

BNM Institute of Technology

An Autonomous Institution under VTU
Department of Information Science and Engineering

Scheme of Teaching 2022-2026 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 | 22MAI131 | Fourier Transform, Fundamentals of logic and Linear Algebra | Mathematics | 2 | 2 | | | 4 | 3 | 50 | 50 | 100 |
| 2 | PCC | 22ISE132 | Computer Organization | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 3 | PCC | 22ISE133 | Operating Systems | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 4 | PCI | 22ISE134 | Data Structures and Applications | ISE | 3 | | 2 | | 5 | 4 | 50 | 50 | 100 |
| 5 | PCI | 22ISE135 | Object Oriented Programming using Java | ISE | 3 | | 2 | | 5 | 4 | 50 | 50 | 100 |
| 6 | PBL | 22ISE136 | Web Technologies | ISE | | | 2 | 2 | 4 | 2 | 50 | 50 | 100 |
| 7 | IPL | 22ISE137 | Innovative Project Lab (Social Concern) | ISE | | 2 | | | 2 | 1 | 100 | | 100 |
| 8 | AEC | 22SFT138 | Soft Skill I | ISE | | | 2 | | 2 | 1 | 100 | | 100 |
| | | | | | 14 | 4 | 8 | 2 | 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

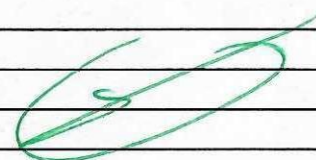
(a) Four credit courses are to be designed for 50 hours Teaching – Learning process.

(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


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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 | 22MAI141 | Statistics, Probability and Graph Theory | Mathematics | 2 | 1 | 1 | | 4 | 3 | 50 | 50 | 100 |
| 2 | PCC | 22ISE142 | Micro Controller and Embedded System | ISE | 3 | 1 | 1 | | 5 | 4 | 50 | 50 | 100 |
| 3 | PCI | 22ISE143 | DataBase Management System | ISE | 3 | | 1 | 1 | 5 | 4 | 50 | 50 | 100 |
| 4 | PCI | 22ISE144 | Design and Analysis of Algorithms | ISE | 3 | | 2 | | 5 | 4 | 50 | 50 | 100 |
| 5 | PBL | 22ISE145 | Python Programming and its Application | ISE | | | 2 | 2 | 4 | 2 | 50 | 50 | 100 |
| 6 | UHV | 22CIP146 | Constitution of India and Professional Ethics | HSS | | 2 | | | 2 | 1 | 100 | | 100 |
| 7 | INT | 22ISE147 | Internship - I/ Innovative Project Lab | ISE | | | 2 | 2 | 2 | 2 | 100 | | 100 |
| 8 | AEC | 22SFT148 | SoftSkill II | ISE | | 2 | | | 3 | 1 | 100 | | 100 |
| | | | | | 11 | 6 | 9 | 5 | 30 | 21 | 550 | 250 | 800 |

Internship - I (22ISE147): 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 | 22ISE151 | Software Engineering Project Management and Finance | ISE | 2 | 2 | | | 4 | 3 | 50 | 50 | 100 |
| 2 | PCC | 22ISE152 | Automata Theory and Computability | ISE | 2 | 2 | | | 4 | 3 | 50 | 50 | 100 |
| 3 | PCI | 22ISE153 | Data Science using Python | ISE | 2 | | 2 | 2 | 4 | 3 | 50 | 50 | 100 |
| 4 | PCI | 22ISE154 | Computer Networks | ISE | 2 | 2 | 2 | | 6 | 4 | 50 | 50 | 100 |
| 5 | PBL | 22ISE155 | Robotic Process Automation | ISE | | | 2 | 2 | 2 | 2 | 50 | 50 | 100 |
| 6 | OE | 22ISE156x | Open Elective 1 | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 7 | AEC | 22ISE157 | Employability Skill -1 (Technical) | P&T | | 2 | | | 2 | 1 | 100 | | 100 |
| 8 | INT | 22ISE158 | Internship - II | ISE | | | 4 | | 4 | 2 | 100 | | 100 |
| | | | | | 11 | 8 | 10 | 4 | 29 | 21 | 500 | 300 | 800 |

Internship - II (22ISE158): 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 1 | | | |
|-----------------|----------------------------------|-----------|-----------------------------------|
| 22ISE1561 | Introduction to Web Technologies | 22ISE1563 | Design and Analysis of Algorithms |
| 22ISE1562 | Software Engineering | 22ISE1564 | Cloud Computing |

