



**S. B. JAIN INSTITUTE OF TECHNOLOGY,  
MANAGEMENT AND RESEARCH, NAGPUR**  
(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**FIRST YEAR ENGINEERING DEPARTMENT**

"Emerge as a leading Institute for developing competent and creative Professionals"

**CURRICULUM SCHEME OF FIRST YEAR ENGINEERING  
SEMESTER-I (Group-II: CD, CM, EE and ME) [NEP-COMPLIANT]**

**Scheme of Teaching & Examination of Bachelor of Technology**

Sr. No.	Course Code	Course Title	Hours Per Week			Credits	Maximum Marks			ESE Duration (Hrs)
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	
1	N-BSC101T	Successive Differentiation and Differential Equation	3	1	0	4	40	60	100	3
2	N-BSC103T	Chemistry for Engineering	2	0	0	2	20	30	50	2
3	N-BSC103P	Engineering Chemistry Lab	0	0	2	1	25	25	50	-
4	N-ESC101T	Electrical Engineering	2	1	0	3	40	60	100	3
5	N-ESC101P	Electrical Engineering Lab	0	0	2	1	25	25	50	-
6	N-VSC	Vocational Skill Course-1*	0	0	4	2	25	25	50	-
7	N-ESC102T	Programming for Problem Solving	3	0	0	3	40	60	100	3
8	N-ESC102P	Programming for Problem Solving Lab	0	0	4	2	25	25	50	-
9	N-AEC101T	Communicative English	1	0	0	1	20	30	50	2
10	N-AEC101P	Communicative English Lab	0	0	2	1	25	25	50	-
11	N-CC102	Liberal Learning Course - 2	1	0	2	2	50	-	50	-
<b>TOTAL</b>			<b>12</b>	<b>2</b>	<b>16</b>	<b>22</b>	<b>335</b>	<b>365</b>	<b>700</b>	

\* Vocational Skill Course shall be from the major discipline.

*AD Signe*  
*Dr. P. Shinde*  
*(Dr. P. Shinde)*  
*(Dr. S. Kemdoo)*

*H.S. Rong*  
*(Dr. H.S. Rong)*

*R. K. Kulkarni*  
*(Dr. R. K. Kulkarni)*

*Y. N. Patil*  
*(Dr. Y. N. Patil)*

*B. B. Kondhure*  
*(Dr. B. B. Kondhure)*

*S. A. Anwar*  
*(Dr. S. A. Anwar)*

Revision	BoS Meeting	Date	w. e. f.
-	7 <sup>th</sup>	13-07-2023	2023-24

*V. H. Asudani*  
*(Dr. V. H. Asudani)*



**S. B. JAIN INSTITUTE OF TECHNOLOGY,  
MANAGEMENT AND RESEARCH, NAGPUR**  
(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**FIRST YEAR ENGINEERING DEPARTMENT**

"Emerge as a leading Institute for developing competent and creative Professionals"

**CURRICULUM SCHEME OF FIRST YEAR ENGINEERING  
SEMESTER-II (Group-II: CD, CM, EE and ME) [NEP-COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology

Sr. No.	Course Code	Course Title	Hours Per Week			Credits	Maximum Marks			ESE Duration (Hrs)
			L	T	P		Continuous Evaluation	End Sem Exam	Total	
1	N-BSC104T	Integral Calculus and Linear Algebra	3	1	0	4	40	60	100	3
2	N-BSC102T	Applied Physics	2	0	0	2	20	30	50	2
3	N-BSC102P	Applied Physics Lab	0	0	2	1	25	25	50	-
4	N-ESCI03T	Engineering Graphics and Design	1	0	0	1	40	60	100	4
5	N-ESCI03P	Engineering Graphics and Design Lab	0	0	4	2	25	25	50	-
6	N-VSC	Vocational Skill Course-2*	0	0	4	2	25	25	50	-
7	N-IKS101T	Indian Knowledge System	2	0	0	2	50	-	50	-
8	N-PCC	Program Core Course*	2	0	0	2	20	30	50	2
9	N-PCC	Program Core Course*	0	0	2	1	25	25	50	-
10	N-CC101	Liberal Learning Course - I	1	0	2	2	50	-	50	-
<b>TOTAL</b>			<b>11</b>	<b>1</b>	<b>14</b>	<b>19</b>	<b>320</b>	<b>280</b>	<b>600</b>	

\* Program Core Course and Vocational Skill Course shall be from the major discipline.

