

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



NEP aligned Syllabus
for
M. Tech (Mechanical Engineering)

(Effective from AY: 2024-25)



JSPM University Pune

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

REVISION NO.

0.0 (NEP)


FIRST YEAR MASTER OF TECHNOLOGY (MECHANICAL ENGINEERING)


SEMESTER I (Level 6.5)

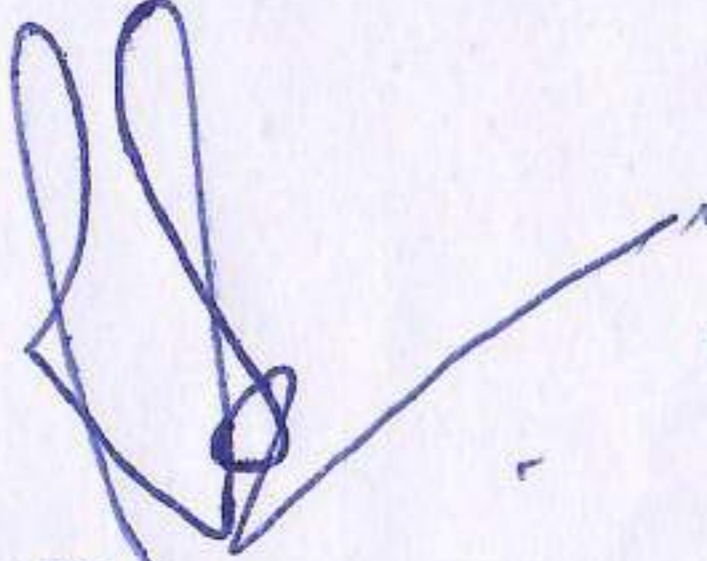
COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			
			L	T	P	EL	CONTINUOUS IN SEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PSMC	230GMAM02_01	Advanced Numerical Methods	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PSBC	230GMEM01_01	Advanced Mechanics	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
PCC	240GMEM02_01	Advanced Thermodynamics	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	231GRAM03_01	Advanced Hydraulics and Pneumatics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
SEC	230GCSM26_01	Python Programming for Engineers	2	-	2	-	-	-	-	-	50	50	50	50	100	3
VSC	230IDCB01_01	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
AEC	230UENM01_01	Communicative English for Professionals	1	-	2	-	30	30	40	50	-	-	-	-	50	2
RMC	230IRMM01_01	Research Methodology	2	-	-	-	30	30	40	50	-	-	-	-	50	2
LC	230GRAM26_01	Advanced Hydraulics and Pneumatics Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
TOTAL			16	1	8	4									750	22

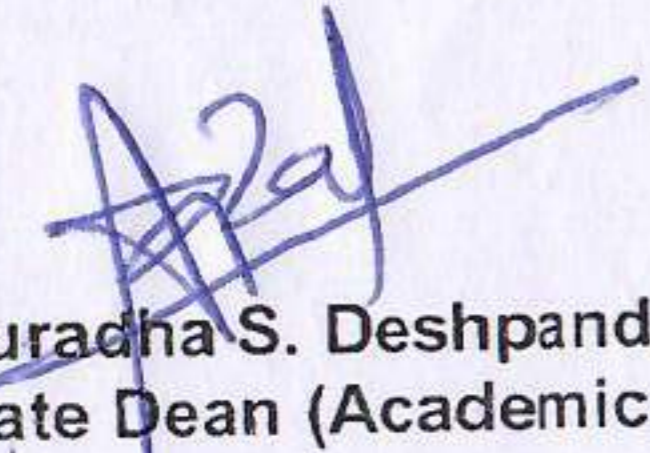


Multidisciplinary Minor Course (MMC)				
I	Course Code	230GRAM24_01	230VOSM59_01	230GCSM28_01
	Course Name	Sensors and Automation	Introduction to Project Management	Introduction to Data Science
II	Course Code	230GETM16_02	230VDMM02_02	230GCSM29_02
	Course Name	IoT Basics and Applications	Customer Relationship Management	Introduction to Artificial Intelligence

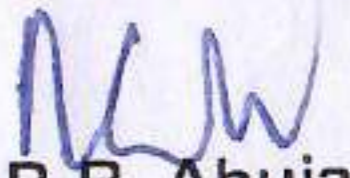

Dr. Sunil S Waddar
 Programme Coordinator


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 Director, School of Mechanical and Manufacturing
 Sciences


