



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 Basic and Applied Sciences



NEP aligned Curriculum Structure

For

**B.Sc. (DATA SCIENCE AND
ARTIFICIAL INTELLIGENCE)**

(Effective from AY: 2024-25)



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF BASICS AND APPLIED SCIENCES

FIRST YEAR BACHELOR SCIENCE
(DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

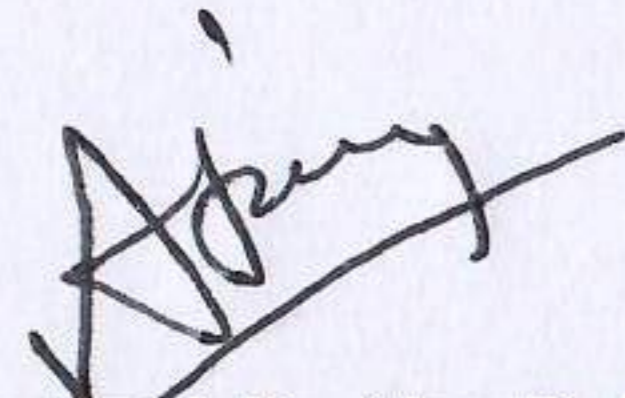
REVISION NO.

0.0 (NEP)

SEMESTER I (LEVEL 4.5)

COURSE		TEACHING SCHEME	EXAMINATION SCHEME AND MARKS													C R E D I T S
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)		T O T A L	
			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	230GMAB02_01	Discrete Mathematics	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	231GSCB02_01	Database Management Systems	2	-	-	-	30	30	40	50	-	-	-	-	50	2
IOC	---	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
SEC	240GDIB02_01	Problem Solving using Python Programming	2	-	2	-	-	-	-	-	50	50	50	50	100	3
VSC	230IDCB01_01	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
AEC	230UENB01_01	Effective Communication Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2
IKS	230UHIB02_01	Wisdom through Ancient Indian History	2	-	-	-	30	30	40	50	-	-	-	-	50	2
VEC	230GCEB02_01	Environment and Sustainability	2	-	-	-	30	30	40	50	-	-	-	-	50	2
LC	230GSCB04_01	Database Management Systems Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	240GDIB01_01	Data Manipulation and Representation using Excel	1	-	2	-	-	-	-	-	50	50	-	-	50	2
LLC	231UPYB02_01	Mindfulness and Well-being	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5
TOTAL			16	1	8	4									700	22

Interdisciplinary Open Course (IOC)	
Course Code	240GPHB03
Course Name	Semiconductor Physics
Course Code	230GETB29
Course Name	Fundamentals of Digital Electronics
Course Code	230VBBB06
Course Name	Essentials of Management
Course Code	240VBBB06
Course Name	Introduction to Digital Marketing
Course Code	230VBCB14
Course Name	E-Commerce
Course Code	230UEEB01
Course Name	Macro-Economics
Course Code	230VBBB57
Course Name	Essentials of Business Law
Course Code	240UPOB36_01
Course Name	Technology in Democracy



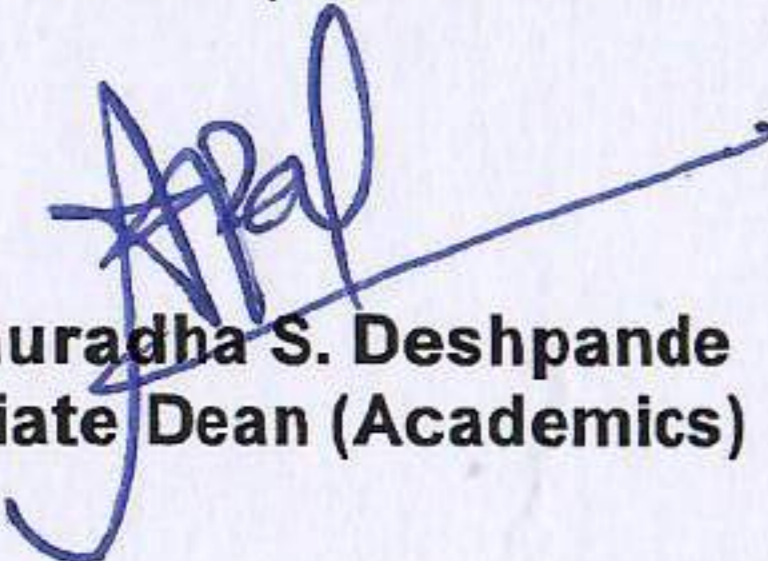
Associate Prof. Dr. Ajay D. Nagne
Coordinator, B.Sc. DSAI