*AD Sage*  
*Dr. P. Shinde*  
*Dr. A.K. Kelkar*  
*Dr. S. Komde*  
*Dr. Y.S. Raj*  
*Dr. Y.B. Patil*  
*Dr. S.B. Kondhar*  
*Dr. S. Anand*  
*Dr. V.H. Asudani*

Revision	BoS Meeting	Date	w. e. f.
-	7 <sup>th</sup>	13-07-2023	2023-24



**S. B. JAIN INSTITUTE OF TECHNOLOGY,  
MANAGEMENT AND RESEARCH, NAGPUR**  
(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**FIRST YEAR ENGINEERING DEPARTMENT**

*"Emerge as a leading Institute for developing competent and creative Professionals"*

**LIST OF PROGRAM CORE COURSE [THEORY]**

Sr. No.	Course Code	Course Title
1	N-PCCCD101T/ N-PCCCM101T/ N-PCCCS101T	Advanced C Programming
2	N-PCCEE101T	Electrical Measurement and Instrumentation
3	N-PC CET101T	Basic Electronics Engineering
4	N-PCCME101T	Basics of Mechanical Engineering

**LIST OF PROGRAM CORE COURSE [PRACTICAL]**

Sr. No.	Course Code	Course Title
1	N-PCCCD101P/ N-PCCCM101P/ N-PCCCS101P	Advanced C Programming Lab
2	N-PCCEE101P	Electrical Measurement and Instrumentation Lab
3	N-PC CET101P	Basic Electronics Engineering Lab
4	N-PCCME101P	Basics of Mechanical Engineering Lab

**LIST OF VOCATIONAL SKILL COURSE-1**

Sr. No.	Course Code	Course Title
1	N-VSCCD101P/ N-VSCCM101P/ N-VSCCS101P	Hardware & Networking
2	N-VSCEE101P	Electrical Workshop Practice-1
3	N-VSCET101P	Electronic Workshop-1
4	N-VSCME101P	Workshop Practices

**LIST OF VOCATIONAL SKILL COURSE-2**

Sr. No.	Course Code	Course Title
1	N-VSCCD102P/ N-VSCCM102P/ N-VSCCS102P	Web Designing
2	N-VSCEE102P	Electrical Workshop Practice-2
3	N-VSCET102P	Electronic Workshop-2
4	N-VSCME102P	Computer Aided Drafting

Revision	BoS Meeting	Date	w. e. f.
-	7 <sup>th</sup>	13-07-2023	2023-24

*ADTape*  
*Dr. P. Roha*  
*Dr. S. Komde*  
*Dr. R. K. Kelkar*  
*Dr. S. Anand*  
*Dr. Y. B. Patil*  
*Dr. S. B. Kumbhar*



# S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NAGPUR.

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)**

"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"

## CURRICULUM SCHEME

### FOR B. TECH. COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE) 2<sup>nd</sup> YEAR SEMESTER-III [NEP COMPLIANT]

Scheme of Teaching & Examination of Bachelor of Technology III Semester B.Tech. CSE (Data Science)

Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem Exam	Total	Duration (Hrs)
1	N-PCCCD301T	Data Structures and Algorithms	3	0	0	3	40	60	100	3
2	N-PCCCD301P	Data Structures and Algorithms Lab	0	0	2	1	25	25	50	-
3	N-PCCCD302T	Object Oriented Programming	3	0	0	3	40	60	100	3
4	N-PCCCD302P	Object Oriented Programming Lab	0	0	2	1	25	25	50	-
5	N-PCCCD303T	Statistics for Data Science	3	1	0	4	40	60	100	3
6	N-PCCCD304P	Python Programming Lab	0	0	2	1	25	25	50	-
7	N-MDM	Multidisciplinary Minor Course -1	3	0	0	3	40	60	100	3
		OR								
		Multidisciplinary Minor Course -1 [Engineering][Th.]	2	0	0	2	20	30	50	2
		Multidisciplinary Minor Course -1 [Engineering][Pr.]	0	0	2	1	25	25	50	-
8	N-OEC	Open Elective Course-1	3	0	0	3	40	60	100	3
9	N-VECCD301T	Universal Human Values	2	0	0	2	50	-	50	-
10	N-CEPCD301	Community Engagement Project (CEP)	0	0	4	2	50	-	50	-
	OR									
	N-FPCD301	Field Project (FP)					50	-	50	-
11	N-MCCD301	Indian Constitution	2	0	0	-	50	-	50	-
<b>TOTAL</b>			19	1	10	23	425	375	800	
			OR							
			18	1	12	23	430	370	800	

Revision	BOS Meeting	Date	W. E. F
	6 <sup>th</sup>	03/05/2024	2024-25

*(Handwritten signatures and initials)*



# S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NAGPUR.

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)**

*"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"*

## B. TECH. COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE) 2<sup>nd</sup> YEAR SEMESTER-IV [NEP COMPLIANT]

**Scheme of Teaching & Examination of Bachelor of Technology IV Semester B.Tech. CSE (Data Science)**

Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE	
			L	T	P		Continuous Evaluation	End Sem Exam	Total	Duration (Hrs)	
1	N-PCCCD401T	Operating System	3	0	0	3	40	60	100	3	
2	N-PCCCD401P	Operating System Lab	0	0	2	1	25	25	50	-	
3	N-PCCCD402T	Database Management System	3	0	0	3	40	60	100	3	
4	N-PCCCD402P	Database Management System Lab	0	0	2	1	25	25	50	-	
5	N-PCCCD403T	Fundamentals of Artificial Intelligence	3	0	0	3	40	60	100	3	
6	N-MDM	Multidisciplinary Minor Course -2	3	0	0	3	40	60	100	3	
		OR									
		Multidisciplinary Minor Course -2 [Engineering][Th.]	2	0	0	2	20	30	50	2	
		Multidisciplinary Minor Course -2 [Engineering][Pr.]	0	0	2	1	25	25	50	-	
7	N-OEC	Open Elective Course-2	3	0	0	3	40	60	100	3	
8	N-SECCD401P	Foundation of Data Science Lab	0	0	4	2	25	25	50	-	
9	N-AECCD401T	Business Communication	2	0	0	2	20	30	50	2	
10	N-HSSMCD401T	Entrepreneurship Development	2	0	0	2	50	-	50	-	
11	N-VECCD401T	Environmental Studies	2	0	0	2	50	-	50	-	
<b>TOTAL</b>			21	0	8	25	395	405	800		
			OR								
			20	0	10	25	400	400	800		

<b>Revision</b>	<b>BOS Meeting</b> 6 <sup>th</sup>	<b>Date</b> 03/05/2024	<b>W. E. F</b> 2024-25
-----------------	---------------------------------------	---------------------------	---------------------------



**S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NAGPUR.**

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)**

"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"

