

Sapthagiri NPS University, BENGALURU-560057.

B.E. in CSE-Artificial Intelligence and Machine Learning; Scheme of Teaching and Examinations 2024 batch
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2024-25)

I Semester E Cycle

SN	Course Type	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	HS	24BEELY101A/ 24BEELY101B	Kannada Samskruthi/ Kali Kannada	TD: KANNADA PSB: KANNADA	1	0	0	01	50	50	100	1
2.	BS	24BEELY102	Linear Algebra and Calculus	TD: MATHS PSB: MATHS	3	0	2	03	50	50	100	4
3.	HS	24BEELY103	Environmental Science and Engineering	TD: CIVIL PSB: CIVIL	1	0	0	03	50	50	100	1
4.	ES	24BEELY104	Basics of Electrical and Electronics Engineering	TD: ECE PSB: ECE	3	0	2	03	50	50	100	4
5.	ES	24BEELY105	Problem Solving Using C	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
6.	ES	24BEELY106	Fundamentals of Data Structure	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
7.	ES	24BEELY107	Fundamentals of Data Science	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
8.	HS	24BEELY108	Indian Constitution	TD: CSE-AIML PSB: CSE-AIML	1	0	0	01	50	50	100	1
Total								400	400	800	22	

HS: Humanities, Social Science & Management Course, **BS:** Basic Sciences, **ES:** Engineering Science Course, **PC:** Professional Course, **UV:** Universal Human Value Course, **MC:** Mandatory Course (Non-credit), **AE:** Ability Enhancement Course, **PW:** Project Work/Mini Project, **OE:** Open Elective, **IS:** Internship / Technical Seminar, **NC:** Non-Credit, **PE:** Professional Elective Course, **L:** Lecture, **T:** Tutorial, **P:** Practical, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation.

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I Semester P Cycle

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					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	AE	24BEPHY101	Professional Communication-I	TD: ENGLISH PSB: ENGLISH	1	0	0	01	50	50	100	1
2.	BS	24BEPHY102	Linear Algebra and Calculus	TD: MATHS PSB: MATHS	3	0	2	03	50	50	100	4
3.	BS	24BEPHY103	Engineering Physics	TD: PHYSICS PSB: PHYSICS	2	0	2	03	50	50	100	3
4.	ES	24BEPHY104	Problem Solving Using C	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
5.	ES	24BEPHY105	Computer Organization and Architecture	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
6.	ES	24BEPHY106	Fundamentals of AI& ML	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
7.	ES	24BEPHY107	Computer Aided Engineering and Graphics	TD: MECH PSB: MECH	2	0	2	03	50	50	100	3
8.	AE	24BEPHY108	Intellectual Property Rights (IPR)	TD: CSE-AIML PSB: CSE-AIML	1	0	0	01	50	50	100	1
Total								400	400	800	22	

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II Semester P Cycle

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					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P					
1.	AE	24BEPHY201	Professional Communication-I	TD: ENGLISH PSB: ENGLISH	1	0	0	01	50	50	100	1
2.	BS	24BEPHY202	Computational Mathematics	TD: MATHS PSB: MATHS	3	0	2	03	50	50	100	4
3.	BS	24BEPHY203	Engineering Physics	TD: PHYSICS PSB: PHYSICS	2	0	2	03	50	50	100	3
4.	ES	24BEPHY204	Problem Solving Using Python	TD: CSE-AI ML PSB: CSE-AI ML	3	0	2	03	50	50	100	4
5.	ES	24BEPHY205	Computer Organization and Architecture	TD: CSE-AI ML PSB: CSE-AI ML	3	0	0	03	50	50	100	3
6.	ES	24BEPHY206	Fundamentals of AI & ML	TD: CSE-AI ML PSB: CSE-AI ML	3	0	0	03	50	50	100	3
7.	ES	24BEPHY207	Computer Aided Engineering and Graphics	TD: MECH PSB: MECH	2	0	2	03	50	50	100	3
8.	AE	24BEPHY208	Intellectual Property Rights (IPR)	TD: CSE-AI ML PSB: CSE-AI ML	1	0	0	01	50	50	100	1
Total								400	400	800	22	

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II Semester E Cycle

SN	Course Type	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	HS	24BEELY201A/ 24BEELY201B	Kannada Samskruthi/ Kali Kannada	TD: KANNADA PSB: KANNADA	1	0	0	01	50	50	100	1
2.	BS	24BEELY202	Computational Mathematics	TD: MATHS PSB: MATHS	3	0	2	03	50	50	100	4
3.	HS	24BEELY203	Environmental Science and Engineering	TD: CIVIL PSB: CIVIL	1	0	0	03	50	50	100	1
4.	ES	24BEELY204	Basics of Electrical and Electronics Engineering	TD: ECE PSB: ECE	3	0	2	03	50	50	100	4
5.	ES	24BEELY205	Problem Solving Using Python	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
6.	ES	24BEELY206	Fundamentals of Data Structure	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
7.	ES	24BEELY207	Fundamentals of Data Science	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
8.	HS	24BEELY208	Indian Constitution	TD: CSE-AIML PSB: CSE-AIML	1	0	0	01	50	50	100	1
Total								400	400	800	22	

