

Sapthagiri NPS University, BENGALURU-560057.

B.E. in CSE-Data Science; 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 (Electronics 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.	BS	24BEELY101	Kali Kannada	TD: BS PSB: BS	1	0	0	01	50	50	100	1
2.	BS	24BEELY102	Linear Algebra and Calculus	TD: Maths PSB: Maths	3	0	2	04	50	50	100	4
3.	BS	24BEELY103	Environmental Science and Engineering	TD: BS PSB: BS	1	0	0	01	50	50	100	1
4.	PC	24BEELY104	Basics of Electrical and Electronics Engineering	TD: CSE-DS PSB: CSE-DS	3	0	2	04	50	50	100	4
5.	PC	24BEELY105	Problem Solving Using C	TD: CSE-DS PSB: CSE-DS	3	0	2	04	50	50	100	4
6.	PC	24BEELY106	Fundamentals of Data Structure	TD: CSE-DS PSB: CSE-DS	3	0	2	04	50	50	100	4
7.	PC	24BEELY107	Fundamentals of Data Science	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
8.	AE	24BEELY108	Indian Constitution	TD: BS PSB: BS	1	0	0	01	50	50	100	1
Total								400	400	800	22	

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II SEMESTER (Physics 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					
9.	BS	24BTPHY201	Professional Communication-I	TD: BS PSB: BS	1	0	0	01	50	50	100	1
10.	BS	24BTPHY202	Computational Mathematics	TD: Maths PSB: Maths	3	0	2	04	50	50	100	4
11.	BS	24BTPHY203	Engineering Physics	TD: BS PSB: BS	2	0	2	03	50	50	100	3
12.	PC	24BTPHY204	Programming in Python	TD: CSE-DS PSB: CSE-DS	3	0	2	04	50	50	100	4
13.	PC	24BTPHY205	Computer Organization and Architecture	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
14.	PC	24BTPHY206	Fundamentals of AI& ML	TD: CSE-DS PSB: CSE-DS	3	0	2	04	50	50	100	3
15.	PC	24BTPHY207	Computer Aided Engineering and Graphics	TD: Mech PSB: Mech	2	0	2	03	50	50	100	3
16.	AE	24BTPHY208	Intellectual Property Rights (IPR)	TD: BS PSB: BS	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					
17.	BS	24BEDAS301	Probability and Statistical Methods	TD: Maths PSB: Maths	4	0	0	04	50	50	100	4
18.	PC	24BEDAS302	Object Oriented Programming	TD: CSE-DS PSB: CSE-DS	2	0	2	03	50	50	100	3
19.	PC	24BEDAS303	Design and Analysis of Algorithms	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
20.	PC	24BEDAS304	Operating Systems	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
21.	PC	24BEDAS305	Data Analysis and Data Visualization	TD: CSE-DS PSB: CSE-DS	2	0	2	03	50	50	100	3
22.	PC	24BEDAS306	Data Base Management Systems	TD: CSE-DS PSB: CSE-DS	3	0	2	03	50	50	100	4
23.	PC	24BEDAS307	Computer Networks	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
24.	AE	24BEDAS308	Life Skills for Engineers	TD: CSE-DS PSB: CSE-DS	1	0	0	01	50	50	100	1
25.	UV	24BEDAS309	Out Reach Activity 1	Any Department	0	0	0	01	100	---	100	1
Total								500	400	900	25	
26.	BS	24BEDAS310	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	24BEDAS401	Discrete Mathematical Structures	TD: Maths PSB: Maths	4	0	0	04	50	50	100	4
2.	PC	24BEDAS402	Web Technology	TD: CSE-DS PSB: CSE-DS	3	0	2	03	50	50	100	4
3.	PC	24BEDAS403	R- Programming for Data Science	TD: CSE-DS PSB: CSE-DS	2	0	2	03	50	50	100	3
4.	PC	24BEDAS404	Fundamentals of IoT	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
5.	PC	24BEDAS405	Machine Learning	TD: CSE-DS PSB: CSE-DS	2	0	2	03	50	50	100	3
6.	PC	24BEDAS406	Software Engineering	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
7.	PE	24BEDAS41x	Professional Elective - I	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
8.	AE	24BEDAS407	Cyber Laws and Ethics	TD: CSE-DS PSB: CSE-DS	1	0	0	01	50	50	100	1
9.	UV	24BEDAS409	Out Reach Activity - II	Any Department	0	0	0	01	100	---	100	1
Total									500	400	900	25

