

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI

DEPARTMENT OF CIVIL ENGINEERING

PILANI CAMPUS

Department overview – Civil Engineering



BITS Pilani
Pilani Campus



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Department of Civil Engineering:

The department of Civil Engineering was established in the year 1959 and B.E. (Civil) was offered since inception.

Programme Level	Programme offered	Year of establishment
First Degree	B.E. (Civil)	1959
Higher Degree	M.E. (Civil) with specialization in Structural Engineering	2001
	M.E. (Civil) with specialization in Transportation Engineering	2002
	M.E. (Civil) with specialization in Infrastructure Engineering & Management	2006
	M.E. Sanitation Science Technology & Management	2020
Doctoral Degree	Ph.D.	1959

Faculty Strength: <ul style="list-style-type: none"> • Senior Professors – 4 • Professors – 2 • Associate Professors – 5 • Assistant Professors – 13 	Student Faculty Ratio: First Degree students – 409 Higher Degree students – 106 Total students – 515 Student Faculty ratio – $515/25 = 20.6:1$
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Research Thrust Areas:

- Structural Engineering
- Transportation Engineering
- Water Resources and Environmental Engineering

Faculty Profile:

NAME	DESIGNATION	SPECIALIZATION
Prof. Sudhir Kumar Barai	Sr. Prof. and Director	Structural Health Monitoring
Prof. Anupam Singhal	Prof. and Head	Environmental & Water Resources Engineering
Prof. Rajiv Gupta	Sr. Prof.	GIS And Water Resources
Prof. Shamsher Bahadur Singh	Sr. Prof.	Structural Engineering
Prof. A.P. Singh	Sr. Prof.	Environmental & Water Resources Engg.
Prof. Ravi Kant Mittal	Prof.	Geotechnical Engineering
Dr. Manoj Kumar	Assoc. Prof.	Structural Engineering
Dr. Anshuman	Assoc. Prof.	Soil Structure Interaction
Dr. Dipendu Bhunia	Assoc. Prof.	Structural Engineering
Dr. Shibani K Jha	Assoc. Prof.	Water Resources and Environmental Engineering
Dr. S.N. Patel	Assoc. Prof.	Structural Engineering
Dr. Kamlesh Kumar	Asst. Prof.	Geotechnical Engineering
Dr. Durgesh Vikram	Asst. Prof.	Transportation Engineering
Dr. G. Muthukumar	Asst. Prof.	Structural Engineering
Dr. Rajesh Kumar	Asst. Prof.	Structural Engineering
Dr. Mukund Lahoti	Asst. Prof.	Structural Engineering
Dr. Nishant Roy	Asst. Prof.	Rock Mechanics
Dr. R. Srinivas	Asst. Prof.	Water Resources
Dr. Vijay Kakade	Asst. Prof.	Transportation Engineering
Dr. Sarah Mariam Abraham	Asst. Prof.	Transportation Engineering
Dr. Sayantan Chakraborty	Asst. Prof.	Geotechnical Engineering
Dr. Md. Rushdie Ibne Islam	Asst. Prof.	Structural Engineering
Dr. Subhasis Pradhan	Asst. Prof.	Structural Engineering
Dr. Selva Balaji Munusamy	Asst. Prof.	Water Resources

Department for Societal cause:

In an effort to support for the societal cause, BITS Pilani has always been in the fore-front especially in technical support to the nearby villages either in the form of consultancy or in the form of sponsored projects. The department of civil engineering has come forward in educating the nearby villages through the implementation of rain water harvesting structures. This centre will focus on expanding to the multitude of avenues in the capacity building of Pilani village in particular and Rajasthan in general. It is strongly committed to contribute towards societal issues under WaSH (Water, Sanitation and Hygiene) through strategic and applied research.

Sponsored & Consultancy Projects:

S.No.	Project Title	Principal/ Co-Principal Investigator	Sponsored Organization	Amount Sanctioned (Rs. In Lacs)	Year of Sanction
1.	Preparation of State of the Art Report (SOAR) on Fog vision system for roads	Rajiv Gupta	MORTH, NOIDA, U.P	4.35	2017
2.	Road safety audit of widening and strengthening of existing Bikaner-Phalodi section to four lane from Km 4+200 to Km 55+250 and two lane from Km 55+250 to Km 163+500 of NH-15 on BOT (Toll) basis in the state of Rajasthan	Ashoke K. Sarkar	NRRDA, New Delhi	53.50	2017
3.	Preparation of State of the Art Report (SOAR) on Development of innovative non-destructive techniques for determination of in-situ strength and permeability of concrete	Amit Goel	MORTH, NOIDA, U.P	2.50	2017
4.	Investigation of ductile characteristics of high strength concrete beams reinforced with high strength steel and basalt fibre under elevated temperature conditions	G. Muthukumar	Additional competitive Research Grant, BITS Pilani	9.75	2017