**B. TECH. COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)  
3<sup>rd</sup> YEAR  
SEMESTER-V  
[NEP COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology V Semester B.Tech. CSE (Data Science)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem Exam	Total	Duration (Hrs)
1	N-PCCCD501T	Design Analysis and Algorithms	3	0	0	3	40	60	100	3
2	N-PCCCD501P	Design Analysis and Algorithms Lab	0	0	2	1	25	25	50	-
3	N-PCCCD502T	Foundation of Machine Learning	3	0	0	3	40	60	100	3
4	N-PCCCD502P	Foundation of Machine Learning Lab	0	0	2	1	25	25	50	-
5	N-PCCCD503T	Theory of Computation	3	0	0	3	40	60	100	3
6	N-PEC	Program Elective-1	3	0	0	3	40	60	100	3
7	N-PEC	Program Elective-1 Lab	0	0	2	1	25	25	50	-
8	N-MDM	Multidisciplinary Minor Course -3	3	0	0	3	40	60	100	3
		OR								
		Multidisciplinary Minor Course -3 [Engineering][Th.]	2	0	0	2	20	30	50	2
		Multidisciplinary Minor Course -3 [Engineering][Pr.]	0	0	2	1	25	25	50	-
9	N-OEC	Open Elective Course-3	2	0	0	2	20	30	50	2
			17	0	6	20	295	405	700	
		<b>TOTAL</b>	OR							
			16	0	8	20	300	400	700	

*(Handwritten signatures and initials)*



# S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NAGPUR.

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



## DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)

"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"

### Program Elective – 1 and Program Elective – 1 Lab

Sr. No	Course Code	Course Title
1	N-PECCD501T	Cryptography
	N-PECCD501P	Cryptography Lab
2	N-PECCD502T	Soft Computing
	N-PECCD502P	Soft Computing Lab
3	N-PECCD503T	Exploratory Data Analysis
	N-PECCD503P	Exploratory Data Analysis Lab

*[Handwritten signatures and initials in blue ink]*

Revision	BOS Meeting	Date	W. E. F
-	6 <sup>th</sup>	03/05/2024	2025-26



**S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT  
& RESEARCH, NAGPUR.**

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)**

*"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"*

**B. TECH. COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)  
3<sup>rd</sup> YEAR  
SEMESTER-VI  
[NEP COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology VI Semester B.Tech. CSE (Data Science)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem Exam	Total	Duration (Hrs)
1	N-PCCCD601T	Deep Learning	3	0	0	3	40	60	100	3
2	N-PCCCD601P	Deep Learning Lab	0	0	2	1	25	25	50	-
3	N-PCCCD602T	Software Engineering and Project Management	2	0	0	2	20	30	50	2
4	N-PCCCD603T	Computer Networks	3	0	0	3	40	60	100	3
5	N-PEC	Program Elective-2	3	0	0	3	40	60	100	3
6	N-PEC	Program Elective-2 Lab	0	0	2	1	25	25	50	-
7	N-PEC	Program Elective-3	4	0	0	4	40	60	100	3
8	N-MDM	Multidisciplinary Minor Course -4	3	0	0	3	40	60	100	3
		OR								
		Multidisciplinary Minor Course -4 [Engineering][Th.]	2	0	0	2	20	30	50	2
		Multidisciplinary Minor Course -4 [Engineering][Pr.]	0	0	2	1	25	25	50	-
9	N-SECCD601P	Data Visualization Tools Lab	0	0	2	1	25	25	50	-
10	N-SECCD602P	Programming for Data Science Lab	0	0	2	1	25	25	50	-
			18	0	8	22	320	430	750	
		TOTAL	OR							
			17	0	10	22	325	425	750	





# S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NAGPUR.

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



## DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)

"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"

### Program Elective – 2 and Program Elective – 2 Lab

Sr. No	Course Code	Course Title
1	N-PECCD601T	Information Retrieval
	N-PECCD601P	Information Retrieval Lab
2	N-PECCD602T	Distributed Computing System
	N-PECCD602P	Distributed Computing System Lab
3	N-PECCD603T	Natural Language Processing
	N-PECCD603P	Natural Language Processing Lab

### Program Elective – 3

Sr. No	Course Code	Course Title
1	N-PECCD604T	Data & Internet Security
2	N-PECCD605T	Compiler Design
3	N-PECCD606T	Semantic Web & Social Networks

