



INFORMATION BROUCHER

M.Tech.
STRUCTURAL ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Jawahar Lal Nehru Marg, Jaipur-302017 (Rajasthan) INDIA

mnit.ac.in

PROGRAMME DETAILS AND ADMISSIONS

Programme Description

Structural engineers design structures that must endure stresses and pressures inflicted through human use and environmental conditions. The MTech Structural Engineering program offers learning in safety of structures, sustainability, performance of structure, their duties and contribution to the society and also understanding of professionalism. Structural engineering students are prepared to get employment, profession and/or to pursue Higher education and research in structural engineering discipline in particular and allied engineering disciplines in general.

Aims and Objectives

1. The objective in design is to create structures with adequate safety and serviceability under the influence of the relevant loads and actions during the lifetime of the structure.
2. Develop graduates with a strong understanding of structural stability, strength and serviceability
3. Impart knowledge on Structural analysis and design of super structures and substructures.
4. Impart knowledge and industry-oriented skills of documentation preparation and scenario analysis for decision making in the rapidly evolving structural health monitoring and evaluation of performance of structures.
5. Imbibe knowledge of modern programming tools (MATLAB, PYTHON, Artificial Intelligence, Machine Learning, SAP, R, etc.) for solving industry research challenges.

Programme Highlights

- 1) Develop graduates with a strong understanding of Different Indian Standard Code of Practices.
- 2) Collaborative research with top international universities and industries: Enhances value in terms of knowledge and exposure.

Target Groups

- Students seeking advanced knowledge of Structural Engineering
- Professionals from Structures background
- Government functionaries/ administrators
- Contractors/Designers
- Public Sector Undertakings Officials
- Consultants & Researchers

PROGRAMME COURSES

Core

- Advanced Structural Analysis
- Concrete Technology
- Design of Advanced Concrete Structures
- Finite Element Method
- Plate and Shells
- Structural Dynamics
- Seminar/Minor Research Project

Research Domains for Dissertations

- Tall Buildings, Earthquake Resistance Design, Seismic Control Methods and Design of RC And Steel Structures
- Concrete Technology, Concrete Pavement, Use of waste in construction sector, Structural Control Methods
- Rehabilitation and Retrofitting of Structures,
- Artificial Intelligence
- Earthquake resistant Buildings and Construction Practices, Performance-Based Design of Structures
- Seismic Vulnerability and Risk Evaluation of Structures, Geotechnical Earthquake Engineering, Soil Structure Interaction, Finite Element Analysis.
- Geotechnology Engineering, Ground Improvement Technologies, Granular piles/ Stone Columns, Compaction grouting, Geosynthetics and reinforced soil structures
- Environmental Geotechnology, Construction and Demolition waste, Mathematical Modeling, Experimental Modeling.
- Nonlinear Mathematical Models, Computational method for linear/non-linear problems
- Sustainable/Eco-friendly materials, technology and practices, Construction and Demolition (C&D) waste management and recycling
- Geotechnical and Geoenvironmental Engineering
- Geotechnical Engineering, Numerical Modelling, Unsaturated Soil Mechanics.

Elective

- Advance Solid Mechanics
- Advanced Foundation Engineering
- Bridge Engineering
- Computational Methods
- Design of Composite Structures
- Earthquake Engineering
- Ground Improvement Techniques
- Prestressed Structures
- Soil Structure Interaction
- Structural Optimization
- Sustainable Materials and Construction
- Tall Buildings

Admissions

Who can Apply:

B.Tech. / B.E. in any of the domains of

- Civil Engineering

Relevant GATE Score Card for Eligibility: CE (applicable only for full time with assistantship)

Course Duration

Full-Time – 2 Years

Part-Time – 3 Years

Industry - sponsored seats are available to support potential staff to attain M. Tech. degree in Structural Engineering

Dissertations of M.Tech. Structural Engineering students (2020 - 2022)

Student Name	Thesis Topic
Nidhi Choudhary	Seismic Response of Isolated Building With Elastomeric Base Isolation System
Vineet Singh	Short-Term Analysis of Encased Steel-Concrete Composite Integral Bridge
Dilip	Mechanical and Hydraulic Properties of Pervious Concrete Incorporating Waste Pet Plastic
Rohit Dhaked	Seismic Evaluation of RC Frame Based on Performance Based Plastic Design
Abhilasha Choudhary	Artificially Coated Recycled Brick Aggregates for Improved Performance of Concrete
Priya Kumari	Analysis Of Water-Tank Wall With Varying Thickness
Harjeet Singh	Performance Evaluation of IS Code Compliance Mid-Rise RC Building
Praveen Kumar Salvi	Soil Stabilization using Dolomite Overburden
Kuldip kumar Thoriya	Experimental Study on Utilization of Steel Slag In Concrete
Mithun	Comparative Analysis Of Tuned Mass Damper And Yield Damper Considering Seismic Forces By Using Etabs
Vishal Sharma	Seismic Response of RC Frame Building with Soft First Story
Rupanshu Makkar	Effect Of Hanger System On Resistance Against Progressive Collapse Of RC Buildings Under Column Removal In Alternate Storeys
Ashish Kumar Sharma	Evaluation Of Seismic Response Of Mid-Rise RC Buildings with Setback
Manish Kumawat	Experimental Investigation of Full-Scale RC Beam-Column Joint for Performance Based Design
Akshra Sharma	Seismic Response of Isolated Building with Friction Pendulum System
Yogesh Kumar Sharma	Experimental Investigation of Full-Scale RC Beam –Column Joint Under Displacement Controlled Reverse Cycle Loading
Vaibhav Sharma	Effects Of Buildings On Slope Stability Under Seismic Action

