



JSPM UNIVERSITY PUNE

Recognized by the UGC u/s 2 (f) of UGC Act 1956 and enacted by the
State Government of Maharashtra - JSPM University Ac., 2022 (Mah. IV of 2023)

Faculty of Science and Technology

**School of Mechanical and Manufacturing
Sciences**



Course Structure

B. Tech (Mechatronics)

AY: 2024-25



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY
SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

REVISION NO.

0.0 (NEP)

SECOND YEAR BACHELOR OF TECHNOLOGY (Regular)
(MECHATRONICS)

SEMESTER III (Level 5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										CREDITS	
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)			ORAL (Equal Weightage for CIE and ESE)				TOTAL
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)				
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)									
BSC	230GMAB07_03	Ordinary Differential Equations and Multivariate Calculus	2	1	-	-	30	30	40	100	-	-	-	-	100	3		
PCC	230GETB98_03	Analog and Digital Electronics	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
	230GMEB13_03	Solid Mechanics	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5		
	230GEEB32_03	Electrical Machines and Drives	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2		
IOC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2		
VEC (HSMC)	230USYB02_03	Professional Laws, Ethics, Values and Harmony	2	-	-	-	30	30	40	50	-	-	-	-	100	2		
LC	230GETB99_03	Analog and Digital Electronics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
	230GMEB14_03	Solid Mechanics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
	230GEEB33_03	Electrical Machines and Drives Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
LLC	231UPYB02_03	Mindfulness and Wellbeing	1	-	-	2	-	-	-	-	50	50	-	-	50	1		
TOTAL			14	1	8	4								50		1.5		
															750	20		



L-Lecture
Format No.: JSPMUni/ACAD/001

T-Tutorial
Rev. No.:0.0

P-Practical Session (Laboratory)
Rev. Date:01/07/2024

EL-Experiential Learning
Page 1 of 2

Sem.	Multidisciplinary Minor Course (MMC)				
III	Course Code	230GMTB01_03	240GCEB38_03	230USYB03_03	230GCSB131_03
	Course Name	Sensors and Actuators	Engineering Geology	Social Inequality	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCSB116_04	240GCSB111_04
	Course Name	Wireless Sensor Network	Business Intelligence	Data Science and Analytics	Foundations of Artificial Intelligence
V	Course Code	230GETB34_05	230GCSB121_05	230HFGM26_05	230GCSB115_05
	Course Name	Internet of Things and Applications	Data Visualization	Digital Investigations and Cyber Forensics	Machine Learning with Python
VI	Course Code	230GCEB44_06	230GCSB119_06	230GCSB130_06	240GCSB112_06
	Course Name	Solid Waste Management	Web Application Development	Basics of Linux Operating System	Foundations of Artificial Neural Network
VII	Course Code	230GCEB43_07	230GETB31_07	230GCEB40_07	240GCSB113_07
	Course Name	Environmental Impact Assessment and Auditing	Data Communication	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GCEB45_07	230GCSB123_07	230GCSB125_07	240GCSB115_07
	Course Name	Environmental Quality Monitoring	Mobile Application Development	Internet and Cloud Computing	AI for Robotics

Sem.	Interdisciplinary Open Course (IOC)					
III	Course Code	230GCEB29_03	230VBCB04_03	230GCEB31_03	230HFGM25_03	230HFSB16_03
	Course Name	Smart Cities	Basics of Accounting	E-Waste Management	Intellectual Property	Biology for Engineers
V	Course Code	230GETB33_05	230VBCB14_05	230HFGM29_05	230HFSB15_05	230VMSM09_05
	Course Name	EV Technology	E-Commerce	Hazards and Chemical Safety	Introduction to Microscopy Techniques	Business Ethics and Sustainability
VII	Course Code	230GETB42_07	230VBBB25_07	230GETB35_07	240VBBB06_07	230UPYB34_07
	Course Name	Smart Grid	Economics for Management	Sustainable Energy System	Introduction to Digital Marketing	Psychology at Workplace

P.S.S.
Programme Coordinator
A.S.D.
Dr. A. S. Deshpande
Associate Dean (Academics)

Ambad
Prof. P. M. Ambad
Director, School of Mechanical and
Manufacturing Sciences



R.S.D.
Prof. R. S. Deshpande
Dean, Faculty of Science and Technology

B.B.A.
Prof. B. B. Ahuja
Vice Chancellor, JSPM University Pune



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FACULTY OF SCIENCE & TECHNOLOGY
SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