5	Road Safety Audit for Reengus-Sikar stretch of NH-11 (43.887 km)	A K Sarkar	National Highway Authority of India	18.11 lacs	2017
6.	Fluoride remediation field study	Rajiv Gupta	University of Virginia, USA	5.00	2018
7.	Structural Health Assessment and Rehabilitation Framework based on Cyber Physical System.	Kota Soloman Raju(CEERI) S.B. Singh K.K. Gupta	DST, New Delhi	70.0	2018
8.	Integrated approach for the efficient removal and recovery of heavy metal catalyst (Zinc) used in viscose fiber industries	S. K. Verma (PI) Suresh Gupta (Co-PI) Jitendra Panwar (Co-PI) Ajit Pratap Singh (Co-PI)	Aditya Birla Science and Technology Centre (ABSTC) Mumbai	49.42	2018
9.	Waste Management of Generated Sludge from Indian Steel and Steel Related Plants: A Sustainable Business Model	Srikanta Routroy(Mech.) Anupam Singhal & Dipendu Bhunia	Ministry of Steel, GoI, New Delhi	38.04	2018
10.	Seismic Response of Tunnels Considering Topographic and Site Effects	PI Nishant Roy Co-PI: Ravi Kant Mittal	BITS Research Initiation Grant	2.0	2018
11.	Post-buckling analysis of CNT-Reinforced composite plates under different types of in-plane mechanical loads.	Rajesh Kumar	BITS Research Initiation Grant	2.0	2018
12.	A feasibility study on utilizing locally available fly ash to produce geopolymers for structural fire resistance applications	Mukund Lahoti	BITS Research Initiation Grant	2.0	2018
13	Structured Dialogues for Sustainable Urban Water Management (SDSUWM)	Rajiv Gupta Abdul Malik Suchismita Satpathy	Department of Science and Technology, Delhi	5,09,04,188 (BITS, Pilani: 3,29,88,508)	2019

		Soundharajan Bankaru-Swamy			
14	Crime Analysis and Study for Safe Cities with Emphasis on Women Safety using Technology and Societal Participation	Anu Gupta Rajiv Gupta Meetha V Sinoy	Indian Council of Social Science Research	05 Lakhs	2019
15	Development of a Cyber-Physical System based Smart Water Grid & Testbed for Community Usage	Ajit Pratap Singh	DST, new Delhi	70 Lakhs	2019
16	Waste Management of Generated Sludge from Indian Steel and Steel Related Plants: Sustainable Business Model".	Srikanta Routroy Anupam Singhal Dipendu Bhunia	Ministry of Steel, New Delhi	38 Lakhs	2019
17	Study of Postbuckling Response, Failure and Strength of Functionally Graded Composite Plates with and without Cutouts,	Shamsher Bahadur Singh	CSIR, New Delhi	18.5 Lakhs	2019
18	Design and development of Fixed and Floating Solar PV Installations for water management infrastructures	Ravi Kant Mittal Manoj Kumar Soni	First Green Consulting Pvt. Ltd.	11.36 lakhs	2019
19	Development of a Cyber-Physical System based Smart Water Grid & Testbed for Community Usage	K. K Gupta Ajit Pratap Singh, Amit Dua, Kamlesh Tiwari	CPS research of Interdisciplinary Cyber Physical System (ICPS) program of DST, GoI, New Delhi	57,77,500 (Total) 27,54,200 (BITS) 30,23,300 (CEERI)	2020
20	Structural Health Assessment and Rehabilitation Framework based on Cyber Physical System, sponsored by DST New Delhi, (Multi-institutional and multi-disciplinary project)	S. B. Singh, K. K. Gupta Kota Solomon Raju	DST New Delhi	15.543 Lakhs (Civil Engineering, BITS Pilani) 33.083 Lakhs (CEERI, Pilani) 11.73 Lakhs (EEE Department, BITS Pilani)	2020

21	Fire Resistance Guidelines for Hybrid FRP Structural Components made of Cellulose Fibers Derived from Agricultural Waste;	Venkatesh Kodur Shamsher Bahadur Singh, Vasant Matsagar	US Department of States, University of Nebraska at Omaha	US \$1,36,878.03	2020
22	Characterization of Soil-Rock Mixtures and Development of Numerical Models for Landslide Hazard Assessment	Nishant Roy	BITS Research Initiation Grant	8 Lakhs	2020
23	A feasibility study on development of Fire Resistant Geopolymer Composites	Mukund Lahoti	BITS Research Initiation Grant	8.25 Lakhs	2020
24	Evaluation of Coarse , Fine and SMA Asphalt Mix Incorporating Copper Mine Tailings	Priyansh Singh	BITS Research Initiation Grant	8.20 Lakhs	2020
25	Investigation of Effect of Aging on Moisture Resistance of Bituminous Mixes prepared with Different Types of Fillers	Vijay Bajirao Kakade	BITS Research Initiation Grant	2 Lakhs	2020
26	Mitigating Ettringite-Induced Heaving in Sulfate-Laden Soils Using Quarry Dust as Co-Additive with Calcium-Based Stabilizers	Sayantan Chakraborty	SERB- DST	16.67 Lakhs	2021
27	Assessing the Potential of Reclaimed Asphalt (RAP) aggregate inclusive concrete mixtures as available engineered carbon sink	Sarah Mariam Abraham	SERB-DST	18.36 Lakhs	2021
28	Investigating the efficacy of curing practices and its influence on shrinkage on RAP-JPCP mixtures	Sarah Mariam Abraham	BITS Research Initiation Grant	9.40 Lakhs	2021
29	Watershed- based optimized decision support model for conservation practice placement using remote sensing	Rallapalli Srinivas	BITS Research Initiation Grant	4.50 Lakhs	2021
30	Investigation of Effect of Moisture on Rut Resistance of Bituminous Mixes prepared with RAP	Vijay Bajirao Kakade	BITS Research Initiation Grant	9.70 Lakhs	2021
31	Development of Functionally-Graded Hybrid Fiber-Reinforced Polymer Composites for High-Strain Rate and Elevated	Shamsher Bahadur Singh Vasant Matsagar, Sudhirkumar	DRDO, New Delhi	98.85 Lakhs	2021