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


Dr. Anuradha S. Deshpande
 Associate Dean (Academics)




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



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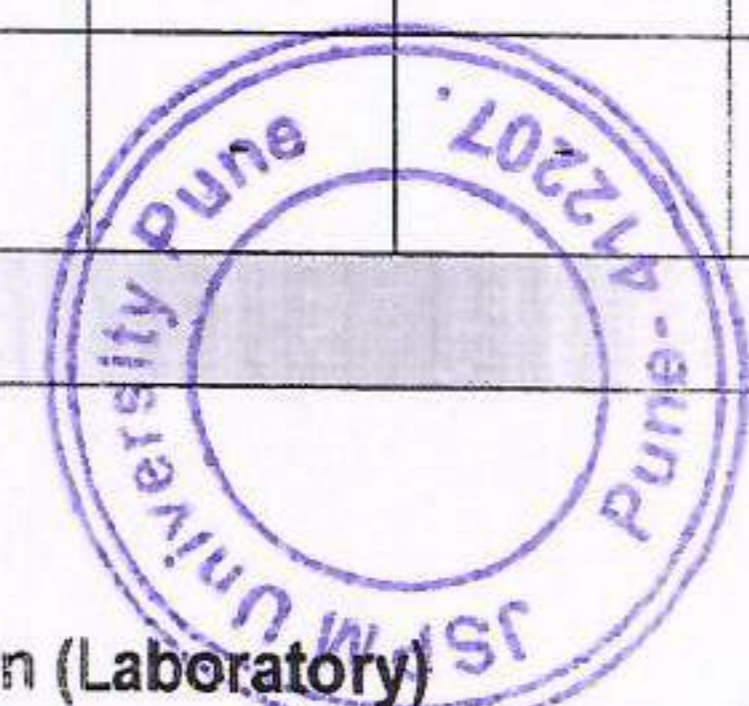
FIRST YEAR MASTER OF TECHNOLOGY (MECHANICAL ENGINEERING)

REVISION NO.

0.0 (NEP)

SEMESTER II (Level 6.5)

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 IN SEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)			
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)								
PCC	240GMEM05_02	Advanced Fluid Mechanics and Heat Transfer	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
	240GMEM06_02	Smart Manufacturing	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
	240GMEM07_02	Mechanical System Design	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
SEC	230GATM09_02	Computer Aided Analysis	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
VSC	230IINB02_02	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5	
AEC	230UENM02_02	Business Communication	1	-	2	-	30	30	40	50	-	-	-	-	50	2	
RMC	230IRMM02_02	Research Design and Techniques	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
LC	240GMEM08_02	Mechanical System Design Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/FP/CEP	230GMEM10_02	Internship/Field Project/Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
TOTAL			15	0	8	4									750	22	

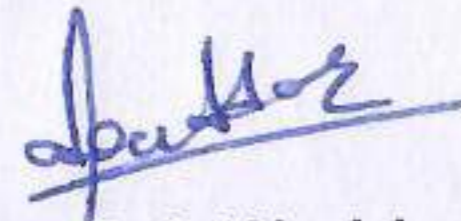


Multidisciplinary Minor Course (MMC)			
I	Course Code	230GRAM24_01	230VOSM59_01
	Course Name	Sensors and Automation	Introduction to Project Management
II	Course Code	230GETM16_02	230VDMM02_02
	Course Name	IoT Basics and Applications	Customer Relationship Management
			230GCSM28_01
			Introduction to Data Science
			230GCSM29_02
			Introduction to Artificial Intelligence

Note: A **Postgraduate Diploma** will be awarded if a student exits after first year.

For Exit at the end of first year the student must complete: (Total credits = 8)

- An internship / OJT of 8- 10 weeks (4 credits)
- Additional Course 1 (4 credits) (Vocational Skill Course (VSC) / Skill Enhancement Course (SEC))