COURSE STRUCTURE (NEP 2020 Aligned)

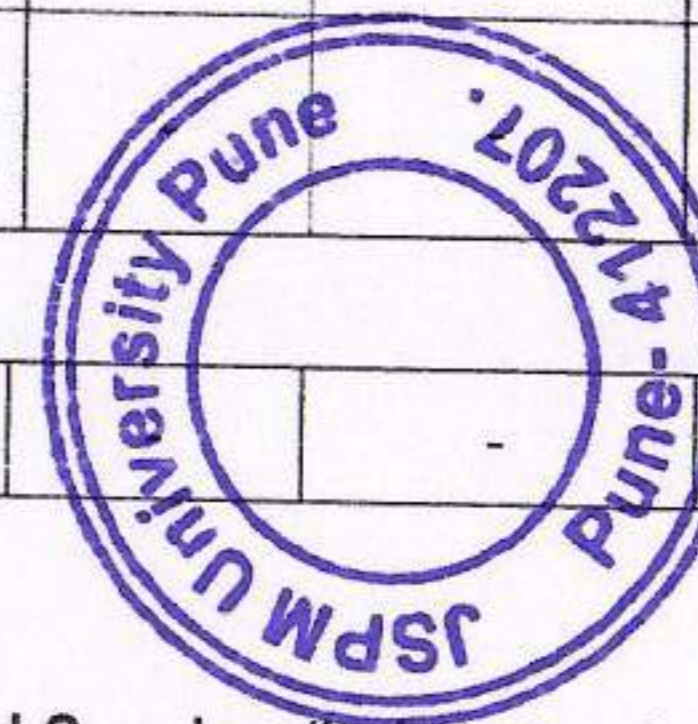
W. E. F
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REVISION NO.

2024-2025
01/07/2024
0.0 (NEP)

SECOND YEAR BACHELOR OF TECHNOLOGY (Regular)
(MECHATRONICS)

SEMESTER IV (Level 5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										CREDITS
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)		TOTAL		
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)			
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)								
BSC	230GMAB08_04	Vector Calculus and Partial Differential Equations	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	230GRAB03_04	Fundamentals of Material Science and Smart Materials	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
	232GETB11_04	Signals and Systems	2	-	-	2	25			75	-	-	-	-	100	2.5	
	230GMEB15_04	Fluid Mechanics	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
EEC	230GCEB02_04	Environment and Sustainability	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
SEC	230GMTB06_04	Industrial Automation and Control	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
AEC (HSMC)	230UENB02_04	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2	
LC	230GRAB04_04	Fundamentals of Material Science and Smart Materials Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/F P/CE P	230GMEB12_04	Internship / Field Project / Community Engagement Programme	4 to 6 Weeks				-	-	-	-	-	-	-	50	50	50	2
TOTAL			12	1	8	4									750	22	
MLC#	-	Audit Course	-	-	2	-	-	-	-	-	-	-	50	-	50	1	



Sem.	Multidisciplinary Minor Course (MMC)				
III	Course Code	230GMTB01_03	240GCEB38_03	230USYB03_03	230GCSB131_03
	Course Name	Sensors and Actuators	Engineering Geology	Social Inequality	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCSB116_04	240GCSB111_04
	Course Name	Wireless Sensor Network	Business Intelligence	Data Science and Analytics	Foundations of Artificial Intelligence
V	Course Code	230GETB34_05	230GCSB121_05	230HFGM26_05	230GCSB115_05
	Course Name	Internet of Things and Applications	Data Visualization	Digital Investigations and Cyber Forensics	Machine Learning with Python
VI	Course Code	230GCEB44_06	230GCSB119_06	230GCSB130_06	240GCSB112_06
	Course Name	Solid Waste Management	Web Application Development	Basics of Linux Operating System	Foundations of Artificial Neural Network
VII	Course Code	230GCEB43_07	230GETB31_07	230GCEB40_07	240GCSB113_07
	Course Name	Environmental Impact Assessment and Auditing	Data Communication	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GCEB45_07	230GCSB123_07	230GCSB125_07	240GCSB115_07
	Course Name	Environmental Quality Monitoring	Mobile Application Development	Internet and Cloud Computing	AI for Robotics

