

For Internal Communication

Department of Artificial Intelligence and Machine Learning
Scheme of Teaching for 2024-28 batch- Choice Based Credit System (CBCS) Total Credits – 120

III Semester B.E. Curriculum

Sl. No	Type of Course	Course Code	Course Title	Teaching Department	Hours per week				Subject Contact Hours	Credits	Examination		
					Lecture (L)	Tutorial (T)	Practical (P)	Project (J)			CIA	SEA	Total
1	BSC	24MAC131	Fourier Transform, Mathematical logic and Advanced Linear Algebra	Mathematics	2	2	-	-	4	3	50	50	100
2	PCC	24AML132	Computer Organization and Architecture	AIML	3	-	-	-	3	3	50	50	100
3	PCI-C	24AML133	Artificial Intelligence	AIML	3	-	2	-	5	4	50	50	100
4	PCI-P	24AML134	Data Structures & Applications	AIML	3	-	2	-	5	4	50	50	100
5	PCI-C	24AML135	Microcontroller and Embedded Systems	AIML	1	2	2	-	5	3	50	50	100
6	PBL	24AML136	Object Oriented Programming using Java	AIML	-	-	2	2	4	2	50	50	100
7	PBL	24AML137	Innovative Project Lab (Social Concern)	AIML	-	-	-	2	2	1	100	-	100
8	AEC	24SFT138	Soft Skill - 1	T & P	-	-	2	-	2	1	100	-	100
Total					12	4	10	4	30	21	500	300	800

BSC - Basic Science Course
PCL - Professional Core Laboratory
PBL - Project Based Learning
AEC - Ability Enhancement Course Activity

PCC- Professional Core Course
PCE - Professional Core Elective
INT - Internship
UHV - Universal Human Values

PCI-Professional Core Integrated
POE- Professional Open Elective
PRJ - Project Work
HSS - Humanity and Social Science

CIA: Continuous Internal Assessment
SEA: Semester End Assessment

AICTE Activity Points to be earned by students admitted to BE day college programme (For more details refer to Chapter 6, AICTE Activity Point Programme, Model Internship Guidelines): Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other institutions and Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to BNMIT. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, eighth semester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

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IV Semester B.E. Curriculum

Sl. No.	Type of Course	Course Code	Course Title	Teaching Department	Hours per week				Subject Contact Hours	Credits	Examination		
					Lecture (L)	Tutorial (T)	Practical (P)	Project (J)			CIA	SEA	Total
1	BSC	24MAC141	Statistics, Probability and Graph theory	Mathematics	2	2	-	-	4	3	50	50	100
2	PCC	24AML142	Operating System	AIML	3	-	-	-	3	3	50	50	100
3	PCI-C	24AML143	Database Management System	AIML	2	-	2	-	4	3	50	50	100
4	PCI-P	24AML144	Design and Analysis of Algorithms	AIML	3	-	2	-	5	4	50	50	100
5	PCI	24AML145	Machine Learning	AIML	1	2	2	-	5	3	50	50	100
6	PBL	24AML146	Cloud Computing & Applications	AIML	-	-	2	2	4	2	50	50	100
7	AEC	24CIP147	Constitution of India and Professional Ethics	HSS	-	2	-	-	2	1	100	-	100
8	AEC	24SFT148	Soft Skill-II	T & P	-	2	-	-	2	1	100	-	100
9	INT	24AML149	Internship – I & IPL (Social Concern)	AIML	-	-	2	2	4	2	100	-	100
Total					9	11	10	5	33	22	600	300	900

Internship-I: All the students registered to III year of BE shall have to undergo mandatory internal internship of 3 weeks during II semester or III semester vacation. Semester End Assessment will be conducted in IV semester and the prescribed credit will be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.

Activity

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Professor & Head, Dept. of AIML

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V Semester B.E. Curriculum

Sl. No	Type of Course	Course Code	Course Title	Teaching Department	Hours per week				Subject Contact Hours	Credits	Examination		
					Lecture (L)	Tutorial (T)	Practical (P)	Project (J)			CIA	SEA	Total
1	PCC	24AML151	Software Engineering, Project Management & Finance	AIML	3	-	-	-	3	3	50	50	100
2	PCC	24AML152	Automata Theory and Computations	AIML	2	1	1	-	4	3	50	50	100
3	PCI	24AML153	Computer Networks and Security	AIML	3	-	2	-	5	4	50	50	100
4	PCI	24AML154	Advanced Machine Learning	AIML	3	-	2	-	5	4	50	50	100
5	PBL	24AML155	Virtual Reality & Augmented Reality	AIML	-	-	2	2	4	2	50	50	100
6	POE	24AML156x	Open Elective - I	AIML	3	-	-	-	3	3	50	50	100
7	AEC	24AML157	Employability Skills - I	T & P	-	2	-	-	2	1	100	-	100
8	INT	24AML158	Internship-II/ IPL	AIML	-	-	2	2	4	2	100	-	100
Total					14	3	9	4	30	22	500	300	800

OPEN ELECTIVES:

Course Code	24AML1561	24AML1562	24AML1563	24AML1564
Course Title	Introduction to Data Science	Cyber Security	Data Driven Decision Making	Sensors & Robotics

Internship-II: All the students registered to III year of BE shall have to undergo mandatory internship of 3 to 4 weeks during IV semester vacation. Semester End Assessment will be conducted in V semester and the prescribed credit will be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.