	Temperature Applications	Aeronautical	Barai, Deepti Ranjan saho			
32	Development of Fire Resistant Natural FRP for Structures, US-INDIA EDUCATIONAL FOUNDATION (USIEF) Project to Host US Fulbright Specialist at BITS Pilani during Academic Year starting August 01, 2022		Shamsher Bahadur Singh Sudhir Kumar Barai	USIEF, New Delhi	Cost related to travel, boarding and lodging, and Honorarium for the US specialist	2021
33	Development of Mesh-free Computational framework for Modeling of Geo- material Flows		Md. Rushdie Ibne Islam	BITS Research Initiation Grant	2 Lakhs	2021
34	CO ₂ Utilization and Sequestration to Prepare Sustainable Structural Concrete Mix Using Recycled Aggregate		Subhasis Pradhan	BITS Research Initiation Grant	2 Lakhs	2021
35	Evaluation of RAP concrete under adverse environmental conditions		Sarah Mariam Abraham	BITS Research Initiation Grant	2 Lakhs	2021
36	Durability of Soils stabilized with traditional calcium – based stabilizers		Sayantana Chakraborty	BITS Research Initiation Grant	2 Lakhs	2021
37	Fabrication of test set-up for stabilization of soils		B. S. Shashank	BITS Research Initiation Grant	2 Lakhs	2021
38.	Verify DPR of Proposed Rain water harvesting System		Rajiv Gupta Anshuman	YOMA, ENGINEERS, PILANI	0.25 Lakhs	2021
39.	Adequacy Certificate Agrow Allied Ventures Pvt. Ltd,		Rajiv Gupta	Keshwana Industrial Estate, Kotputli	0.59 Lakhs	2021

Publications:

	2017	2018	2019	2020	2021
Journals	36	45	39	28	48
Conference papers	24	40	18	12	09

Awards and Recognitions – Civil Engineering Students:

Year 2021:

- Ms. Laasya Priya (2019A2PS0928P) won 2nd prize in the Build-A-Thon tournament conducted by CEA during the institute technical fest APOGEE 2021.
- Mr. Advik Singh (2020A2PS1735P) was awarded with Avery Dennison Foundation InvEnt Scholarship (Awarded to 10 students across the country to recognize and reward invention, innovation and excellence in the fields of science, engineering and technology at selected higher education institutions).
- Mr. Advik Singh (2020A2PS1735P) was awarded with George H.W. Bush Points of Light Inspiration Honoree (Established in recognition of the 41st President of the United States, George H.W. Bush, the honour roll recognizes individuals who demonstrate the transformative power of service, and who are driving significant and sustained impact through their everyday actions. I was recognized for impacting 8000+ lives through my nonprofit organisation, Chhalaang Foundation).
- Mr. Advik Singh (2020A2PS1735P) was awarded with OP Jindal Engineering and Management Scholarship (OPJEMS) - Awarded to 100 students across the country on the basis of their academic performance, business aptitude and leadership potential.
- Mr. Uttank Jha (2019B5A20857P), Vice Lead of Consortium for Research in Space Systems (CRISS) and his team was ranked 18 out of 32 finalists in the International Rover Challenge 2021 (IRDC) held by Mars Society South Asia.

Year 2020:

- Saurav H. Yadav (2018A2PS0113P) won the prestigious O. P. Jindal Engineering & Management Scholarship (OPJEMS 2020),
- Shriya Amey Marathe (2017A2PS1015P) got Masters Admission in Paris School of International Affairs for a degree in Environmental Policy.
- Shriya Amey Marathe (2017A2PS1015P) got Masters Admission in Middlebury Institute of international studies with a scholarship of 9000 dollars per semester.
- Arvind Sahu (2016A2PS0531P) got AIR 177 in GATE 2020 in Civil Engineering
- Saumya Gaikwad, (2018A2PS0680P) have been selected for Product Intern at Adobe for summer 2021.

