Indian Institute of Technology, Bombay was established in 1958 and the Civil Engineering Department is part of the institute since its inception. The Department has grown tremendously over the years and is now recognized as one of the major engineering departments in the country. The department has developed strong links with the building and construction industry and academic and research , both with in and outside the country. Besides high quality teaching and instruction at both UG and PG levels, the Department is actively involved in basic and applied research and consultancy and provides high quality technical advisory support through various R D projects and consultancy to various organizations. The Department of Civil Engineering with its multifaceted faculty continues to maintain and cultivate its strong links with the infrastructural industry and academic and research institutions both within and outside the country.
IIT

The Department has excellent facilities for carrying out teaching, research and consultancy activities in various disciplines of Civil Engineering. Some important facilities in the Department are:
Structural Engineering Laboratories
Remote Sensing Laboratories

Geotechnical Engineering Laboratories

Water Resources Engineering Laboratory

Transportation Systems Engineering Laboratories

Ocean Engineering Laboratories

Construction Technology and Management Laboratories

Computational Laboratories

Traffic analysis and design. Modelling and design of mass transit. Urban land use transportation. Road safety and traffic congestion.
Traffic flow modeling and simulation; Traffic flow theory and capacity analysis.
Travel demand modelling and forecasting; behavioural travel modeling.
Application of ANNs, fuzzy systems, GAs and GIS in urban transportation planning.
Transportation network optimization, Rural road network planning; GIS applications. Control and management; Environmental, economical, financial impact assessment.

Centrifuge modelling; In-situ and laboratory engineering properties of soil; Numerical and physical modelling in geotechniques; Geomaterial and porous media characterization.
Environmental geotechnology; Industrial waste disposal and utilization.
Earthquake geotechnical engineering; Soil dynamics; Computational geomechanics; Soil-structure interaction problems; Foundation engineering; Numerical modelling of foundation and retaining structures.
Soil reinforcements; Slope stabilization; Rock slopes and rock joints; Ground improvement.
Digital image processing: Digital terrain modelling; GIS applications to landslides.
Geosynthetic-reinforced soil structures; Engineering application of geosynthetics.
Landslides, probabilistic methods, risk and reliability analysis, Mesh-free techniques (Material Point Method), large deformation problems.

Groundwater systems planning and management; Groundwater pollution investigation; Aquifer remediation strategies; Inverse modeling of the aquifers; Coastal aquifer hydrodynamics modeling.

Computational fluid dynamics; Coastal hydrodynamics; Watershed management; Application of numerical methods.
Urban drainage/storm water management; Sedimentation in channels and rivers; Urban water infrastructure management; Hydrologic disaster management.
Diffusion of jets and plumes; Multiple diffusers; Off-shore pipelines; Scour problems and cooling water structures.More...For WRE Labsclick here

Global positioning system; Geographic information system, Space geodesy; Remote sensing; Surveying. Remote sensing applications to water resources; Runoff modelling of watersheds; Optimization of water distribution systems.

Structural dynamics and earthquake engineering; Nonlinear dynamic analysis; Non-classically damped systems; Stochastic earthquake analysis; Wind induced vibrations; Seismic hazard assessment; Vibration control; Base isolation for earthquake-resistant design; Performance based seismic design; Inelastic design of steel and concrete structures; Reliability of structures; Earthquake vulnerability and service life evaluation of structures and facilities; Repair, rehabilitation and retrofitting of structures; Development and design of energy-absorbing and base-isolating devices.
Structural health/condition monitoring; Damage detection in structures; Wave propagation and scattering in structures; Application of artificial neural network.
Finite element analysis; Computational mechanics; Parallel computing for computational mechanics; Nonlinear dynamics; Structural stability and control; Composite mechanics.
Advanced materials; Concrete technology; Composite/hybrid structures; Fiber-reinforced polymers and fiber-reinforced concrete; Smart structures.
Design of nuclear containment structures; Design against impact loading; Design of cold-formed steel structures; Computer aided design.

Coastal, port and harbor engineering; wave hydrodynamics, coastal, marine and offshore structures, wave-structure interaction, coastal erosion and mitigation measures, physical and numerical modeling of coastal/ocean dynamics.
Design of port/harbor and offshore structures, design of coastal protection and waterfront structures.
Tidal, estuarine and bay hydrodynamics, sediment transport, harbor agitation/layout/planning.
Application of neural networks and soft computing for ocean engineering related problems.

Construction materials, Concrete technology, mineral and chemical admixtures, rheology and particle packing of cement based materials, Alkali activation, geopolymerisation, Mineral carbonation, Industrial residue valorization, sustainable construction materials.
Construction Management, Infrastructure Project Management, Modelling flexibility and resilience in infrastructure contracts, Building Information Modelling, Machine learning enabled construction safety management. For further information please visit the specialization website athttps://www.civil.iitb.ac.in/~ctam/

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302

E-Mail:hod[at]civil.iitb.ac.in

Profile Login

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
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Table:

Name Tenure Email Contact
Prof. Mhatre R P 1970-01-01 - TO - 1970-01-01 help[at]civil.iitb.ac.in 9819904542
Prof. J T Panikar 1970-01-01 - TO - 1967-01-03 help[at]civil.iitb.ac.in
Prof. R K Katti 1967-01-04 - TO - 1969-01-03 help[at]civil.iitb.ac.in
Prof. C K Ramesh 1969-04-01 - TO - 1970-01-01 help[at]civil.iitb.ac.in 25767301
Prof. S Narasimhan 1970-01-01 - TO - 1970-01-01 help[at]civil.iitb.ac.in 25767301
Prof. B S Khadilkar 1970-01-01 - TO - 1976-01-07 help[at]civil.iitb.ac.in 25767301
Prof. S H Nagaraja 1976-01-07 - TO - 1980-11-24 help[at]civil.iitb.ac.in 25767301
Prof. R S Ayyar 1980-11-24 - TO - 1982-04-28
Prof. S Chatterjee 1982-04-29 - TO - 1985-02-05 help[at]civil.iitb.ac.in 25767301
Prof. C Natarajan 1985-02-05 - TO - 1988-04-04 help[at]civil.iitb.ac.in 25767301
Prof. D N Buragohain 1988-04-04 - TO - 1991-04-03
Prof. V S Chandrasekharan 1991-04-03 - TO - 1993-12-23 9880399482
Prof. B S Pani 2024-08-24 - TO - 1996-12-24 bspani[at]iitb.ac.in 9820120057
Prof. S L Dhingra 1996-12-24 - TO - 2000-03-08 sldhingra[at]civil.iitb.ac.in 9820345493
Prof. Tarun Kant, FNAE, FNASc, FASc, FNA 2000-03-08 - TO - 2002-01-17 tkant[at]civil.iitb.ac.in 9969164646
Prof. G Venkatachalam 2002-01-18 - TO - 2005-06-16 gvee[at]iitb.ac.in 9820605352
Prof. M C Deo, FNAE 2005-06-17 - TO - 2008-07-17 mcdeo[at]civil.iitb.ac.in 9820956090
Prof. Yogesh M Desai 2008-07-18 - TO - 2012-01-02 desai[at]civil.iitb.ac.in 25767333
Prof. K V Krishna Rao 2012-01-03 - TO - 2017-12-04 kvkrao[at]civil.iitb.ac.in 25767305
Prof. T I Eldho 2017-12-05 - TO - 2021-03-29 eldho@civil.iitb.ac.in 25767339
Prof. Deepankar Choudhury, FNAE, FNASc, FASc, F.ASCE 2021-03-30 - TO - 2024-06-30 dc@civil.iitb.ac.in 25767335 / 9969274031

