



**JSPM UNIVERSITY PUNE**

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

**JSPM University Pune**  
**Faculty of Science and Technology**  
**School of Mechanical & Manufacturing**  
**Sciences**



**NEP aligned Curriculum Structure**

**for**

**B.Tech (Robotics and Artificial Intelligence))**

**(Effective from AY: 2024-25)**



# JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

SECOND YEAR BACHELOR OF TECHNOLOGY (Regular)  
(Robotics and Artificial Intelligence)

COURSE STRUCTURE  
(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

REVISION NO.

0.0 (NEP)

## SEMESTER III (Level 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	230GMAB07_03	Ordinary Differential Equations and Multivariate Calculus	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	230GRAB01_03	Foundations of Robotics and AI	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
	230GRAB03_03	Fundamentals of Material Science and Smart Materials	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	230GETB98_03	Analog and Digital Electronics	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	-	-	-	-	50	2
LC	230GRAB02_03	Robot Programming Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GRAB04_03	Fundamentals of Material Science and Smart Materials Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GETB99_03	Analog and Digital Electronics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
LLC	231UPYB02_03	Mindfulness and Wellbeing	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5
<b>TOTAL</b>			<b>14</b>	<b>1</b>	<b>8</b>	<b>4</b>									<b>750</b>	<b>20</b>



Multidisciplinary Minor Course (MMC)					
III	Course Code	230GMTB01_03	230GCSB116_03	230GCEB43_03	230GCSB131_03
	Course Name	Sensors and Actuators	Data Science and Analytics	Environmental Impact Assessment and Auditing	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCEB44_04	230GCSB125_04
	Course Name	Wireless Sensor Network	Business Intelligence	Solid Waste Management	Internet and Cloud Computing
V	Course Code	230GETB34_05	230GCSB119_05	240GCEB37_05	230GCSB115_05
	Course Name	Internet of Things and Application	Web Application Development	Smart Transportation System	Machine Learning with Python
VI	Course Code	230GETB31_06	230GCSB123_06	240GCEB38_06	240GCSB112_06
	Course Name	Data Communication	Mobile Application Development	Engineering Geology	Foundations of Artificial Neural Network
VII	Course Code	230GETB41_07	230GCSB130_07	230GCEB40_07	240GCSB113_07
	Course Name	Introduction to Embedded Systems	Basics of Linux Operating System	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GETB40_07	230GCSB120	230GCEB45_07	230GCSB136_07
	Course Name	Electronic Instrumentation	Cryptography and Cyber Security	Environmental Quality Monitoring	Multi Model Learning

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

*PSR*  
**Dr. Raghvendra Upadhyay**  
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*P. M. Ambad*  
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 Vice Chancellor, JSPM University Pune



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SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

SECOND YEAR BACHELOR OF TECHNOLOGY (Regular)  
(Robotics and Artificial Intelligence)

SEMESTER IV (Level 5)

COURSE STRUCTURE  
(NEP 2020 Aligned)

2024-2025

01/07/2024

W. E. F

RELEASE DATE

REVISION NO.

0.0 (NEP)

## EXAMINATION SCHEME AND MARKS

TYPE	CODE	COURSE NAME	TEACHING SCHEME				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)		TOTAL	CREDITS	
			Hours / Week				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)			
			L	T	P	EL	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	230GETB100_04	Microcontroller and its Application	3	-	-	2	30	30	40	100	-	-	-	-	100	3.5	
	232GETB11_04	Signals and Systems	-	-	-	2	25			75	-	-	-	-	100	2.5	
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	-	-	-	50	2	
EEC	230GCEB02_04	Environment and Sustainability	2	-	-	-	30	30	40	50	-	-	50	50	100	3	
SEC	230GMEB11_04	Machine Drawing	2	-	-	-	-	-	-	-	50	50	-	-	50	2	
AEC (HSMC)	230UENB02_04	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	50	-	-	50	1	
LC	230GETB101_04	Microcontroller and its Application Lab	-	-	2	-	-	-	-	-	-	-	50	50	50	1	
	230GETB102_04	Signal and Systems Lab	-	-	2	-	-	-	-	-	-	-	50	50	50	2	
IITP/ FP/ CEP	230GRAB12_04	Internship/Field Project/Community Engagement Programme	4 to 6 Weeks				-	-	-	-	-	-	-	50	50	50	1
<b>TOTAL</b>			11	1	10	4							750	22			
MLC#	-	Audit Course	-	-	2	-							50	50	50	1	