Year 2019:

- Abhishek Gaur (2017B2A21037P) was one of the 1000 students selected from more than 100 countries worldwide to work as a Student Developer at Google Summer of Code (GSoc) '19 for 13 weeks during summer 2019.
- Harshoman Sinha (2016A2PS0830P) has been offered one of the 4 students to have been offered PPO from McKinsey and Company.
- Harshoman Sinha (2016A2PS0830P) was the only undergraduate student in the country to be offered an internship at Oliver Wyman and was subsequently a PPO.
- Sanidhya Kumar Pandey (2016B1A20755P) and Hardik Maheshwari (2016B1A20906P) received a funding of ₹17000 from the institute for the project on "Self-healing in Geopolymer Concrete".

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- Shubham Aggarwal (2018A2PS0093P) has been invited for the 3rd International Conference on Safer Mobility (ICSM'20).

Faculty Awards and Recognitions:

Year 2021:

- Prof. S.B. Singh has been elected as fellow of ASCE by American Society of Civil Engineers on December 11, 2021.
- Prof. S.B. Singh has been nominated as expert member for Developing FRP shelters for High Altitude Areas for Defence needs by CCE(R&D), DRDO, Ministry of Defense through E-mail on 25th October 2021.
- Prof. S.B. Singh has been awarded with the Best Paper Award by the Indian Concrete Journal for the year 2022 by Indian Concrete Journal on August 26, 2021.
- Prof. S.B. Singh was invited by CIDC (Construction Industry Development Council) to join the esteemed group of faculty members of CIDC Academy of Construction Engineering (CACE) on Feb 9, 2021.
- Prof. S.B. Singh was awarded with Bharat Shiksha Gaurav Puraskar" and Certificate of Excellence by KTK Foundation, New Delhi on Feb 8, 2021.
- Prof. Kamalesh Kumar has been presented with Best Researcher Award in the international Scientist Awards on Engineering, Science and Medicine by VGood Professional Association on August 28, 29, 2021.

Year 2020:

1. Prof. S.B. Singh received a Best Academician of the Year 2020 Award from Institution of Engineers, Rajasthan State Center, Jaipur on Engineers Day (15th September 2020).
2. Prof. R.K. Mittal received a Second Prize in Best Paper Prizes sponsored by Springer Nature for Paper titled "Experimental Study on Waste Tire Chips-Reinforced Sand using Cyclic Plate Load Test" presented at Indian Geotechnical Conference 2020.
3. Prof. A.P. Singh appointed as a Coordinator, Principal Technical Agency, PMGSY, by National Rural Infrastructure Development Agency (NRIDA), Ministry of Rural Development, Government of India, New Delhi.
4. Prof. A.P. Singh appointed as an Executive Committee Member, by National Rural Infrastructure Development Agency (NRIDA), Ministry of Rural Development, Government of India, New Delhi.
5. Prof. A.P. Singh nominated as an external member of Committee of Courses for Bachelor of Engineering, by Jai Narain Vyas University, Jodhpur, Rajasthan.
6. Prof. A.P. Singh nominated as a Monitoring Committee Member for monitoring compliance of pollution norms in Pali Industrial cluster, by Hon'ble National Green Tribunal, New Delhi.

Year 2019:

1. Prof. Ajit Pratap Singh was appointed as commissioner to assess the status of Common Effluent Treatment Plants (CETPs) at Pali, Rajasthan by the Hon'ble National Green Tribunal, New Delhi in October 2019.
2. Prof. S. B. Singh attended Army Technology Seminar on 23rd December 2019 at Monekshaw Centre, New Delhi and presented the Collaborative Technology

Development Project on "Fiber-Reinforced Polymer Lightweight Shelters for High-Altitude Areas," (IIT Delhi is Collaborative Partner).

3. Prof. S.B. Singh has been invited by Provost, Trinity College Dublin, Ireland for Faculty Appraisal at the level of Professor during November 2019.
4. Prof. S.B. Singh has been appointed as committee member of Research Advisory Committee for PhD students of NIRMA University, Ahmedabad, Gujrat.
5. Prof. S.B. Singh has been appointed as Editorial Board Member of Enliven: International Journal of Advances in Civil Engineering 2019.
6. Prof. S.B. Singh has been invited to Conduct Interview on 21st July at UPSC, New Delhi for Lecturers.
7. Prof. S.B. Singh has been appointed as committee member for Campus Level Faculty Appraisal Committee, BITS Pilani, Feb, 2019.
8. Prof. S.B. Singh has chaired a session at UKIERI Concrete Congress at NIT Jalandhar, Mach 5-8, 2019
9. Dr. M. Lahoti received a GPU grant worth INR 1.40 lakhs from NVIDIA Corporation's Academic Programs team (February 2019). The GPU grant consists of a Titan V GPU.