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

Table:

Sr. No.	Name	Specialization
1	Durga Parmar	(Dept. Office) unskilled
2	Vilas Bhamble	(Dept. Office) skilled
3	Anthonis George Kuruveetil	(Dept. Office) skilled
4	Mario Rodriguese	(Dept. Office) unskilled
5	Anita Dandge	(Dept. Office) unskilled
6	Nagsen Narwade	(Transport Lab) skilled
7	Vishal Hiwale	(Transport Lab) skilled
8	Suresh Jangle	(Soil Lab /Geotech Lab) skilled
9	Anil Sonawane	(Soil Lab /Geotech Lab) skilled
10	Sunil Vishwakarma	(Hydrulics Lab) skilled
11	Satish Mhaske	(Heavy Structure Lab) skilled
12	Mahesh Mane	(Heavy Structure Lab) skilled
13	Milind Dhodade	(Experimental Lab) skilled
14	Pappu Yadav	(Ocean Engg. Lab) skilled
15	Sandeep Wagh	(Concrete Lab/SEMT) unskilled
16	Vijay Chiman Solanki	(Concrete Lab/SEMT) unskilled
17	Manoj Gadade	(Concrete Lab/SEMT) skilled
18	Mayur Bhonde	(NGCF LAB) skilled
19	Umesh Natekar	(NGCF LAB) skilled

Geotechnical Engineering, Geotechnical Earthquake Engineering, Railway Transportation Geotechnics, In-situ Testing, Retaining Structures, Ground Improvement Techniques, Constitutive and Numerical Modelling in Geotechnical EngineeringDr Sanjay Nimbalkar serves as a Visiting Associate Professor at IIT Bombay. He is a proud alumnus of IIT Bombay (PhD 2007; MTech 1999) and currently works as an Associate Professor in the School of Civil and Environmental Engineering at the University of Technology Sydney (UTS), Australia. He also previously worked in the ARC Centre of excellence for geotechnical sciences and engineering spearheaded by University of Newcastle, University of Western Australia and University of Wollongong, Australia. His research has strongly focused on railway track design, railway embankment stability analysis, in-situ testing, instrumentation, retaining structures, ground improvement techniques, constitutive and numerical Modelling.He is a Charted Professional Engineer: CPEng (Engineers Australia) and a member of several ISSMGE technical societies. He is the recipient of the Thomas Telford Premium award from the Institution of Civil Engineer (ICE), UK (2014) and ‘Professor Joseph M Sussman Best Paper Prize’ from Frontiers in Built Environment, Switzerland (2020). He is a

EMCR fellow of Australian Academy of Science supported by the Australia-India Strategic Research Fund (AISRF) 2020.Links:UTS staff profileandpersonal webpage.

Hydrology, Watershed modeling, Impact assessment of land use change and climate change on water resources, Modeling evaluation of agricultural and urban BMPs for sediment and nutrient control, etc.

Serves as the US Ambassador's Distinguished Scholar to Ethiopia before the COVID-19 break. He is a former Duke Energy Distinguished Professor of Environmental Engineering and Science, and Director of the Global Institute of Energy and Environmental Systems of the North Carolina Charlotte, USA. He has authored/co-authored more than 272 research articles, book chapters, Federal design manuals and the textbook: "Geo-environmental Engineering: Principles and applications";, published by Marcel Dekker (ISBN: 0-8247-0045-7). He was the Editor-in-Chief of the Journal of Energy Engineering of the American Society of Civil Engineers (ASCE), and associate editor/editorial board member of 33 refereed international journals and contributing editor of three books, including the United Nations Encyclopedia of Life Support Systems (Environmental Monitoring Section)

Professor B. S. Mazumderis a former Visiting Professor, at Department of Civil Engineering, Indian Institute of Technology (IIT), Bombay. After his retirement from Indian Statistical Institute (ISI), Kolkata, Professor Mazumder joined as a Visiting Professor at Department of Civil Engineering, IIT Bombay in 2015 and continued till 2021. He was closely working with Prof. Eldho T.I., in the Hydraulics Research Laboratory. He offered number of lectures to Master’s and Ph.D. students and mentored many Ph.D. students working in the Hydraulics Research laboratory in the research areas of Fluid Dynamics, Turbulence, Fluvial Process and bridge scour problems. He has co-authored many research papers in reputed Journals with Prof. Eldho and his students. Prof. Mazumder and Prof. Eldho, jointly authored theText Book “Introduction to Advanced Fluid Dynamics and Fluvial Processes”published byCRC Press and Taylor and FrancisPublishers in September 2023.Areas of Research Interest:Applied fluid mechanics related to:-Turbulence, Particle-fluid interactions, Bed load and suspension,-Particle-size distributions, Bedform Migration, Wave-current interactions,-Flow Visualization and Image Processing, Dispersion phenomena,-Environmental Fluid Mechanics, MHD Flow and heat transfer

Engineering Law.

Managment of Large Infrastructure Projetcts, Railway Engieering, Bridge Engineering, Contract and Arbitration, Construction Management, Safety at worksite,Cost Estimation, Recruitment & Training.He has more than 40 years experince of working in Indian Railways & Goverment of India.He has worked as Menber (Engineering) Railway Board & Ex-officio Secretary to the Governent of India and thereafter as Member, Public Enterprises Section Board (DoPT), GoI.

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
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Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
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Professor in-charge for softwares

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

Table:

Software	Professor-In-Charge
Matlab	Subimal Ghosh
ArcGis	RAAJ Ramsankaran
AutoCAD	Mandar Inamdar
Abaqus	Siddhartha Ghosh
Erdas	RAAJ Ramsankaran
MX Road	P Vedagiri
ETABS	Manish Kumar
GMS	T I Eldho
LSDYNA	Sauvik Banerjee
MIKE	M C Deo
Plaxis	Ashish Juneja
FLAC	Deepankar Choudhury
SHAKE	Deepankar Choudhury
SAP2000	Manish Kumar
SPSS	M C Deo
Talren	B V S Viswanadham
VISSIM	Tom V Mathew
WaterGems	V. Jothiprakash
TRANSYT 15 & PICARDY 9	K V Krishna Rao
IBM SPSS	Subimal Ghosh
BENTLEY - SEWERGEM & WATERGEMS	Subimal Ghosh
CUBE	Gopal R Patil
Topas 6	Muhammad Salman
ROCSCIENCE	Ashish Juneja
Surfer & Grapher	T I Eldho
MIDAS Civil	Alok Goyal / Deepankar Choudhury

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

Table:

Sr. No.	Name	Mentor	Tenure
1	Dr. Milaa Zyad Murshan		2024-06-03 - TO - 2025-06-02
2	Dr. Revanth Kumar Kandagaddala		2023-11-06 - TO - 2024-12-19
3	Dr. Uday Boddepalli		2024-05-21 - TO - 2025-05-20
4	Dr. Pranoy Debnath		2024-05-03 - TO - 2025-05-02
5	Dr. Satwik Pankajkumar Rayjada		2024-01-17 - TO - 2024-10-02
6	Dr. Nabanita Roy		2024-04-22 - TO - 2025-04-21
7	Dr. Arvind Kumar Tiwari		2023-11-09 - TO - 2024-04-17
8	Dr. Manthirikul Sandeep		2024-02-05 - TO - 2025-02-04
9	Dr. Rony J.S.		2024-04-08 - TO - 2025-04-07
10	Dr. Satwik Pankajkumar Rayjada		2024-04-03 - TO - 2024-10-02
11	Dr. Lukesh Parida		2024-04-10 - TO - 2025-04-09
12	Dr. Somyashree Dixit		2024-01-17 - TO - 2024-04-16
13	Dr. Dibyandu Roy		2024-03-13 - TO - 2025-03-13
14	Dr. Pranab Kar		2023-08-23 - TO - 2023-08-22
15	Dr. Nabodyuti Das		2023-08-23 - TO - 2024-02-22
16	Dr. Md Ahsaan Hussain	Prof. Swagata Basu	2023-08-28 - TO - 2024-08-27
17	Dr. Divya M		2023-08-26 - TO - 2024-08-25
18	Dr. Paresh Govind Mirgal	Prof. Sauvik Banerjee	2023-04-18 - TO - 2023-10-17
19	Dr. Junaid Nabi	Prof. Najeeb Shariff Mohammad	2023-05-04 - TO - 2024-05-03
20	Dr. Rahul Raoniar	Prof. P.Vedagiri	2023-03-29 - TO - 2025-03-28
21	Dr. Pankaj Kumar	Prof. B V S Viswanadham	2023-03-16 - TO - 2023-09-15
22	Dr. Abhishek Kumar Pandey	Prof. T.I.Eldho	2023-04-18 - TO - 2024-04-19
23	Dr. Snigdha Bhutange	Prof. Muhammad Salman	2022-11-28 - TO - 2023-11-27
24	Dr. Gaurav Misuriya	Prof. T.I.Eldho	2023-04-13 - TO - 2023-10-12
25	Dr. Tathagatha Khan	Prof. Nagendra Rao Velaga	2022-10-17 - TO - 2023-10-16
26	Dr. B. Sharanbaswa	Prof. Swagata Basu	2022-10-03 - TO - 2023-09-30
27	Dr. Kishor Bhagwat	Prof. Venkata S K Delhi	2022-07-13 - TO - 2023-01-12
28	Dr. Aatish Anshuman	Prof. T.I.Eldho	2022-07-13 - TO - 2023-01-12
29	Dr. Dineshkumar M	Prof. Billie Sivakumar	2022-06-03 - TO - 2024-05-15
30	Dr. Sameer J Suthar	Prof. Pradipta Banerjee	2022-05-12 - TO - 2022-11-11
31	Dr. Gajanand Sharma	Prof. Gopal Patil	2022-05-12 - TO - 2022-09-05
32	Dr. Sandeepan Roy	Prof. Avijit Maji	2022-05-11 - TO - 2022-11-10
33	Dr. Deviprasad B. S. Gowda	Prof. Santiram Chaterjee	2022-04-25 - TO - 2023-03-31
34	Dr. Vasudevan N	Prof. K.V.Krishna Rao	2022-03-30 - TO - 2023-03-29

35 Dr. Janani L Prof. Tom V.Mathew 2022-03-15 - TO - 2022-08-19
36 Dr. Varsha Pandey Prof. Eswar Rajasekaran 2022-03-02 - TO - 2023-03-01
37 Dr. Nishant Mukund Pawar Prof. Nagendra Rao Velaga 2022-03-21 - TO - 2023-03-20
38 Dr. P.V. Ponambala Moorthi Prof. Prakash Nanthagopalan 2022-02-14 - TO - 2023-02-13
39 Dr. Priyanka Gautam Prof. T I Eldho 2022-03-14 - TO - 2022-09-13
40 Dr. Rishi Dipak Sahastrabuddhe Prof. Subimal Ghosh 2022-03-04 - TO - 2022-09-03
41 Dr. Sowjanya Dulipala Prof. Gopal Patil 2021-12-29 - TO - 2022-12-28
42 Dr. Ammavajjala Sesha Sai Raghuram Prof. Daska S Murthy 2021-09-24 - TO - 2022-06-17
43 Dr. Saista Tabssum Prof. R Balaji 2021-08-20 - TO - 2023-08-19
44 Dr. Akhilesh Nair Prof.Indu Jaya 2021-06-30 - TO - 2021-09-08
45 Dr.Deepti Ranjan Majhi Prof. Siddhartha Ghosh 2021-04-05 - TO - 2022-04-04
46 Dr. Krishnendu P Prof. R.Balaji 2021-03-25 - TO - 2021-08-09
47 Dr. Swati Sirsant Prof. Manne Janga Reddy 2021-03-15 - TO - 2022-03-14
48 Dr. Rameeza Moideen Prof. Manasa R. Behera 2021-09-16 - TO - 2022-03-15
49 Dr.Kirti Mahajan Prof. Nagendra Velega 2021-03-15 - TO - 2022-03-14
50 Dr.Sathya Kumar Vasu Prof. RAAJ Ramsankaran 2021-03-05 - TO - 2021-12-01
51 Dr.Vanama Raghava Kumar Prof. R.Balaji 2021-03-05 - TO - 2022-03-04
52 Dr.Rakesh Sahu Prof. RAAJ Ramsankaran 2021-03-04 - TO - 2022-03-03
53 Dr.Ankit Kumar Yadav Prof. Nagendra Velega 2021-03-04 - TO - 2022-03-03
54 Dr. Maneesha Sebastian Prof. Manasa R Behera 2021-03-01 - TO - 2021-07-16
55 Dr. Sreedevi S Prof. T.I.Eldho 2021-03-01 - TO - 2022-02-28
56 Dr. Muhammed Hashid Prof. T.I.Eldho 2021-02-22 - TO - 2023-02-21
57 Dr. Tharun Dolla Prof. Venkata S Delhi 2022-01-12 - TO - 2023-01-11
58 Dr.Vikas Kumar Das Prof. Billie Sivakumar 2021-01-01 - TO - 2023-06-30
59 Dr Aradhana Yaduvanshi Prof. Riddhi Singh 2020-08-04 - TO - 2022-08-03
60 Dr Athira Gopinath Prof. Prakash Nanthagopalan 2020-12-01 - TO - 2022-11-30
61 Dr Anugya Shukla Prof. RAAJ Ramsankaran 2020-12-01 - TO - 2022-11-30
62 Dr Prateek Verma Prof. RAAJ Ramsankaran 2020-02-03 - TO - 2022-02-02
63 Dr Jismy Poulose Prof. Manas R Behera 2020-01-01 - TO - 2021-12-31
64 Dr Ranjit Kumar Jha Prof. Basudev Biswal 2019-11-13 - TO - 2020-11-12
65 Dr. Seethalakshmi P Prof. Ashish Juneja 2019-11-01 - TO - 2020-02-04
66 Dr. Sanjeev Gadad Prof. Eswar Rajsekaran 2019-01-01 - TO - 2021-12-31
67 Dr Ruchika Agarwala Prof. P Vedagiri 2019-03-15 - TO - 2021-03-14
68 Dr. Vikas Sharma Prof. D N Singh 2019-02-01 - TO - 2021-01-29
69 Dr Rishma C Prof. Subimal Ghosh 2018-09-10 - TO - 2019-08-16
70 Dr.P A Umesh Prof. Manas R Behera 2018-06-18 - TO - 2019-08-16
71 Dr. Needhi Kotoky Prof. Jayadipta Ghosh 2018-06-05 - TO - 2019-10-11
72 Dr.Ambika Kuity Prof. Dharmveer Singh 2018-10-22 - TO - 2019-07-12
73 Dr. Shiva Kumar G Prof. Dharamveer Singh 2018-05-08 - TO - 2018-11-30
74 Dr. Prateek Gantayat Prof. RAAJ Ramsankaran 2018-08-30 - TO - 2019-09-16
75 Dr. Saurabh Biswas Prof. Naresh K. Chandiramani 2019-10-01 - TO - 2018-10-15
76 Dr. Aishwarya KP Prof. T.I.Eldho 2018-01-01 - TO - 2019-12-31
77 Dr. Ankit Kathuria Prof. P.Vedagiri 2017-10-27 - TO - 2018-05-10
78 Dr. Sowmya S D N Singh 2014-11-20 - TO - 2017-03-03
79 Dr Anuj Budhkar Prof. Avijit Maji 2017-10-25 - TO - 2018-04-09
80 Dr. Renjith Vishnuradhan Prof. T.I.Eldho 2017-09-21 - TO - 2021-09-29
81 Dr. Sreeja K. G. Prof. T.I.Eldho 2014-06-05 - TO - 2017-06-02
82 Dr. Swagata Ghosh Prof. RAAJ Ramsankaran 2013-04-04 - TO - 2014-07-31

