



## AUTONOMOUS SCHEME (Tentative) UG - BE 2nd Year Dept:AI & ML

**SCHEME: 2023**

**Aca. Year.: 2024-25**

**Date:**

**15-11-2023**

**SEM: III**

SL No	Course Type	Course type Count	Course Code	Course Title	Teaching Dept.	QP setting dept	Credits	Teaching Hrs/Week				Examinations				
								L	T	P	S	CIE Marks	SEE			Tot. Marks
								Lecture	Tutorial	Practical	PBL/ABL/SL/others.		Dur.	Th. Mrks	Lab. Mrks.	
1	IBSC	3	23MAI301	Mathematics-III	Maths	Maths	4	2	2	2		50	03	50	-	100
2	PCC	1	23AIT302	Data Structures with Application	AI & ML	AI & ML	3	2	2	0		50	03	50	-	100
3	IPCC	1	23AII303	Digital Design & Computer Organization	AI & ML	AI & ML	4	3	0	2		50	03	50	-	100
4	IPCC	2	23AII304	Database Management Systems	AI & ML	AI & ML	4	2	2	2		50	03	50	-	100
5	PCCL	1	23AIL305	Data Structures Lab	AI & ML	AI & ML	1	0	0	2		50	03	-	50	100
6	ETC	1	23AIE31y	Emerging Technology Course - 1	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
7	AEC	3	23AIAE31	Skill development Course - 3 (EWDP)	I.E.	I.E.	1	1	0	0	3	50	02	50	-	100
8	NMC	3	23PDSN03	Personality Development-3 (HRD Training)	I.E.	I.E.	PP/NP	0	0	0	2	50	-	-	-	50
<b>Total</b>							<b>20</b>	<b>13</b>	<b>6</b>	<b>8</b>	<b>5</b>	<b>400</b>		<b>300</b>	<b>50</b>	<b>750</b>

BSC: Basic Science Course; PCC: Professional Course; IPCC: Integrated Professional Core Course; PCCL: Professional Core Course Laboratory; ETC: Emerging Technology Course; AEC: Ability Enhancement Course; NMC: Non Credit Mandatory Course {I.E.-Industry Experts}

**Note:** For the fulfillment of successful completion of degree, lateral entry students, shall study & complete additional courses of Additional mathematics, Language Courses, Environmental studies, Constitution of India & professional Ethics as per the guidelines released time to time.

Emerging Technology Course - 1	
Course Code	Course Title
23AIE311	Object Oriented Programming with Java
23AIE312	Python Programming for Data Science
23AIE313	Julia
23AIE314	R Programming

HOD

Head of the Department  
Department of Artificial Intelligence and Machine Learning  
SJB INSTITUTE OF TECHNOLOGY  
BGS Health & Education City,  
No. 67, Uttarahalli Road, Kengeri,  
Bengaluru - 560 060

Academic Dean

**Dr. BABU. N.V**  
Prof & Academic Dean  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bengaluru-560060

Principal

Principal  
SJB Institute of Technology  
# 67, BGS Health & Education City,  
Dr. Vishnuvardhan Road,  
Kengeri, Bengaluru - 560 060.



# SJB Institute of Technology

BGS Health and Education City, Dr. Vishnuvardhana Road, Kengeri, Bengaluru-560060  
Approved by AICTE, New Delhi.

Autonomous Institute affiliated to Visvesvaraya Technological University, Belagavi  
Accredited by NAAC with 'A+' grade, Certified by ISO 9001 - 2015  
Recognized by UGC, New Delhi with 2(F) & 12 (B)



