

B.N.M. Institute of Technology

An Autonomous Institution under VTU

Department of Mechanical Engineering

Third Semester

Sl. No.	Course type	Course Code	Course Title	Teaching Dept.	Teaching Hours / Week					Total Credits	Examination		
					L	T	P	J	Hours/Week		CIA	SEA	Total Marks
1	BSC	25MAM131	Fourier Series, Transforms, Statistical and Numerical Techniques	MAT	2	2	-	-	4	3	50	50	100
2	PCC	25MEC132	Material Science & Metallurgy ✓	ME	3	-	-	-	3	3	50	50	100
3	PCI	25MEC133	Additive and Subtractive Manufacturing ✓	ME	2	1	2	1	6	4	50	50	100
4	PCI	25MEC134	Fluid Mechanics & Pneumatics ✓	ME	3	-	2	-	5	4	50	50	100
5	PCI	25MEC135	Machine Drawing and GD & T ✓	ME	2	-	2	-	4	3	50	50	100
6	PBL	25MEL136	Data Structure using C	CSE	2	-	1	1	4	3	50	50	100
7	HSS	25CIP137	Constitution of India and Professional Ethics	HSS	1	-	-	-	1	1	100	-	100
8	AEC	25SFT138	Soft Skill -I	HSS	-	2	-	-	2	1	100	-	100
9	IPL	25MEI139	Innovative Project Lab	ME	-	-	2	-	2	1	100	-	100
Total					15	5	9	2	31	23	600	300	900

PCC- Professional Core Course	PCI- Professional Core Course with Integrated lab	PEC- Professional Elective Course	PBL- Project Based Learning	POE- Professional Open Elective	AEC – Ability Enhancement Course
MAT- Mathematics	ME- Mechanical Engineering	CSE-Computer Science & Engineering		HSS- Humanities	

AICTE Activity points to be earned by students admitted to BE day college programme

Over and above the academic grades, every regular student admitted to the 4-year 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 programme. 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 fulfilling the requirements. Activity points have no effect on SGPA/CGPA and shall not be considered for vertical progression.

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16/12/2016
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 B.N.M. Institute of Technology
 27th Cross, 12th Main, BSK II stage
 Bengaluru – 560 070, INDIA

16/12

B.N.M. Institute of Technology

An Autonomous Institution under VTU

Department of Mechanical Engineering

Fourth Semester

Sl. No.	Course type	Course Code	Course Title	Teaching Dept.	Teaching Hours / Week					Total Credits	Examination		
					L	T	P	J	Hours/Week		CIA	SEA	Total Marks
1	BSC	25MAM141	Complex Analysis, Probability and Optimization Techniques	MAT	2	2	-	-	4	3	50	50	100
2	PCC	25MEC142	Block Chain and Supply Chain Management	ME	3	-	-	-	3	3	50	50	100
3	PCI	25MEC143	Mechanics of Materials	ME	3	-	2	-	5	4	50	50	100
4	PCI	25MEC144	Thermal Engineering	ME	3	-	2	-	5	4	50	50	100
5	PCI	25MEC145	Hybrid and Electric Vehicles	ME	1	-	2	-	3	2	50	50	100
6	PBL	25MEL146	IoT for Mechatronics System Design	ME	-	-	2	2	4	2	50	50	100
7	INT	25MEI147	Internship-I / IPL	ME	-	-	4	-	4	2	100	-	100
8	AEC	25SFT148	Soft Skill-II	HSS	-	2	-	-	2	1	100	-	100
Total					12	4	12	2	30	21	500	300	800

AICTE Activity points to be earned by students admitted to BE day college programme

Over and above the academic grades, every regular student admitted to the 4-year 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 programme. 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 fulfilling the requirements. Activity points have no effect on SGPA/CGPA and shall not be considered for vertical progression.

Internship: All the students registered to II year of BE shall have to undergo mandatory internship of 4 weeks during II semester or III semester vacation. Semester End Assessment will be conducted in IV semester and the prescribed credit will be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.

