COMPULSORY COURSES IN M.TECH.

(Last Updated: 1 November 2023)

Specialization	Semester I	Semester II
EE	CE664A, CE665A, CE666A, CE604A, and CE605A	CE668A*
GI	CE770A, CE772A, CE773B Any TWO from: CE603A, CE604A, CE605A	CE673A*, CE674A, CE771A Any ONE from: CE675B, CE677B
GTE	CE631A, CE638A* Any TWO from: CE603A, CE604A, CE605A	CE632A
HWRE	CE610A, CE611A Any TWO from: CE603A, CE604A, CE605A	CE612A*, CE613A
IEM		
STR	CE603A, CE620A, CE621A, and (CE654A+CE653B)/CE628A CE604A OR CE605A	CE622A, CE623A*, CE723A
TE	CE683A, CE786A, CE787A Any TWO from: CE603A, CE604A, CE605A	CE780A*

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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, CE678A 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
CE432A	Geographical Information System (GIS)
CE603A	Mathematics for Civil Engineers
CE604A	Numerical Methods for Civil Engineers
CE605A	Probability and Statistics for Civil Engineers
CE610A	Advanced Hydrology
CE611A	Advanced Hydraulics
CE612A	Fluid Mechanics Laboratory
CE613A	Computational Methods in Hydraulics and Hydrology
CE620A	Structural Dynamics
CE621A	Engineering Mechanics
CE622A	Stability of Structures
CE623A	Experimental Methods in Structural Engineering
CE628A	Durability of Concrete Structures
CE631A	Advanced Geotechnical Engineering
CE632A	Foundation Analysis and Design
CE638A	Geotechnical Measurements and Explorations
CE640A	Infrastructure Asset Management
CE641A	Project Management
CE642A (P-II)	Construction Engineering and Management Laboratory
CE642A	Construction Engineering and Management Laboratory
CE642B (P-I)	Laboratory Course in Infrastructure Engineering and Management
CE643B	Infrastructure Financing
CE653B	Advancements in Concrete
CE654A	Concrete Science and Engineering Properties
CE663A	Humans, Environment, and Sustainable Development
CE664A	Physico-Chemical Principles and Processes
CE665A	Ecological and Biological Principles and Processes
CE666A	Air Pollution and its Control
CE668A	Environmental Quality and Pollution Monitoring Techniques
CE670A	Environmental Geodesy
CE671A	Introduction to Remote Sensing
CE672A	Machine Processing of Remotely Sensed Data

CE673A	Instrumentation, Laboratory and Field Practices in Geoinformatics
CE674A	Global Navigation Satellite System
CE675B	Global Navigation Satellite Systems (GNSS) For Surveying & Mapping
CE676A	Laser Scanning and Photogrammerty
CE677B	Introduction to Inertial and Multi-Sensor Navigation
CE678A	Introduction to Geodesy
CE679A	Signal Processing on The Sphere
CE683A	Traffic Engineering
CE723A	Finite Element Methods for Civil Engineering Applications
CE770A	Adjustment Computations for Geoinformatics-I
CE771A	Adjustment Computations for Geoinformatics-II
CE772A	Reference Frames, Coordinate Systems and Map Projections
CE773B	Geodetic Astronomy and Introduction to Satellite Geodesy
CE780A	Laboratory Course in Transportation Engineering
CE786A	Analysis and Design of Bituminous Pavements
CE787A	Computational Tools for Transportation Engineering