



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA – 533 003, Andhra Pradesh, India**

**DEPARTMENT OF CIVIL ENGINEERING**

## **COURSE STRUCTURE**

**M.Tech CIVIL ENGINEERING**

**(Geotechnical Engineering/ Soil Mechanics & Foundation Engineering) Programme**  
*(Applicable for batches admitted from 2019-2020)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**

I - Semester

S.No	Course No	Category	Course Name	L	T	P	C	Marks
1	MSFI-1	Core1	Advanced Soil Mechanics	3	0	-	3	100
2	MSFI-2	Core2	Soil Investigation/ Soil Exploration	3	0	-	3	100
3	MSFI-3	Elective I		3	0	-	3	100
			a) Ground Improvement Techniques					
			b) Soil-Foundation Interaction					
			c) Critical State Soil Mechanics					
4	MSFI-4	Elective II		3	0	-	3	100
			a) Design with Geo-synthetics					
			b) Rock Mechanics					
			c) Remote Sensing & Geographical Information Systems					
5	MSFMC		Research Methodology and IPR	2	0	0	2	100
6	MSFPI□ 1	Lab 1	Geotechnical Engineering Lab-I	-	-	4	2	100
7	MSFPI□ 2	Lab 2	Geotechnical Engineering Lab-II	-	-	4	2	100
8	MSFA-1	Audit Course -1	Audit Course -1	2	0	0	0	100
<b>Total Credits /Marks</b>							<b>18</b>	<b>800</b>

II – Semester

S.No.	Course No	Category	Course Name	L	T	P	C	Marks
1	MSFII-1	Core 3	Advanced Foundation Engineering	3	0	-	3	100
2	MSFII-2	Core 4	Earth Retaining Structures	3	0	-	3	100
3	MSFII-3	Elective III		3	0	-	3	100
			a) Pavement Analysis Design & Evaluation					
			b) Construction Planning & Methods					
			c) Geotechnical Earthquake Engineering					
4	MSFII-4	Elective IV		3	0	-	3	100
			a) Earth Dams					
			b) Construction in Expansive Soils					
			c) Numerical Methods in Geotechnical Engineering					
5	MSFPII□ 1	Lab 3	Geotechnical Engineering Lab-III	-	-	4	2	100
6	MSFPII□ 2	Lab 4	Software Design Lab	-	-	4	2	100
7	MSFMP	Core	Mini Project With Seminar	0	0	4	2	100
8	MSFA-2	Audit Course -2	Audit Course -2	2	0	0	0	100
<b>Total Credits /Marks</b>							<b>18</b>	<b>800</b>

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III – Semester

S.No.	Course No	Category	Course Name	L	T	P	C	Marks
1	MSFIII-1	Elective-V	Elective /MOOCS	3	0	--	3	100
			a) Geo-environmental Engineering					
			b) Soil Dynamics & Machine Foundations					
			c) Finite Element Method					
2	MSFIII-2	Open Elective	Open Elective / MOOCS	3	0	--	3	100
3	DISSERTATION	Core	Dissertation Phase-I / Industrial Project (To be continued and Evaluated next Semester)*	-	--	20	10	
<b>Total Credits /Marks</b>				<b>16</b>	<b>200</b>			

\* Evaluated and displayed in 4<sup>th</sup> Semester marks list

\*\* Students Going for Industrial Project / Thesis will complete these courses through MOOCS

IV – Semester

S. No.	Course No	Category	Course Name	L	T	P	C	Marks
1	DISSERTATION	Core	Dissertation Phase II (Continued from III Semester)	0	0	32	16	100
<b>Total Credits /Marks</b>							<b>16</b>	<b>200</b>

Total Credits: 18+18+16+16 = 68



Director (Ac)  
Academic Planning  
JNTUK Kakinada



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**DEPARTMENT OF CIVIL ENGINEERING**

**COURSE STRUCTURE**  
**M.Tech (Structural Engineering) Programme**  
*(Applicable for batches admitted from 2019-2020)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**

## I - Semester

S.No	Course Name	Category	L	T	P	C	Marks
1	Theory of Elasticity	Core	3	0	--	3	100
2	Structural Dynamics	Core	3	0	--	3	100
3	Elective I	Elective	3	0	--	3	100
	a) Matrix Analysis of Structures						
	b) Analytical & Numerical Methods for Structural Engineering						
	c) Design of RCC Foundations						
4	Program Elective II	Elective	3	0	--	3	100
	a) Bridge Engineering						
	b) Repair and Rehabilitation of Structures						
	c) Advanced Reinforced Concrete Design						
5	Advanced Concrete Technology		2	0	0	2	100
6	Advanced Concrete Technology Laboratory	Lab	-	--	4	2	100
7	Advanced Structural Engineering Laboratory	Lab	-	--	4	2	100
8	Audit Course -1	Audit	2	0	0	0	
<b>Total Credits /Marks</b>						<b>18</b>	<b>700</b>