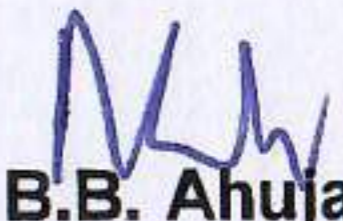
Dr. G. A. Patil
Director, School of Computational Sciences



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




Dr. Anuradha S. Deshpande
Associate Dean (Academics)

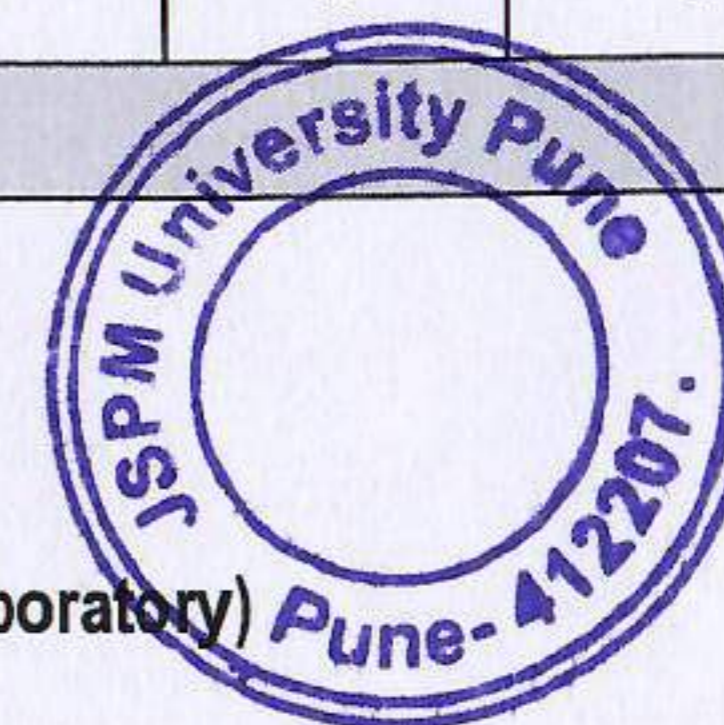



Prof. B.B. Ahuja
Vice Chancellor, JSPM University Pune

Vice Chancellor
JSPM University
Pune

		JSPM University Pune						COURSE STRUCTURE (NEP 2020 Aligned)										
		FACULTY OF SCIENCE & TECHNOLOGY						W. E. F		2024-2025								
		SCHOOL OF BASICS AND APPLIED SCIENCES						RELEASE DATE		01/07/2024								
FIRST YEAR BACHELOR SCIENCE (DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)								REVISION NO.		0.0 (NEP)								
SEMESTER II (LEVEL 4.5)																		
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 (50marks)	END SEMESTER EXAMINATION (50 marks)	CONTINUOUS INSEMESTER EVALUATION (50marks)	END SEMESTER EXAMINATION (50 marks)				
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)									
BSC	230GMAB03_02	Linear Algebra	2	1	-	-	30	30	40	100	-	-	-	-	100	3		
PCC	231GSCB06_02	Relational Database Management Systems	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
	230GSCB13_02	Data Communication Networks	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5		
MDM	---	Multi-Disciplinary Minor	2	-	-	-	30	30	40	100	-	-	-	-	50	2		
SEC	240GDIB03_02	Programming using C	2	-	2	-	-	-	-	-	50	50	50	50	50	3		
AEC	230UENB02_02	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2		
VEC	230UPYB03_02	Ethics and Moral Values	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
LC	230GSCB07_02	Relational Database Management Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
	---	Multi-Disciplinary Minor Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
LLC	231UPYB01_02	Yoga and Fitness	-	-	2	2	-	-	-	-	-	-	50	-	50	1.5		
ITP/ FP/ CEP	230GSCB08_02	Internship / Field Project / Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2	
TOTAL			13	1	6	4									700	22		


Note: A Certificate will be awarded if a student exits after first year.




For "Exit" at the end of First Year the student must complete a total of 8 additional credits.