Structural Engineering: Computational Solid & Structural Mechanics, Mechanics of Composite Materials & Structures,Finite Element Method.

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

The Department of Civil Engineering offers a broad-based undergraduate (UG) B. Tech. degree programme. These UG students also have the opportunity to convert into dual-degree (B. Tech.-M. Tech.) programme in the available specialisations. The department offers M. Tech. and Ph. D. programmes in the following specializations:

In each academic year, about 175 students are admitted to the B. Tech degree programme. Total B.Tech students on roll is about 600. The intake into M. Tech. programmes is about 93. Every year about 35 students are admitted to our doctoral (PhD) programme.

Graduate Programs and Students on roll (2022)

Current PG Students
*Note: Data as on 1st Oct 2022.
Graduated Students

The department offers M. Tech. and Ph.D. programmes in the following specializations:
The department admits about 75 M.Tech. students every year into the above specializations. Each specialization has well-equipped laboratories with excellent advanced instrumentation and equipment for research and teaching. State-of-art computational facilities are available in the departmental computational laboratory which is equipped with new servers, workstations and personal computers. All the computers in the department are networked with the institute Local Area Network and are connected to internet through IIT Bombay’s proxy servers.
The students of the Department use the Central Library that has more than 440,000 books and volumes,

and subscribes more than 1800 current journals in Science, Engineering, Humanities and Social Sciences. Library cataloguing is fully computerized. The Department also has a library where all B. Tech., M. Tech. and Ph.D. Theses completed at the Department are available for reference. The Department has about 50 faculty members and about 30 other technical and non-technical staff.
The department disseminates knowledge to working professionals regularly by organizing national and international conferences and workshops. Continuing Education Programme courses are also conducted by the Department on a regular basis. The faculty publishes extensively from the research and consultancy work carried out in the Department. More than 200 research papers are published every year by the faculty in all areas of Civil Engineering in the national and international journals and conferences.
The M.Tech. Programme spans for a period of two academic years. The rules and regulations pertaining to M.Tech Programme at IIT Bombay can be foundhere.
*Pass or No Pass Course – No grade given
*Pass or No Pass Course – No grade given
*Pass or No Pass Course – No grade given
*Pass or No Pass Course – No grade given
*Pass or No Pass Course – No grade given
*Pass or No Pass Course – No grade given
*Pass or No Pass Course – No grade given
The Department of Civil Engineering admits 117 students in undergraduate programme. The department offers dual-degree programmes in the following six areas of specialization:
The B.Tech. and M.Tech. Dual Degree Programme involves five full years of coursework that should be completed by the student to earn required credits to graduate. The minimum credit requirement for the student to graduate from Civil Engineering is 395 credits.
The rules and regulations pertaining to B.Tech and Dual Degree Programme at IIT Bombay can be found here.
For all the specializations, B.Tech. students at the end of Semester VI can opt to pursue a M.Tech. in the specialization of interest. Hence, the coursework from semester I to VI will remain the same as B.Tech. coursework for all dual degree students. The coursework for semesters VII to X will depend on the specialization chosen for the M.Tech.degree.
Coursework is same as B.Tech.
CE 401
Water Resources
Engineering
3
0
0
6
C
CE 463
Probability and
Statistics for Civil Engineers
3
0
0
6
C
CE 465
OR
CE 603
Numerical Methods in
Civil Engineering
OR
Numerical Methods
2

3
1

0
0

0
6

6
C

C
CE
407
Foundation Engineering
3
0
0
6
C

Elective I

6
D
CE 740
OR
CE 751
Traffic Engineering
OR
Urban Transportation
Systems Planning
3

3
0

0
2

2
8

8
C

C
CE 753
OR
CE 694
Transportation Systems
Studio

OR
Credit Seminar
0
0
4
4

4
C

C
CE 753
OR
CE 694
Transportation Systems
Studio
OR
Credit Seminar
0
0
4
4

4
C

C

Elective II

6
D

Elective III

6
D

Elective IV

6
D

Elective V

6
D

Specialization Elective
I

6
D

Specialization Elective
II

6
D
CE 740
OR
CE 751
Traffic Engineering
OR
Urban Transportation
Systems Planning
3

3
0

0
2

2
8

8
C

C
CE 742
Pavement Systems
Engineering
3
0
2
8
C
CE 593
Dual Degree Project
Stage I

36
C
CE 740

OR
CE 751
Traffic Engineering
OR
Urban Transportation
Systems Planning
3

3
0

0
2

2
8

8
C

C
CE 742
Pavement Systems
Engineering
3
0
2
8
C
CE 593
Dual Degree Project
Stage I

36
C
List of prescribed elective courses
Coursework is same as B.Tech.
CE 401
Water Resources
Engineering
3
0
0
6
C
CE 463
Probability and
Statistics for Civil Engineers
3
0
0
6
C

CE 465
OR
CE 603
Numerical Methods in
Civil Engineering
OR
Numerical Methods
2

3
1

0
0

0
6

6
C

C
CE 407
Foundation Engineering
3
0
0
6
C

Elective I

6
D
CE 645

CE 647
Geotechnical Centrifuge
Modelling
OR
Soil Dynamics and
Machine Foundations
3
0
0
6
C
CE643
Experimental Geotechnics
0
0
4

4
C

Elective III

6
D

Elective IV

6
D

Elective V

6
D

Specialization Elective
I

6
D

Specialization Elective
II

6
D
CE 740
OR
CE 751
Traffic Engineering
OR
Urban Transportation
Systems Planning
3

3
0

0
2

2

8

8
C

C
CE 742
Pavement Systems
Engineering
3
0
2
8
C
CE 593
Dual Degree Project
Stage I

36
C
CE 740
OR
CE 751
Traffic Engineering
OR
Urban Transportation
Systems Planning
3

3
0

0
2

2
8

8
C

C
CE 742
Pavement Systems
Engineering
3
0
2
8
C
CE 593
Dual Degree Project
Stage I

36
C
List of prescribed elective courses
Coursework is same as B.Tech.
CE 401
Water Resources
Engineering
3
0
0
6
C
CE 463
Probability and
Statistics for Civil Engineers
3
0
0
6
C
CE 465
OR
CE 603
Numerical Methods in
Civil Engineering
OR
Numerical Methods
2