16/6/2016
Department of Mechanical Engineering
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Bengaluru - 560 070. INDIA

16/08

B.N.M. Institute of Technology

An Autonomous Institution under VTU

Department of Mechanical Engineering Fifth Semester

Sl. No.	Course type	Course Code	Course Title	Teaching Dept.	Teaching Hours / Week					Total Credits	Examination		
					L	T	P	J	Hours/Week		CIA	SEA	Total Marks
1	PCC	25MEC151	Machine Design	ME	2	2	-	-	4	3	50	50	100
2	PCC	25MEC152	Smart Materials and MEMS	ME	3	-	-	-	3	3	50	50	100
3	PCI	25MEC153	Kinematics and Dynamics of Mechanical Systems	ME	3	-	1	1	5	4	50	50	100
4	PCI	25MEC154	AI & ML for mechanical engineers	ME	2	-	1	1	4	3	50	50	100
5	PBL	25MEL155	Drone Technology	ME	-	1	2	1	4	2	50	50	100
6	POE	25MEC156	Open Elective -I	ME	3	-	-	-	3	3	50	50	100
7	AEC	25MEC157	Employability Skill - I (Technical)	ME	-	2	-	-	2	1	100	-	100
8	INT	25MEI158	Internship-II	ME	-	-	4	-	4	2	100	-	100
Total					13	5	8	3	29	21	500	300	800

AICTE Activity points to be earned by students admitted to BE day college programme

Over and above the academic grades, every regular student admitted to the 4-year 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 programme. 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 fulfilling the requirements. Activity points have no effect on SGPA/CGPA and shall not be considered for vertical progression.

Internship: All the students registered to III year of BE shall have to undergo mandatory internship of 4 weeks during IV semester vacation. Continuous Internal Assessment will be conducted in V semester and the prescribed credit will be included. The internship shall be considered for CIA only and will not have SEA. 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 considered under F(fail) grade and shall have to complete subsequently after satisfying the internship requirements.

Signature
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12/56

B.N.M. Institute of Technology

An Autonomous Institution under VTU

Department of Mechanical Engineering Sixth Semester

Sl. No.	Course type	Course Code	Course Title	Teaching Dept.	Teaching Hours / Week					Total Credits	Examination		
					L	T	P	J	Hours/Week		CIA	SEA	Total Marks
1	PCC	25MEC161	Data Analytics	ME	2	-	2		4	3	50	50	100
2	PCC	25MEC162	Engineering Project Management and Finance	ME	2	2	-	-	4	3	50	50	100
3	PCI	25MEC163	CIM and Robotics	ME	2	-	2	1	4	3	50	50	100
4	PCI	25MEC164	Finite Element Analysis	ME	2	2	1	1	6	4	50	50	100
5	PEC	25MEC165	Professional Elective-I	ME	3	-	-	-	3	3	50	50	100
6	PEC	25MEC166	Professional Elective-II	ME	3	-	-	-	3	3	50	50	100
7	POE	25MEC167	Open Elective –II	ME	3	-	-	-	3	3	50	50	100
8	AEC	25MEC168	Employability & Entrepreneurial Skill-2 (Technical)	ME	-	-	2	-	2	1	100	-	100
Total					17	4	7	1	29	23	450	350	800

Professional Elective I			Professional Elective II		
Stream	Course Code	Course Title	Stream	Course Code	Course Title
AI in Mechanical Systems	25MEC1651	Generative AI for Engineering Design	AI in Mechanical Systems	25MEC1661	MATLAB for Modeling Mechanical Systems
Robotics & Automation	25MEC1652	Mechatronics	Robotics & Automation	25MEC1662	Industrial Automation and Control
Thermal	25MEC1653	HVAC System Design	Thermal	25MEC1663	Thermal Management of Electronic Systems
Design	25MEC1654	Product Design and Development	Design	25MEC1664	Mechanics of Composite Materials
Smart Manufacturing	25MEC1655	Sensors and IoT for Manufacturing	Smart Manufacturing	25MEC1665	PLC and SCADA in Manufacturing Systems
Management	25MEC1656	Total Quality Management	Management	25MEC1666	Strategic Management

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B.N.M. Institute of Technology

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Department of Mechanical Engineering Seventh Semester

Sl. No.	Course type	Course Code	Course Title	Teaching Dept.	Teaching Hours / Week					Total Credits	Examination		
					L	T	P	J	Hours/Week		CIA	SEA	Total Marks
1	PCC	25MEC171	Mechanical Vibrations and Control Systems	ME	2	2	-	-	4	3	50	50	100
2	PEC	25MEC172	Professional Elective – III	ME	3	-	-	-	3	3	50	50	100
3	PEC	25MEC173	Professional Elective –IV	ME	3	-	-	-	3	3	50	50	100
4	AEC	25MEC174	Research Methodology & IPR	ME	1	2	-	-	3	2	50	50	100
5	PPW	25MEP175	Project Phase -I	ME	-	-	-	8	8	4	100	-	100
Total					9	4	-	8	21	15	300	200	500