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

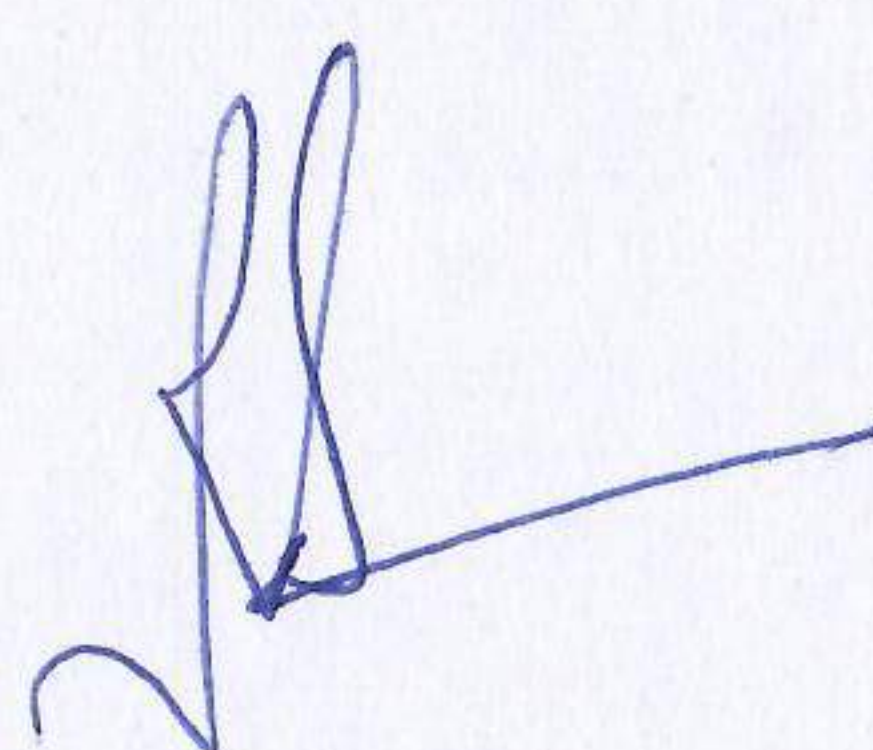
Sem.	Multi-Disciplinary Minor (MDM)	
	Specialization	IoT and Application
II	Course Code	230GETB103_02
	Course Name	Introduction to Electronics
	Course Code	230GETB104_02
	Course Name	Introduction to Electronics Lab
III	Course Code	230GETB58_03
	Course Name	Sensors and Interfacing
	Course Code	230GETB59_03
	Course Name	Sensors and Interfacing Lab
IV	Course Code	230GETB60_04
	Course Name	Foundations of IoT
	Course Code	230GETB61_04
	Course Name	Foundations of IoT Lab
V	Course Code	230GETB62_05
	Course Name	Wireless Technologies for IoT
	Course Code	230GETB63_05
	Course Name	Wireless Technologies for IoT Lab
VI	Course Code	230GETB64_06
	Course Name	Industrial Internet of Things

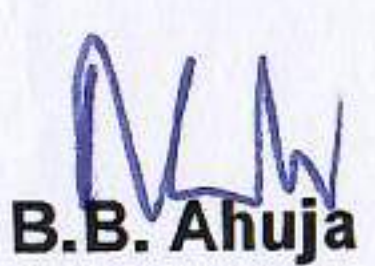

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SECOND YEAR BACHELOR OF SCIENCE
(DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)

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(NEP 2020 Aligned)

W. E. F

2025-2026

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REVISION NO.

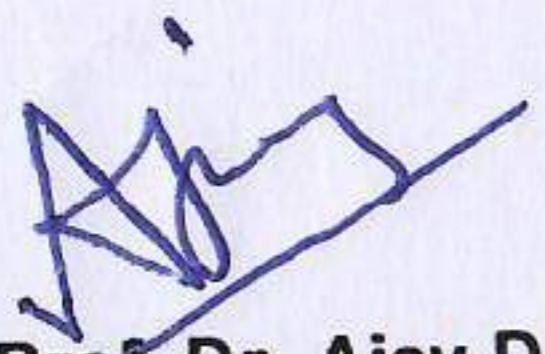
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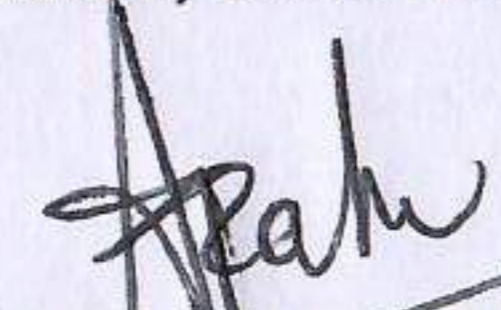
SEMESTER III (LEVEL 5)


