

# BNM Institute of Technology

An Autonomous Institution under VTU  
Department of Information Science and Engineering

Scheme of Teaching 2023-2027 Batch

## III Semester

Sl No	Course Type	Course Code	Course Title	Teaching Department	Teaching Hour/week				Contact Hour	Total Credits	Examination		
					L	T	P	J			CIE	SEE	Total
1	MAT	23MAC131	Fourier Transform, Mathematical logic and Advanced Linear Algebra	Mathematics	2	2			4	3	50	50	100
2	PCC	23ISE132	Computer Organization	ISE	3				3	3	50	50	100
3	PCC	23ISE133	Operating Systems	ISE	3				3	3	50	50	100
4	PCI	23ISE134	Data Structures and Applications	ISE	3		2		5	4	50	50	100
5	PCI	23ISE135	Object Oriented Programming using Java	ISE	3		2		5	4	50	50	100
6	PBL	23ISE136	Web Technology	ISE			2	2	4	2	50	50	100
7	IPL	23ISE137	Innovative Project Lab	ISE				2	2	1	100		100
8	AEC	23SFT138	Softskill-1	ISE			2		2	1	100		100
					14	2	8	4	28	21	500	300	800

Note: **BSC**: Basic Science Course, **PCC**: Professional Core Course, **HUM**: Humanity and Social Science & Management Courses, **PCI**: Professional Core Integrated **PBL** – Project Based Learning **AEC** – Ability Enhancement Courses, **UHV** – Universal Human Values, **PE**: Professional Elective, **OE**: Open Elective, **INT**: Summer Internship.

**L** – Lecture, **T** – Tutorial, **P** – Practical/ Drawing, **J** – Project Component, **CIE**: Continuous Internal Evaluation, **SEE**: Semester End Examination

Credit definition: 1 hour Lecture (L) per week = 1 Credit

2 hours Tutorial (T) per week = 1 Credit

2 hours Practical /Drawing (P) per week = 1 Credit

2 hours Project Component (J) per week = 1 Credit

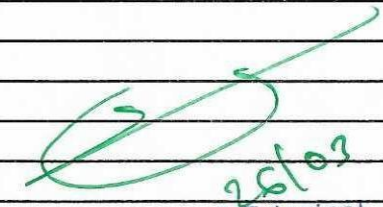
(a) Four credit courses are to be designed for 50 hours Teaching – Learning process.

(b) Three credit courses are to be designed for 40 hours Teaching – Learning process.

(c) Two credit courses are to be designed for 25 hours Teaching – Learning process.

(d) One credit course are to be designed for 12-15 hours Teaching – Learning process

The course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

  
 Additional Director & Principal  
**BNM Institute of Technology**  
 Bangalore-560 070

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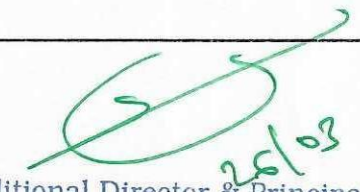
Department of Information Science and Engineering

Scheme of Teaching 2023-2027 Batch

IV Semester

Sl No	Course Type	Course Code	Course Title	Teaching Department	Teaching				Contact Hour	Total Credits	Examination		
					L	T	P	J			CIE	SEE	Total
1	MAT	23MAC141	Statistics, Probability and Graph Theory	Mathematics	2	2			4	3	50	50	100
2	PCC	23ISE142	Microcontroller and Embedded System	ISE	3	1	1		5	4	50	50	100
3	PCI	23ISE143	DataBase Management System	ISE	3		1	1	5	4	50	50	100
4	PCI	23ISE144	Design and Analysis of Algorithms	ISE	3		2		5	4	50	50	100
5	PBL	23ISE145	Robotic Process Automation	ISE			2	2	4	2	50	50	100
6	INT	23ISE146	Internship - I/ Innovative Project Lab	ISE			2	2	2	2	100		100
7	UHV	23CIP147	Constitution of India and Professional Ethics	HSS		2			2	1	100		100
8	AEC	23SFT148	Softskills - 2	ISE			2		3	1	100		100
					11	5	10	5	30	21	550	250	800

**Internship - I (23ISE146):** All the students admitted shall have to undergo a mandatory summer internship of 04 weeks during the intervening vacation of II and III semesters. Summer Internship shall include Inter / Intra Institutional activities, VTU approved skill enhancement courses. A Viva-voce examination shall be conducted during IV semesters and the prescribed credit shall be included in IV semesters. The internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up / complete the internship shall be declared fail and shall have to complete during subsequent examination after satisfying the internship requirements. (The faculty coordinator or mentor has to monitor the students' internship progress and interact to guide them for the successful completion of the internship.)

  
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 V Semester

Sl No	Course Type	Course Code	Course Title	Teaching Department	Teaching				Contact Hour	Total Credits	Examination		
					L	T	P	J			CIE	SEE	Total
1	PCC	23ISE151	Software Engineering Project Management and Finance	ISE	2	2			4	3	50	50	100
2	PCC	23ISE152	Automata Theory and Computability	ISE	2	2			4	3	50	50	100
3	PCI	23ISE153	Data Science using Python	ISE	2	2	2		5	4	50	50	100
4	PCI	23ISE154	Computer Networks	ISE	2	2	2		5	4	50	50	100
5	PBL	23ISE155	Computer Graphics and Animation	ISE			2	2	2	2	50	50	100
6	OE	23ISE156x	Open Elective I	ISE	3				3	3	50	50	100
7	AEC	23ISE157	Employability Skill -I (Technical)	P&T		2			2	1	100		100
8	INT	23ISE158	Internship - II	ISE			4		4	2	100		100
					11	10	10	2	29	22	500	300	800

**Internship - II (23ISE158):** All the students admitted shall have to undergo a mandatory summer internship of 04 weeks during the intervening vacation of IV semesters. Summer Internship shall include Inter / Intra Institutional activities. A Viva-voce examination shall be conducted during IV semesters and the prescribed credit shall be included in IV semesters. The internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up / complete the internship shall be declared fail and shall have to complete during subsequent examination after satisfying the internship requirements. (The faculty coordinator or mentor has to monitor the students' internship progress and interact to guide them for the successful completion of the internship.)