## AUTONOMOUS SCHEME (Tentative) UG - BE 2nd Year Dept: AI & ML

SCHEME: 2023  
SEM: IV

Aca. Year.: 2024-25

Date: 15-11-2023

SL No	Course Type	Course type Count	Course Code	Course Title	Teaching Dept.	QP setting dept	Credits	Teaching Hrs/Week					Examinations			
								L	T	P	S	CIE Marks	SEE			Tot. Marks
								Lecture	Tutorial	Practical	PBL/ABL / SL/othrs		Dur.	Th. Mrks	Lab. Mrks	
1	IBSC	4	23MAI401	Mathematicss-IV	Maths	Maths	3	2	0	2		50	03	50	-	100
2	PCC	2	23AIT402	Analysis & Design of Algorithms	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
3	IPCC	3	23AII403	Artificial Intelligence	AI & ML	AI & ML	4	3	0	2		50	03	50	-	100
4	IPCC	4	23AII404	Operating Systems	AI & ML	AI & ML	4	3	0	2		50	03	50	-	100
5	PCCL	2	23AIL405	Analysis & Design of Algorithms Lab	AI & ML	AI & ML	1	0	0	2		50	03	-	50	100
6	ETC	2	23AIE42y	Emerging Technology Course - 2	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
7	HSMC	5	23SFHH06/ 23IHIVH07	SFH or UHV	any dept	any dept	1	0	2	0	@	50	02	50	-	100
8	AEC	4	23AIAE41	Skill Development Course - 4 (EWDP)	I.E.	I.E.	1	1	0	0	3	50	02	50	-	100
9	NMC	4	23PASN01	Phy. Education (Phy. Activities & Sports)	PED	PED	PP/NP	-	-	-	2	50	-	-	-	50
			23YOGN02	Yoga	PED	PED										
			23NSSN03	NSS	NSS	NSS										
			23NCCN04	NCC	NCC	NCC										
			23IKSN05	Inidan Knowledge System	HSS	HSS										
10	NMC	5	23PDSN04	Personality Development-4 (HRD Training)	I.E.	I.E.	PP/NP	0	0	0	2	50	-	-	-	50
<b>Total</b>							<b>20</b>	<b>15</b>	<b>2</b>	<b>8</b>	<b>7</b>	<b>500</b>		<b>350</b>	<b>50</b>	<b>900</b>

BSC: Basic Science Course; PCC: Professional Course; IPCC: Integrated Professional Core Course; PCCL: Professional Core Course Laboratory; ETC: Engineering Technology Course; AEC: Ability Enhancement Course; HSMC: Humanities, Social Sciences & Management Course; NMC: Non Credit Mandatory Course; {@} - Compulsory one activity during the semester} {\$ - Activity based (2 Hrs/week)} {I.E.-Industry Experts}

Emerging Technology Course - 2	
Course Code	Course Title
23AIE421	Discrete Mathematical Structures
23AIE422	Metric Spaces
23AIE423	Optimization for Machine Learning
23AIE424	Algorithmic Game Theory

Head of the Department  
Department of Artificial Intelligence and Machine Learning  
SJB INSTITUTE OF TECHNOLOGY  
BGS Health & Education City,  
No. 67, Uttarahalli Road, Kengeri  
Bengaluru - 560 060

Academic Dean  
Dr. BABU. N.V  
Prof & Academic Dean  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bengaluru-560060

Principal  
Principal  
SJB Institute of Technology  
# 67, BGS Health & Education City,  
Dr. Vishnuvardhan Road,  
Kengeri, Bengaluru - 560 060