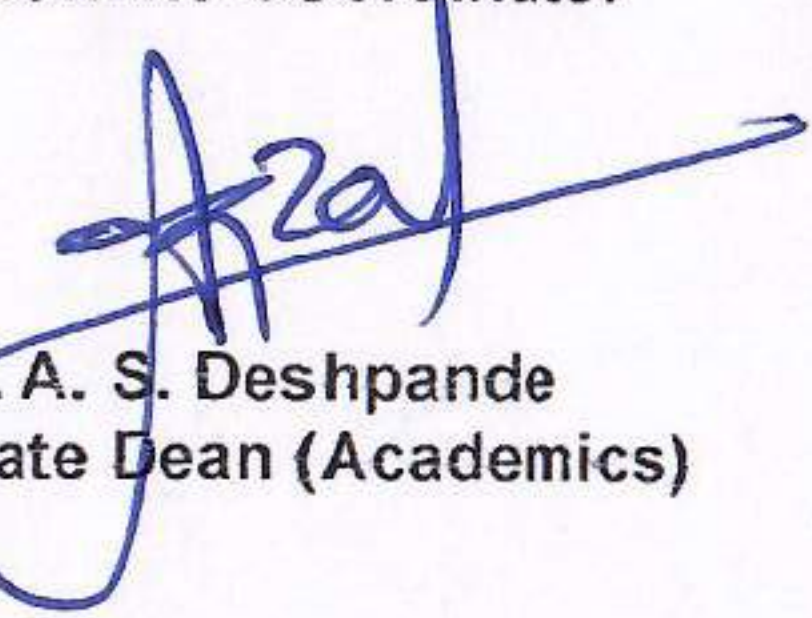
Sem.	Mandatory Learning Course (MLC#) Audit Course	
IV	Course Code	230GMEB97_04
	Course Name	Data Analytics with Tableau and Power BI
V	Course Code	230GMEB98_05
	Course Name	Advanced Excel
VI	Course Code	230GMEB99_06
	Course Name	Structured Query Language
VII	Course Code	230UPOB02_07
	Course Name	Introduction to Indian Constitution

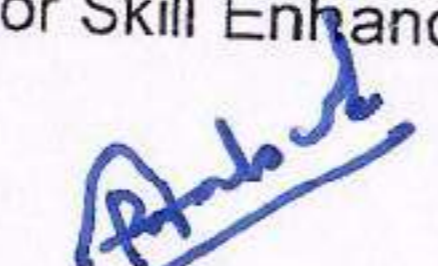
Note: A Diploma will be awarded if a student exits after second year.

For "Exit" at the end of Second Year the student must complete: (Total credits = 8).


- An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 2 internship of minimum 4 weeks.
- Additional Course 1 (4 credits) (Vocational Skill Course (VSC) or Skill Enhancement Course (SEC)).

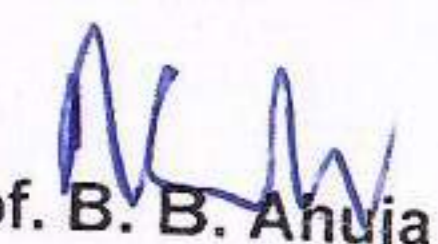

Programme Coordinator


Dr. A. S. Deshpande
Associate Dean (Academics)


Prof. P. M. Ambad
Director, School of Mechanical and Manufacturing Sciences




Prof. R. S. Deshpande
Dean, Faculty of Science and Technology


Prof. B. B. Anuja
Vice Chancellor, JSPM University Pune



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FACULTY OF SCIENCE & TECHNOLOGY
SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

SECOND YEAR BACHELOR OF TECHNOLOGY (Lateral)
(MECHATRONICS)

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

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SEMESTER III (Level 5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
BSC	230GMAL01_03	Linear Algebra and Univariate Calculus	3	1	-	-	30	30	40	100	-	-	-	-	100	4
PCC	230GETB98_03	Analog and Digital Electronics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	230GMEB13_03	Solid Mechanics	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
	230GEEB32_03	Electrical Machines and Drives	2	-	-	-	30	30	40	50	-	-	-	-	50	2
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	-	-	-	-	50	2
ICC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	50	50	50	50	100	2
VSC	230IDCB01_03	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	-	-	-	100	2
AEC (HSMC)	230UENB01_03	Effective Communication Skills	1	-	2	-	30	30	40	50	-	-	50	50	50	1.5
LC	230GETB99_03	Analog and Digital Electronics Lab	-	-	2	-	-	-	-	-	-	-	-	-	50	2
	230GMEB14_03	Solid Mechanics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GEEB33_03	Electrical Machines and Drives Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
TOTAL			14	1	10	4	-	-	-	-	50	50	-	-	50	1
														750	21	