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III SEMESTER

SN	Course Type	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	BS	24BEAML301	Probability and Statistical Methods	TD: MATHS PSB: MATHS	4	0	0	04	50	50	100	4
2.	PC	24BEAML302	Object Oriented Programming	TD: CSE-AIML PSB: CSE-AIML	2	0	2	03	50	50	100	3
3.	PC	24BEAML303	Design and Analysis of Algorithms	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
4.	PC	24BEAML304	Operating Systems	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
5.	PC	24BEAML305	Data Analysis and Data Visualization	TD: CSE-AIML PSB: CSE-AIML	2	0	2	03	50	50	100	3
6.	PC	24BEAML306	Database Management Systems	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
7.	PC	24BEAML307	Computer Networks	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
8.	AE	24BEAML308	Life Skills for Engineers	TD: CSE-AIML PSB: CSE-AIML	1	0	0	01	50	50	100	1
9.	UV	24BEAML309	Outreach Activity-I	Any Department	0	0	0	00	100	---	100	1
Total								500	400	900	25	
10.	BS	24BEAML310	Maths-Dip (for Lateral entry)	TD: MATHS PSB: MATHS	3	0	0	03	50	--	50	-

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IV SEMESTER

SN	Course Type	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	BS	24BEAML401	Discrete Mathematical Structures	TD: MATHS PSB: MATHS	4	0	0	04	50	50	100	4
2.	PC	24BEAML402	Web Technology	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
3.	PC	24BEAML403	Formal Languages and Automata Theory	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
4.	PC	24BEAML404	Internet of Things	TD: CSE-AIML PSB: CSE-AIML	2	0	2	03	50	50	100	3
5.	PC	24BEAML405	Machine Learning	TD: CSE-AIML PSB: CSE-AIML	2	0	2	03	50	50	100	3
6.	PC	24BEAML406	Software Engineering	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
7.	PE	24BEAML41X	Professional Elective 1	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
8.	AE	24BEAML407	Cyber Laws and Ethics	TD: CSE-AIML PSB: CSE-AIML	1	0	0	01	50	50	100	1
9.	UV	24BEAML408	Outreach Activity -II	Any Department	0	0	0	00	100	---	100	1
Total								500	400	900	25	

Professional Elective 1

24BEAML411	Cryptography and Network Security	24BEAML412	UI/UX Design	24BEAML413	Digital Image Processing
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V SEMESTER

SN	Course Type	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	PC	24BEAML501	Cloud Computing Technology	TD: MATHS PSB: MATHS	2	0	2	03	50	50	100	3
2.	PC	24BEAML502	Artificial Neural Networks	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
3.	PC	24BEAML503	Deep Learning	TD: CSE-AIML PSB: CSE-AIML	2	0	2	03	50	50	100	3
4.	PC	24BEAML504	Big Data Tools and Techniques	TD: CSE-AIML PSB: CSE-AIML	3	0	2	04	50	50	100	4
5.	PE	24BEAML52x	Professional Elective-II	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
6.	PE	24BEAML53x	Professional Elective-III	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
7.	HS	24BEAML505	Management and Entrepreneurship	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
8.	UV	24BEAML506	Professional Ethics and Human Values	TD: CSE-AIML PSB: CSE-AIML	1	0	0	01	50	50	100	1
9.	NC	24BEAML507	Value Added Program-I	ANY DEPARTMENT	0	0	0	00	100	---	100	0
Total								500	400	900	23	

Professional Elective - II

24BEAML521	Knowledge Discovery	24BEAM522	Ethical Hacking	24BEAML523	Predictive Analytics
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Professional Elective - III

24BEAML531	Social Network Analysis	24BEAML532	Fog and Edge Computing	24BEAML533	Software Testing
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VI SEMESTER

SN	Course Type	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	PC	24BEAML601	Natural Language Processing	TD: CSE-AIML PSB: CSE-AIML	3	0	2	03	50	50	100	4
2.	PC	24BEAML602	Generative AI	TD: CSE-AIML PSB: CSE-AIML	2	0	2	03	50	50	100	3
3.	PC	24BEAML603	Reinforcement Learning	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
4.	PC	24BEAML604	Robotic Process Automation	TD: CSE-AIML PSB: CSE-AIML	2	0	2	03	50	50	100	3
5.	PE	24BEAML64X	Professional Elective-IV	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
6.	PE	24BEAML65X	Professional Elective-V	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
7.	HS	24BEAML605	Digital Marketing	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
8.	PW	24BEAML606	Mini Project	TD: CSE-AIML PSB: CSE-AIML	-	-	-	01	50	50	100	2
9.	NC	24BEAML607	Value Added Program-II	ANY DEPARTMENT	-	-	-	00	100	---	---	---
Total								400	400	800	24	

Professional Elective - IV

24BEAML641	Quantum Computing	24BEAM642	Computer Vision	24BEAML643	Time Series Analysis
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Professional Elective - V

24BEAML651	Information Retrieval	24BEAML652	Explainable AI	24BEAML653	Business Intelligence
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VII SEMESTER

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					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	OE	24BEAML70X	Open Elective- I / MOOC-I/NPTEL-I	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
2.	OE	24BEAML70X	Open Elective- II / MOOC-II/NPTEL-II	TD: CSE-AIML PSB: CSE-AIML	3	0	0	03	50	50	100	3
3.	IS	24BEAML701	Summer Internship	TD: CSE-AIML PSB: CSE-AIML	Two contact hours /week for interaction between the faculty and students.			03 (Batch wise)	50	50	100	2
4.	IS	24BEAML702	Technical Seminar	TD: CSE-AIML PSB: CSE-AIML	One contact hour /week for interaction between the faculty and students.			00	100	-	100	1
5.	PW	24BEAML703	Project Phase-I	TD: CSE-AIML PSB: CSE-AIML	Two contact hours /week for interaction between the faculty and students.			03	50	50	100	3
Total								250	250	500	12	

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					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P					
1.	PW	24BEAML801	Project Phase-II	TD: CSE-AIML PSB: CSE-AIML	Two contact hours /week for interaction between the faculty and students.			03	50	50	100	9
Total									50	50	100	9

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