Dissertations of M.Tech. Structural Engineering students

(2019 - 2021)

Student Name	Thesis Topic
Donga Tushar Rajeshbhai	A study on Nonlinear Static (Pushover) Analysis of RCC Building with Shear Wall and without Shear Wall
Jay Prakash	Enhancement in the Performance of Functionally Graded Concrete by Altering Layer Properties
Yalamanchili K P M Krishna Chowdary	Finite Element Simulations on Mechanical Properties of Hollow Concrete Block Masonry
Jitendra Meena	Influence on Properties of Cement Mortars Containing Granite Waste and Crushed Stone as Fine Aggregate.
Jonesh Kumar Bijarniya	Seismic Analysis of Concrete Gravity Dam with Dam-Water Interaction
Mohammad Harun	Comparative Study on Column Stresses in Building Constructed on Sloping Ground with different stories and soft stories
Divyansh Jain	Utilization of Marble Dust & Fly Ash in Composite Mortar as Partial Cement Substitute
Mahendra Meghwal	Structural Health Monitoring: Plastic Material Assessment of Important Structures
Rajat Kumar Goyal	Optimum Utilization of Ceramic Tile Waste for Enhancing Concrete Properties
Gaurav Trivedi	Effect of Soil Flexibility on Structural Response
Abrar Ahmad Khan	Dynamic Behaviour of Tall Building with Floating Columns and without Floating Columns
Himanshu Saugat	Nonlinear Static Analysis of RC Building Using CSM
Ramkesh Prajapat	Mathematical Models Evaluation for High Rise Structure with Recycled Materials Strength Parameters
Surya Kant Sharma	Influence of Recycled Aggregate on Concrete Properties and Sustainability Analysis
B Rajesh	Comparative Study Of Plan Irregularities In Moment Resisting Frame And Eccentric K Braced Frame
Goutham M	A Comparative Study on the Effect of Column Orientation on Building on a Sloping Ground Subjected to Seismic Loads
Ankit Sarraf	Influence on Properties of Cement Mortars Containing Marble Waste and Crushed Stone as Fine Aggregate.
Abhinav Sharma	Nonlinear Static Analysis of Unsymmetrical/Irregular Building

PLACEMENT OF EARLIER BATCHES

S. NO.	Year	Student Name	Employee Name
1.	2019-20	Hardik Thinger	L&T Construction
2.	2019-20	Krishan Kumar	L&T Construction
3.	2019-20	Patel Akshaykumar Pravinbhai	Kiana Structures (Off Campus)
4.	2019-20	Apurva Chaudhary	Sucha Consultancy And Construction
5.	2019-20	Apoorva Mudgal	Government Sector (Assistant Engineer PWD, Rajasthan)
6.	2019-20	Jitesh Singhal	Government Sector (Assistant Engineer Phed, Rajasthan)
7.	2019-20	Shweta Gocher	Government Sector (Junior Engineer PWD, Rajasthan)
8.	2020-21	Gaurav Trivedi	Rajasthan Government
9.	2020-21	Goutham M	Entrepreneur
10.	2020-21	Abrar Ahmad Khan	Water Resources Department Rajasthan
11.	2020-21	Rajat Kumar Goyal	Water Resource Department Rajasthan
12.	2020-21	Abhinav Sharma	Off Campus
13.	2020-21	Ramkesh Prajapat	Government Sector (Assistant Engineer Phed, Rajasthan)
14.	2020-21	Himanshu Saugat	Government Sector (Assistant Engineer Phed, Rajasthan)
15.	2020-21	Yalamanchili K P M Krishna Chowdary	Campus Placement
16.	2020-21	Ankit Sarraf	Government Sector (Junior Engineer - Bsf)
17.	2021-22	Harjeet Singh	TCE
18.	2021-22	Abhilasha Choudhary	Systra
19.	2021-22	Priya Kumari	Systra
20.	2021-22	Kuldipkumar Rasikbhai Thoriya	Development Alternatives
21.	2021-22	Yogesh Kumar Sharma	M/S Bhivaram Pannalal Kumawat
22.	2021-22	Vishal Sharma	HSI IDC

