



**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 Civil and Environmental Science**



**NEP aligned Curriculum Structure**

**For**

**M.Tech (Structural Engineering)**

**(Effective from AY: 2025-26)**



# JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF CIVIL AND ENVIRONMENTAL SCIENCES

FIRST YEAR MASTER OF TECHNOLOGY  
(STRUCTURAL ENGINEERING)

## COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2024 - 2025

RELEASE DATE

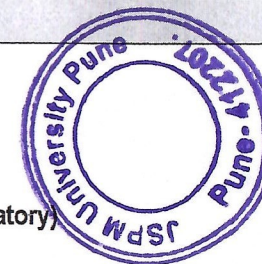
01/07/2025

REVISION NO.

1.0 (NEP)

### SEMESTER I (LEVEL 6.5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										C R E D I T S
			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)								
PSMC	230GMAM02_01	Advanced Numerical Methods	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	231GSEM01_01	Advanced Analysis of Structures	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
PCC	231GSEM02_01	Structural Dynamics	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
PCC	231GSEM03_01	Advanced Design of Reinforced Concrete Structures	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
MMC	-	Multidisciplinary Minor Course- I	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
SEC	230GTEM19_01	Geospatial Analysis	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
VSC (HSMC)	230IDCB01_01	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5	
AEC (HSMC)	231UENM01_01	Communicative English for Professionals	1	-	2	-	-	-	-	-	50	50	-	-	50	2	
RMC	230IRMM01_01	Research Methodology	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
LC	230GSEM23_01	Structural Engineering Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
<b>TOTAL</b>			<b>16</b>	<b>1</b>	<b>8</b>	<b>4</b>									<b>750</b>	<b>22</b>	



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

T-Tutorial  
Rev. No.:1.0

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

EL-Experiential Learning  
Page 1 of 2

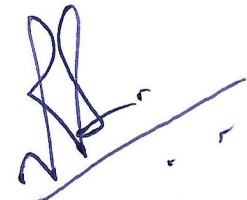
Sem	Multidisciplinary Minor Course (MMC)	
I (MMC - I)	Course Code	230GRAM24_01
	Course Name	Sensors and Automation
II (MMC - II)	Course Code	230GETM16_02
	Course Name	IoT Basics and Applications



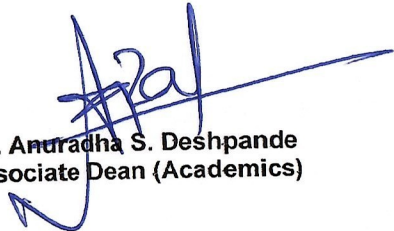
**Dr. Tushar Kanti Das**  
Programme Coordinator, MTech-STR



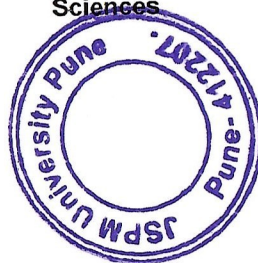
**Dr. A. D Patil**  
Director (I/C), School of Civil and Environmental  
Sciences



**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



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SCHOOL OF CIVIL AND ENVIRONMENTAL SCIENCES

## COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2024 - 2025

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01/07/2025

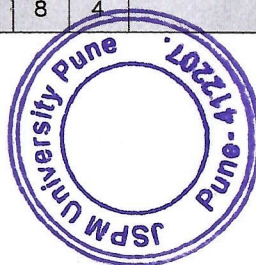
FIRST YEAR MASTER OF TECHNOLOGY  
(STRUCTURAL ENGINEERING)

REVISION NO.

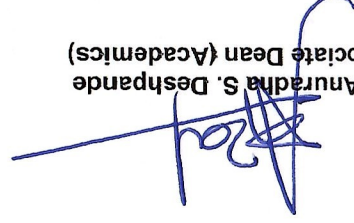
1.0 (NEP)

