



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

M.Sc (DS & AI)

(Effective from AY: 2023-24)



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF BASIC AND APPLIED SCIENCES

FIRST YEAR MASTER OF SCIENCE
(DATA SCIENCE AND ARTIFICIAL INTELLIGENCE)

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2023-2024

RELEASE DATE

01/07/2023


REVISION NO.

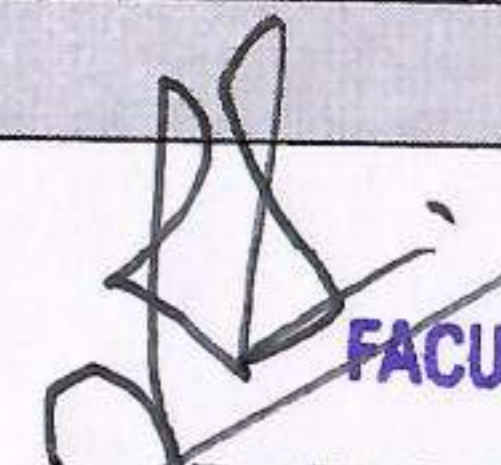
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SEMESTER I (LEVEL - 6.5)

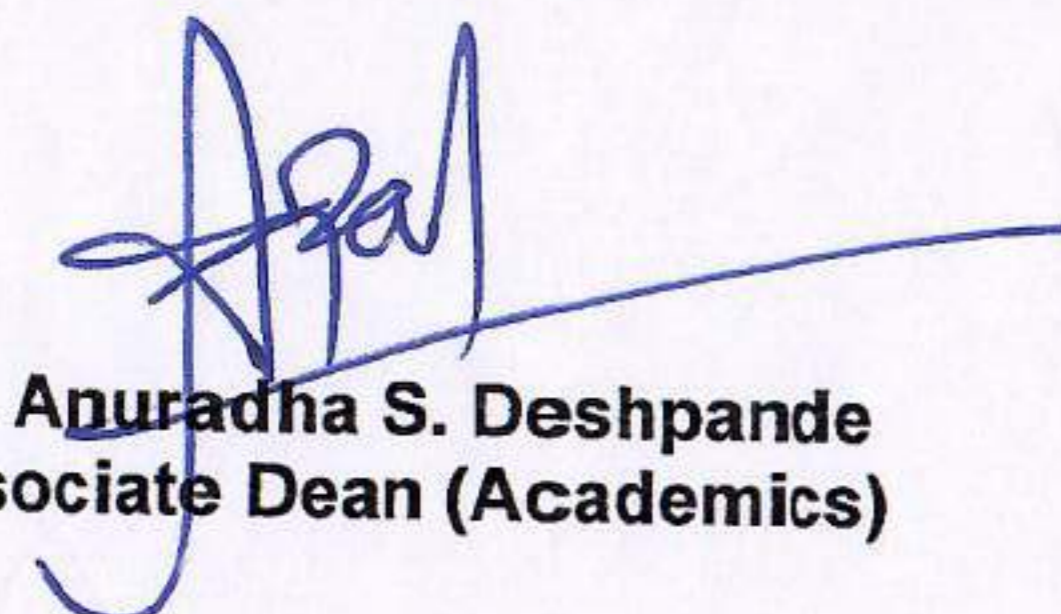
COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								M A R K S	C R E D I T S
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (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)							
PSMC	230GMAM01_01	Advanced Statistics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
PCC	230GCAM01_01	Data Structure and Algorithm	2	1	-	2	30	30	40	100	-	-	-	-	100	3.5
PCC	230GCAM02_01	Foundations of Artificial Intelligence	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	230GCAM03_01	Data Communication and Computer Networking	3	-	-	-	30	30	40	100	-	-	-	-	100	3
SEC	230GCAM15_01	Programming in Java	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	-	-	-	-	-	-	50	-	-	-	-	50	2
LC	230GCAM17_01	Data Structure and Algorithm Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
LC	230GCAM18_01	Foundations of Artificial Intelligence Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
TOTAL			16	1	8	4					50	50	50	50	100	1
															750	22


Mr. Ikram Ali
 Programme Coordinator, MSc-DSAI



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


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

Dean
FACULTY OF SCIENCE AND TECHNOLOGY
JSPM UNIVERSITY PUNE


Dr. Anuradha S. Deshpande
 Associate Dean (Academics)




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



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SEMESTER II (LEVEL – 6.5)

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)			M A R K S	
			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	230GCAM04_02	Advanced Database Management Systems	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	230GCAM05_02	Foundations of Machine Learning	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
PCC	230GCAM06_02	Software Testing and Quality Assurance	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
MMC	---	Multidisciplinary Minor Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2	
SEC	230GCAM16_02	Data Science with Python	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	230IRMM03_02	Research Data Analysis	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
LC	230GCAM19_02	Advanced Database Management Systems Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/FP/CEP	230GCAM21_02	Internship/Field Project/Community Engagement Program	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
TOTAL			15	1	6	4									750	22	