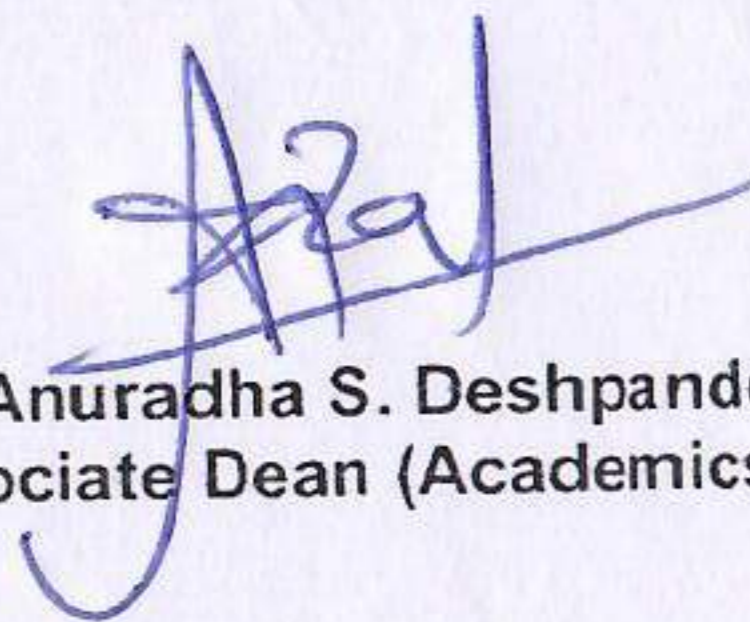
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2025-2026

RELEASE DATE

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SECOND YEAR MASTER OF TECHNOLOGY (MECHANICAL ENGINEERING)

REVISION NO.

0.0 (NEP)

SEMESTER III (Level 7)


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 IN SEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PEC	-	Programme Elective Course-I	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	-	Programme Elective Course -II	3	-	-	-	30	30	40	100	-	-	-	-	100	3
IOC	-	Interdisciplinary Open Course -I	2	-	-	-	30	30	40	100	-	-	-	-	100	2
	-	Interdisciplinary Open Course -II	2	-	-	-	30	30	40	100	-	-	-	-	100	2
VEC (HSMC)	230USYB01_03	Behavioral Science and Ethics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
SLC	230GMEM19_03	Seminar	-	-	-	8	-	-	-	-	-	-	50	50	50	2
PROJ	230GMEM20_03	Field Project	-	-	4	8	-	-	-	-	50	50	50	50	100	4
TOTAL			12	-	4	16									600	18
MLC#	-	Audit Course	-	-	2	-	-	-	-	-	-	-	50	-	50	1

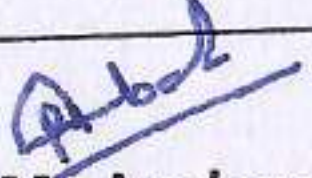


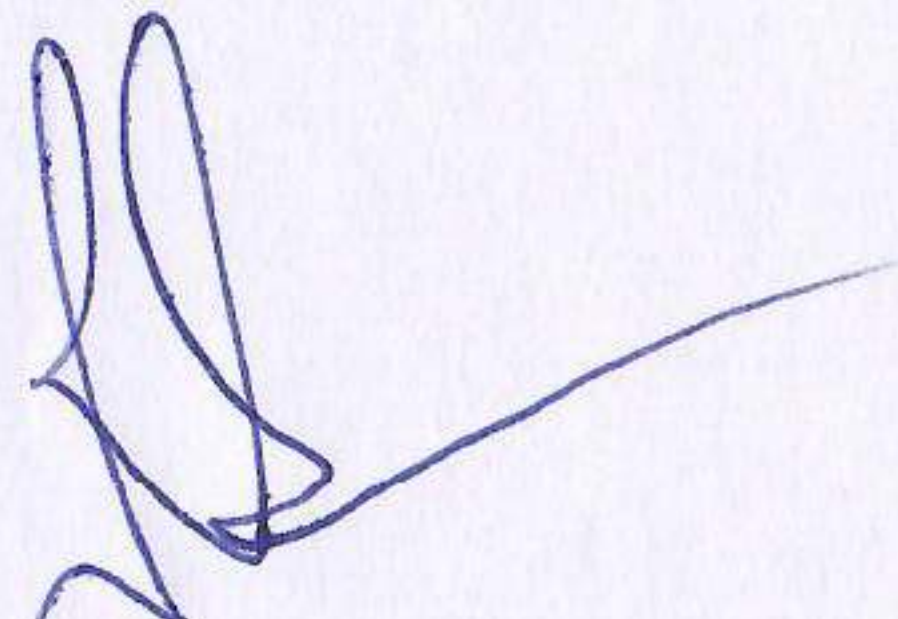
Program Elective Course (PEC)					
III (PEC-I)	Course Code	240GMEM18_03	240GMEM09_03 ✓	230GRAM07_03	240GRAM01_03
	Course Name	Engineering Tribology	Compressible flow of Gas Dynamics	Industry 4.0	Industrial Robotics
III (PEC-II)	Course Code	240GMEM19_03 ✓	240GMEM010_03	240GMEM011_03	230GRAM21_03
	Course Name	Fatigue and Fracture Mechanics	Advanced Computational Fluid Dynamics	Surface Engineering	Autonomous Robotics and Telecherics
IV (PEC-III)	Course Code	230GDEM15_04	240GMEM012_04	240GMEM013_04	240GATM02_04
	Course Name	Mechanics of Composite Materials	Convective Heat Transfer	3D Printing Technologies	Autotronic Systems
IV (PEC-IV)	Course Code	240GMEM014_04	240GMEM015_04	240GMEM016_04	240GATM01_04
	Course Name	Dynamics and Condition Monitoring	Advanced Power Generation Systems	Micro Manufacturing	Automotive Transmission Systems and Drives