## II - Semester

S.No.	Course Name	Category	L	T	P	C	Marks
1	Finite Element Methods in Structural Engineering	Core	3	0	--	3	100
2	Theory of Plates and Shells	Core	3	0	--	3	100
3	Elective III	Elective	3	0	--	3	100
	a) Stability of Structures						
	b) Advanced Steel Design						
	c) Analysis of Offshore Structures						
4	Elective IV	Elective	3	0	--	3	100
	a) Earthquake Resistant Design of Buildings						
	b) Precast and Prefabricated Structures						
	c) Earth Retaining Structures						
5	Computer Aided Design Laboratory		--	--	4	2	100
6	Structural Design laboratory	Lab	--	--	4	2	100
7	Mini Project With Seminar		0	0	4	2	100
8	Audit Course -2	Audit	2	0	0	0	
<b>Total Credits / Marks</b>						<b>18</b>	<b>700</b>

### III – Semester

S.No.	Course Name	Category	L	T	P	C	Marks
1	Elective 5: Program Elective /MOOCS	Elective	3	0	--	3	100
	a) Design of Prestressed Concrete structures						
	b) Structural Health Monitoring						
	c) Industrial Structures						
2	Open Elective / MOOCS	Elective	3	0	--	3	100
3	Dissertation Phase-I / Industrial Project (To be continued and Evaluated next Semester)*		--	--	20	10	
<b>Total Credits / Marks</b>						<b>16</b>	<b>200</b>

\* Evaluated and displayed in 4<sup>th</sup> Semester marks list

\*\* Students Going for Industrial Project / Thesis will complete these courses through MOOCS

### IV - Semester

SI No.	Course Name	Category	L	T	P	C	Marks
1	Project / Dissertation Phase II (Continued from III Semester)		0	0	32	16	100
<b>Total Credits / Marks</b>						<b>16</b>	<b>100</b>

  
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**DEPARTMENT OF CIVIL ENGINEERING**

## **COURSE STRUCTURE**

### **M.Tech (Transportation Engineering) Programme**

*(Applicable for batches admitted from 2019-2020)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**

I - Semester

S.No	Course No	Category	Course Name	L	T	P	C	Marks
1	MTEI-1	Core1	Advanced Highway Engineering	3	0	--	3	100
2	MTEI-2	Core2	Advanced Traffic Engineering	3	0	--	3	100
3	MTEI-3	Elective I		3	0	--	3	100
			a) Bridge Engineering					
			b) Project Management					
		c) Ground Improvement Technique						
4	MTEI-4	Elective II		3	0	--	3	100
			a) GIS for Transportation					
			b) Pavement Management System					
		c) Transportation Modeling and Simulation						
5	MTEMC		Research Methodology and IPR	2	0	0	2	100
6	MTEPI□1	Lab 1	Highway Aggregates Lab	-	--	4	2	100
7	MTEPI□2	Lab 2	Bituminous Testing Lab	-	--	4	2	100
8	MTEA-1	Audit Course -1		2	0	0	0	100
			<b>Total Credits /Marks</b>				<b>18</b>	<b>800</b>

II - Semester

S.No.	Course No	Category	Course Name	L	T	P	C	Marks
1	MTEII-1	Core 3	Pavement Analysis and Design	3	0	--	3	100
2	MTEII-2	Core 4	Transportation Planning	3	0	--	3	100
3	MTEII-3	Elective III		3	0	--	3	100
			a) Pavement Construction					
			b) Environmental Impact Assessment					
		c) Traffic Flow Analysis						
4	MTEII-4	Elective IV		3	0	--	3	100
			a) Geosynthetics and Reinforced Earth Structures					
			b) Highway Safety Engineering					
		c) Intelligent Transportation System						
5	MTEPII□1	Lab 3	Advanced Transportation Engineering Lab	--	--	4	2	100
6	MTEPII□2	Lab 4	Transportation Simulation Lab	--	--	4	2	100
7	MTEMP	Core	Mini Project with Seminar	0	0	4	2	100
8	MTEA-2	Audit Course -2		2	0	0	0	100
			<b>Total Credits /Marks</b>				<b>18</b>	<b>800</b>



### III - Semester

S.No	Course No	Category	Course Name	L	T	P	C	Marks
1	MTEIII-1	Elective-V		3	0	--	3	100
			a)Financial and Economic Analysis of Transportation Projects					
			b)Airport Engineering					
			c)Transportation System Management					
2	MIEIII-2	Open Elective	Open Elective /MOOCS	3	0	--	3	100
3	DISSERTATION	Core	Dissertation Phase-I / Industrial Project (To be continued and Evaluated next Semester)*	--	--	20	10	
<b>Total Credits /Marks</b>							<b>16</b>	<b>200</b>

\* Evaluated and displayed in 4<sup>th</sup> Semester marks list

\*\* Students Going for Industrial Project / Thesis will complete these courses through MOOCS

### IV - Semester

S. No.	Course No	Category	Course Name	L	T	P	C	Marks
1	DISSERTATION	Core	Dissertation Phase II (Continued from III Semester )	0	0	32	16	100
<b>Total Credits /Marks</b>							<b>16</b>	<b>200</b>

**Total Credits: 18+18+16+16 = 68**

  
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