Invited Talks – Year 2021:

Name of the Speaker	Title of the talk	Date
Dr. Sarwesh Swarup (Former Deputy director of the Ministry of Commerce and Industry Govt. of India)	Project Management (with an emphasis on Major Infrastructure Projects)	January 18, 2021
Er. Prashant Sathe , Technical Expert Regulations, Hilti (India) Pvt. Ltd.	An Overview of Post-installed Fastening Systems for Use in Concrete as per Current Standards	August 28, 2021
Prof. Debasish Bandyopadhyay Jadavpur university	Study on an alternative affordable building system for sustainable construction	September 18, 2021
Prof. Amit Shaw IIT Kharagpur	Potential of natural and waste materials in various structural applications	September 18, 2021
Dr. Suyash Garg Jaipur Metro Rail Corporation Ltd	Construction of Metro Phase-1B in the Heritage City of Jaipur	September 18, 2021
Prof. Rahul Dev Garg IIT Roorkee	Recent Trends in Geomatics Engineering	September 18, 2021
Prof. Mahesh Jat MNIT Jaipur	Land use land cover changes and its implication on climate: Possible adaptation and mitigation options	September 18, 2021
Ms. Snigdha Srivastava , Assistant Manager, Intercontinental Consultants & Technocrats Private Limited, New Delhi	Exploring AutoCAD and Revit software	November 2, 2021
Mr. Vikalp Gupta and Mr. Raj Panchmatiya , Engineers, CITEC, Mumbai	Exploring STAAD PRO (emphasis on Concrete and Steel structures)	November 10, 2021

Mr. Pranay Kumar Portfolio Manager, Private PPCM, Mott MacDonald	Construction Management - Site Practices	November 26, 2021
Mr. Swapnil Wakodkar – Discipline Lead, Civil, Structure, and Architecture, Mott MacDonald	Construction Management - Project Development Stages	November 26, 2021
Ms. Sangita Mehta -Principal Engineer, Civil/Structure, Mott MacDonald	Construction Management - Project Development Stages	November 26, 2021

SEMINAR/ WORKSHOP/CONFERENCE/TRAINING PROGRAMMES CONDUCTED IN THE DEPARTMENT:

- Prof. S.B. Singh was the organizing chairman of the one-day US2020 International Partnership Workshop on “FRP Materials and Sustainable Structures” on March 4th, 2022.
- Prof. Rajiv Gupta was the coordinator for the training program on “Sustainable Water Management System” for Delhi Jal Board Engineers during Jan 31st – Feb 12th, 2022.
- Prof. S.B. Singh was the coordinator for the workshop “DRDO-BITS Pilani Research Interaction” on March 20, 2021 ad April 24, 2021.
- Prof. S.B. Singh was the coordinator for the workshop “Bio-Based Fiber Reinforced Polymer Composites for Civil Engineering Infrastructure” on July 29, 2021.
- Prof. S.B. Singh was the coordinator for the 5-day AICTE Training and Learning Development Program on “Analysis and Design of FRP Reinforced and Concrete Structures” during July 25-29, 2021.
- Prof. S.B. Singh and Prof. Navneet Goyal conducted a webinar on “Smart Cities: Beyond the Pandemics”, BITS Pilani, on July 10-11, 2020. Number of Participants: More than 700
- Dr. R. Srinivas conducted a 4-week workshop on “Global meet on Computational Modeling and Simulation: Recent Innovations, Challenges & Perspectives, BITS Pilani (Pilani, Hyderabad, Goa, Dubai)”, during October 16th to November 7th 2020. Number of Participants: 500

Initiatives towards course curriculum revision:

The Department of Civil Engineering, BITS Pilani-Pilani campus has been committed to the expansion of the Higher Degree Civil Engineering Programmes as per the needs in the industry. The course revision is a structured process at BITS Pilani by involving the team of experts from both industry and academia in a brain storming session. In the process, 10 new courses have been introduced and two programs have been revised for the course content.

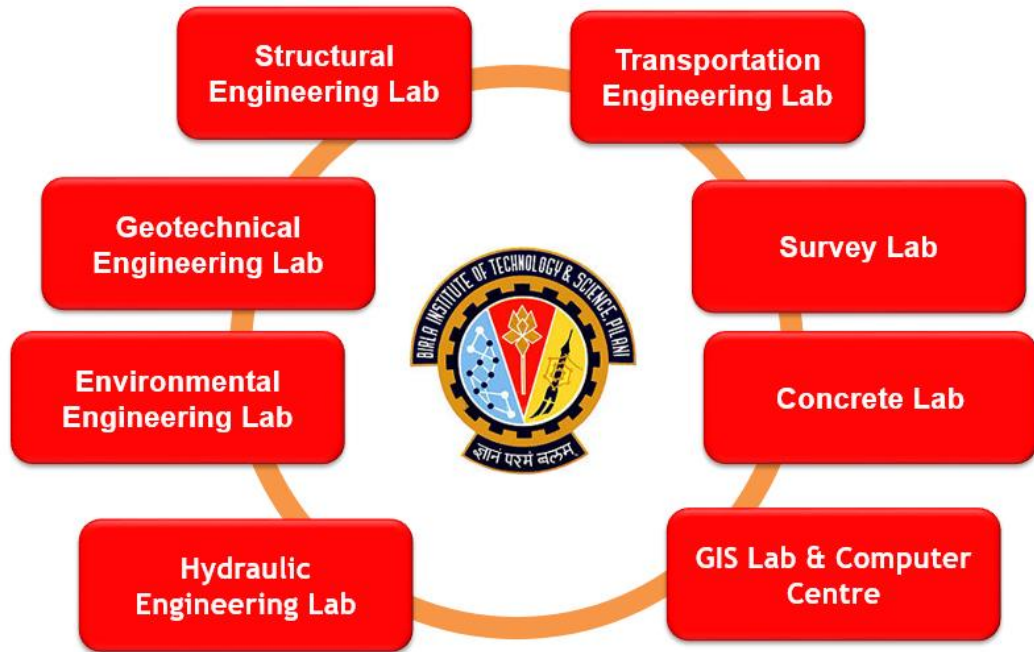
Curriculum revision in last 3 years in Higher Degree:

1. M.E. Transportation Engineering has been revised with input of experts from industry and academia.
2. M.E. Structural Engineering Course Curriculum revision is presently in progress.

Outreach Activities:

Sl. No.	Name of the faculty	Date	Program details
1	Prof. S.B. Singh	Feb 26-28, 2018	2 nd International Conference on Advances in Concrete, Structural and Geotechnical Engineering (ACSGE 2018)
2	Prof. S.B. Singh	July 10-11, 2020	International Webinar on "Smart Cities: Beyond the Pandemics"
3	Dr. Shibani Khanra Jha	Nov 7, 2020	Naya Kshitij for higher education Organized by BITS Pilani
4	Dr. Shibani Khanra Jha	Dec 17-22, 2022	Naya Kshitij Faculty Development Programme Organized by BITS Pilani
5	Dr. R. Srinivas	16 Oct - 07 Nov, 2020	Global meet on Computational Modeling and Simulation: Recent Innovations, Challenges and Perspectives
6	Prof. S.B. Singh	20-March, 2021	DRDO-BITS Pilani Research Interaction
7	Prof. S.B. Singh	24-April, 2021	DRDO-BITS Pilani Research Interaction
8	Prof. S.B. Singh	29-July, 2021	Bio-Based Fiber Reinforced Polymer Composites for Civil Engineering Infrastructure
9	Prof. S.B. Singh	25-29 July, 2021	AICTE Training and Learning (ATAL) workshop on Analysis and Design of FRP Reinforced and Concrete Structures

Departmental Labs:





Soil Mechanics Lab



Structural Engineering Lab



Concrete Technology Lab



Environmental Engineering Lab



Transportation Engineering Lab



Hydraulics & Fluid Mechanics Lab



GIS & Computer Lab



Survey Lab



Concrete Lab



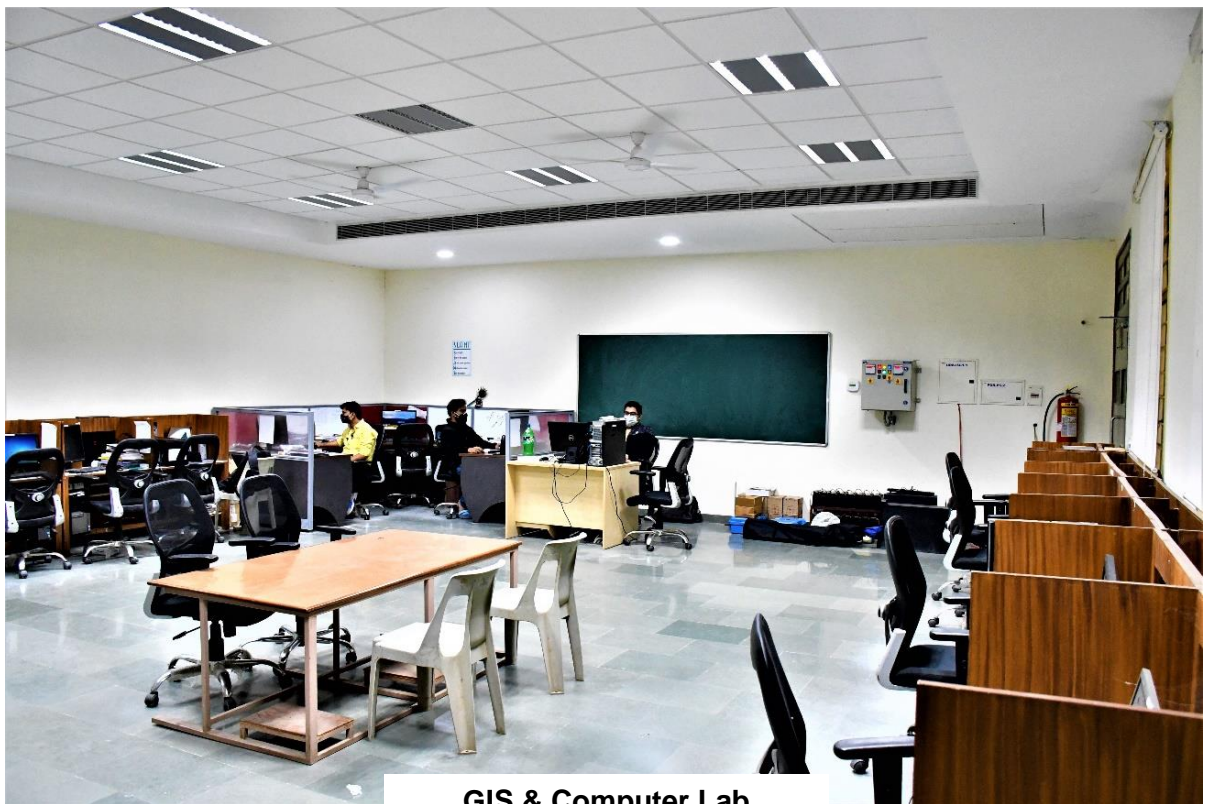
Transportation Engineering Lab



Environmental Engineering Lab



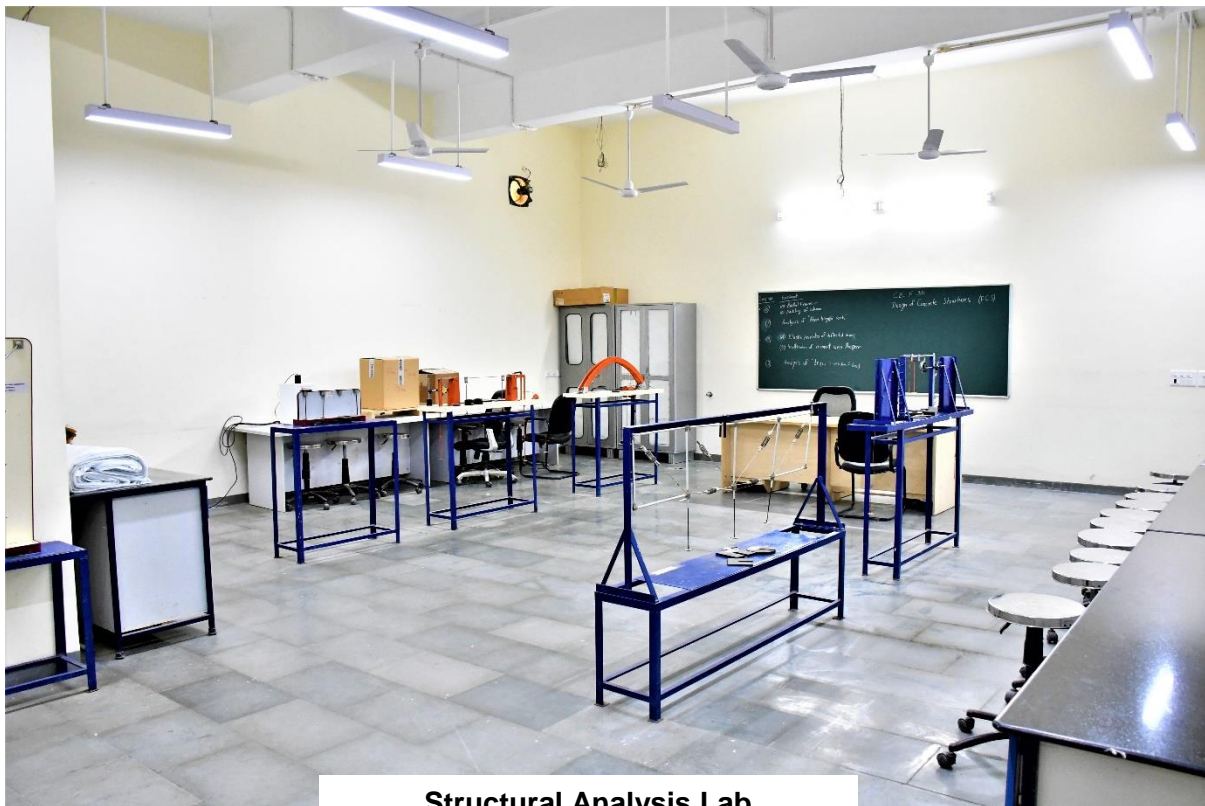
Geotechnical Engineering Lab



GIS & Computer Lab



Structural Engineering Lab



Structural Analysis Lab



Surveying Lab

Core courses for different HD programs		
M.E. Structural Engineering	M.E. Transportation Engineering	M.E. Infrastructure Engineering & Mgmt
Dynamics of Structures	Pavement Material & Characterization	Fundamentals of Systems Engineering
Advanced Structural Stability	Transportation Planning	Transportation Systems Planning and Management
Advanced Structural Analysis	Highway Design	Water Resources Planning and Management
Finite Element Analysis	Traffic Systems Analysis	Construction Management
Research Practice	Pavement Analysis and Design	Research Practice
Earthquake Engineering	Public Transportation	Infrastructure Planning and Management
	Research Practice	

Note: Apart from core courses, students need to do few electives.

