Department of Civil Engineering
M.Tech. by Research

The Department offers an undergraduate programme with an intake of about 120. The postgraduate Programmes are offered in Hydraulics and Water Resources Engineering, Structural Engineering, Environmental Engineering, and Geotechnical Engineering, with an intake of about 90 students. The Department is well equipped with laboratories related to Structure, Concrete testing, Soil Mechanics, Highway Engineering, Experimental Stress Analysis, etc. The department lays greater emphasis on quality research of industrial design and development, Structural Engineering, and Structural Dynamics.

Research Areas: **Structural Engineering, Concrete Technology, Cementitious Materials, Prestressed Concrete, Tall Structures and Rehabilitation of Structures, Geotechnical Engineering, Rock Mechanics, Soil Mechanics, Geo-Environment Engineering, Water Resources Engineering, Pavement Engineering. Hyper Spectral Microwave and LIDAR Remote Sensing.**

Thrust Areas: **AI-Driven Structural Health Monitoring, Machine Learning in Construction management, Data Science for Smart Cities, Predictive Maintenance of Infrastructure, AI in Transportation Systems, Intelligent Water Resource Management, Machine Learning for Geotechnical Engineering, AI-Enhanced Environmental Monitoring, Data-Driven Urban Planning, Predictive Analytics in Disaster Risk Management, AI for Sustainable Building Design, Machine Learning in Traffic Flow Analysis, AI-Optimized Energy Efficiency in Buildings, Data Science for Waste Management Systems, Smart Pavement Technologies.**

ANNEXURE – I

DELHI TECHNOLOGICAL UNIVERSITY

(Formerly Delhi College of Engineering)
Shahbad Daulatpur, Main Bawana Road, Delhi-42

DEPARTMENT OF CIVIL ENGINEERING

SCHEME FOR M.TECH. BY RESEARCH

SEMESTER I						
Code	**Course Name**	**Type/ Area**	**Cr**	**L-T-P**	**Total Credits**	**Level**
RUCC501	University Core-1	UCC	2	2-0-0	**18**	**500-599***
RUCC503	University Core-2	UCC	4	4-0-0		
RCED501	Departmental Core Course-1	DCC	4	3-0-2		
RCED505	Departmental Core Course-2	DCC	4	3-0-2		
RCED507	Report-1	DCC	4	0-0-4		
SEMESTER II						
Code	**Course Name**	**Type/ Area**	**Cr**	**L-T-P**	**Total Credits**	**Level**
RCED502	Departmental Core Course-3	DCC	4	3-0-2	**22**	**500-599***
RCED504	Departmental Core Course-4	DCC	6	3-1-0		
RCED508	Report-2	DCC	6	-		
RCED532	Elective Course-1	DEC/ GEC	4	3-1-0/3-0-2		
RCED534	M.Tech. (R) Project-1	DEC/ GEC	4	-		

SEMESTER III						
Code	**Course Name**	**Type/ Area**	**Cr**	**L-T-P**	**Total Credits**	**Level**
RCED601	Report-3	DCC	12	0-0-12	**16**	600-699*
RCED631	M.Tech. (R) Project-2	DCC	4	4-0-0/ 3-0-2		
SEMESTER IV						
Code	**Course Name**	**Type/ Area**	**Cr**	**L-T-P**	**Total Credits**	**Level**
RCED602	Final Report	DCC	24	0-0-24	**24**	600-699*
TOTAL CREDITS	**100**					

ANNEXURE – II

DELHI TECHNOLOGICAL UNIVERSITY

SCHEME OF TEACHING AND EVALUATION

DEPARTMENT OF CIVIL ENGINEERING

SCHEME FOR M.TECH. BY RESEARCH

Teaching Scheme					Contact Hours/ Week			Relative Weightage (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credit**	**L**	**T**	**P**	**CWS**	**PRS/ STS/ CMS**	**MTE**	**ETE**	**PRE**
SEMESTER I												
1	RUCC501	Research and Publication Ethics (RPE)	UCC-1	**2**	2	0	0	25	-	25	50	0
2	RUCC503	Research Methodology	UCC-2	**4**	4	0	0	25	-	25	50	0
3	RCED501	Applied Numerical Methods	DCC-1	**4**	3	0	2	15	25	20	40	0
4	RCED505	Advanced Foundation Engineering	DCC-2	**4**	3	0	2	15	25	20	40	0
5	RCED507	Report -1	DCC-3	**4**	0	0	4	-	40	-	-	60
		Total Credit		**18**								