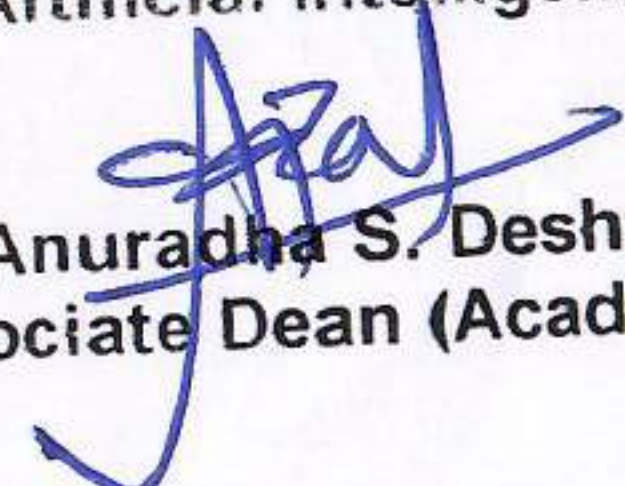
Rev. Date: 01/07/2024


Rev. No.: 0.0

Multidisciplinary Minor Course.(MMC)					
III	Course Code	230GMTB01_03	230GCSB116_03	230GCEB43_03	230GCSB131_03
	Course Name	Sensors and Actuators	Data Science and Analytics	Environmental Impact Assessment and Auditing	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCEB44_04	230GCSB125_04
	Course Name	Wireless Sensor Network	Business Intelligence	Solid Waste Management	Internet and Cloud Computing
V	Course Code	230GETB34_05	230GCSB119_05	240GCEB37_05	230GCSB115_05
	Course Name	Internet of Things and Application	Web Application Development	Smart Transportation System	Machine Learning with Python
VI	Course Code	230GETB31_06	230GCSB123_06	240GCEB38_06	240GCSB112_06
	Course Name	Data Communication	Mobile Application Development	Engineering Geology	Foundations of Artificial Neural Network
VII	Course Code	230GETB41_07	230GCSB130_07	230GCEB40_07	240GCSB113_07
	Course Name	Introduction to Embedded Systems	Basics of Linux Operating System	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GETB40_07	230GCSB120	230GCEB45_07	230GCSB136_07
	Course Name	Electronic Instrumentation	Cryptography and Cyber Security	Environmental Quality Monitoring	Multi Model Learning

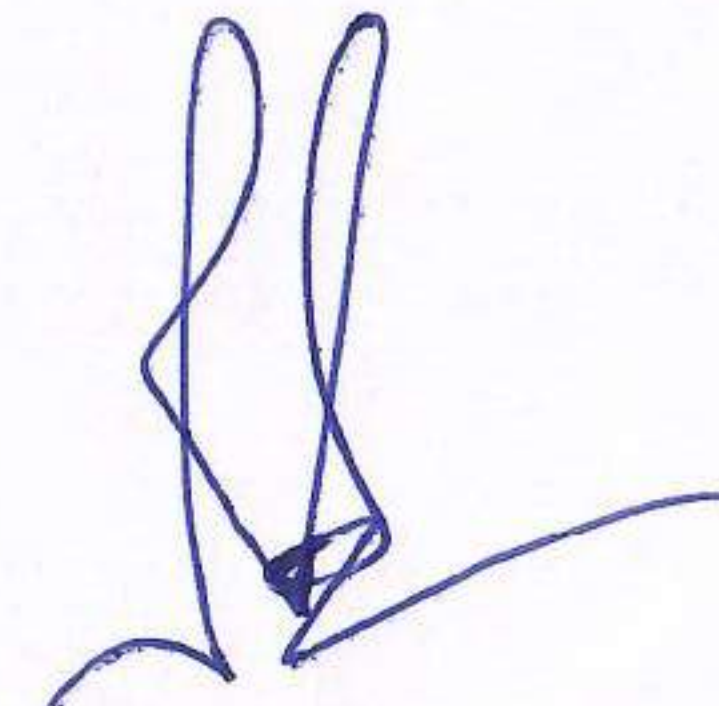
Mandatory Learning Course (MLC#) Audit Course		
IV	Course Code	230GMEB97_04
	Course Name	Data Analytics with Tableau and Power BI
V	Course Code	230GMEB98_05
	Course Name	Advanced Excel
VI	Course Code	230GMEB99_06
	Course Name	Structured Query Language
VII	Course Code	230UPOB02_07
	Course Name	Introduction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


  
**Dr. Raghendra Upadhyay**  
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SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

SECOND YEAR BACHELOR OF TECHNOLOGY (Lateral)  
(Robotics and Artificial Intelligence)

COURSE STRUCTURE  
(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

REVISION NO.