M.E. Structural Engineering – 6 electives

M.E. Transportation Engineering – 7 electives

M.E. Infrastructure Engineering & Mgmt – 6 electives

Pool of electives for different HD programs		
M.E. Structural Engineering	M.E. Transportation Engineering	M.E. Infrastructure Engineering & Mgmt
Design of Multi-storeyed Structures	Pavement Maintenance & Rehabilitation	Multicriteria decision analysis
Advanced Concrete Structures	Transportation data analytics	Remote sensing and image processing
Advanced Concrete Technology	Transportation economics and finance	Environmental impact assessment
Prestressed Concrete Structures	Airport planning and design	Airport planning and design
Earthquake Engineering	Traffic systems analysis	Water resource planning and management
Advanced steel structures	Pavement analysis and design	Transportation planning and management
Structural optimization	Public Transportation	Design of multi storey buildings under lateral loads
Theory of plates and shells	Highway geometric design	Bridge engineering
Bridge engineering	Transportation Planning	Design of foundation for dynamic loads
Design of foundation for dynamic loads	Traffic Engineering	Infrastructure engineering and management
	Project Planning and Management	

List of commercial Softwares:

- **CSI Bridge**
- **SAP2000**
- **ETABS**
- **STAAD.Pro**
- **Plaxis 2D**
- **Plaxis 3D**
- **Midas GTS**
- **Universal Distinct Element Code (UDEC)**
- **GEOS**
- **Abaqus Teaching Suite (20 license)**
- **Abaqus Research**
- **ArcGIS**
- **MODFLOW**
- **PTV Vissim**
- **GeoHECRAS**
- **Microsoft Visual Studio**
- **Comsol Multiphysics**
- **ENVI (PO Released)**
- **Topas Ver. 7 (PO Released)**
- **Match Ver. 3 (PO Released)**

Practice School Opportunities for Higher degree students:



List of collaborators:

- **University of Dundee, UK**
- **University of Bath, UK**
- **University of Virginia, USA**
- **University of Bengurion Negav, Israel**
- **University of Dublin, Trinity College, Ireland**
- **Central Building Research Institute, India**
- **Central Road Research Institute, India**
- **Central Electronics Engineering Research Institute, India**
- **University of Minnesota**
- **Hilti India**

Ph.D. Programmes:

Institute Fellowship:

- **Rs. 31,000 per month from starting**
- **Based on the DRC approval, fellowship may be increased to Rs. 33,000 per month after publication in Q2 journal**
- **Based on the DRC approval, fellowship may be increased to Rs. 35,000 per month after publication in Q1 journal**
- **Contingency: Rs. 10,000 per year**

Institute Support for PhD Students to Attend the Reputed Conferences in India

- **Registration Fee:**
 - **5000.00 INR for the international conferences**
 - **3500.00 INR for the national conferences**
- **Travel: Fare of AC 2-tier train (Students can go by flight also, but the reimbursement will be based on the maximum fare of AC 2-tier train)**
- **Accommodation: INR 1500.00 per day or as per actuals, whichever is lower.**
- **Food: INR 1000.00 per day or as per actuals, whichever is lower.**
- **The reimbursement will be done after producing the bills. The above institute support to the PhD students is applicable to one reputed conference only in a financial year.**

Pattern 1: Semester-wise course registration pattern (from admission in the Ph.D. programme) for Ph.D. students holding Higher Degree

Year	First Semester	Second Semester
I	BITS C797T Ph.D. Seminar BITS C791T Teaching Practice – I (FT) BITS E793T Practice Lecture Series – I (PT/Aspirant)	BITS C797T Ph.D. Seminar BITS G661 Research Methodology – I
II	BITS C797T Ph.D. Seminar BITS C799T Ph.D. Thesis	BITS C797T Ph.D. Seminar BITS C799T Ph.D. Thesis
III	BITS C797T Ph.D. Seminar BITS C799T Ph.D. Thesis	BITS C797T Ph.D. Seminar BITS C799T Ph.D. Thesis

FT = Full Time; PT – Part Time

Pattern 2: Semester-wise registration pattern (from admission in the Ph.D. programme) for Ph.D. students holding First Degree as the highest degree

Year	First Semester	Second Semester
I	Three courses (as recommended by Departmental Research Committee)	Three courses (as recommended by Departmental Research Committee)
II	BITS C797T Ph.D. Seminar BITS C791T Teaching Practice – I (FT) BITS E793T Practice Lecture Series – I (PT/Aspirant)	BITS C797T Ph.D. Seminar BITS G661 Research Methodology – I
III	BITS C797T Ph.D. Seminar BITS C799T Ph.D. Thesis	BITS C797T Ph.D. Seminar BITS C799T Ph.D. Thesis

FT = Full Time; PT – Part Time

Regarding all other aspects, prospective candidates can refer to the institute website.

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