Activity: AICTE Activity Points to be earned by students admitted to BE day college programme (For more details refer to Chapter 6, AICTE Activity Point Programme, Model Internship Guidelines): Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other institutions and Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to BNMIT. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for

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VI Semester B.E. Curriculum

Sl. No.	Type of course	Course Code	Course Title	Teaching Department	Hours per week				Subject Contact Hours	Credits	Examination		
					Lecture (L)	Tutorial (T)	Practical (P)	Project (J)			CIA	SEA	Total
1	PCI-C	24AML161	Deep Learning	AIML	2	-	2	-	4	3	50	50	100
2	PCI-P	24AML162	Natural Language Processing	AIML	2	-	2	-	4	3	50	50	100
3	PCI-C	24AML163	Generative Artificial Intelligence	AIML	3	-	1	1	5	4	50	50	100
4	PBL	24AML164	Image Processing & Computer Vision	AIML	-	-	2	2	4	2	50	50	100
5	PCE	24AML165x	Professional Elective – I	AIML	3	-	-	-	3	3	50	50	100
6	PCE	24AML166x	Professional Elective – II (MOOC)	AIML	3	-	-	-	3	3	50	50	100
7	POE	24AML167x	Open Elective - II	AIML	3	-	-	-	3	3	50	50	100
8	AEC	24AML168	Employability Skills - II	T & P	-	-	2	-	2	1	100		100
Total					16	-	9	3	28	22	450	350	800

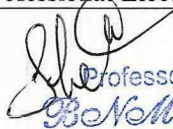
OPEN ELECTIVES:

Course Code	24AML1671	24AML1672	24AML1673	24AML1674
Course Title	Big Data Analytics & Data Visualization	Natural Language Processing	Computer Vision	Virtual Reality & Augmented Reality

Activity

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Professional Elective MOOC: Tentative changes based on courses offered during the semester.


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VII Semester B.E. Curriculum

Sl. No	Type of course	Course Code	Course Title	Teaching Department	Hours per week				Subject Contact Hours	Credits	Examination		
					Lecture (L)	Tutorial (T)	Practical (P)	Project (J)			CIA	SEA	Total
1	PCI	24AML171	Agentic Artificial Intelligence	AIML	2	-	2	-	4	3	50	50	100
2	PCE	24AML172x	Professional Elective – III	AIML	3	-	-	-	3	3	50	50	100
3	PCE	24AML173x	Professional Elective – IV (MOOC)	AIML	3	-	-	-	3	3	50	50	100
4	AEC	24AML174	Research Methodology & Intellectual Property Rights	AIML	2	-	-	-	2	2	50	50	100
5	PRJ	24AML175	Project Work Phase – I	AIML	-	-	-	10	10	5	100		100
Total					10	-	2	10	22	16	300	200	500

Project Work Phase - 1: Based on the abilities of the students and recommendations of the mentor, a single discipline or a multidisciplinary project can be assigned to an individual student or to a group having not more than 4 students. In extraordinary cases, like the funded projects requiring students from different disciplines, the project student strength can be 5 or 6.

Activity

AICTE Activity Points to be earned by students admitted to BE day college programme (For more details refer to Chapter 6, AICTE Activity Point Programme, Model Internship Guidelines): Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other institutions and Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to BNMIT. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

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VIII Semester B.E. Curriculum

Sl. No	Type of course	Course Code	Course Title	Teaching Department	Hours per week				Subject Contact Hours	Credits	Examination		
					Lecture (L)	Tutorial (T)	Practical (P)	Project (J)			CIA	SEA	Total
1	PCE	24AML181x	Professional Elective – V (MOOC)	AIML	3	-	-	-	3	3	50	50	100
2	INT	24AML182	Internship-III	AIML	-	-	16	-	16	8	50	50	100
3	PRJ	24AML183	Project Work Phase-II	AIML	-	-	-	12	12	6	50	50	100
Total					3	-	16	12	31	17	150	150	300

Project Work Phase - II: Based on the abilities of the students and recommendations of the mentor, a single discipline or a multidisciplinary project can be assigned to an individual student or to a group having not more than 4 students. In extraordinary cases, like the funded projects requiring students from different disciplines, the project student strength can be 5 or 6.

Internship - III: All the students admitted to III year of BE shall have to undergo mandatory internship of 6 months during the vacation of VI semester and during VII semester. End Assessment will be conducted in VIII semester and the prescribed credit shall be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.

Activity

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PROFESSIONAL ELECTIVE COURSES						
		6 th Semester		7 th Semester		8 th Semester
Sl. No.	Clusters	Elective – I	Elective – II (MOOC)	Elective – III	Elective – IV (MOOC)	Elective – V (MOOC)
1	<u>Intelligent Systems</u>	Recommender Systems	Responsible Artificial Intelligence	Reinforcement Learning	MLOps	Cognitive Science
2	<u>Robotics</u>	Embedded Systems	Robotic Process Automation	Digital Twinning	Robotics & Control: Theory & Practice	Computer Integrated Manufacturing System
3	<u>Gamification</u>	Computer Graphics & Applications	Game Theory & Programming	3D Graphics & Animation	Multimedia Tools & Applications	Game Design & Development
4	<u>Cryptography & Network Security</u>	Cryptography	Cyber Security & Privacy	Blockchain Technology	Ethical Hacking	Reverse Engineering & Malware Analysis
5	<u>Data Science</u>	Data Warehousing & Data Mining	Data Science & Data Analytics	Predictive Analytics & Business Intelligence	R Programming	Graph Neural Network
6	<u>General</u>	Mobile Application Development	Devops on AWS specialization	Operations Research	MLOps	High Performance Computing
7	<u>Management</u>	Personal Finance & Investment	Managerial Economics	Entrepreneurship & Development	Digital Marketing	Service Marketing

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