SEMESTER II												
1	RCED502	Advanced Open Channel Hydraulics	DCC-4	**4**	3	0	2	15	25	20	40	0
2	RCED504	Finite Element Methods	DCC-5	**4**	3	1	0	25	-	25	50	-
3	RCED508	Report-2	DCC-6	**6**	0	0	6	-	40	-	-	60
4	RCED532	Elective-1	DEC/ GEC-1	**4**	4	0	0	-	40	-	-	60
					3	0	2	15	25	20	40	-
5	RCED534	M.Tech. (R) Project-1	DEC/ GEC-2	**4**	4	0	0	-	40	-	-	60
					3	0	2	15	25	20	40	-
Total Credits				**22**								
SEMESTER III												
1	RCED601	Report-3	DCC-7	**12**	0	0	12	-	40	-	-	60
2	RCED603	M.Tech. (R) Project-2	DCC-8	**4**	4	0	0	-	40	-	-	60
					3	0	2	15	25	20	40	-
Total Credits				**16**								
SEMESTER IV												
1	RCED602	Final Report	DCC-9	**24**	0	0	24	-	-	-	-	100
Total Credits				**24**								

CREDITS IN FOUR SEMESTERS

Total	Course Type	Department Core Courses (DCC)	University Core Course (UCC)	Department/ Generic Electives (DEC/ GEC)	Projects (DCC)	Reports (DCC)
80	Credits	16	6	4	8	46

List of Subjects

Subject Code	Subject Title	Existing Specialisation PG/University Code
RUCC501	Research and Publication Ethics (RPE)	--
RUCC503	Research Methodology	--
RCED501	Applied Numerical Methods	STE505
RCED505	Advanced Foundation Engineering	GTE505
RCED502	Advanced Open Channel Hydraulics	HWE502
RCED504	Finite Element Methods	STE502
	Departmental Elective-1 (RCED532)*	
RCED532	Earthquake Resistant Design of Structures (3-0-2)	STE520
RCED532	Advanced Theory of Structures (3-0-2)	STE504
RCED532	Cyclonic Risk and Hazard Assessment (3-1-0)	STE506
RCED532	Wind Engineering (3-0-2)	STE530
RCED532	Design of Advanced Steel Structures (3-1-0)	STE 532
RCED532	Retrofitting of Structures (3-1-0)	STE534
RCED532	Disaster Mitigation and Management (3-0-2)	STE536
RCED532	Soil Structure Interaction (3-1-0)	GTE504
RCED532	Geotechnical Exploration (3-0-2)	GTE502
RCED532	Theoretical Soil Mechanics (3-0-2)	GTE520
RCED532	Critical State Soil Mechanics (3-0-2)	GTE522
RCED532	Cost Management of Engineering Project (3-0-2)	GTE524
RCED532	Geotechnical Earthquake Engineering (3-1-0)	GTE530
RCED532	Stability Analysis of Slopes (3-1-0)	GTE532
RCED532	Pavement Analysis and Design (3-1-0)	GTE534
RCED532	Design of Hydraulic Structures (3-0-2)	HWE504
RCED532	Groundwater Hydrology (3-1-0)	HWE520
RCED532	Design of Flood Control and River Training Works (3-1-0)	HWE522
RCED532	Hydro-informatics and Simulation (3-1-0)	HWE530
RCED532	Ground Improvement Techniques (3-1-0)	HWE532
Note*: These are generic elective courses (GEC) for students of other departments.		