
1	Major Core Course	EAI3501	Natural Language Processing (NLP)	3	0	0	30	70	100	3
2	Major Core Course	EAI3502	Cloud Computing & Edge AI	3	0	0	30	70	100	3
3	Major Core Course	EAI3503	Computational Intelligence	3	1	0	30	70	100	4
4	Major Core Course	EAI3504	Elective-I	3	1	0	30	70	100	4
5	Minor Course	EAI3505	MOOC	Self-Paced Learning					100	3
Practical										
6	Major Core Course	EAI3571	Computational Intelligence Lab	0	0	4	50	50	100	2
7	Major Core Course	EAI3572	Cloud Computing & Edge AI	0	0	2	50	50	100	1
8	Skill Enhancement Course	EAI3573	Internship	0	0	8	50	50	100	4
			TOTAL	**12**	**2**	**14**	**270**	**430**	**800**	**24**

				Week			Evaluation Scheme			
SN	**Course Category**		**Course Title**	**L**	**T**	**P**	**CA**	**EE**	**Total**	**Credit**
Semester-VI										
1	Major Course	EAI3601	Research Methodology	3	1	0	30	70	100	4
2	Major Core Course	EAI3602	Internet of Things	2	0	0	30	70	100	2
3	Major Core Course	EAI3603	Introduction to Robotic Process Automation Tools	2	0	0	30	70	100	2
4	Major Core Course	EAI3604	Elective-II	3	0	0	30	70	100	3
5	Minor Course	EAI3605	MOOC	Self-Paced Learning					100	3
Practical										
6	Major Core Course	EAI3671	Internet of Things Lab	0	0	4	50	50	100	2
7	Major Core Course	EAI3672	Introduction to Robotic Process Automation Tools Lab	0	0	4	50	50	100	2
			TOTAL	**12**	**1**	**8**	**220**	**380**	**700**	**18**

				Week			Evaluation Scheme			
SN.	**Course Category**	**Code**	**Course Title**	**L**	**T**	**P**	**CA**	**EE**	**Total**	**Credit**
Semester –VII										
1	Major Core Course	EAI4701	Fuzzy Logic & Application	3	0	0	30	70	100	3
2	Major Course	EAI4702	R Programming	3	0	0	30	70	100	3
3	Major Core Course	EAI4703	Deep Learning	3	0	0	30	70	100	3
4	Major Core Course	EAI4704	Elective-III	3	0	0	30	70	100	3
5	Minor Course	EAI4705	MOOC	Self-Paced Learning					100	1
Practical										
6	Major Core Course	EAI4771	R Programming Lab	0	0	4	50	50	100	2
7	Research Project/ Dissertation	EAI4772	Project Part-I	0	0	12	50	50	100	6
			TOTAL	**12**	**0**	**16**	**220**	**380**	**700**	**21**

				Week			Evaluation Scheme			
SN	**Course Category**	CODE	**Course Title**	**L**	**T**	**P**	**CA**	**EE**	**Total**	**Credit**
Semester-VIII										
1	Major Core Course	EAI4801	Entrepreneurship & AI Startups	3	0	0	30	70	100	3
2	Major Core Course	EAI4802	Elective – IV	3	0	0	30	70	100	3
3	Major Core Course	EAI4803	Robotic Operating Systems & Robot Simulation	3	0	0	30	70	100	3
4	Minor Course	EAI4804	MOOC	Self-Paced Learning					100	1
Practical										
5	Research Project/ Dissertation	EAI4871	Project Part- II	0	0	32	100	300	400	16
			Total	**9**	**0**	**32**	**190**	**510**	**800**	**26**

SN	Course Category
1	Major (Core)
2	Minor Stream
3	Multidisciplinary
4	Ability Enhancement Course
5	Skill Enhancement Course
6	Value Added Courses Common for All UG
7	Summer Internship
8	Research Project/ Dissertation

SN	Codes	Elective -I
1	EAI3504	Information Security
2	EAI3506	Database Security
3	EAI3507	Business Intelligence
4	EAI3508	Smart Industry Connectivity
5	EAI3509	Data Visualization

SN	Codes	Elective-II
1	EAI3604	Blockchain Technology
2	EAI3606	Cyber Security and AI
3	EAI3607	Management Information System
4	EAI3608	Signal & Image Processing
5	EAI3609	Meta Learning

SN	Codes	Elective –III
1	EAI4704	Orientation program in Entrepreneurship
2	EAI4706	Meta Verse
3	EAI4707	AI Ethics and Governance
4	EAI4708	Unmanned Aerial Vehicles
5	EAI4709	Formal Language & Automata Theory

SN	Codes	Elective-IV
1	EAI4802	Quantum Computing

2	EAI4805	AI in Bioinformatics
3	EAI4806	Big Data Analytics
4	EAI4807	Evolutionary Algorithms
5	EAI4808	Computer Vision