**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.

Open Elective I			
23ISE1561	Introduction to Web Technologies	23ISE1563	Design and Analysis of Algorithms
23ISE1562	Software Engineering	23ISE1564	Data Science and Business Intelligence

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VI Semester

Sl No	Course Type	Course Code	Course Title	Teaching Department	Teaching				Contact Hour	Total Credits	Examination		
					L	T	P	J			CIE	SEE	Total
1	PCC	23ISE161	Cryptography and Information Security	ISE	2	2			4	3	50	50	100
3	PCI	23ISE162	Cloud Computing and its Application	ISE	2		1		3	3	50	50	100
3	PCI	23ISE163	Artificial Intelligence and Machine Learning	ISE	2	1	1		5	3	50	50	100
4	PBL	23ISE164	Virtual and Augmented Reality	ISE			2	2	4	2	50	50	100
5	CPE	23ISE165x	Professional Elective 1	ISE	3				3	3	50	50	100
6	CPE	23ISE166x	Professional Elective 2	ISE	3				3	3	50	50	100
7	OE	23ISE167x	Open Elective 2	ISE	3				3	3	50	50	100
8	AEC	23ISE168	Employability Skill-II (Technical)	P&T		2			2	1	100		100
					15	5	4	2	27	21	450	350	800

**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.

### Professional Elective 1

23ISE1651	Data Mining	23ISE1654	Data Visualization
23ISE1652	Blockchain Technologies: Platforms and Applications	23ISE1655	UI Framework
23ISE1653	Cybersecurity	23ISE1656	Strategic Management

### Professional Elective 2 (MOOC Course)

23ISE1661	Natural Language Processing	23ISE1664	Deep Learning
23ISE1662	No SQL	23ISE1665	Agile Software Development
23ISE1663	Operation Research	23ISE1666	Knowledge Management

### Open Elective 2

23ISE1671	Introduction to Data science	23ISE1673	Introduction to Block chain
23ISE1672	Software Testing	23ISE1674	Introduction to Big Data

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VII Semester

Sl No	Course Type	Course Code	Course Title	Teaching Department	Teaching				Contact Hour	Total Credits	Examination		
					L	T	P	J			CIE	SEE	Total
1	PCI	23ISE171	Big Data Analytics	ISE	2	2	2		5	4	50	50	100
2	CPE	23ISE172x	Professional elective 3	ISE	3				3	3	50	50	100
3	CPE	23ISE173x	Professional elective 4	ISE	3				3	3	50	50	100
4	AEC	23AEC174	Research Methodology and IPR	ISE	1	2			3	2	50	50	100
5	PROJECT	23ISE175	Project Phase - I	ISE			10		10	5	100		100
					9	4	2	10	24	17			500

**Project work:** 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.

**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.

### Professional Elective 3

23ISE1721	Advanced Computer Vision	23ISE1724	Python for Cybersecurity
23ISE1722	Smart Contracts and Solidity Programming	23ISE1725	Salesforce Developer(Industry Elective)
23ISE1723	Prompt Engineering	23ISE1726	Business Analytics

### Professional Elective 4

23ISE1731	Advanced Distributed Systems	23ISE1734	Ethical Hacking
23ISE1732	Human Computer Interaction	23ISE1735	Reinforcement Learning
23ISE1733	Multicore computer Architecture	23ISE1736	Software Testing

  
 Head of Department  
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VIII Semester

Sl No	Course Type	Course Code	Course Title	Teaching Department	Teaching				Contact Hour	Total Credits	Examination		
					L	T	P	J			CIE	SEE	Total
1	CPE	23ISE181x	Professional elective 5	ISE	3				3	3	50	50	100
2	PROJECT	23ISE182	Project Phase - II	ISE			12		12	6	50	50	100
3	INT	23ISE183	Internship/Global Certification Course	ISE			18		18	9	50	50	100
					3	0	30	0	33	18			300

**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.

**Internship/ Global Certification Course (23ISE183):** All the students admitted shall have to undergo a mandatory summer internship of 24 weeks during VIII semesters. Summer Internship shall include Industry/Research/startup or a global certification offered from the department. A Viva-voce examination shall be conducted during VIII semesters and the prescribed credit shall be included in VIII semesters. Those, who do not take up / complete the internship shall be declared fail and shall have to complete during subsequent examination after satisfying the internship requirements. (The faculty coordinator or mentor has to monitor the students' internship progress and interact to guide them for the successful completion of the internship.)

Professional Elective 5			
23ISE1811	Business Intelligence & Analytics	23ISE1814	Full Stack Development
23ISE1812	Blockchain and web Development	23ISE1815	GPU Architecture and programming
23ISE1813	Foundations of Cyber Physical Systems	23ISE1816	Privacy and security in online social Media

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