### SEMESTER II

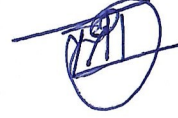
COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS	
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)					
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			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)								
PCC	230GSEM05_02	Finite Element Methods	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	230GSEM06_02	Earthquake Resistant Design of Structures	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
PCC	230GSEM07_02	Prestressed Concrete Structures	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
MMC	-	Multidisciplinary Minor Course- II	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
SEC	230GSEM19_02	Building Information Modelling	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
VSC (HSMC)	230IINB02_02	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5	
AEC (HSMC)	231UENM02_02	Business Communication	1	-	2	-	-	-	-	-	50	50	-	-	50	2	
RMC	230IRMM02_02	Research Design and Techniques	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
LC	230GSEM24_02	Structural Analysis lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/FP/ CEP	230GSEM25_02	Internship / Field Project / Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
<b>TOTAL</b>			14	1	8	4									750	22	



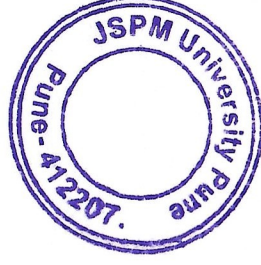
Dr. Anuradha S. Deshpande  
Associate Dean (Academics)



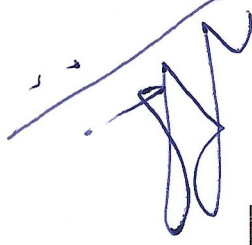
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Prof. B. B. Ahuja  
Vice Chancellor, JSPM University Pune



Sem	Course Code	Course Name
I	230GRAM24_01	Sensors and Automation
(MMC - I)		
II	230GETM16_02	IoT Basics and Applications
(MMC - II)		
Multidisciplinary Minor Course (MMC)		

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



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SCHOOL OF CIVIL AND ENVIRONMENTAL SCIENCES

SECOND YEAR MASTER OF TECHNOLOGY  
(STRUCTURAL ENGINEERING)

## COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2025-2026

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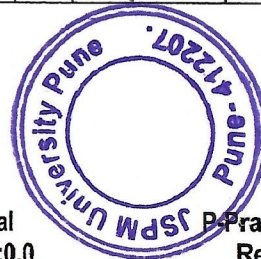
01/07/2025

REVISION NO.

0.0 (NEP)

### SEMESTER III (LEVEL 7)

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 EXAMINATIO N (100 / 50 marks)	CONTINU US INSEMEST ER EVALUATI ON (50marks)	END SEMESTER EXAMINATIO N (50 marks)	CONTINU US INSEMEST ER EVALUATI ON (50marks)	END SEMESTER EXAMINATIO N (50 marks)				
							T1 (30 Marks)	T2 (30 Marks)	Assign- ments (40 Marks)									
PEC	-	Program Elective-I / MOOCs	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
PEC	-	Program Elective-II / MOOCs	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
IOC	-	Interdisciplinary Open Course -I	2	-	-	-	30	30	40	100	-	-	-	-	100	2		
IOC	-	Interdisciplinary Open Course -II	2	-	-	-	30	30	40	100	-	-	-	-	100	2		
VEC	230USYB01_03	Behavioral Science and Ethics	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
SLC	240GSEM03_03	Seminar	-	-	-	8	-	-	-	-	-	-	50	50	50	2		
PROJ	240GSEM01_03	Field Project	-	-	4	8	-	-	-	-	50	50	50	50	100	4		
<b>TOTAL</b>			12	0	8	8											600	18
MLC#	-	Audit Course - I	1	-	-	-	-	-	-	50	-	-	-	-	50	1		




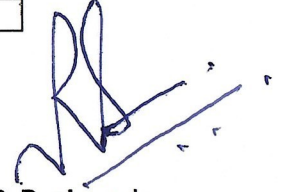
Sem.	Interdisciplinary Open Course (IOC)		
	Specialization	(IOC – I)	(IOC – II)
III	Course Code	250GCSM03_03	230GCSM33_03
	Course Name	Fundamentals of Artificial Intelligence and Machine Learning	Introduction to Python Programming
III	Course Code	230VMSM11_03	230VBCB04_03
	Course Name	Fundamentals of Financial Management	Basics of Accounting