Sem.	Multidisciplinary Minor Course (MMC)				
III	Course Code	230GMTB01_03	240GCEB38_03	230USYB03_03	230GCSB131_03
	Course Name	Sensors and Actuators	Engineering Geology	Social Inequality	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCSB116_04	240GCSB111_04
	Course Name	Wireless Sensor Network	Business Intelligence	Data Science and Analytics	Foundations of Artificial Intelligence
V	Course Code	230GETB34_05	230GCSB121_05	230HFGM26_05	230GCSB115_05
	Course Name	Internet of Things and Applications	Data Visualization	Digital Investigations and Cyber Forensics	Machine Learning with Python
VI	Course Code	230GCEB44_06	230GCSB119_06	230GCSB130_06	240GCSB112_06
	Course Name	Solid Waste Management	Web Application Development	Basics of Linux Operating System	Foundations of Artificial Neural Network
VII	Course Code	230GCEB43_07	230GETB31_07	230GCEB40_07	240GCSB113_07
	Course Name	Environmental Impact Assessment and Auditing	Data Communication	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GCEB45_07	230GCSB123_07	230GCSB125_07	240GCSB115_07
	Course Name	Environmental Quality Monitoring	Mobile Application Development	Internet and Cloud Computing	AI for Robotics

Sem.	Interdisciplinary Open Course (IOC)					
III	Course Code	230GCEB29_03	230VBCB04_03	230GCEB31_03	230HFGM25_03	230HFSB16_03
	Course Name	Smart Cities	Basics of Accounting	E-Waste Management	Intellectual Property	Biology for Engineers
V	Course Code	230GETB33_05	230VBCB14_05	230HFGM29_05	230HFSB15_05	230VMSM09_05
	Course Name	EV Technology	E-Commerce	Hazards and Chemical Safety	Introduction to Microscopy Techniques	Business Ethics and Sustainability
VII	Course Code	230GETB42_07	230VBBB25_07	230GETB35_07	240VBBB06_07	230UPYB34_07
	Course Name	Smart Grid	Economics for Management	Sustainable Energy System	Introduction to Digital Marketing	Psychology at Workplace

P.S.S.
Programme Coordinator

A.S.D.
Dr. A. S. Deshpande
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A.M.
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Manufacturing Sciences



R.S.D.
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FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES
 SECOND YEAR BACHELOR OF TECHNOLOGY (Lateral)
 (MECHATRONICS)

COURSE STRUCTURE
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W. E. F

2024-2025

RELEASE DATE

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REVISION NO.

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COURSE		SEMESTER IV (Level 5)																
TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										TOTAL	CREDITS
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)			ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)				
				T1 (30 Marks)	T2 (30 Marks)	Assign-ments (40 Marks)												
BSC	230GMAL02_04	Multivariate Calculus and Differential Equations	3	1	-	-	30	30	40	100	-	-	-	-	100	4		
PCC	230GRAB03_04	Fundamentals of Material Science and Smart Materials	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
	232GETB11_04	Signals and Systems	2	-	-	2	25			75	-	-	-	-	100	2.5		
	230GMEB15_04	Fluid Mechanics	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5		
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2		
EEC	230GCEB02_04	Environment and Sustainability	2	-	-	-	30	30	40	50	-	-	-	50	2			
SEC	230GMTB06_04	Industrial Automation and Control	2	-	2	-	-	-	-	-	50	50	50	50	100	3		
AEC (HSMC)	230UENB02_04	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	50	2			
LC	230GRAB04_04	Fundamentals of Material Science and Smart Materials Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
IITP/FP /CEP	230GMEB12_04	Internship / Field Project / Community Engagement Programme	4 to 6 Weeks				-	-	-	-	-	-	-	50	50	1		
TOTAL			13	1	8	4								50	50	2		
MLC#	-	Audit Course	-	-	2	-								50	-	50	1	



L-Lecture
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EL-Experiential Learning
 Page 1 of 2