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	230GMAB04_03	Applied Statistics	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	231GDIB09_03	Data Structures Using Python	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	230GSCB10_03	Foundations of Software Engineering	2	-	-	-	30	30	40	50	-	-	-	-	50	2
	240GDIB10_03	Data Warehousing	2	-	-	-	30	30	40	50	-	-	-	-	50	2
AEC	230UENB03_03	Soft Skill Development	1	-	2	-	30	30	40	50	-	-	-	-	50	2
MDM	---	Multi-Disciplinary Minor	2	-	-	-	30	30	40	50	-	-	-	-	50	2
IOC	---	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
VSC	230IINB02_03	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
LC	230GDIB11_03	Data Structure using Python Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
	---	Multi-Disciplinary Minor Lab	-	-	2	4	-	-	-	-	50	50	-	-	50	2
LLC	230HFSB80_03	Health and Nutrition	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5
TOTAL			16	1	6	8									700	22

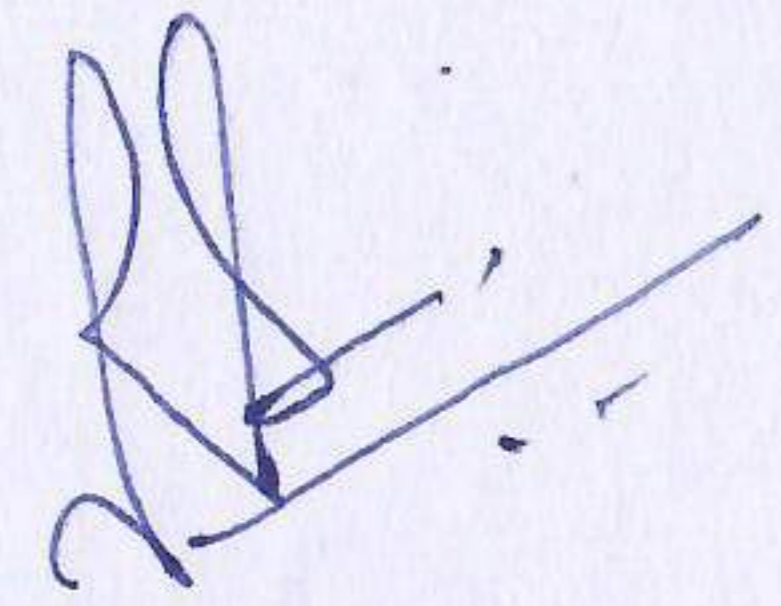
Sem.	Multi-Disciplinary Minor (MDM)	
	Specialization	IoT and Application
II	Course Code	230GETB103_02
	Course Name	Introduction to Electronics
	Course Code	230GETB103_02
	Course Name	Introduction to Electronics Lab
III	Course Code	230GETB58_03
	Course Name	Sensors and Interfacing
	Course Code	230GETB59_03
	Course Name	Sensors and Interfacing Lab
IV	Course Code	230GETB60_04
	Course Name	Foundations of IoT
	Course Code	230GETB61_04
	Course Name	Foundations of IoT Lab
V	Course Code	230GETB62_05
	Course Name	Wireless Technologies for IoT
	Course Code	230GETB63_05
	Course Name	Wireless Technologies for IoT Lab
VI	Course Code	230GETB64_06
	Course Name	Industrial Internet of Things


Interdisciplinary Open Course (IOC)	
Course Code	240GPHB03_01
Course Name	Semiconductor Physics
Course Code	230GETB29
Course Name	Fundamentals of Digital Electronics
Course Code	230VBBB06_3
Course Name	Introduction to Digital Marketing
Course Code	230VBCB14_06
Course Name	E-Commerce


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SEMESTER IV (LEVEL 5)

COURSE		TEACHING SCHEME	EXAMINATION SCHEME AND MARKS													C R E D I T S	
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)		T O T A L		
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 marks)	CONTINUOUS INSEMESTER EVALUATION (50marks)	END SEMESTER EXAMINATION (50 marks)	CONTINUOUS INSEMESTER EVALUATION (50marks)	END SEMESTER EXAMINATION (50 marks)			
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)								
PCC	230GDIB08_04	Basics of Programming for Data Science	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
	240GSCB04_04	Artificial Intelligence Fundamentals	2	-	-	1	30	30	40	100	-	-	-	-	100		
	240GSCB05_04	Unified Modeling Language	2	-	-	-	30	30	40	50	-	-	-	-	50		
	250GSCB01_04	Programming with C++	2	-	-	-	30	30	40	50	-	-	-	-	50		
AEC	230UENB04_04	Verbal Aptitude Through Literature	1	-	2	-	30	30	40	50	-	-	-	-	50	2	
MDM	---	Multi-Disciplinary Minor	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
SEC	250GSCB02_04	Programming with C++ Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	2	
LC	230GDIB09_04	R Programming Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
	240GSCB06_04	Artificial Intelligence Fundamentals Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
	---	Multi-Disciplinary Minor Lab	-	-	2	4	-	-	-	-	50	50	-	-	50	1	
LLC	240VBBB02_04	Theatre and Performing Arts	-	-	2	2	-	-	-	-	50	50	-	-	50	2	
IITP/FP/CEP	230GSCB15_04	Internship / Field Project / Community Engagement Programme	(4 to 6 Weeks)				-	-	-	-	-	-	-	50	-	50	1.5
TOTAL			14	-	8	8					-	-	50	50	50	2	
MLC#	---	Audit Course	1	-	-	-					50	-	-	-	-	700	22
											50	-	-	-	50	1	