3
1

0
0

0
6

6
C

C
CE 407
Foundation Engineering
3
0
0
6
C

Elective I

6
D
CE 731
OR
CE-626
Mechanics of Fluid Flow
OR
Groundwater Systems and
Management
3

3
0

0
0

0
6

6
C

C
CE 675
Advanced Experimental
Fluid Mechanics
0
0
4
4
C
CE 669
Advanced Hydrological
Analysis and Design
3
0
0
6
C
CE 676
Water Resources System
3
0
0
6
C
CE 694
Credit Seminar

C

Elective II

6
D

Elective III

6
D

Elective IV

6
D

Elective V

6
D
CE 731
OR
CE-626
Mechanics of Fluid Flow
OR
Groundwater Systems and
Management
3

3
0

0
0

0
6

6
C

C

Specialization Elective
I

6

Specialization Elective
II

6

CE 593
Dual Degree Project
Stage I

36
C
CE 731
OR
CE-626
Mechanics of Fluid Flow
OR
Groundwater Systems and
Management
3

3
0

0
0

0
6

6
C

C

Specialization Elective
I

6

Specialization Elective
II

6

CE 593
Dual Degree Project
Stage I

36
C
List of prescribed elective courses
Coursework is same as B.Tech.
Course Number
Course Title
L
T
P
C
Course
Tag
CE 401
Water Resources
Engineering
3
0
0
6
C
CE 463
Probability and
Statistics for Civil Engineers
3
0
0
6
C
CE 465
OR
CE 603
Numerical Methods in
Civil Engineering
OR
Numerical Methods
2

3
1

0
0

0
6

6
C

C
CE 407
Foundation Engineering
3
0
0
6
C

Elective I

6
D
CE
623
Advanced Solid Mechanics
3
0
0
6
C
CE 627
Structural
Design

4
C
Course Number
Course Title
L
T
P
C
Course
Tag
CE 694
Credit Seminar

4
C

Elective II

6

D

Elective III

6
D

Elective IV

6
D

Elective V

6
D

Specialization Elective I

3
0
0
6
C

Specialization Elective II

6
D
Course Number
Course Title
L
T
P
C
Course Tag
CE 616
Structural Dynamics
3
0
0
6
C

Specialization Elective
III

6

Specialization Elective
IV

6

CE 593
Dual Degree Project
Stage I

36
C
Course Number
Course Title
L
T
P
C
Course
Tag

Specialization Elective
V

6
D

Specialization Elective
VI

6
D
CE 594
Dual Degree Project
Stage II

36
C

List of prescribed elective courses
Coursework is same as B.Tech.

Course Number	Course Title	L	T	P	C	Course Tag
CE 401	Water Resources Engineering	3	0	0	6	C
CE 463	Probability and Statistics for Civil Engineers	3	0	0	6	C
CE 465 OR CE 603	Numerical Methods in Civil Engineering OR Numerical Methods	2 3	1 0	0 0	6 6	C C
CE 407	Foundation Engineering	3	0	0	6	C

Elective I

6
D
CE 680
Mechanics of Water Waves
3
0
0
6
C
CE 769
Coastal and Ocean Environment
3
0
0
6
C
Course Number
Course Title
L
T
P
C
Course
Tag
CE 707
Coastal, Port and Harbor Engineering
3
0
0
6
C
CE 798
Offshore Engineering
3
0
0
6
C
CE 694
Credit Seminar

4
C

Elective II

6
D

Elective III

6
D

Elective IV

6
D

Elective V

6
D
Course Number
Course Title
L
T
P
C
Course
Tag
CE 706
Ocean Engineering Laboratory
0
0
4
4
C

Specialization Elective
I

6
D

Specialization Elective
II

6
D
CE 593

Dual Degree Project
Stage I

36
C
Course Number
Course Title
L
T
P
C
Course
Tag

Specialization Elective
III

6
D

Specialization Elective
IV

6
D
CE 594
Dual Degree Project
Stage II

36
C
List of prescribed elective courses
Coursework is same as B.Tech.
Course Number
Course Title
L
T
P
C
Course
Tag
CE 401
Water Resources
Engineering
3
0
0

6
C
CE 463
Probability and
Statistics for Civil Engineers
3
0
0
6
C
CE 465
OR
CE 603
Numerical Methods in
Civil Engineering
OR
Numerical Methods
2

3
1

0
0

0
6

6
C

C
CE 407
Foundation Engineering
3
0
0
6
C

Elective I

6
D
CE 712
Digital Image Processing of Remotely Sensed
Data
3
0
0
6
C
CE 701

Remote sensing Technology
3
0
0
6
C
Course Number
Course Title
L
T
P
C
Course
Tag
CE 694
Credit Seminar

4
C

Elective II

6
D

Elective III

6
D

Elective IV

6
D

Elective V

6
D

Specialization Elective I

6

D

Specialization Elective II

6
D
Course Number
Course Title
L
T
P
C
Course
Tag
CE 630
Geographical Information Systems in Civil
Engineering
3
0
0
6
C
CE 703
Remote sensing Lab
0
0
4
4
C

Specialization Elective
III

6
D
CE 593
Dual Degree Project
Stage I

36
C
Course Number
Course Title
L
T
P
C
Course
Tag

Specialization Elective IV

6
D

Specialization Elective V

6
D
CE 594
Dual Degree Project Stage II

36
C
List of prescribed elective courses
Coursework is same as B.Tech.
Course Code
Course Name
Credit Structure
Credits
Remarks
L
T
P
CE 401
Water Resources Engineering
3
0
0
6
Core Course
CE 463
Probability and Statistics for Civil Engineers
3
0
0
6
Core Course
CE 465
Numerical Methods in Civil Engineering
3
0

0
6
Core
Course
CE 407
Foundation Engineering
3
0
0
6
Core Course
CE 717
Construction Planning and Control
3
1
0
8
PG Core
CE 4xx
Departmental UG ElectiveI
3
0
0
6
Departmental UG
Elective
CE 718
Construction Materials Laboratory
0
0
4
4
PG Lab
Total Credits
42

Course
Code
Course
Name
Credit
Structure
Credits
Remarks
L
T
P
CE 4xx
Departmental UG Elective II
3
0
0
6
Departmental UG
Electives

CE 4xx
Departmental UG Elective III
3
0
0
6
CE 4xx
Departmental UG Elective IV
3
0
0
6
CE 4xx
Departmental UG Elective V
3
0
0
6
CE 719
Construction
Contracts
3
0
0
6
PG Core
CE xxx
PG Elective I
3
0
0
6
PGElective
CE 722
Construction
Management Studio
0
0
4
4
PG Lab
CE 694
Credit seminar

4
Seminar
Total Credits
44

Course
Code
Course
Name

Credit
Structure
Credits
Remarks
L
T
P
CE 713
Advanced
Concrete Technology
3
0
0
6
PG core
CE xxx
PG Elective II
3
0
0
6
PG Elective
CE xxx
DDP-I

36
Project - Stage I
Total Credits
48

Course
Code
Course
Name
Credit
Structure
Credits
Remarks
L
T
P
CE xxx
PG
Elective III
3
0
0
6
PG
Elective
CE xxx
PG Elective IV
3