Sem.	Multidisciplinary Minor Course (MMC)				
III	Course Code	230GMTB01_03	240GCEB38_03	230USYB03_03	230GCSB131_03
	Course Name	Sensors and Actuators	Engineering Geology	Social Inequality	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCSB116_04	240GCSB111_04
	Course Name	Wireless Sensor Network	Business Intelligence	Data Science and Analytics	Foundations of Artificial Intelligence
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	Course Name	Internet of Things and Applications	Data Visualization	Digital Investigations and Cyber Forensics	Machine Learning with Python
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	Course Name	Solid Waste Management	Web Application Development	Basics of Linux Operating System	Foundations of Artificial Neural Network
VII	Course Code	230GCEB43_07	230GETB31_07	230GCEB40_07	240GCSB113_07
	Course Name	Environmental Impact Assessment and Auditing	Data Communication	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GCEB45_07	230GCSB123_07	230GCSB125_07	240GCSB115_07
	Course Name	Environmental Quality Monitoring	Mobile Application Development	Internet and Cloud Computing	AI for Robotics

Sem.	Mandatory Learning Course (MLC#)	Audit Course
IV	Course Code	230GMEB97_04
	Course Name	Data Analytics with Tableau and Power BI
V	Course Code	230GMEB98_05
	Course Name	Advanced Excel
VI	Course Code	230GMEB99_06
	Course Name	Structured Query Language
VII	Course Code	230UPOB02_07
	Course Name	Introduction to Indian Constitution

Note: A Diploma will be awarded if a student exits after second year.

For "Exit" at the end of Second Year the student must complete: (Total credits = 8).

- An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 2 internship of minimum 4 weeks.
- Additional Course 1 (4 credits) (Vocational Skill Course (VSC) or Skill Enhancement Course (SEC)).

PSB

Programme Coordinator

Azel
Dr. A. S. Deshpande
Associate Dean (Academics)

A. M. Ambad

Prof. P. M. Ambad
Director, School of Mechanical and Manufacturing Sciences



R. S. Deshpande

Prof. R. S. Deshpande
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FACULTY OF SCIENCE & TECHNOLOGY
SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2025-2026

RELEASE DATE

01/07/2025

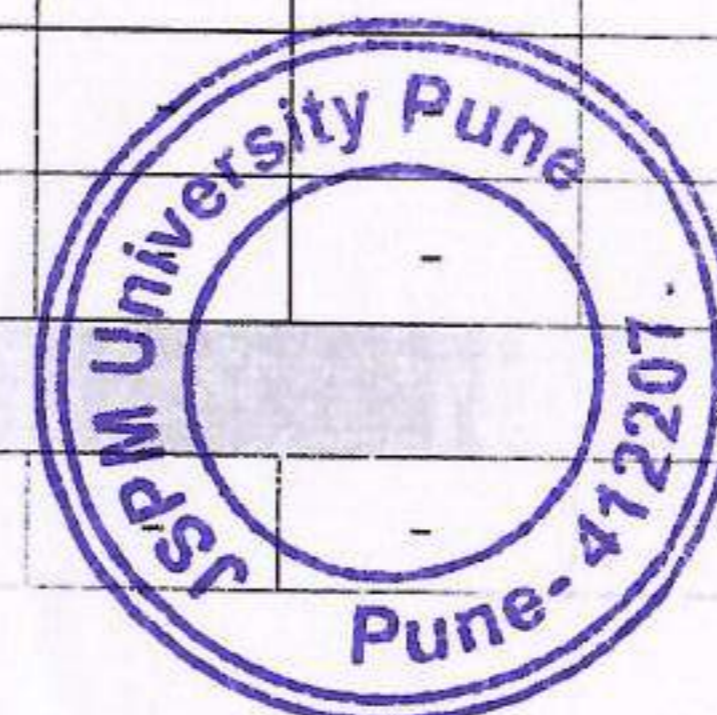
THIRD YEAR BACHELOR OF TECHNOLOGY
(MECHATRONICS)

REVISION NO.