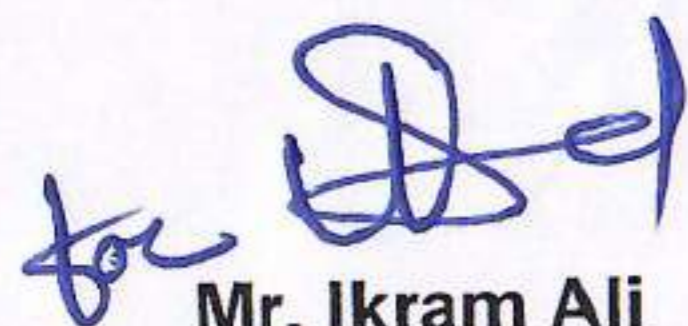
Note: A Postgraduate Diploma will be awarded if a student exits after first year.

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

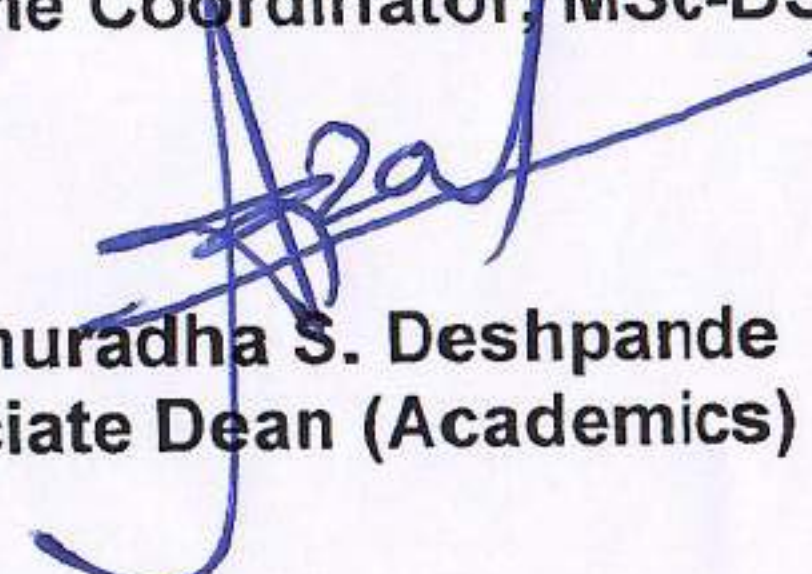
a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 2 internship of minimum 4 weeks.

b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project)

Multidisciplinary Minor Course (MMC)							
Sem.	Course Code	230GMAM04_02	230VOSM26_02	240GCEB37_02	230UPYB04_02	250UPOM10_02	230UEEB02_02
II	Course Name	Mathematical Foundations of Computer Science	Project Management	Smart Transportation System	Positive Psychology	Global Challenges	Public Economics
III	Course Code	230GETB34_03	230VBCB17_03	250UPOM10_03	230UHIB04_03	230VBCB19_03	230VDMM02_03
	Course Name	Internet of Things and Applications	Elements of Company Law	Global Challenges	Making of the Modern Indian	Risk and Insurance Management	Customer Relationship Management

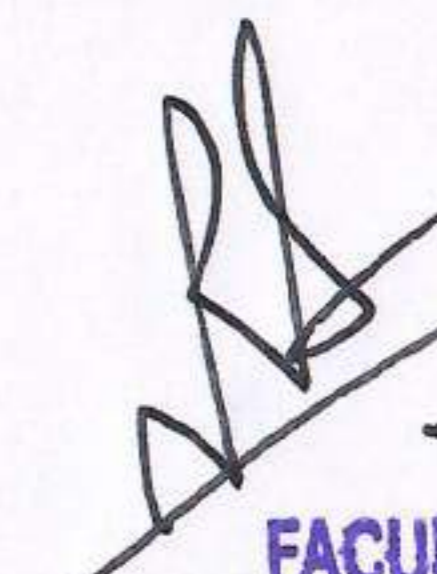
for 

Mr. Ikram Ali
Programme Coordinator, MSc-DSAI


Dr. Anuradha S. Deshpande
Associate Dean (Academics)



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



Dean
FACULTY OF SCIENCE AND TECHNOLOGY
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SEMESTER III (LEVEL – 7.0)