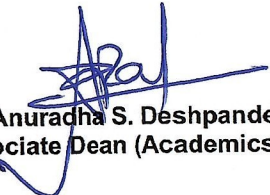
Sem.	Programme Elective Course (PEC)				
	Specialization	Structural Engineering			
III (PEC – I)	Course Code	230GSEM08_03	230GSEM09_03	230GSEM10_03	230GSEM30_03
	Course Name	Theory of Plates and Shells	Theory of Elasticity and Plasticity	Advanced Design of Steel Structures	Seismology
III (PEC – II)	Course Code	230GSEM11_03	230GSEM12_03	230GSEM13_03	230GSEM31_31
	Course Name	Structural Health Monitoring and Retrofitting	Soil Structure Interaction	Stability Analysis of Slopes, Dams and Embankments	Geotechnical Earthquake Engineering
IV (PEC – III)	Course Code	230GSEM14_04	230GSEM15_04	230GSEM16_04	230GSEM32_04
	Course Name	Micro-Structure and Innovations in Structural Concrete	Advanced Concrete Technology and Applications	Prefabricated Structures	Design of Masonry Structures
IV (PEC – IV)	Course Code	230GSEM17_04	230GSEM18_04	230GSEM21_04	230GSEM33_04
	Course Name	Design of Substructure	Design of Tall Buildings	Design of Steel Concrete Composite Structures	Performance Based Seismic Design

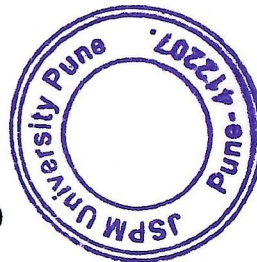
Sem	Mandatory Learning Course (MLC*) - Audit Course	
III (Audit Course- I)	Course Code	230GSEM29_03
	Course Name	Structural Audit
IV (Audit Course- II)	Course Code	230UPOB02_04
	Course Name	Introduction to Indian Constitution

  
**Dr. Tushar Kanti Das**  
 Programme Coordinator, MTech- STR

  
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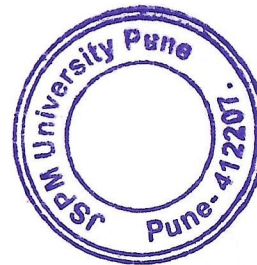
SECOND YEAR MASTER OF TECHNOLOGY (REGULAR)  
(STRUCTURAL ENGINEERING)

REVISION NO.

1.0 (NEP)

### SEMESTER IV (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 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)							
PEC	-	Program Elective-III/ MOOCs	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PEC	-	Program Elective-IV/ MOOCs	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PROJ	240GSEM02_04	Project/ Internship with Project	-	-	12	24	-	-	-	-	200	200	100	100	300	12
<b>TOTAL</b>			6	0	12	24									500	18
MLC#	-	Audit Course - II	1	-	-	-	-	-	-	50	-	-	-	-	50	1

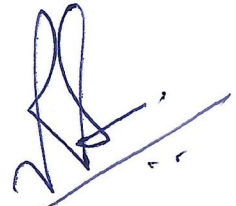


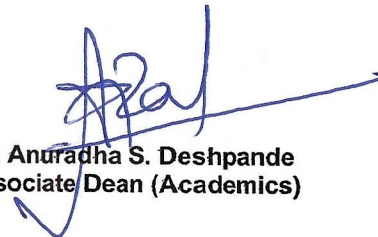
Sem.	Programme Elective Course (PEC)				
	Specialization	Structural Engineering			
III (PEC - I)	Course Code	230GSEM08_03	230GSEM09_03	230GSEM10_03	230GSEM30_03
	Course Name	Theory of Plates and Shells	Theory of Elasticity and Plasticity	Advanced Design of Steel Structures	Seismology
III (PEC - II)	Course Code	230GSEM11_03	230GSEM12_03	230GSEM13_03	230GSEM31_31
	Course Name	Structural Health Monitoring and Retrofitting	Soil Structure Interaction	Stability Analysis of Slopes, Dams and Embankments	Geotechnical Earthquake Engineering
IV (PEC - III)	Course Code	230GSEM14_04	230GSEM15_04	230GSEM16_04	230GSEM32_04
	Course Name	Micro-Structure and Innovations in Structural Concrete	Advanced Concrete Technology and Applications	Prefabricated Structures	Design of Masonry Structures
IV (PEC - IV)	Course Code	230GSEM17_04	230GSEM18_04	230GSEM21_04	230GSEM33_04
	Course Name	Design of Substructure	Design of Tall Buildings	Design of Steel Concrete Composite Structures	Performance Based Seismic Design

Sem	Mandatory Learning Course (MLC*) - Audit Course	
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	Course Name	Introduction to Indian Constitution


  
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