0.0 (NEP)

SEMESTER V (Level 5.5)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
BSC	230GMAB10_05	Foundations of Probability and Statistics	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	231GETB13_05	Control Systems	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
	230GMTB02_05	Foundations of Mechatronics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	230GMEB101_05	Kinematics and Theory of Machines	2	-	-	-	30	30	40	50	-	-	-	-	50	2
PEC	-	Program Elective Course - I	3	-	-	-	30	30	40	100	-	-	-	-	100	3
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
IOC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
HSSM	231VBCB27_05	Finance for Engineers	1	-	-	4	-	-	-	-	-	-	50	50	50	2
VSC	230IINB02_05	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
LC	230GMTB03_05	Foundations of Mechatronics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	240GEEB09_05	Control Systems and Simulation Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
TOTAL			16	1	8	4									800	22
MLC#	-	Audit Course	-	-	2	-	-	-	-	-	-	-	50	-	50	1



Sem.	Programme Elective Course (PEC)			
V	Course Code	240GMTB27_05	240GMEB102_05	230GMTB18_05
	Course Name	Instrumentation	Industrial Management	Industrial Hydraulics and Pneumatics
VI	Course Code	230GMEB36_06	230GMEB38_06	230GMTB24_06
	Course Name	Additive Manufacturing and Rapid Prototyping	Total Quality Management	Optimization Technique
VII	Course Code	230GMTB30_07	230GMTB21_07	240GETB07_07
	Course Name	Introduction to Microelectro Mechanical Systems	PLC and SCADA	Wireless Communication and Networks
VIII	Course Code	240GANB05_08	240GCSB75_08	240GCSB76_08
	Course Name	Virtual and Augmented Reality	Image Processing and Computer Vision	Real Time Systems
VIII	Course Code	230GMTB23_08	240GCSB74_08	230GMTB33_08
	Course Name	Machine Fault Diagnostics	Computer Organization	Advances in Motion Control
				230GMEB69_05
				Operation Research
				230GMTB13_06
				Manufacturing Technologies
				240GETB05_07
				Introduction to Digital Signal Processing
				230GMTB34_08
				Product Development
				230GMTB25_08
				Industry 5.0

Sem.	Multidisciplinary Minor Course (MMC)			
III	Course Code	230GMTB01_03	240GCEB38_03	230USYB03_03
	Course Name	Sensors and Actuators	Engineering Geology	Social Inequality
IV	Course Code	230GETB09_04	230GCSB122_04	230GCSB116_04
	Course Name	Wireless Sensor Network	Business Intelligence	Data Science and Analytics
V	Course Code	230GETB34_05	230GCSB121_05	230HFGM26_05
	Course Name	Internet of Things and Applications	Data Visualization	Digital Investigations and Cyber Forensics
VI	Course Code	230GCEB44_06	230GCSB119_06	230GCSB130_06
	Course Name	Solid Waste Management	Web Application Development	Basics of Linux Operating System
VII	Course Code	230GCEB43_07	230GETB31_07	230GCEB40_07
	Course Name	Environmental Impact Assessment and Auditing	Data Communication	Sustainable Materials
VII	Course Code	230GCEB45_07	230GCSB123_07	230GCSB125_07
	Course Name	Environmental Quality Monitoring	Mobile Application Development	Internet and Cloud Computing
				230GCSB131_03
				Basics of AIML
				240GCSB111_04
				Foundations of Artificial Intelligence
				230GCSB115_05
				Machine Learning with Python
				240GCSB112_06
				Foundations of Artificial Neural Network
				240GCSB113_07
				Foundations of Deep Learning
				240GCSB115_07
				AI for Robotics

Sem.	Interdisciplinary Open Course (IOC)			
III	Course Code	230GCEB29_03	230VBCB04_03	230GCEB31_03
	Course Name	Smart Cities	Basics of Accounting	E-Waste Management
V	Course Code	230GETB33_05	230VBCB14_05	230HFGM29_05
	Course Name	EV Technology	E-Commerce	Hazards and Chemical Safety
				230HFGM25_03
				Intellectual Property
				230HFSB15_05
				Introduction to Microscopy Techniques
				250GBTB01_03
				Bioengineering
				230VMSM09_05
				Business Ethics and Sustainability



VII	Course Code	230GETB42_07	230VBBB25_07	230GETB35_07	240VBBB06_07	230UPYB34_07
	Course Name	Smart Grid	Economics for Management	Sustainable Energy System	Introduction to Digital Marketing	Psychology at Workplace

Sem.	Mandatory Learning Course (MLC#)	Audit Course
IV	Course Code	230GMEB97_04
	Course Name	Data Analytics with Tableau and Power BI
V	Course Code	230GMEB98_05
	Course Name	Advanced Excel
VI	Course Code	230GMEB99_06
	Course Name	Structured Query Language
VII	Course Code	230UPOB02_07
	Course Name	Introduction to Indian Constitution