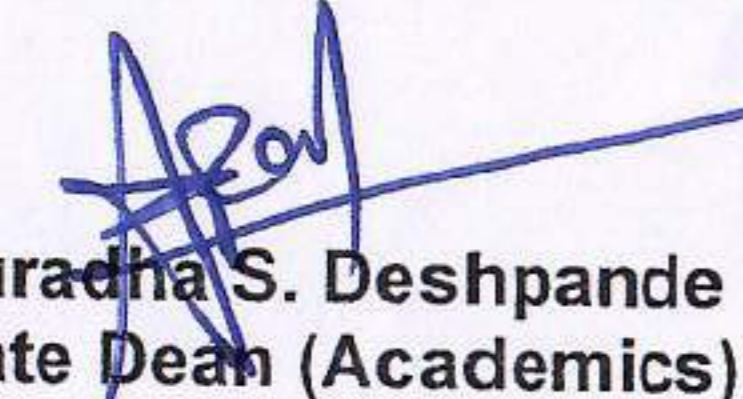
COURSE		TEACHING SCHEME	EXAMINATION SCHEME AND MARKS												C R E D I T S	
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			M A R K S
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100/ 25 Marks)			END SEMESTER EXAMINATION (100 /75 / 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)							
PCC	230GCAM07_03	Full Stack Development	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PEC	---	Programme Elective Course -I	3	-	-	-	25			75	-	-	-	-	100	3
PEC	---	Programme Elective Course -II	3	-	-	-	25			75	-	-	-	-	100	3
MMC	---	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	-	-	-	-	100	3
IOC	---	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	50	50	50	50	100	2
VEC	230USYB01_03	Behavioral Science and Ethics	2	-	-	-	30	30	40	50	-	-	-	-	100	2
LC	230GCAM23_03	Full Stack Development Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
IITP/F P/CEP	230GDIM13_03	Internship/Field Project/Community Engagement Program	-	-	-	8	-	-	-	-	-	-	-	-	100	4
TOTAL			13	1	4	8								100	20	

Sem.	PEC	Program Elective Course (PEC)				
		Specialization	AI and ML	Big Data Analytics	Cloud Computing and Virtualization	Blockchain Technology
III	PEC-I	Course Code	230GCAM08_03	230GDIM02_03	240GCAM36_03	240GCAM32_03
		Course Name	Fundamentals of Soft Computing	Foundations of Big Data Analytics	Cloud Computing Fundamentals	Introduction to Blockchain Technology
III	PEC-II	Course Code	230GCAM09_03	230GDIM01_03	240GDIM51_03	240GCYM45_03
		Course Name	Introduction to Deep Learning	Distributed Database and Cloud Computing	Visual Analytics	Quantum Algorithms and Cryptography
IV	PEC-III	Course Code	230GCAM10_04	240GCAM46_04	240GCAM38_04	240GCAM34_04
		Course Name	Fundamentals of Natural Language Processing	Parallel Computer Architecture	Cloud Security and Privacy	Blockchain Platforms and Technologies
IV	PEC-IV	Course Code	230GCAM11_04	240GCAM47_04	240GDIM52_04	240GCAM35_04
		Course Name	Foundations of Brain Computer Interface	Blockchain and its Applications	Big Data Computing	Blockchain in Business and Industry

Sem.	Multidisciplinary Minor Course (MMC)						
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	Course Name	Mathematical Foundations of Computer Science	Project Management	Smart Transportation System	Positive Psychology	Global Challenges	Public Economics
III	Course Code	230GETB34_03	230VBCB17_03	250UPOM10_03	230UHIB04_03	230VBCB19_03	230VDMM02_03
	Course Name	Internet of Things and Applications	Elements of Company Law	Global Challenges	Making of the Modern Indian	Risk and Insurance Management	Customer Relationship Management


Sem.	Interdisciplinary Open Course (IOC)				
III	Course Code	230HFGM28_03	230VBCB14_03	250ULBB03_03	230GMEB63_3
	Course Name	Impression Forensics	E-Commerce	Cybersecurity Law and Policy	Energy Audit and Management
	Course Code	230HFGM27_03	230VMSM05_03	230UPYB34_03	230VBCB16_03
	Course Name	Investigative Skills	Fundamentals of Financial Management	Psychology at Workplace	Financial Fraud


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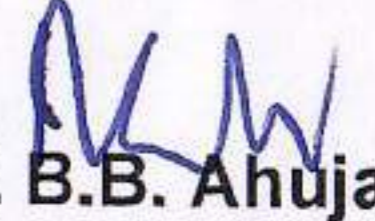

