



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 (Transportation Engineering)

(Effective from AY: 2024-25)



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF CIVIL AND ENVIRONMENTAL SCIENCES

SECOND YEAR MASTER OF TECHNOLOGY
(TRANSPORTATION ENGINEERING)

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

REVISION NO.

0.0 (NEP)

SEMESTER III (LEVEL 7)

COURSE

TEACHING SCHEME

EXAMINATION SCHEME AND MARKS

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)		TOTAL	CREDITS				
			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)											
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	-	-	-	-	100	2				
SLC	230GTEM23_03	Seminar	-	-	4	-	-	-	-	-	-	-	-	-	50	2				
IITP/F P/CEP	230GTEM24_03	Internship / Field Project / Community Engagement Programme	-	-	12	-	-	-	-	-	-	-	100	100	100	6				
TOTAL			12	0	16	0													650	20

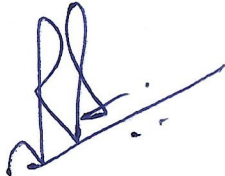


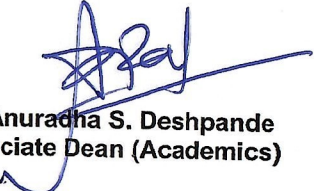
Sem.	Interdisciplinary Open Course (IOC)		
	Specialization	Management (IOC – I)	Computer Science (IOC – II)
III	Course Code	230VBCB04_03	230GCSM31_03
	Course Name	Basics of Accounting	Artificial Intelligence for All
III	Course Code	230VMSM11_03	230GCSM32_03
	Course Name	Fundamentals of Financial Management	Machine Learning in Practice
III	Course Code	230VMSM08_03	230GCSM33_03
	Course Name	Start up and Entrepreneurship Development	Introduction to Python Programming

Sem.	Programme Elective Course (PEC)			
	Specialization	Transportation Engineering		
III (PEC – I)	Course Code	230GTEM07_03	230GTEM08_03	230GTEM09_03
	Course Name	Mass Transit System	Urban Public Transport	Highway Planning and Economic Development
III (PEC – II)	Course Code	230GTEM10_03	230GTEM11_03	230GTEM12_03
	Course Name	Road Safety and Road Safety Audit	Airport, Railway, Docks, and Harbor Engineering	Intelligent Transport Systems
IV (PEC – III)	Course Code	230GTEM13_04	230GSEM15_04	230GTEM15_04
	Course Name	Safety in Highways and Airports	Advanced Concrete Technology and Applications	Ground Improvement Techniques
IV (PEC – IV)	Course Code	230GTEM16_04	230GTEM17_04	230GTEM18_04
	Course Name	Sustainable Construction and Lean Construction	Pavement Recycling	Design of Highway Geometrics and Drainage


Dr. Prashant Sudani
 Programme Coordinator, MTech- TRE


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 Director (I/C), School of Civil and Environmental Sciences


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 Dean, Faculty of Science and Technology


Dr. Anuradha S. Deshpande
 Associate Dean (Academics)


Prof. B.B. Ahuja
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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 (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)							
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	230GTEM25_04	Project / Internship with Project	-	-	24	-	-	-	-	-	-	-	-	-	200	200
TOTAL			6	0	24	0	-	-	-	-	-	-	-	-	400	18
MLC#	-	Audit Course - I	1	-	-	-	-	-	-	50	-	-	-	-	50	1



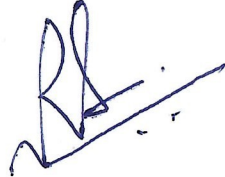
Sem.	Interdisciplinary Open Course (IOC)		
	Specialization	Management (IOC - I)	Computer Science (IOC - II)
III	Course Code	230VBCB04_03	230GCSM31_03
	Course Name	Basics of Accounting	Artificial Intelligence for All
III	Course Code	230VMSM11_03	230GCSM32_03
	Course Name	Fundamentals of Financial Management	Machine Learning in Practice
III	Course Code	230VMSM08_03	230GCSM33_03
	Course Name	Start up and Entrepreneurship Development	Introduction to Python Programming