[Signature]

Programme Coordinator

[Signature]
Dr. A. S. Deshpande
Associate Dean (Academics)

[Signature]

Prof. P. M. Ambad
Director, School of Mechanical and Manufacturing Sciences



[Signature]

Prof. R. S. Deshpande
Dean, Faculty of Science and Technology

[Signature]

Prof. B.B. Ahuja
Vice Chancellor, JSPM University Pune



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

THIRD YEAR BACHELOR OF TECHNOLOGY (MECHATRONICS)

COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2025-2026

RELEASE DATE

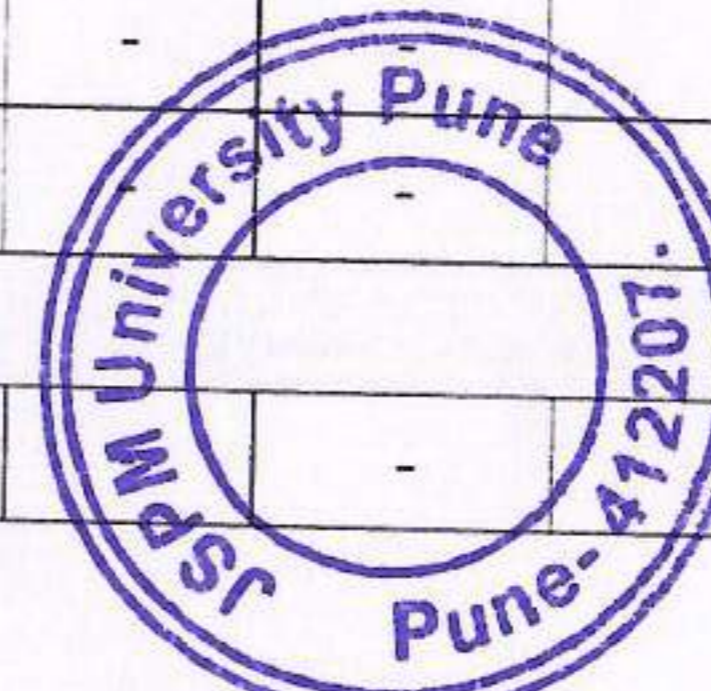
01/07/2025

REVISION NO.

0.0 (NEP)

SEMESTER VI (Level 5.5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										TOTAL	CREDITS
			Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)					
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)				
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)									
PCC	230GMEB27_06	Reliability Engineering	2	1	-	-	30	30	40	100	-	-	-	-	100	3		
	230GMEB16_06	Design of Machine Elements	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5		
	230GMTB27_06	Microprocessor and Microcontroller	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
PEC	-	Program Elective Course - II	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2		
AEC	230UENB03_06	Soft Skill Development	1	-	2	-	30	30	40	50	-	-	-	-	50	2		
HSSM	230UEEB19_06	Engineering Economics	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
VSC	230IESB03_06	Entrepreneurship	1	-	-	2	-	-	-	-	-	-	-	-	50	2		
LC	230GMTB28_06	Microprocessor and Microcontroller Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1.5		
	230GMEB81_06	Computer Aided Design Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
IITP/FP/CEP	230GMEB57_06	Internship / Field Project / Community Engagement Programme	4 to 6 Weeks				-	-	-	-	-	-	-	-	50	1		
TOTAL			14	1	8	4												
MLC#	-	Audit Course	-	-	2	-	-	-	-	-	-	-	50	-	50	1		



Sem.	Course Code	Course Name	Programme Elective Course (PEC)			
V	240GMTB27_05	Instrumentation	240GMEB102_05	230GMTB18_05	230GMEB69_05	
VI	230GMEB36_06	Additive Manufacturing and Rapid Prototyping	Industrial Management	Industrial Hydraulics and Pneumatics	Operation Research	
VII	230GMTB30_07	Introduction to Microelectro Mechanical Systems	230GMEB38_06	230GMTB24_06	230GMTB13_06	
VIII	240GANB05_08	Virtual and Augmented Reality	Total Quality Management	Optimization Technique	Manufacturing Technologies	
VIII	230GMTB23_08	Machine Fault Diagnostics	230GMTB21_07	240GETB07_07	240GETB05_07	
VIII			PLC and SCADA	Wireless Communication and Networks	Introduction to Digital Signal Processing	
			240GCSB75_08	240GCSB76_08	230GMTB34_08	
			Image Processing and Computer Vision	Real Time Systems	Product Development	
			240GCSB74_08	230GMTB33_08	230GMTB25_08	
			Computer Organization	Advances in Motion Control	Industry 5.0	