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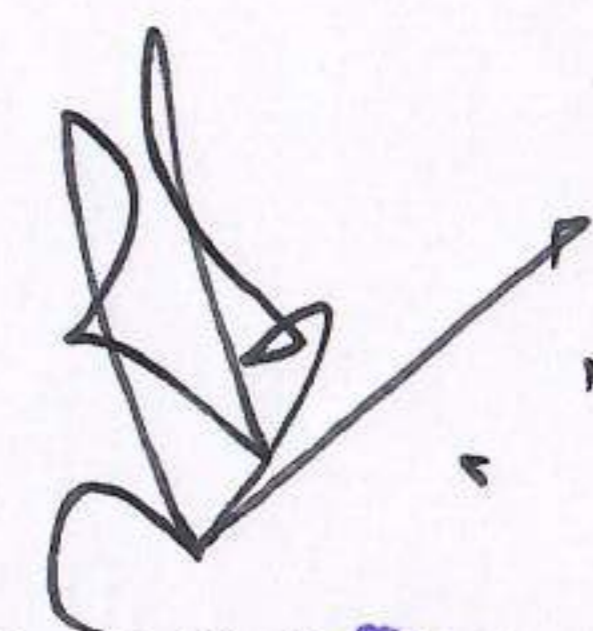
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T Y P E	C O D E	C O U R S E N A M E	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)		M A R K S		
			L	T	P	E L	CONTINUOUS INSEMESTER EVALUATION (100 / 25 Marks)			E N D S E M E S T E R E X A M I N A T I O N (100 / 75/ 50 Marks)	C O N T I N U O U S I N S E M E S T E R E V A L U A T I O N (50 Marks)	E N D S E M E S T E R E X A M I N A T I O N (50 Marks)	C O N T I N U O U S I N S E M E S T E R E V A L U A T I O N (50 Marks)			E N D S E M E S T E R E X A M I N A T I O N (50 Marks)	
							T1 (30 Marks)	T2 (30 Marks)	Assign- ments (40 Marks)								
PEC	---	Programme Elective Course -III/MOOC	3	-	-	-	25			75	-	-	-	-	100	3	
PEC	---	Programme Elective Course -IV/MMOC	3	-	-	-	25			75	-	-	-	-	100	3	
PROJ	230GDIM14_04	Project/ Internship with Project	-	-	12	24	-	-	-	-	-	-	-	200	200	200	12
TOTAL			6	0	12	24									400	18	
MLC#	-	Audit course	1	-	-	-	-	-	-	50	-	-	-	-	50	1	

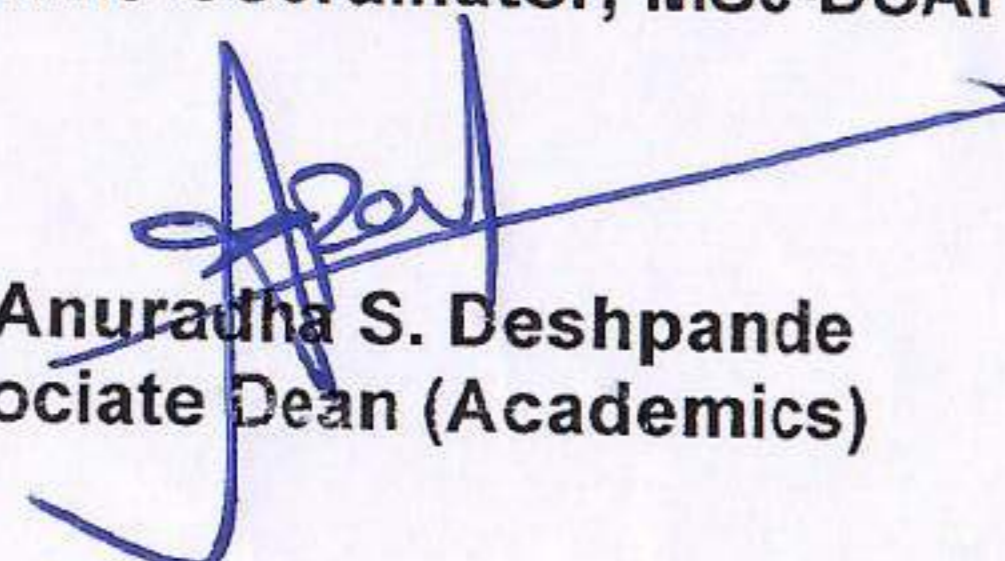
Mandatory Learning Course (MLC#) Audit Course	
Course Code	230UPOB02_04
Course Name	Introduction to Constitution of India

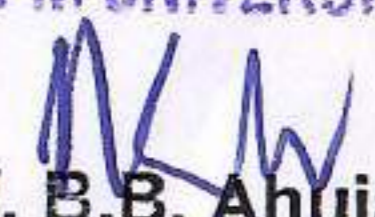
Sem.	PEC	Program Elective Course (PEC)				
		Specialization	AI and ML	Big Data Analytics	Cloud Computing and Virtualization	Blockchain Technology
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