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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 | 22ISE161 | Cryptography and Information Security | ISE | 2 | 2 | | | 4 | 3 | 50 | 50 | 100 |
| 3 | PCI | 22ISE162 | Cloud Computing and its Application | ISE | 2 | | 1 | | 3 | 3 | 50 | 50 | 100 |
| 3 | PCI | 22ISE163 | Artificial Intelligence and Machine Learning | ISE | 2 | 2 | 2 | | 5 | 4 | 50 | 50 | 100 |
| 4 | PBL | 22ISE164 | Virtual and Augmented Reality | ISE | | | 2 | 2 | 4 | 2 | 50 | 50 | 100 |
| 5 | PE | 22ISE165x | Professional Elective 1 | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 6 | PE | 22ISE166x | Professional Elective 2 (MOOC Course) | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 7 | OE | 22ISE167x | Open Elective 2 | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 8 | AEC | 22ISE168 | Employability Skill-II (Technical) | P&T | | 2 | | | 2 | 1 | 100 | | 100 |
| | | | | | 15 | 6 | 5 | 2 | 27 | 22 | 450 | 350 | 800 |

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Professional Elective 1

| | | | |
|-----------|---|-----------|----------------------|
| 22ISE1651 | Data Mining | 22ISE1654 | Data Visualization |
| 22ISE1652 | Blockchain Technologies: Platforms and Applications | 22ISE1655 | UI Framework |
| 22ISE1653 | Cybersecurity | 22ISE1656 | Strategic Management |

Professional Elective 2 (MOOC Course)

Tentative changes may be there based on the course offered during the semester

| | | | |
|-----------|-----------------------------|-----------|----------------------------|
| 22ISE1661 | Natural Language Processing | 22ISE1664 | Deep Learning |
| 22ISE1662 | No SQL | 22ISE1665 | Agile Software Development |
| 22ISE1663 | Operation Research | 22ISE1666 | Knowledge Management |

Open Elective 2

| | | | |
|-----------|------------------------------|-----------|-----------------------------|
| 22ISE1671 | Introduction to Data science | 22ISE1673 | Introduction to Block chain |
| 22ISE1672 | Software Testing | 22ISE1674 | Introduction to Big Data |

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VII Semester

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|-------|-------------|-------------|------------------------------|---------------------|----------|---|---|----|--------------|---------------|-------------|-----|-------|
| | | | | | L | T | P | J | | | CIE | SEE | Total |
| 1 | PCI | 22ISE171 | Big Data Analytics | ISE | 2 | 2 | 2 | | 5 | 4 | 50 | 50 | 100 |
| 2 | CPE | 22ISE172x | Professional elective 3 | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 3 | CPE | 22ISE173x | Professional elective 4 | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 4 | AEC | 22ISE174 | Research Methodology and IPR | ISE | 1 | 2 | | | 3 | 2 | 50 | 50 | 100 |
| 5 | PROJECT | 22ISE175 | Project Phase 1 | 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 | | | |
|-------------------------|--|-----------|--|
| 22ISE1721 | Advanced Computer Vision | 22ISE1724 | Python for Cybersecurity |
| 22ISE1722 | Smart Contracts and Solidity Programming | 22ISE1725 | Salesforce Developer (Industry Elective) |
| 22ISE1723 | Prompt Engineering | 22ISE1726 | Business Analytics |

| Professional Elective 4 (MOOC Course) | | | |
|---------------------------------------|---------------------------------|-----------|------------------------|
| 22ISE1731 | Advanced Distributed Systems | 22ISE1734 | Ethical Hacking |
| 22ISE1732 | Human Computer Interaction | 22ISE1735 | Reinforcement Learning |
| 22ISE1733 | Multicore computer Architecture | 22ISE1736 | Software Testing |

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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 | 22ISE181x | Professional elective 5 | ISE | 3 | | | | 3 | 3 | 50 | 50 | 100 |
| 2 | PROJECT | 22ISE182 | Project Work | ISE | | | 20 | | 20 | 10 | 50 | 50 | 100 |
| 3 | INT | 22ISE183 | Internship/Global Certification Course | ISE | | | 8 | | 8 | 4 | 50 | 50 | 100 |
| | | | | | 3 | 0 | 28 | 0 | 31 | 17 | | | 300 |

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Internship/ Global Certification Course (22ISE183): 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 (MOOC Course) | | | |
|--|---------------------------------------|-----------|---|
| Tentative changes may be there based on the course offered during the semester | | | |
| 22ISE1811 | Business Intelligence & Analytics | 22ISE1814 | Full Stack Development |
| 22ISE1812 | Blockchain and web Development | 22ISE1815 | GPU Architecture and programming |
| 22ISE1813 | Foundations of Cyber Physical Systems | 22ISE1816 | Privacy and security in online social Media |

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09/08