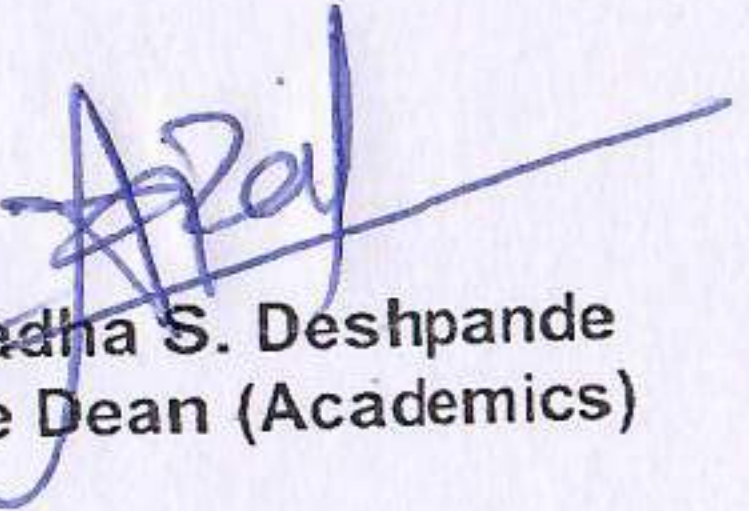
Interdisciplinary Open Course (IOC)				
III (IOC-I)	Course Code	230VMSM11_03	230VMSM13_03 ✓	230VMSM08_03
	Course Name	Fundamentals of Financial Management	Fundamentals of Operations and Supply Chain Management	Start up and Entrepreneurship Development
III (IOC-II)	Course Code	230GCSM31_03 ✓	230GCSM32_03	230GCSB152_03
	Course Name	Artificial Intelligence for All	Machine Learning in Practice	Cyber Security and Laws

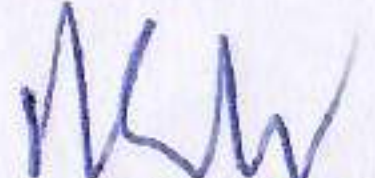
Mandatory Learning Course (MLC*) Audit Course		
III	Course Code	230GMEB98_03
	Course Name	Advanced Excel
IV	Course Code	230UPOB02_04
	Course Name	Introduction to Indian Constitution


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

T-Tutorial
Rev. No.:0.0



P- Practical Session (Laboratory)
Rev. Date:01/07/2025

EL-Experiential Learning
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							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PEC	-	Programme Elective Course –III / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	-	Programme Elective Course –IV / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PROJ	230GMEM21_04	Project /Internship with Project	-	-	12	24	-	-	-	-	200	200	100	100	300	12
TOTAL			6	-	12	24									500	18
MLC#	-	Audit Course	1	-	-	-	-	-	-	50	-	-	-	-	50	1