**AUTONOMOUS SCHEME (Tentative) UG - BE 3rd Year Dept: AI & ML**

**SCHEME: 2023**  
**SEM: V**

**Aca. Year.: 2025-26**

**Date: 15-11-2023**

SL No	Course Type	Course type Count	Course Code	Course Title	Teaching Dept.	QP setting dept	Credits	Teaching Hrs/Week					Examinations			
								L	T	P	PBL/ABL / SI/othrs	CIE Marks	SEE			Tot. Marks
								Lecture	Tutorial	Practical			Dur.	Th. Mrks	Lab. Mrks	
1	PCC	3	23AIT501	Theory of Computation	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
2	IPCC	5	23AII502	Computer Networks	AI & ML	AI & ML	4	3	0	2		50	03	50	-	100
3	IPCC	6	23AII503	Machine Learning-1	AI & ML	AI & ML	4	3	0	2		50	03	50	-	100
4	PCCL	3	23AIL504	Data Visualization Lab	AI & ML	AI & ML	1	0	0	2		50	03	-	50	100
5	PEC	1	23AIP51y	Professional Elective Course - 1	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
6	ETC	3	23AIE53y	Emerging Technology Course - 3	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
7	HSMC	6	23SFHH06/ 23UHVH07	SFH or UHV	any dept	any dept	1	0	2	0	@	50	02	50	-	100
8	AEC	5	23xxAE51	Skill Development Course - 5 (EWDP)	I.E.	I.E.	1	1	0	0	3	50	02	50	-	100
9	NCMC	4	23PASN01	Phy. Education (Phy. Activities & Sports)	PED	PED	NP/PP	-	-	-	2	50	-	-	-	50
			23YOGN02	Yoga	PED	PED										
			23NSSN03	NSS	NSS	NSS										
			23NCCN04	NCC	NCC	NCC										
			23IKSN05	Inidan Knowledge System	HSS	HSS										
10	NCMC	6	23PDSN04	Personality Development-5 (HRD Training)	I.E.	I.E.	PP/NP	0	0	0	2	50	-	-	-	50
<b>Total</b>							<b>20</b>	<b>16</b>	<b>2</b>	<b>6</b>	<b>7</b>	<b>500</b>		<b>350</b>	<b>50</b>	<b>900</b>

PCC: Professional Course; IPCC: Integrated Professional Core Course; PCCL: Professional Core Course Laboratory; ETC: Engineering Technology Course; AEC: Ability Enhancement Course; HSMC: Humanities, Social Sciences & Management Course; NCMC: Non Credit Mandatory Course; {@ - Compulsory one activity during the semester} {\$ - Activity based (2 Hrs/week)} {I.E.-Industry Experts}

Professional Elective Course - 1		Emerging Technology Course - 3	
Course Code	Course Title	Course Code	Course Title
23AIP511	Fundamentals of Digital Image Processing	23AIE531	Mobile Application Development
23AIP512	Computer Graphics	23AIE532	Advanced Java & J2EE
23AIP513	Information Theory and Coding	23AIE533	Full Stack Development
23AIP514	Information Retrieval	23AIE534	MERN

**Head of the Department**  
Department of Artificial Intelligence and Machine Learning  
SJB INSTITUTE OF TECHNOLOGY  
BGS Health & Education City,  
No. 67, Uttarahalli Road, Kengeri  
Bengaluru - 560 060

**Dr. BABU. N.V**  
Prof & Academic Dean  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bengaluru-560060  
-3/6-

**Principal**  
SJB Institute of Technology  
# 67, BGS Health & Education City,  
Dr. Vishnuvardhan Road



**SCHEME: 2023**  
**SEM: VI**

**Aca. Year.: 2025-26**

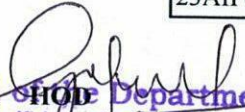
**Date: 15-11-2023**

**AUTONOMOUS SCHEME (Tentative) UG - BE 3rd Year Dept:AI & ML**

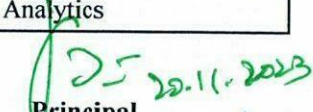
SL No	Course Type	Course type Count	Course Code	Course Title	Teaching Dept.	QP setting dept	Credits	Teaching Hrs/Week				Examinations				
								L	T	P	S	CIE Marks	SEE			Tot. Marks
								Lecture	Tutorial	Practical	PBL/ABL/SL/others.		Dur.	Th. Mrks	Lab. Mrks.	
1	PCC	4	23AIT601	Machine Learning-II	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
2	IPCC	7	23AII602	Natural Language Processing	AI & ML	AI & ML	4	3	0	2		50	03	50	-	100
3	PCCL	4	23AIL603	Machine Learning lab	AI & ML	AI & ML	1	0	0	2		50	03	-	50	100
4	PEC	2	23AIP62y	Professional Elective Course - 2	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
5	OEC	1	23AIO61y	Open Elective Course - 1	AI & ML	AI & ML	3	3	0	0		50	03	50	-	100
6	ETC	4	23AIE64y	Emerging Technology Course - 4	AI & ML	AI & ML	3	2	0	2		50	03	50	-	100
7	AEC	6	23AIAE61	Innovation & Design Thinking	AI & ML	AI & ML	1	0	2	0	@	50	02	50	-	100
8	PRJ	1	23AIPRJ1	Mini Project	AI & ML	AI & ML	2	0	0	4	@	50	03	-	50	100
9	AEC	7	23AIAE62	Skill Development Course - 6 (EWDP)	I.E.	I.E.	1	1	0	0	3	50	02	50	-	100
10	NCMC	7	23PDSN04	Personality Development-6 (HRD Training)	I.E.	I.E.	PP/NP	0	0	0	2	50	-	-	-	50
<b>Total</b>							<b>21</b>	<b>15</b>	<b>2</b>	<b>10</b>	<b>5</b>	<b>500</b>		<b>350</b>	<b>100</b>	<b>950</b>