Professional Elective 1

24BEDAS411	Cryptography and Network Security	24BEDAS412	Mobile Application Development	24BEDAS413	UI/UX Design
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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	24BEDAS501	Cloud Computing	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
2.	PC	24BEDAS502	Big Data Tools & Techniques	TD: CSE-DS PSB: CSE-DS	3	0	2	03	50	50	100	4
3.	PC	24BEDAS503	Data Security and Privacy	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
4.	PC	24BEDAS504	Data Mining and Wrangling	TD: CSE-DS PSB: CSE-DS	2	0	2	03	50	50	100	3
5.	PE	24BEDAS51X	Professional Elective-II	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
6.	PE	24BEDAS52X	Professional Elective-III	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
7.	PE	24BEXXXXXX	Management and Entrepreneurship	Any Department	3	0	0	03	50	50	100	3
8.	UV	24BEDAS505	Professional Ethics and Human Values	Any Department	1	0	0	01	50	50	100	1
9.	NC	24BEDAS506	Value Added Program-I	Any Department	-	-	-	01	---	---	---	---
Total								400	400	800	23	

Professional Elective - II

24BEDAS511	Introduction to Cyber Security	24BEDAS512	Business Intelligence & Data Warehousing	24BEDAS513	Applied Machine Learning
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Professional Elective - III

24BEDAS521	Deep Learning	24BEDAS522	Time Series Analysis	24BEDAS523	Cloud Security
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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	24BEDAS601	Natural Language Processing	TD: CSE-DS PSB: CSE-DS	3	0	2	03	50	50	100	4
2.	PC	24BEDAS602	Generative AI	TD: CSE-DS PSB: CSE-DS	2	0	2	03	50	50	100	3
3.	PC	24BEDAS603	Reinforcement Learning	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
4.	PC	24BEDAS604	Robotic Process Automation	TD: CSE-DS PSB: CSE-DS	2	0	2	03	50	50	100	3
5.	PE	24BEDAS61X	Professional Elective-IV	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
6.	PE	24BEDAS62X	Professional Elective-V	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
7.	OE	24BEDAS605	Digital Marketing	Any Department	3	0	0	03	50	50	100	3
8.	PW	24BEDAS606	Mini Project		-	-	-	01	50	50	100	2
9.	NC	24BEDAS607	Value Added Program-II	Any Department	-	-	-	01	---	---	---	---
Total								400	400	800	24	
Professional Elective - IV												
24BEDAS611		AI for Smart Cities		24BEDAS612		Ethical Hacking		24BEDAS613		Human-Centered AI & UX Design		
Professional Elective - V												
24BEDAS621		AI for Healthcare		24BEDAS622		Blockchain and its Applications		24BEDAS623		Edge Computing & IoT Security		

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					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	OE	24BEDAS71X	Open Elective/MOOC/NPTEL-I	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
2.	OE	24BEDAS72X	Open Elective/MOOC/NPTEL-II	TD: CSE-DS PSB: CSE-DS	3	0	0	03	50	50	100	3
3.	IS	24BEDAS703	Summer Internship		0	0	0	-	50	50	100	2
4.	IS	24BEDAS704	Technical Seminar		0	0	0	-	50	50	100	1
5.	PW	24BEDAS705	Project Phase-I		-	-	-	-	50	50	100	3
Total								400	400	800	24	

Open Elective - I

24BEDAS711	Introduction to Data Visualization	24BEDAS712	Cybersecurity Awareness and Practices	24BEDAS713	Web Development for Beginners
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Open Elective - II

24BEDAS721	Excel for Business Intelligence	24BEDAS722	Introduction to Cloud Computing	24BEDAS723	Mobile App Design without Coding
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					Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1.	PW	24BEDAS801	Project Phase-II		-	-	-	-	50	50	100	3

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