0
0
6
PG Elective
CE xxx
DDP-II

36
Project
– Stage II
Total Credits
48

List of prescribed elective courses
The courses offered to M.Tech. students under various specializations are also open to the PhD students where the courses are relevant to their research area, subject to the rules as prescribed by IIT Bombay. The rules pertaining to PhD programme at IIT Bombay can be foundhere.
The course requirement for a PhD student with an M.Tech. Degree is 3 M.Tech level courses and one seminar. Thus the minimum credit requirement in general would be 22. However, the same number can be reduced to 16 credits if the candidate has undergone relevant courses. Every PhD student must maintain a minimum grade requirement from the courses. In addition to the course work requirement, the students need to take a two-stage qualifier examination which will lead to confirmation of the student's PhD registration.
For the confirmation of a candidate's PhD registration, a two-stage qualifier examination in held.
Stage-1:The "credit seminar" will form Stage-1. This should be completed before the end of the first semester of joining. The credit seminar should be oriented towards formulation of the research proposal. It should include identification of the research topic and its importance, literature review and appraisal of current state-of-the-art, gaps in the area and motivation of the proposed work.
Stage 2:A "PhD Qualifier Examination" will form the Stage-2 of the qualifier. This should be conducted before the end of the second semester of joining. This PhD Qualifier Examination will be an oral examination conducted for evaluation of candidate's aptitude towards carrying out the proposed research work. The knowledge of the candidate in the basic subject areas of the proposed research will be tested by the examiners in the PhD Qualifier Examination
M.Tech students with minimum level of grades in the coursers can convert to M.Tech – PhD dual degree program. In such cases, the students have to only clear the stage-2 of the qualifier examination for the confirmation of their registration. The student has to appear for PhD qualifier examination within six months of the date of conversion from M.Tech. to PhD and should complete it within a maximum period of nine months from the date of conversion
Transportation Planning: Sustainable urban transportation planning, Travel survey design and analysis, Travel demand modelling, Travel behaviour and choice modelling, Transport system analysis and economic evaluation, Land use and transport planning models, Air travel demand modelling, Freight transport modelling, public transport planning and design, and Transport network modelling. Traffic Engineering: Traffic flow theory and capacity analysis, Traffic management, operations and control, Pedestrian flow modelling, Intelligent Transportation Systems, and traffic impact assessment and externalities. Highway Planning and Design: Optimal alignment design, Performance based geometric design, Road safety. Pavement Engineering: Characterization and performance tests of pavement materials, Recycled and warm mix asphalt mixes, Asphalt rheology, Constitutive modelling of pavement materials, Pavement maintenance, rehabilitation and management systems, and design and performance evaluation of concrete pavements.
Geotechnical earthquake engineering; Geoenvironmental engineering; Energy geotechnics; Computational geomechanics; Foundation engineering; Seismic hazard study; Liquefaction; Constitutive modelling of soil; Soil-structure interaction; Offshore geotechnical engineering; Pipeline geotechnics; Soil Characterization, Foundation for offshore structures, Bio-geo interface study; Earth dam problems; Rock

Mechanics and tunnelling; Soil dynamics; Soil stabilization; Expansive soils; Earth retention structures; Slope stabilization; Ground improvement; Reinforced soil structures and geosynthetics; Physical modelling in geotechnics; Centrifuge modelling of geotechnical problems; Optimization techniques and environmental geotechnics; Landslides; GIS applications for geotechnical problems; Earthquake resistant design of geotechnical structures; Reliability analysis; Dynamic soil characterization; Landfills and waste containment engineering; Sea walls.
Computational Mechanics; Finite element techniques; Composite materials and mechanics; Reinforced and prestressed concrete structures; Steel structures; Strength, stability and dynamics of thin membranes; Plates and shells; Structural optimization; Structural resilience, Structural response to blast, impact and shock loading; Pressure vessels; Reliability analysis; Seismic vulnerability and fragility assessment of structures; Bridge engineering; Machine learning; Probabilistic design methods; Curved grid; Cable networks; Plastic analysis techniques; Structural dynamics; Earthquake engineering; Earthquake disaster management; Vibration control of structures; Wind effects on structures; Inverse problems and artificial intelligence applications; Offshore structures; Shell foundation; Structural health monitoring.
Development of methods and algorithms for digital analysis of Remotely Sensed Data (RSD); Remote Sensing, GIS and DTM in Hydrological Modelling; Decision Support Systems in Watershed Development; Remote sensing for Glacier Studies, Remote sensing data assimilation, Microwave remote sensing; Uncertainty modelling; Digital image processing; Fuzzy logic
Building materials, Concrete technology; Construction management; Infrastructure project management.
Groundwater systems planning and management; Groundwater pollution investigation; Aquifer remediation strategies; Inverse modeling of the aquifers; Coastal aquifer hydrodynamics modeling.
Computational fluid dynamics; Coastal hydrodynamics; Watershed management; Application of numerical methods.
Urban drainage/storm water management; Sedimentation in channels and rivers; Urban water infrastructure management; Hydrologic disaster management.
Diffusion of jets and plumes; Multiple diffusers; Off-shore pipelines; Scour problems and cooling water structures.
Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

Table:

Specialisations	PhD	M.Tech.	Total
Transportation Systems Engineering (CE-1)	36	22	58
Geotechnical Engineering (CE-2)	55	18	73
Water Resources Engineering (CE-3)	61	23	84
Structural Engineering (CE-4)	57	32	89
Ocean Engineering (CE-5)	10	11	21
Remote Sensing (CE-6)	29	13	42
Construction Tech. & Mgmt. (CE-7)	27	22	49
Total*	275	141	416

Table:

Year	M.Tech.	Ph.D
2012	39	12
2013	40	13
2014	41	14
2015	50	17
2016	44	14
2017	50	34
2018	64	24
2019	56	25
2020	56	31
2021	61	31

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 751	Urban Transportation Systems Planning	3	0	2	8	C
CE 740	Traffic Engineering	3	0	2	8	C
CE 742	Pavement Systems Engineering	3	0	2	8	C
CE 694	Seminar	0	0	0	4	C
	Elective I				6	D

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 753	CE-753 Traffic Design and Studio	0	0	0	4	C
	Elective II				6	D
	Elective III				6	D
	Elective IV				6	D
	Elective V				6	D
	Institute elective				6	I
HS791	Communication skill*				2*	C
CE792	Communication skill*				4*	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 797	I Stage Dissertation				48	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 798	II Stage Dissertation				42	C

Table:

Course Number	Course Title
CE 605	Applied Statistics
CE 630	Geographical Information Systems in Civil Engineering
CE 744	Analysis of Transportation Systems
CE 780	Behavioral travel modeling
CE 771	Optimization in Civil Engineering
CE 772	Pavement materials
CE 773	Advanced Highway Design and Analysis
CE 774	Traffic Management and Design
CE 776	Transportation Project Evaluation and Decision Making
CE 775	Airport planning and design
US 602	Fundamentals of Urban Science & Engineering

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 631	Soil Engineering I	3	0	0	6	C
CE 643	Experimental Geotechnics	0	0	4	4	C
	Elective I				6	D
	Elective II				6	D
	Elective III				6	D
	Elective IV				6	D
CE 694	Seminar	0	0	4	4	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 634	Soil Engineering II	3	0	0	6	C
	Elective V				6	D
	Elective VI				6	D
	Elective VII				6	D
	Institute elective				6	D
HS791	Communication skill*				2*	C
CE792	Communication skill*				4*	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 797	I Stage Dissertation				48	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 798	II Stage Dissertation				42	C

Table:

Course Number	Course Title
CE 633	Soil Structure Interaction
CE 637	Rock Mechanics
CE 640	Foundation Engineering
CE 641	Environmental Geomechanics
CE 645	Geotechnical Centrifuge Modelling
CE 647	Soil Dynamics and Machine Foundations
CE 648	Finite Element Methods in Geotechnical Engineering
CE 652	Foundations of Offshore Structures
CE 746	Reinforced Earth and Geotextiles
CE 632	Ground Improvement
CE 683	Marine Geotechnical Engineering
CE 684	Advanced Geotechnical Earthquake Engineering
CE 688	Risk Assessment & Management in Geotechnical Engineering
CE 702	Geotechnical Constitutive Models
CE 656	Plasticity Theory and Applications in Geomechanics