0.0 (NEP)

SEMESTER III (Level 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	230GMAL01_03	Linear Algebra and Univariate Calculus	3	1	-	-	30	30	40	100	-	-	-	-	100	4
	230GRAB01_03	Foundations of Robotics and AI	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
PCC	230GRAB03_03	Fundamentals of Material Science and Smart Materials	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	230GETB98_03	Analog and Digital Electronics	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	-	-	-	50	50	1.5
VSC	230IDCB01_03	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	-	-	-	50	2
AEC (HSMC)	230UENB01_03	Effective Communication Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	1
LC	230GRAB02_03	Robot Programming Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GRAB04_03	Fundamentals of Material Science and Smart Materials Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GETB99_03	Analog and Digital Electronics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
<b>TOTAL</b>			<b>14</b>	<b>1</b>	<b>10</b>	<b>4</b>									<b>750</b>	<b>21</b>



L-Lecture

T-Tutorial  
Rev. No.:0.0

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

Multidisciplinary Minor Course (MMC)					
III	Course Code	230GMTB01_03	230GCSB116_03	230GCEB43_03	230GCSB131_03
	Course Name	Sensors and Actuators	Data Science and Analytics	Environmental Impact Assessment and Auditing	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCEB44_04	230GCSB125_04
	Course Name	Wireless Sensor Network	Business Intelligence	Solid Waste Management	Internet and Cloud Computing
V	Course Code	230GETB34_05	230GCSB119_05	240GCEB37_05	230GCSB115_05
	Course Name	Internet of Things and Application	Web Application Development	Smart Transportation System	Machine Learning with Python
VI	Course Code	230GETB31_06	230GCSB123_06	240GCEB38_06	240GCSB112_06
	Course Name	Data Communication	Mobile Application Development	Engineering Geology	Foundations of Artificial Neural Network
VII	Course Code	230GETB41_07	230GCSB130_07	230GCEB40_07	240GCSB113_07
	Course Name	Introduction to Embedded Systems	Basics of Linux Operating System	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GETB40_07	230GCSB120	230GCEB45_07	230GCSB136_07
	Course Name	Electronic Instrumentation	Cryptography and Cyber Security	Environmental Quality Monitoring	Multi Model Learning

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

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FACULTY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

## COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

SECOND YEAR BACHELOR OF TECHNOLOGY (Lateral)  
(Robotics and Artificial Intelligence)

REVISION NO.

0.0 (NEP)

### SEMESTER IV (Level 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	230GMAL02_04	Multivariate Calculus and Differential Equations	3	1	-	-	30	30	40	100	-	-	-	-	100	4	
PCC	230GETB100_04	Microcontroller and its Application	3	-	-	2	30	30	40	100	-	-	-	-	100	3.5	
	232GETB11_04	Signals and Systems	2	-	-	2	25			75	-	-	-	-	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	230GMEB11_04	Machine Drawing	2	-	2	-	-	-	-	-	50	50	-	50	100	3	
AEC (HSMC)	230UENB02_04	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2	
LC	230GETB101_04	Microcontroller and its Application Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
	230GETB102_04	Signal and Systems Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/ FP/ CEP	230GRAB12_04	Internship/Field Project/Community Engagement Programme	4 to 6 Weeks				-	-	-	-	-	-	-	50	-	50	2
<b>TOTAL</b>			<b>14</b>	<b>1</b>	<b>10</b>	<b>4</b>								<b>750</b>	<b>23</b>		
MLC#	-	Audit Course	-	-	2	-	-	-	-	-	-	-	50	50	50	1	



