COMPULSORY COURSES IN M.TECH.

(Last Updated: 22 July 2024)

Specialization	Semester I	Semester II
EE	CE664, CE665, CE666, CE604, and CE605	CE668*
GI	CE770, CE772, CE773 Any TWO from: CE603, CE604, CE605	CE673*, CE674, CE771 Any ONE from: CE675, CE677
GTE	CE631, CE638* Any TWO from: CE603, CE604, CE605	CE632
HWRE	CE610, CE611 Any TWO from: CE603, CE604, CE605	CE612*, CE613
IEM	CE716, CE640, CE645, CE715M Any TWO from: CE603, CE604, CE605	CE657, Laboratory course in IEM (CE6xx*)
STR	CE603, CE620, CE621, and CE723 CE604 OR CE605	CE622, CE623*
TE	CE683, CE786, CE787 Any TWO from: CE603, CE604, CE605	CE780*

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Notes:

[1] Courses marked with * are laboratory courses.

[2] It is mandatory for every M.Tech. student in CE to pass at least TWO of the three math courses (CE603A, CE604A, CE605A). For different specializations, one or both of the math courses can be specified as compulsory.

[3] All compulsory courses must be cleared with minimum D grade for graduation. Compulsory courses can be repeated, if the grade obtained is lower than D. However, they cannot be substituted by some other courses.

[4] Each student shall consult the academic faculty advisor of the respective specialization, or their thesis supervisor (once assigned), for advice on registration in compulsory and elective courses.

[5] For GI, in addition to the above, CE678 is compulsory in Semester I for students supported by the NCG project.

[6] The names of the different courses are given on the following pages.

Course No.	Course Name
CE432	Geographical Information System (GIS)
CE603	Mathematics for Civil Engineers
CE604	Numerical Methods for Civil Engineers
CE605	Probability and Statistics for Civil Engineers
CE610	Advanced Hydrology
CE611	Advanced Hydraulics
CE612	Fluid Mechanics Laboratory
CE613	Computational Methods in Hydraulics and Hydrology
CE620	Structural Dynamics
CE621	Engineering Mechanics
CE622	Stability of Structures
CE623	Experimental Methods in Structural Engineering
CE624	Nonlinear Structural Analysis
CE628	Durability of Concrete Structures
CE631	Advanced Geotechnical Engineering
CE632	Foundation Analysis and Design
CE638	Geotechnical Measurements and Explorations
CE640	Infrastructure Asset Management
CE653M	Advancements in Concrete
CE654M	Concrete Science and Engineering Properties
CE657	Construction economics and Infrastructure financing
CE663	Humans, Environment, and Sustainable Development
CE664	Physico-Chemical Principles and Processes
CE665	Ecological and Biological Principles and Processes
CE666	Air Pollution and its Control
CE668	Environmental Quality and Pollution Monitoring Techniques
CE670	Environmental Geodesy
CE671	Introduction to Remote Sensing
CE672	Machine Processing of Remotely Sensed Data

CE673	Instrumentation, Laboratory and Field Practices in Geoinformatics
CE674	Global Navigation Satellite System
CE675	Global Navigation Satellite Systems (GNSS) For Surveying & Mapping
CE676	Laser Scanning and Photogrammerty
CE677	Introduction to Inertial and Multi-Sensor Navigation
CE678	Introduction to Geodesy
CE679	Signal Processing on The Sphere
CE683	Traffic Engineering
CE711M	Construction Equipment and Methods – I
CE712M	Construction Equipment and Methods – II
CE713M	Construction Equipment and Methods for Bridges
CE715M	Contract Management
CE716	Project management and controls
CE723	Finite Element Methods for Civil Engineering Applications
CE770	Adjustment Computations for Geoinformatics-I
CE771	Adjustment Computations for Geoinformatics-II
CE772	Reference Frames, Coordinate Systems and Map Projections
CE773	Geodetic Astronomy and Introduction to Satellite Geodesy
CE780	Laboratory Course in Transportation Engineering
CE786	Analysis and Design of Bituminous Pavements
CE787	Computational Tools for Transportation Engineering