Sem.	Course Code	Course Name	Multidisciplinary Minor Course (MMC)			
III	230GMTB01_03	Sensors and Actuators	240GCEB38_03	230USYB03_03	230GCSB131_03	
IV	230GETB09_04	Wireless Sensor Network	Engineering Geology	Social Inequality	Basics of AIML	
V	230GETB34_05	Internet of Things and Applications	230GCSB122_04	230GCSB116_04	240GCSB111_04	
VI	230GCEB44_06	Solid Waste Management	Business Intelligence	Data Science and Analytics	Foundations of Artificial Intelligence	
VII	230GCEB43_07	Environmental Impact Assessment and Auditing	230GCSB121_05	230HFGM26_05	230GCSB115_05	
VII	230GCEB45_07	Environmental Quality Monitoring	Data Visualization	Digital Investigations and Cyber Forensics	Machine Learning with Python	
			230GCSB119_06	230GCSB130_06	240GCSB112_06	
			Web Application Development	Basics of Linux Operating System	Foundations of Artificial Neural Network	
			230GETB31_07	230GCEB40_07	240GCSB113_07	
			Data Communication	Sustainable Materials	Foundations of Deep Learning	
			230GCSB123_07	230GCSB125_07	240GCSB115_07	
			Mobile Application Development	Internet and Cloud Computing	AI for Robotics	



Sem.	Mandatory Learning Course (MLC#) Audit Course	
IV	Course Code	230GMEB97_04
	Course Name	Data Analytics with Tableau and Power BI
V	Course Code	230GMEB98_05
	Course Name	Advanced Excel
VI	Course Code	230GMEB99_06
	Course Name	Structured Query Language
VII	Course Code	230UPOB02_07
	Course Name	Introduction to Indian Constitution

Note: A bachelor's degree in Vocation (B. Voc.) or B. Sc. (Engg. /Tech.) will be awarded if a student exists after third year. For Exit at the end of third year the student must complete: (Total credits = 8)

a) An internship / OJT of 8 - 10 weeks (4 credits)

b) Course 1 (4 credits) (Vocational Skill Course (VSC) / Skill Enhancement Course (SEC))



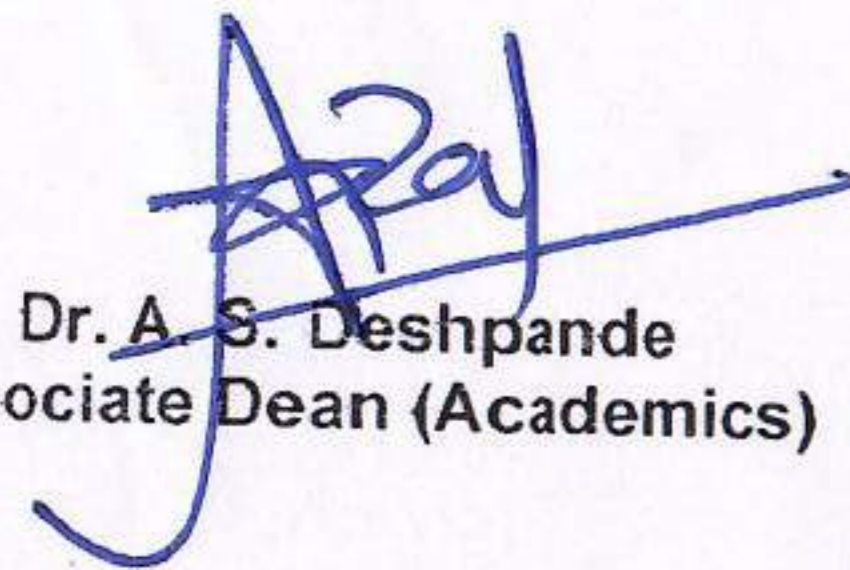
Programme Coordinator



Prof. P. M. Ambad
Director, School of Mechanical and
Manufacturing Sciences



Prof. R. S. Deshpande
Dean, Faculty of Science and Technology



Dr. A. S. Deshpande
Associate Dean (Academics)




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