Sem.	Multidisciplinary Minor Course (MMC)				
III	Course Code	230GMTB01_03	230GCSB116_03	230GCEB43_03	230GCSB131_03
	Course Name	Sensors and Actuators	Data Science and Analytics	Environmental Impact Assessment and Auditing	Basics of AIML
IV	Course Code	230GETB09_04	230GCSB122_04	230GCEB44_04	230GCSB125_04
	Course Name	Wireless Sensor Network	Business Intelligence	Solid Waste Management	Internet and Cloud Computing
V	Course Code	230GETB34_05	230GCSB119_05	240GCEB37_05	230GCSB115_05
	Course Name	Internet of Things and Application	Web Application Development	Smart Transportation System	Machine Learning with Python
VI	Course Code	230GETB31_06	230GCSB123_06	240GCEB38_06	240GCSB112_06
	Course Name	Data Communication	Mobile Application Development	Engineering Geology	Foundations of Artificial Neural Network
VII	Course Code	230GETB41_07	230GCSB130_07	230GCEB40_07	240GCSB113_07
	Course Name	Introduction to Embedded Systems	Basics of Linux Operating System	Sustainable Materials	Foundations of Deep Learning
VII	Course Code	230GETB40_07	230GCSB120	230GCEB45_07	230GCSB136_07
	Course Name	Electronic Instrumentation	Cryptography and Cyber Security	Environmental Quality Monitoring	Multi Model Learning

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).


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



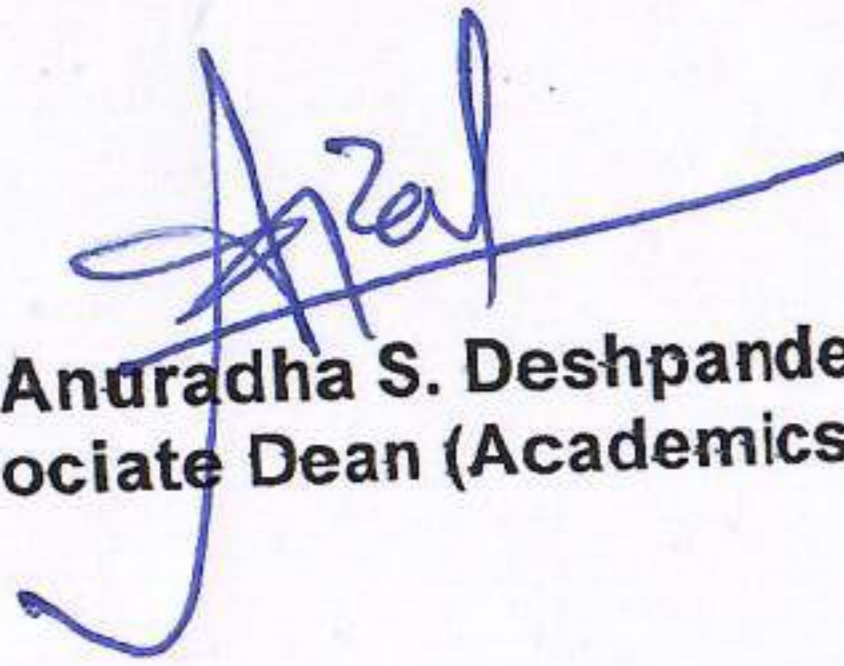
**Dr. Raghendra Upadhyay**  
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FACULTY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

THIRD YEAR BACHELOR OF TECHNOLOGY  
(Robotics and Artificial Intelligence)

COURSE STRUCTURE  
(NEP 2020 Aligned)

W. E. F

2025-2026

RELEASE DATE

01/07/2025

REVISION NO.

0.0 (NEP)

## SEMESTER V (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)							
BSC	230GMAB10_05	Foundations of Probability and Statistics	2	1	-	-	30	30	40	100	-	-	-	-	100	3
	240GMEB103_05	Theory of Machines and Machine Design	2	-	-	-	30	30	40	50	-	-	-	-	50	2
PCC	250GDSB01_05	Foundation of Data Science	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
	230GRAB16_05	Hydraulic and Pneumatic Drive for Robots	2	-	-	-	30	30	40	50	-	-	-	-	50	2
PEC	-	Programme 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	50	-	-	-	-	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	240GMEB104_05	Theory of Machines and Machine Design Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	230GRAB17_05	Hydraulic and Pneumatic Drive for Robots Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
<b>TOTAL</b>			<b>16</b>	<b>1</b>	<b>6</b>									<b>800</b>	<b>22</b>	
MLC#	-	Audit Course	-	-	2								50	-	50	1