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 731	Mechanics of Fluid Flow	3	0	0	6	C
CE 626	Groundwater Systems and Management	3	0	0	6	C
	Elective I				6	D
	Elective II				6	D
	Elective III				6	D
CE 675	Advanced Experimental Fluid Mechanics	0	0	4	4	C
CE 694	Seminar				4	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 669	Advanced Hydrological Analysis and Design	3	0	0	6	C
CE 676	Water Resources System	3	0	0	6	C
	Elective IV				6	D
	Elective V				6	D
	Institute elective				6	I
HS791	Communication skill*				2*	C
CE792	Communication skill*				4*	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 797	I Stage Dissertation				48	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 798	II Stage Dissertation			42	C	

Table:

Course Number	Course Title
CE 605	Applied Statistics
CE 607	Numerical Techniques in Hydraulic Engineering
CE 667	Hydraulic Structures
CE 672	River Mechanics and Control Structures
CE 682	Finite Element Application To Flow Problems
CE 736	Environmental Impact Analysis of Water Resources Systems
CE 738	Irrigation and Conveyance Network
CE 764	Hydro informatics
CE 765	Environmental Fluid Mechanics
CE 766	Watershed Management
CE 767	Hydrological Hazard Mitigation Management
CE 768	Urban Water and Environmental Management
CE 608	Eco-hydro climatology
CE 686	Probabilistic Methods in Hydrology
CE 603	Numerical Methods
CE 769	Coastal and Ocean Environment
CE 680	Mechanics of Water Waves
CE 710	Remote Sensing and GIS for Water Resources Management
CE 630	Geographical Information Systems in Civil Engineering
CE 712	Digital Image Processing of Remotely Sensed Data
CE 701	Remote Sensing Technology

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 616	Structural Dynamics	3	0	0	6	C
CE 623	Advanced Solid Mechanics	3	0	0	6	C
	Elective I				6	D
	Elective II				6	D
	Elective III				6	D
CE 627	Structural Design Lab	0	0	4	4	C
CE 694	Seminar				4	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
	Elective IV				6	D
	Elective V				6	D
	Elective VI				6	D

Elective VII 6 D
Institute elective 6 I
HS791 Communication skill* 2* C
CE792 Communication skill* 4* C

Table:

Course Number Course Title L T P C Course Tag
CE 797 I Stage Dissertation 48 C

Table:

Course Number Course Title L T P C Course Tag
CE 798 II Stage Dissertation 42 C

Table:

Course Number Course Title
CE 448 Prestressed Concrete
CE 482 Construction Management
CE 602 Design of Offshore Structures
CE 603 Numerical Methods
CE 605 Applied Statistics
CE 610 Introduction to Earthquake Engg.
CE 611 Advanced Structural Mechanics
CE 615 Structural Optimisation
CE 617 Plates and Shells
CE 619 Structural Stability
CE 620 Finite Element Method
CE 621 Plastic Analysis
CE 624 Nonlinear Analysis
CE 625 Analysis of Offshore Structures
CE 629 Elastic Waves in Solids
CE 633 Soil Structure Interaction
CE 639 Green Building Design
CE 640 Foundation Engineering
CE 647 Soil Dynamics and Machine Foundations
CE 651 Bridge Engineering
CE 653: Structural Reliability and Risk Analysis
CE 679 Advanced Mechanics of Reinforced Concrete
CE 684 Advanced Geotechnical Earthquake Engineering
CE 713 Advanced Concrete Technology
CE 719 Construction Contracts
CE 720 Non-destructive Testing of Materials
CE 727 Construction Materials
CE 743 Condition Assessment and Rehabilitation of Structures
CE 771 Optimization in Civil Engineering

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 680	Mechanics of Water Waves	3	0	0	6	C
CE 769	Coastal and Ocean Environment	3	0	0	6	C
	Elective I				6	D
	Elective II				6	D
	Elective III				6	D
CE 706	Ocean Engineering Lab	0	0	4	4	C
CE 694	Seminar				4	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 798	Offshore Engineering	3	0	0	6	C
CE 707	Coastal, Port and Harbour Engineering	3	0	0	6	C
	Elective IV				6	D
	Elective V				6	D
	Institute elective				6	I
HS791	Communication skill*				2*	C
CE792	Communication skill*				4*	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 797	I Stage Dissertation				48	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 798	II Stage Dissertation				42	C

Table:

Course Number	Course Title
CE 602	Design of Offshore Structures
CE 603	Numerical Methods
CE 605	Applied Statistics
CE 607	Numerical Techniques in Hydraulic Engineering
CE 713	Advanced Concrete Technology
CE 616	Structural Dynamics
CE 620	Finite Element Methods
CE 622	Reliability based Civil Engineering Design
CE 625	Analysis of Offshore Structures
CE 633	Soil Structure Interaction
CE 640	Foundation Engineering

CE 667 Hydraulic Structures
CE 687 Offshore Construction
CE 701 Remote Sensing Technology
CE 716 Data Processing in Remote Sensing
CE 731 Mechanics of Fluid Flow
CE 764 Hydro-informatics
CE 765 Environmental Fluid Mechanics
CE 767 Hazard Mitigation Management
CE 770 Ocean Renewable Energy

Table:

Course Number Course Title L T P C Course Tag
CE 605 Applied Statistics 3 0 0 6 C
CE 630 GIS in Civil Engineering 3 0 0 6 C
CE 701 Remote Sensing Technology 3 0 0 6 C
CE 712 Digital Image Processing of Remotely Sensed Data 2 1 0 6 C
Elective I 6 C
CE 706 Ocean Engineering Lab 0 0 4 4 C
CE 694 Seminar 4 C

Table:

Course Number Course Title L T P C Course Tag
Elective II 6 C
Elective III 6 D
Elective IV 6 D
Elective V 6 D
Institute elective 6 I
HS791 Communication skill* 2* C
CE792 Communication skill* 4* C

Table:

Course Number Course Title L T P C Course Tag
CE 797 I Stage Dissertation 48 C

Table:

Course Number Course Title L T P C Course Tag
CE 798 II Stage Dissertation 42 C

Table:

Course Number Course Title

CE 710 Remote Sensing and GIS for Water Resources Management
CE 714 Remote sensing in Geotechnical Engineering
CE 771 Optimization in Civil Engineering
CE 607 Numerical Techniques in Hydraulic Engineering
CE 669 Physical and Stochastic Hydrology
CE 608 Eco hydroclimatology
CE 705 Photogrammetric Engineering
CE 763 Digital Methods in Terrain Data Analysis
GNR 633 Remote Sensing & GIS Applications to Mineral and Hydrocarbon Exploration
GNR 647 Microwave Remote sensing
GNR 651 Digital Photogrammetry and Cartography
GNR 636 Remote Sensing of Vegetation

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 713	Advanced Concrete Technology	3	0	0	6	C
CE 717	Construction Planning and Control	3	0	2	8	C
CE 718	Construction Materials Laboratory	0	0	4	4	C
Elective I					6	D
Elective II					6	D
CE 694	Seminar				4	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 719	Construction Contracts	3	0	0	6	C
CE 722	Construction Management Studio	0	0	4	4	C
Elective III					6	D
Elective IV					6	D
Elective V					6	D
Institute elective		3	0	0	6	I
HS791	Communication skill*				2*	C
CE792	Communication skill*				4*	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 797	I Stage Dissertation				48	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 798	II Stage Dissertation				42	C