*[Handwritten signatures and initials in blue ink]*

Revision	BOS Meeting	Date	W. E. F
-	6 <sup>th</sup>	03/05/2024	2025-26



**S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT  
& RESEARCH, NAGPUR.**

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)**

*"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"*

**B. TECH. COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)  
4<sup>th</sup> YEAR  
SEMESTER-VII  
[NEP COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology VII Semester B.Tech. CSE (Data Science)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE Duration (Hrs)
			L	T	P		Continuous Evaluation	End Sem Exam	Total	
1	N-PCCCD701T	Data Warehousing & Mining	3	0	0	3	40	60	100	3
2	N-PCCCD702T	Data Analytics	3	0	0	3	40	60	100	3
3	N-PCCCD702P	Data Analytics Lab	0	0	2	1	25	25	50	-
4	N-PEC	Program Elective-4	3	0	0	3	40	60	100	3
5	N-PEC	Program Elective-4 Lab	0	0	2	1	25	25	50	-
6	N-PEC	Program Elective-5	4	0	0	4	40	60	100	3
7	N-MDM	Multidisciplinary Minor Course -5	2	0	0	2	20	30	50	2
8	N-PROJCD701	Project-I	0	0	8	4	75	75	150	-
<b>TOTAL</b>			<b>15</b>	<b>0</b>	<b>12</b>	<b>21</b>	<b>305</b>	<b>395</b>	<b>700</b>	

**Program Elective – 4 and**

**Program Elective – 4 Lab**

**Program Elective – 5**

Sr. No.	Course Code	Course Title
1	N-PECCD701T	Introduction to Cyber Security
	N-PECCD701P	Introduction to Cyber Security Lab
2	N-PECCD702T	Cloud Computing
	N-PECCD702P	Cloud Computing Lab
3	N-PECCD703T	Digital Image Processing
	N-PECCD703P	Digital Image Processing Lab

Sr. No.	Course Code	Course Title
1	N-PECCD704T	Cyber Forensics and Investigation
2	N-PECCD705T	Parallel Computing
3	N-PECCD706T	Computer Vision

<b>Revision</b>	<b>BOS Meeting</b>	<b>Date</b>	<b>W. E. F</b>
-	6 <sup>th</sup>	03/05/2024	2026-27



**S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT  
& RESEARCH, NAGPUR.**

(An Autonomous Institute, Affiliated to RTMNU, Nagpur)



**DEPARTMENT OF EMERGING TECHNOLOGIES CSE (AI&ML) and CSE (DS)**

*"Become an excellent center for Emerging Technologies in Computer Science to create competent professionals"*

**B. TECH. COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)  
4<sup>th</sup> YEAR  
SEMESTER-VIII  
[NEP COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology VIII Semester B.Tech. CSE (Data Science)

Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE Duration (Hrs)
			L	T	P		Continuous Evaluation	End Sem Exam	Total	
1	N-PEC	Program Elective-6	3	0	0	3	40	60	100	3
2	N-RMCD801T	Research Methodology	3	0	0	3	40	60	100	3
3	N-PROJCD801	Project-II	0	0	12	6	100	100	200	-
<b>TOTAL</b>			<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>	<b>180</b>	<b>220</b>	<b>400</b>	
<b>OR</b>										
1	N-ELCCD801	Internship/On Job Training (OJT)	One Semester			12	100	100	200	-

**Program Elective – 6**

Sr. No.	Course Code	Course Title
1	N-PECCD801T	Ethical Hacking
2	N-PECCD802T	Blockchain Technologies
3	N-PECCD803T	CNN for Visual Recognition

*Yes (Y. Vaneekar)*

*Shom*

*SS*

*(A Chauhan)*

*Dr. S. S. Badhye*

*Dr. S. S. Badhye*

*Dr. V. P. Balpande*

*R. B. Talwar*

*[Signature]*

Revision	BOS Meeting	Date	W. E. F
-	6 <sup>th</sup>	03/05/2024	2026-27