Programme Elective Course (PEC)					
Sem.	Specialization	Control System	Mechatronics	AI	Robotics
V	Course Code	230GETB128_05	230GRAB19_05	230GDSB89_05	230GRAB15_05
	Course Name	Microcontroller's Architecture and Programming	Industrial Electronics and Power Convertors	Introduction to Data Analytics	Foundations of Mobile and Micro-robots
VI	Course Code	230GRAB22_06	230GMTB29_06	231GAIB14_06	230GRAB16_06
	Course Name	Robot Control Systems	Foundations of Mechatronics System Design	Deep Learning Techniques and Applications	Introduction to Autonomous Robots and Telecherics
VII	Course Code	230GETB129_07	230GMTB30_07	240GAIB12_07	230GRAB17_07
	Course Name	Advanced Control System	Introduction to Micro Electromechanical Systems	Responsible AI Theory and Applications	Advanced Robotic Programming
VIII	Course Code	230GRAB22_08	230GMTB31_08	230GRAB19_08	230GRAB18_08
	Course Name	Robot Dynamics and Control	Advanced Mechatronics	Augmented Reality and Virtual Reality	Biomedical Robotics
VIII	Course Code	230GMTB33_08	230GMTB32_08	240GAIB12_08	230GRAB21_08
	Course Name	Advances in Motion Control	Intelligent Manufacturing	Foundations of Generative AI	Robot Operating Systems

Multidisciplinary Minor Course (MMC)					
Sem.	Course Code	230GMTB01_03	230GCSB116_03	230GCEB43_03	230GCSB131_03
III	Course Name	Sensors and Actuators	Data Science and Analytics	Environmental Impact Assessment and Auditing	Basics of AIML
	Course Code	230GETB09_04	230GCSB122_04	230GCEB44_04	230GCSB125_04
IV	Course Name	Wireless Sensor Network	Business Intelligence	Solid Waste Management	Internet and Cloud Computing
	Course Code	230GETB34_05	230GCSB119_05	240GCEB37_05	230GCSB115_05
V	Course Name	Internet of Things and Applications	Web Application Development	Smart Transportation System	Machine Learning with Python
	Course Code	230GETB31_06	230GCSB123_06	240GCEB38_06	240GCSB112_06
VI	Course Name	Data Communication	Mobile Application Development	Engineering Geology	Foundations of Artificial Neural Network
	Course Code	230GETB41_07	230GCSB130_07	230GCEB40_07	240GCSB113_07
VII	Course Name	Introduction to Embedded Systems	Basics of Linux Operating System	Sustainable Materials	Foundations of Deep Learning
	Course Code	230GETB40_07	230GCSB120	230GCEB45_07	230GCSB136_07
VII	Course Name	Electronic Instrumentation	Cryptography and Cyber Security	Environmental Quality Monitoring	Multi Model Learning
	Course Code				



Interdisciplinary Open Course (IOC)						
III	Course Code	230GCEB29_03	230VBCB04_03	230GCEB31_03	230HFGM25_03	250GBTB01_03
	Course Name	Smart Cities	Basics of Accounting	E-Waste Management	Intellectual Property	Bioengineering
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

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

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 Dean, Faculty of Science and Technology

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 Dr. Anuradha S. Deshpande  
 Associate Dean (Academics)



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



# JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING SCIENCES

THIRD YEAR BACHELOR OF TECHNOLOGY  
(Robotics and Artificial Intelligence)

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)

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)	Assign-ments (40 Marks)								
			2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	230GMEB27_06	Reliability Engineering	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
	230GETB23_06	Embedded Systems	2	-	-	-	30	30	40	100	-	-	-	-	100	2.5	
	231GETB13_06	Control Systems	2	-	-	2	30	30	40	100	-	-	-	-	100	3	
PEC	-	Programme Elective Course -II	3	-	-	-	30	30	40	100	-	-	-	-	100	2	
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	50	50	1.5	
LC	230GETB121_06	Embedded Systems Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
	240GEEB09_06	Control System Simulation Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/FP/CEP	230GRAB12_06	Internship / Field Project / Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
<b>TOTAL</b>			<b>14</b>	<b>1</b>	<b>8</b>	<b>4</b>									<b>750</b>	<b>22</b>	
MLC#		Audit Course	-	-	2										50	1	