PCC: Professional Course; IPCC: Integrated Professional Core Course; PCCL: Professional Core Course Laboratory; PEC: Professional Elective Course; OEC: Open Elective Course; ETC: Engineering Technology Course; HSMC: Humanities, Social Sciences & Management Course; AEC: Ability Enhancement Course; {@ - Compulsory one activity during the semester} {I.E.-Industry Experts} {Open Electives listed here are for other department students, stdnts shall select from separate list published}

Professional Elective Course - 2		Open Elective Course - 1		Emerging Technology Course - 4	
Course Code	Course Title	Course Code	Course Title	Course Code	Course Title
23AIP621	Computer Vision	23AIO611	Introduction to Data Structures	23AIE641	Block chain Technology
23AIP622	Big Data Analytics	23AIO612	Mobile Application Development	23AIE642	Internet of Things
23AIP623	Human-Centred AI	23AIO613	Introduction to Java Pogramming	23AIE643	Social Network Analysis
23AIP624	Scalable Data Systems	23AIO614	Introduction to Operating systems	23AIE644	Business Analytics

  
**Head of Department**  
 Department of Artificial Intelligence and Machine Learning  
**SJB INSTITUTE OF TECHNOLOGY**  
 BGS Health & Education City,  
 No. 67, Utarahalli Road, Kengeri  
 Bengaluru - 560 060

  
**Dr. BABU** Academic Dean  
 Prof. & Academic Dean  
**SJB Institute of Technology**  
 BGS Health & Education City  
 Kengeri, Bengaluru-560060

  
**Principal**  
**SJB Institute of Technology**  
 # 67, BGS Health & Education City,  
 Dr. Vishnuvardhan Road,  
 Kengeri, Bengaluru - 560 060



**SCHEME: 2023**  
**SEM: VII**

**Aca. Year.: 2026-27**

**Date: 15-11-2023**

**AUTONOMOUS SCHEME (Tentative) UG - BE 4th Year Dept:AI & ML**

SL No	Course Type	Course type Count	Course Code	Course Title	Teaching Dept.	QP setting dept	Credits	Teaching Hrs/Week				Examinations				
								L	T	P	S	CIE Marks	SEE			Tot. Marks
								Lecture	Tutorial	Practical	PBL/ABL/SL/others.		Dur.	Th. Mrks	Lab. Mrks.	
1	PCC	5	23AIT701	Software Engg and Project Management	AI &ML	AI &ML	3	3	0	0		50	03	50	-	100
2	IPCC	8	23AII702	Deep Learning & Reinforcement Learning	AI &ML	AI &ML	4	3	0	2		50	03	50	-	100
3	IPCC	9	23AII703	Data Security & Privacy	AI &ML	AI &ML	4	3	0	2		50	03	50	-	100
4	PEC	3	23AIP73y	Professional Elective Course - 3	AI &ML	AI &ML	3	3	0	0		50	03	50	-	100
5	OEC	2	23AIO72y	Open Elective Course - 2	any dept.	any dept.	3	3	0	0		50	03	50	-	100
6	HSMC	7	23AIT704	{Mention title for Management Course }	AI &ML	AI &ML	2	2	0	0		50	03	50	-	100
7	PRJ	2	23AIPRJ2	Major Project - Phase I	AI &ML	AI &ML	2	0	0	0	@	50	03	-	50	100
<b>Total</b>							<b>21</b>	<b>17</b>	<b>0</b>	<b>6</b>		<b>350</b>		<b>300</b>	<b>50</b>	<b>700</b>