Sem.	Program Elective Course (PEC)				
III (PEC-I)	Course Code	240GMEM18_03	240GMEM09_03	230GRAM07_03	240GRAM01_03
	Course Name	Engineering Tribology	Compressible flow of Gas Dynamics	Industry 4.0	Industrial Robotics
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EL-Experiential Learning
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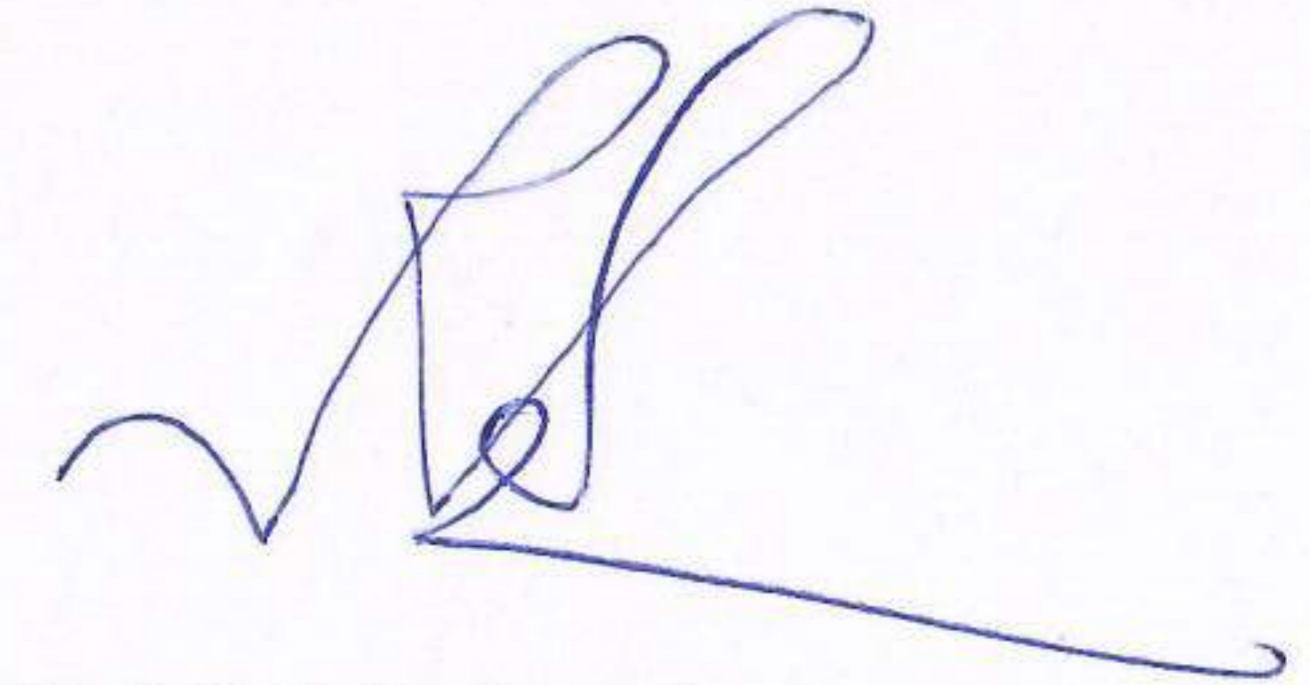
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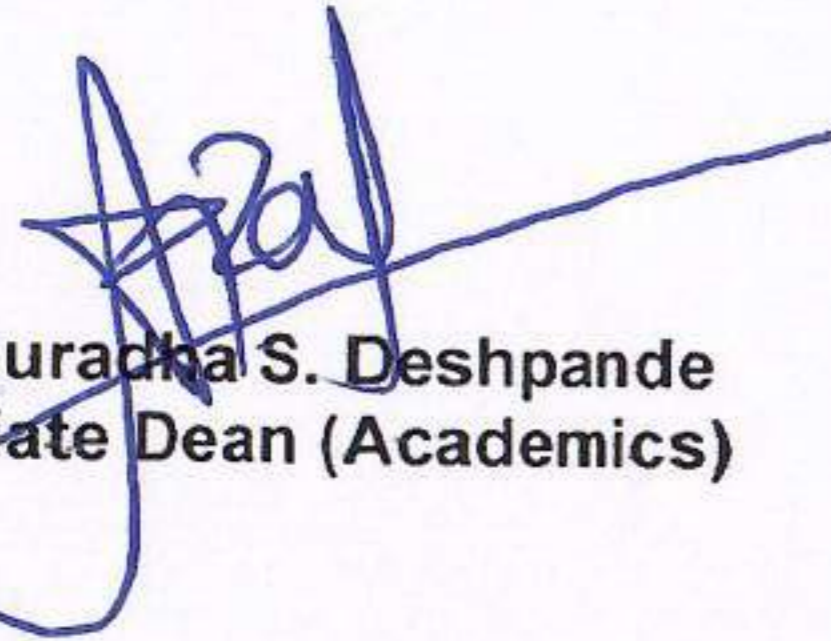
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