Expert talk delivered

- Dr. Dhiraj Raj - Seismic Strength Hierarchy Assessment: Foundation vs Column, 03-07-2022
- Dr. Dhiraj Raj - Seismic Challenges in Hilly Areas (SCHA-2020), 17-08-2020
- Dr. Dhiraj Raj -Seismic Bearing Capacity of Shallow Foundation, 07-09-2020
- Dr. Dhiraj Raj -Assessment of Seismic Strength Hierarchy: Foundations vs Building Components, 02-02-2021
- Dr. Dhiraj Raj - Capacity Design of Foundation: Towards Performance-Based Seismic Design, 05-03-2021
- Dr. Sumit Khandelwal - Quality control measures and desired frequency of tests in building construction works, 09-Dec-19
- Dr. Sandeep Shrivastava - Sustainable Materials using Construction and Demolition Waste, 05-07-2020
- Dr. Sandeep Shrivastava - Waste: Wealth & Entrepreneurship, 20-02-2020
- Prof. Ravindra Nagar - Durability of concrete, 26-07-2020
- Dr. Dhiraj Raj - Capacity Design of Foundation - Modern Perspective, 18-05-2020

Research facilities / centre of excellence

Sr. No.	Name of the Facility	Specialized Equipment Name	Equipment details
1.	Concrete Technology Laboratory	Compression Testing Machine AIM 311, 2000 kN	Compression Testing Machine (2000kN) Electrically cum Hand Operated with Three Pressure Gauge
2.	Concrete Technology Laboratory	Concrete Core Cutting Machine	Concrete Core Cutting Machine with Core Bits (50x440mm), (75x440mm) and (100x440mm)
3.	Concrete Technology Laboratory	Abrasion testing machine	Abrasion testing machine
4.	Concrete Technology Laboratory	Steam Curing Chamber Steam Curing Chamber (G.I. Sheet) 22"x16"x14"	Steam Curing Chamber
5.	Concrete Technology Laboratory	Permeability Apparatus	Permeability Apparatus
7.	Concrete Technology Laboratory	Water Bath Temperature Controller	Water Bath Temperature Controller
8.	Concrete Technology Laboratory	Spot Humidifier	Spot Humidifier
9.	Concrete Technology Laboratory	De Humidifier	De Humidifier
10.	Concrete Technology Laboratory	Carbonation Chamber	Carbonation Chamber
12.	Concrete Technology Laboratory	Concrete Saw	Concrete Saw
13.	Concrete Technology Laboratory	Environmental Chamber	Environmental Chamber
14.	Concrete Technology Laboratory	Chloride Diffusion Cells	Chloride Diffusion Cells
15.	Concrete Technology Laboratory	Air Entrainment Meter	Air Entrainment Meter
16.	Concrete Technology Laboratory	Set of Copper Sulphate Half Cell & Electronic Milli Voltmeter with Acrylic Base	Copper Sulphate Half Cell
17.	Concrete Technology Laboratory	Corrosion Beam	Corrosion Beam

18.	Concrete Technology Laboratory	Shrinkage Mould	Mild steel Mould
19.	Concrete Technology Laboratory	Accelerated Curing Tank	Accelerated Curing Tank
20.	Concrete Technology Laboratory	Impact Test apparatus	Impact Test apparatus
1.	Stress Analysis Lab	Universal Testing Machine Electronic Universal Testing Machine Cap. 100 Ton with PC accessories and tools	Universal Testing Machine Cap. 100 Ton
2.	Stress Analysis Lab	Crack Detection Micro Scope	Crack Detection Micro Scope
3.	Stress Analysis Lab	Micro Cover Meter	Micro Cover Meter
4.	Stress Analysis Lab	Strain indicator	STRAIN INDICATOR
5.	Stress Analysis Lab	Load Cell 2 T	LOAD CELL
6.	Stress Analysis Lab	Absolute Pressure Transducer	Pressure Transducer
7.	Stress Analysis Lab	Digital CTM AIM-323 Digital Testing Machine Computer Controlled Compression Testing Machine 3000 kN with computer	Digital CTM 3000 kN Capacity with computer
8.	Stress Analysis Lab	Digital CTM AIM-323 Digital Testing Machine Computer Controlled Compression Testing Machine 1000 kN Cap.	Digital CTM 1000 kN Cap.
9.	Stress Analysis Lab	Load Cell Load Cell 500 kN Capacity	Load Cell Load Cell 500 kN Capacity
10.	Stress Analysis Lab	Load Cell Load Cell 1000 kN Cap.	Load Cell Load Cell 1000 kN Cap.
11.	Stress Analysis Lab	Digital Displayed for Load Cell	Digital Displayed for Load Cell
12.	Stress Analysis Lab	MultiCell Surveyor and Cover Meter	MultiCell Surveyor and Cover Meter
13.	Stress Analysis Lab	Cellbrand Ultrasonic Concrete Tester	Cellbrand Ultrasonic Concrete Tester

Contact Details:

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