Professional Elective III			Professional Elective IV		
Stream	Course Code	Course Title	Stream	Course Code	Course Title
AI in Mechanical Systems	25MEC1721	Predictive Maintenance and Condition Monitoring using AI	AI in Mechanical Systems	25MEC1731	Deep Learning for Mechanical Engineers
Robotics & Automation	25MEC1722	Robot Kinematics and Dynamics	Robotics & Automation	25MEC1732	Industrial Internet of Things (IIoT)
Thermal	25MEC1723	Sustainable Engineering	Thermal	25MEC1733	Hydrogen Technology
Design	25MEC1724	Product Life Cycle Management	Design	25MEC1734	Design for Manufacturing and Assembly
Smart Manufacturing	25MEC1725	Industrial Robotics and Automation	Smart Manufacturing	25MEC1735	Digital Twin for Manufacturing Systems
Management	25MEC1726	Digital Marketing	Management	25MEC1736	Accounts and financing for Engineers

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.

12/06

B.N.M. Institute of Technology

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Department of Mechanical Engineering

Eighth Semester

Sl. No.	Course type	Course Code	Course Title	Teaching Dept.	Teaching Hours / Week					Total Credits	Examination		
					L	T	P	J	Hours/Week		CIA	SEA	Total Marks
1	PEC	25MEC181	Professional Elective V	ME	3	-	-	-	3	3	50	50	100
2	INT	25MEI182	Internship-III	ME	-	-	16	-	16	8	50	50	100
3	PPW	25MEP183	Project Phase –II	ME	-	-	-	12	12	6	50	50	100
Total					3	-	16	12	31	17	150	150	300

Professional Elective V		
Stream	Course Code	Course Title
AI in Mechanical Systems	MEC1811	AI in Materials Science and Engineering
Robotics & Automation	MEC1812	Robotics and Intelligent Systems
Thermal	MEC1813	Computational Fluid Dynamics (CFD)
Design	MEC1814	Automotive Mechatronics
Smart Manufacturing	MEC1815	Smart Manufacturing and Industry 4.0
Management	MEC1816	Operation Research with AI

Internship: All the students admitted to IV year of BE shall have to undergo mandatory internship of 90 working days (minimum) during VII and VIII semester. End Assessment will be conducted in VIII semester and the prescribed credit shall be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.

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16/6/2026

Department of Mechanical Engineering
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Bengaluru – 560 070, INDIA

16/6/26

B.N.M. Institute of Technology

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Department of Mechanical Engineering Open Electives List

Open Elective I		Open Elective II	
Course Code	Course Title	Course Code	Course Title
25MEC1561	Micro-Electromechanical System (MEMS)	25MEC1671	Reverse Engineering
25MEC1562	Sustainable Energy Technology	25MEC1672	3D Printing
25MEC1563	Product Design and Development	25MEC1673	Industry 4.0
25MEC1564	Introduction to Drone Technology	25MEC1674	Human factors and Ergonomics

The above Open Electives are offered by Mechanical Engineering Department to the students of other department. The Mechanical Engineering students shall select any one of the open electives offered by other Departments.

Selection of an open elective shall not be allowed if,

- The candidate has studied the same course during the previous semesters of the program
- The syllabus content of open elective is similar to that of the Departmental core courses or professional electives
- A similar course, under any category, is prescribed in the higher semesters of the programme
- Registration to electives shall be documented under the guidance of Programme Coordinator/ Advisor/Mentor

Prasanna
16/6/2020

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16/06

B.N.M. Institute of Technology

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Department of Mechanical Engineering Internship and project work guide lines

IV Sem

Internship: All the students registered to II year of BE shall have to undergo mandatory internship of 4 weeks during II semester or III semester vacation. Semester End Assessment will be conducted in IV semester and the prescribed credit will be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.

V Sem

Internship: All the students registered to III year of BE shall have to undergo mandatory internship of 4 weeks during IV semester vacation. Continuous Internal Assessment will be conducted in V semester and the prescribed credit will be included. The internship shall be slated for CIA only and will not have SEA. Internship shall be considered as a head of passing and shall be considered for the award of degree. Internship of 04 weeks during the intervening period of IV and V semesters; The letter grade earned through CIE shall be included in the V semester grade card. Those, who do not take up / complete the internship shall be considered under F(fail) grade and shall have to complete subsequently after satisfying the internship requirements.

VII Sem & VIII Sem

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.

VIII Sem

Internship: All the students admitted to IV year of BE shall have to undergo mandatory internship of 90 working days (minimum) during VII and VIII semester. End Assessment will be conducted in VIII semester and the prescribed credit shall be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.