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 a total of 8 additional credits.

a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 4 internship of minimum 4 weeks.

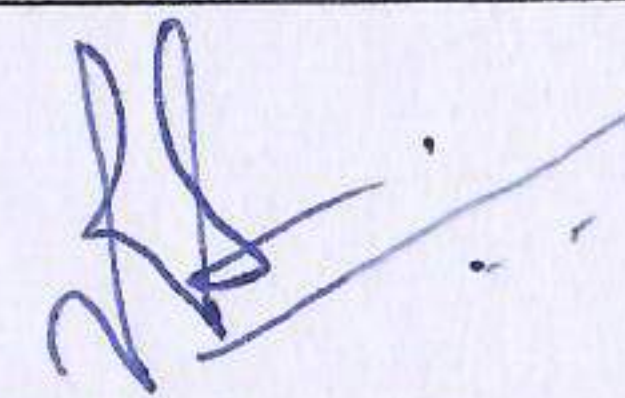
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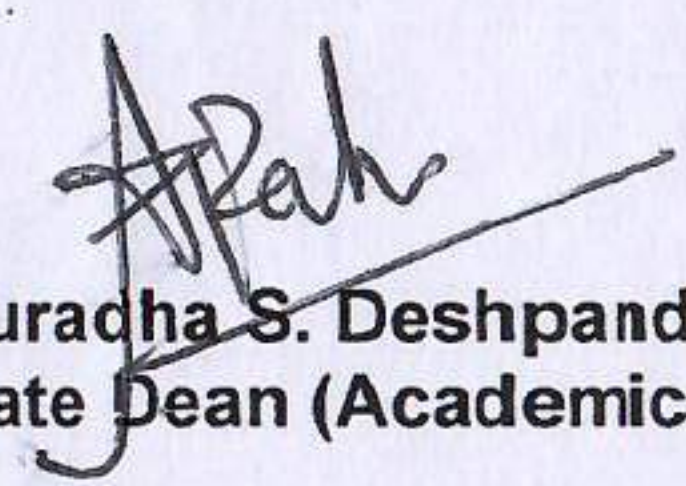
Sem.	Multi-Disciplinary Minor (MDM)	
	Specialization	IoT and Application
II	Course Code	230GETB103_02
	Course Name	Introduction to Electronics
	Course Code	230GETB103_02
	Course Name	Introduction to Electronics Lab
III	Course Code	230GETB58_03
	Course Name	Sensors and Interfacing
	Course Code	230GETB59_03
	Course Name	Sensors and Interfacing Lab
IV	Course Code	230GETB60_04
	Course Name	Foundations of IoT
	Course Code	230GETB61_04
	Course Name	Foundations of IoT Lab
V	Course Code	230GETB62_05
	Course Name	Wireless Technologies for IoT
	Course Code	230GETB63_05
	Course Name	Wireless Technologies for IoT Lab
VI	Course Code	230GETB64_06
	Course Name	Industrial Internet of Things

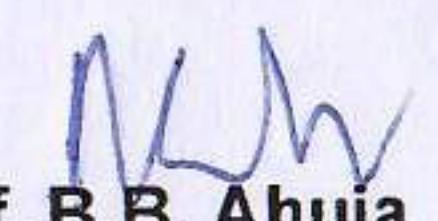
Mandatory Learning Course (MLC#) Audit Course	
Course Code	230UPOB02_04
Course Name	Introduction to Indian Constitution
Course Code	240GCAB131_05
Course Name	German Language
Course Code	240GSCB131_06
Course Name	Salesforce Admin 201
Course Code	240GSCB132_07
Course Name	Testing Automation Tools


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