PCC: Professional Core Course; IPCC: Integrated Professional Core Course; PEC: Professional Elective Course; OEC: Open Elective Course; PRJ-P1W: Major Project Phase Wise.  
{Open Electives listed here are for other department students, stdnts shall select from separate list published}

Professional Elective Course - 3		Open Elective Course - 2	
Course Code	Course Title	Course Code	Course Title
23AIP731	Data Engineering & MLOps	23AIO721	Introduction to DataMining
23AIP732	Generative AI	23AIO722	Introduction to Machine Learning
23AIP733	AI of Things	23AIO723	Introduction to Artificial Intelligence
23AIP734	Virtual Reality and Augmented Reality	23AIO724	Software Testing

**HOD**  
**Head of the Department**  
Department of Artificial Intelligence and Machine Learning  
SJB INSTITUTE OF TECHNOLOGY  
BGS Health & Education City,  
No. 67, Uttarahalli Road, Kengeri  
Bengaluru - 560 060

**Academic Dean**  
**Dr. BABU. N.V**  
Prof & Academic Dean  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bengaluru-560060

**Principal**  
**Principal**  
SJB Institute of Technology  
# 67, BGS Health & Education City,  
Dr. Vishnuvardhan Road,  
Kengeri, Bengaluru - 560 060.



**SCHEME: 2023**  
**SEM: VIII**

**Aca. Year.: 2026-27**

**Date: 15-11-2023**

**AUTONOMOUS SCHEME (Tentative) UG - BE 4th Year Dept:AI & ML**

SL No	Course Type	Course type Count	Course Code	Course Title	Teaching Dept.	QP setting dept	Credits	Teaching Hrs/Week				CIE Marks	Examinations			
								L	T	P	S		SEE			Tot. Marks
								Lecture	Tutorial	Practical	PBI/ABI/SL/others.		Dur.	Th. Mrks.	Lab. Mrks.	
1	SLC	1	23AISL1y	Self-Learning Course - 1 (NPTEL)			3	0	0	0	@	50	-	50	-	100
2	SLC	2	23AISL2y	Self-Learning Course - 2 (NPTEL)			3	0	0	0	@	50	-	50	-	100
3	PRJ	3	23AIPRJ3	Major Project - Phase II			8				@	100	-	-	100	200
4	INT	1	23AIINT1	Industrial Internship			4				@	50	-	-	50	100
<b>Total</b>							<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>250</b>		<b>100</b>	<b>150</b>	<b>500</b>

SLC: Self Learning Course; Prj-PW: Project Phase Wise; INT: Internship; After 7th SEM exams, full time for Internship & Project equally divided; SLC courses to be started from 3rd SEM and to be completed by 7th SEM and evaluated and credited in 8th SEM.

Self-Learning course - 1 (NPTEL)			Self-Learning course - 2 (NPTEL)		
Course Code	Course Title	NPTEL Code	Course Code	Course Title	NPTEL Code
23xxSL11			23xxSL21		
23xxSL12			23xxSL22		
23xxSL13			23xxSL23		
23xxSL14			23xxSL24		
23xxSL15			23xxSL25		
23xxSL16			23xxSL26		
23xxSL17			23xxSL27		
23xxSL18			23xxSL28		
23xxSL19			23xxSL29		
23xxSL20			23xxSL30		
23xxSL21			23xxSL31		

*[Signature]*  
**Head of Department**  
Department of Artificial Intelligence and Machine Learning  
SJB INSTITUTE OF TECHNOLOGY  
BGS Health & Education City,  
No. 67, Uttarahalli Road, Kengeri  
Bengaluru - 560 060

**Dr. BABU. N.V**  
Prof. & Academic Dean  
SJB Institute of Technology  
BGS Health & Education City  
Kengeri, Bengaluru-560060  
*[Signature]*  
13/11/23

*[Signature]* 25.11.2023  
**Principal**  
Principal  
SJB Institute of Technology  
# 67, BGS Health & Education City,  
Dr. Vishnuvardhan Road,