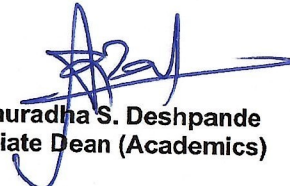
Sem.	Programme Elective Course (PEC)			
	Specialization	Transportation Engineering		
III (PEC - I)	Course Code	230GTEM07_03	230GTEM08_03	230GTEM09_03
	Course Name	Mass Transit System	Urban Public Transport	Highway Planning and Economic Development
III (PEC - II)	Course Code	230GTEM10_03	230GTEM11_03	230GTEM12_03
	Course Name	Road Safety and Road Safety Audit	Airport, Railway, Docks, and Harbor Engineering	Intelligent Transport Systems
IV (PEC - III)	Course Code	230GTEM13_04	230GSEM15_04	230GTEM15_04
	Course Name	Safety in Highways and Airports	Advanced Concrete Technology and Applications	Ground Improvement Techniques
IV (PEC - IV)	Course Code	230GTEM16_04	230GTEM17_04	230GTEM18_04
	Course Name	Sustainable Construction and Lean Construction	Pavement Recycling	Design of Highway Geometrics and Drainage


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


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SEMESTER I (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 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	230GMAM03_01	Probability and Statistics	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PSBC	231GTEM01_01	Traffic Engineering	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	231GTEM02_01	Pavement Materials and Construction	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
PCC	231GTEM03_01	Applications of Remote Sensing and Geographic Information System	2	-	-	-	30	30	40	100	-	-	-	-	100	2.5
MMC	-	Multidisciplinary Minor Course- I	1	-	2	-	-	-	-	-	50	50	50	50	100	2
SEC	230GCSM26_01	Python Programming for Engineers	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)	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	230GTEM20_01	Transportation Engineering Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	2
TOTAL			16	1	8	4					50	50	-	-	750	22

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

T-Tutorial
Rev. No.:0.0


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




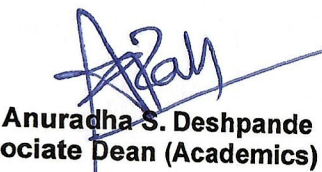
EL-Experiential Learning
Page 1 of 2

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


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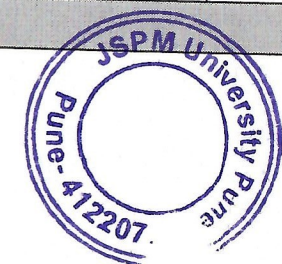
SEMESTER II (LEVEL 6.5)

COURSE

TEACHING SCHEME

EXAMINATION SCHEME AND MARKS

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)		TOTAL	CREDITS	
			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	230GTEM04_02	Pavement Analysis and Design	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	230GTEM05_02	Highway Structures	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
PCC	230GTEM06_02	Highway Geotechnology	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
MMC	-	Multidisciplinary Minor Course- II	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
SEC	230GTEM19_02	Geospatial Analysis	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
VSC (HSMC)	230IINB02_02	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5	
AEC (HSMC)	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	230GTEM21_02	Traffic and Pavement Engineering Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/FP/CEP	230GTEM22_02	Internship / Field Project / Community Engagement Programme	4 to 6 weeks											50	50	50	2
TOTAL			14	1	8	4									750	22	




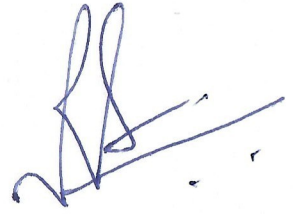
Note: A Postgraduate Diploma will be awarded if a student exits after first year.
For Exit at the end of first year the student must complete: (Total credits = 8)

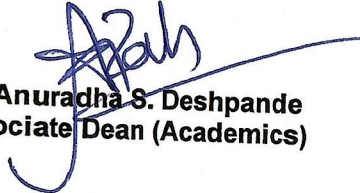
- a) An internship / OJT of 8 - 10 weeks (4 credits)
- b) Additional Course 1 (4 credits) (Vocational Skill Course (VSC) / Skill Enhancement Course (SEC))


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I (MMC - I)	Course Code	230GRAM24_01
	Course Name	Sensors and Automation
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	Course Name	IoT Basics and Applications


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