Programme Elective Course (PEC)					
Sem.	Specialization	Control System	Mechatronics	AI	Robotics
V	Course Code	230GETB128_05	230GRAB19_05	230GDSB89_05	230GRAB15_05
	Course Name	Microcontroller's Architecture and Programming	Industrial Electronics and Power Convertors	Introduction to Data Analytics	Foundations of Mobile and Micro-robots
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	Course Name	Robot Dynamics and Control	Advanced Mechatronics	Augmented Reality and Virtual Reality	Biomedical Robotics
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	Course Name	Advances in Motion Control	Intelligent Manufacturing	Foundations of Generative AI	Robot Operating Systems

Multidisciplinary Minor Course (MMC)						
Sem.	Course Code	Course Name	Course Code	Course Name	Course Code	Course Name
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	230GETB09_04	Wireless Sensor Network	230GCSB122_04	Business Intelligence	230GCEB44_04	Solid Waste Management
IV	230GETB34_05	Internet of Things and Application	230GCSB119_05	Web Application Development	240GCEB37_05	Smart Transportation System
	230GETB31_06	Data Communication	230GCSB123_06	Mobile Application Development	240GCEB38_06	Engineering Geology
V	230GETB41_07	Introduction to Embedded Systems	230GCSB130_07	Basics of Linux Operating System	230GCEB40_07	Sustainable Materials
	230GETB40_07	Electronic Instrumentation	230GCSB120	Cryptography and Cyber Security	230GCEB45_07	Environmental Quality Monitoring
VI	230GCSB131_03	Basics of AIML	230GCSB125_04	Internet and Cloud Computing	240GCSB112_06	Foundations of Artificial Neural Network
	230GCSB115_05	Machine Learning with Python	240GCSB113_07	Foundations of Deep Learning	230GCSB136_07	Multi Model Learning



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 the 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))



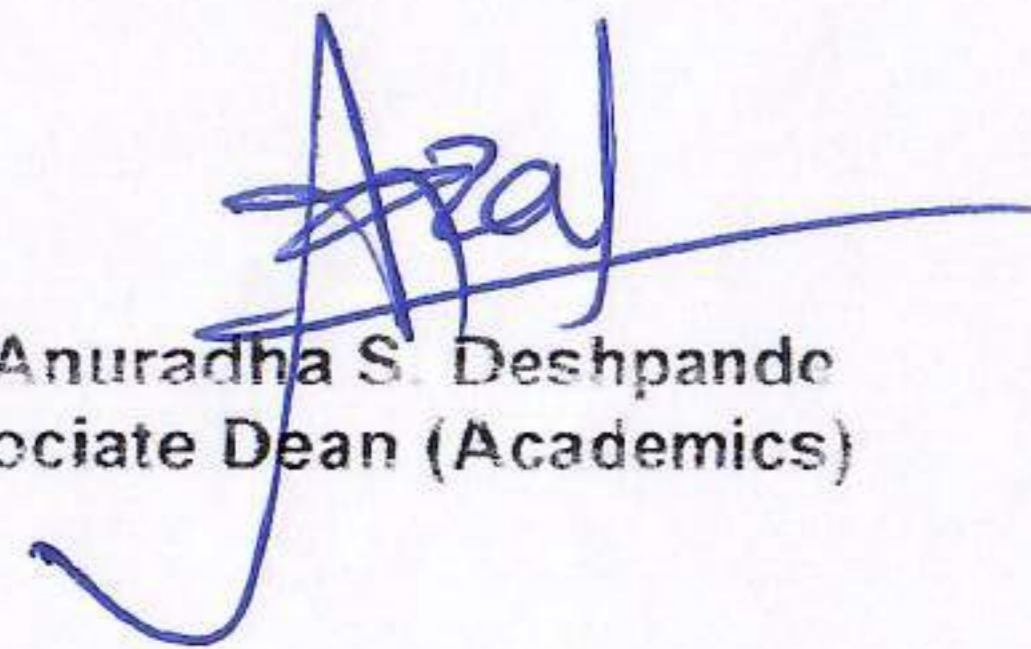
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