Table:

Course Number	Course Title
CE 723	Construction equipment and personnel management
CE 725	Construction economics and finance
CE 727	Construction materials
CE 729	Quality and safety in construction
CE 741	Formwork for concrete structures
CE 743	Condition Assessment and rehabilitation of structures
CE 771	Optimization in civil engineering
CE 720	Non-Destructive Testing of Materials
US 602	Fundamentals of urban science and engineering
US 603	Research methods for urban science
US 604	Management techniques for urban systems
CE 639	Green building design
CE 707	Coastal, Port and Harbour Engineering
CE 687	Offshore Construction
CE 605	Applied statistics
CE 776	Transportation Project Evaluation and Decision Making
CE 603	Numerical Methods
US 606	Urban Environmental Infrastructure
US 607	Sustainability Assessment of Urban Systems

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 401	Water Resources Engineering	3	0	0	6	C
CE 463	Probability and Statistics for Civil Engineers	3	0	0	6	C
CE 465ORCE 603	Numerical Methods in Civil EngineeringORNumerical Methods	23	10	00	66	CC
CE 407	Foundation Engineering	3	0	0	6	C
Elective I		6				D
CE 740ORCE 751	Traffic EngineeringORUrban Transportation Systems Planning	33	00	22	88	CC
CE 753ORCE 694	Transportation Systems StudioORCredit Seminar	0	0	4	44	CC

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 753ORCE 694	Transportation Systems StudioORCredit Seminar	0	0	4	44	CC
Elective II		6				D
Elective III		6				D
Elective IV		6				D
Elective V		6				D
Specialization Elective I		6				D

Specialization Elective
II 6 D

Table:

Course Number Course Title L T P C Course Tag
CE 740ORCE 751 Traffic EngineeringORUrban Transportation
Systems Planning 33 00 22 88 CC
CE 742 Pavement Systems
Engineering 3 0 2 8 C
CE 593 Dual Degree Project
Stage I 36 C

Table:

Course Number Course Title L T P C Course Tag
CE 740ORCE 751 Traffic EngineeringORUrban Transportation
Systems Planning 33 00 22 88 CC
CE 742 Pavement Systems
Engineering 3 0 2 8 C
CE 593 Dual Degree Project
Stage I 36 C

Table:

Course Number Course Title
CE 605 Applied Statistics
CE 630 Geographical Information Systems in Civil Engineering
CE 744 Analysis of Transportation Systems
CE 780 Behavioral travel modeling
CE 771 Optimization in Civil Engineering
CE 772 Pavement materials
CE 773 Advanced Highway Design and Analysis
CE 774 Traffic Management and Design
CE 776 Transportation Project Evaluation and Decision Making
CE 775 Airport planning and design
US 602 Fundamentals of Urban Science & Engineering

Table:

Course Number Course Title L T P C Course Tag
CE 401 Water Resources
Engineering 3 0 0 6 C
CE 463 Probability and
Statistics for Civil Engineers 3 0 0 6 C
CE 465ORCE 603 Numerical Methods in
Civil EngineeringORNumerical Methods 23 10 00 66 CC

CE 407 Foundation Engineering 3 0 0 6 C
Elective I 6 D
CE 645CE 647 Geotechnical Centrifuge
ModellingORSoil Dynamics and
Machine Foundations 3 0 0 6 C
CE643 Experimental Geotechnics 0 0 4 4 C

Table:

Course Number Course Title L T P C Course Tag
Elective III 6 D
Elective IV 6 D
Elective V 6 D
Specialization Elective
I 6 D
Specialization Elective
II 6 D

Table:

Course Number Course Title L T P C Course Tag
CE 740ORCE 751 Traffic EngineeringORUrban Transportation
Systems Planning 33 00 22 88 CC
CE 742 Pavement Systems
Engineering 3 0 2 8 C
CE 593 Dual Degree Project
Stage I 36 C

Table:

Course Number Course Title L T P C Course Tag
CE 740ORCE 751 Traffic EngineeringORUrban Transportation
Systems Planning 33 00 22 88 CC
CE 742 Pavement Systems
Engineering 3 0 2 8 C
CE 593 Dual Degree Project
Stage I 36 C

Table:

Course Number Course Title
CE 605 Applied Statistics
CE 630 Geographical Information Systems in Civil Engineering
CE 744 Analysis of Transportation Systems
CE 780 Behavioral travel modeling
CE 771 Optimization in Civil Engineering
CE 772 Pavement materials

CE 773 Advanced Highway Design and Analysis
CE 774 Traffic Management and Design
CE 776 Transportation Project Evaluation and Decision Making
CE 775 Airport planning and design
US 602 Fundamentals of Urban Science & Engineering

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 401	Water Resources Engineering	3	0	0	6	C
CE 463	Probability and Statistics for Civil Engineers	3	0	0	6	C
CE 465ORCE 603	Numerical Methods in Civil EngineeringORNumerical Methods	23	10	00	66	CC
CE 407	Foundation Engineering	3	0	0	6	C
Elective I					6	D
CE 731ORCE-626	Mechanics of Fluid FlowORGroundwater Systems and Management	33	00	00	66	CC
CE 675	Advanced Experimental Fluid Mechanics	0	0	4	4	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 669	Advanced Hydrological Analysis and Design	3	0	0	6	C
CE 676	Water Resources System	3	0	0	6	C
CE 694	Credit Seminar				4	C
Elective II					6	D
Elective III					6	D
Elective IV					6	D
Elective V					6	D

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 731ORCE-626	Mechanics of Fluid FlowORGroundwater Systems and Management	33	00	00	66	CC
Specialization Elective I					6	
Specialization Elective II					6	
CE 593	Dual Degree Project Stage I				36	C

Table:

CE 731ORCE-626 Mechanics of Fluid FlowORGroundwater Systems and Management 33 00 00 66 CC
Specialization Elective I 6
Specialization Elective II 6
CE 593 Dual Degree Project Stage I 36 C

Table:

Course Number Course Title
CE 605 Applied Statistics
CE 607 Numerical Techniques in Hydraulic Engineering
CE 667 Hydraulic Structures
CE 672 River Mechanics and Control Structures
CE 682 Finite Element Application To Flow Problems
CE 736 Environmental Impact Analysis of Water Resources Systems
CE 738 Irrigation and Conveyance Network
CE 764 Hydro informatics
CE 765 Environmental Fluid Mechanics
CE 766 Watershed Management
CE 767 Hydrological Hazard Mitigation Management
CE 768 Urban Water and Environmental Management
CE 608 Eco-hydro climatology
CE 686 Probabilistic Methods in Hydrology
CE 603 Numerical Methods
CE 769 Coastal and Ocean Environment
CE 680 Mechanics of Water Waves
CE 710 Remote Sensing and GIS for Water Resources Management
CE 630 Geographical Information Systems in Civil Engineering
CE 712 Digital Image Processing of Remotely Sensed Data
CE 701 Remote Sensing Technology

Table:

Course Number Course Title L T P C Course Tag
CE 401 Water Resources Engineering 3 0 0 6 C
CE 463 Probability and Statistics for Civil Engineers 3 0 0 6 C
CE 465ORCE 603 Numerical Methods in Civil EngineeringORNumerical Methods 23 10 00 66 CC
CE 407 Foundation Engineering 3 0 0 6 C
Elective I 6 D
CE 623 Advanced Solid Mechanics 3 0 0 6 C
CE 627 Structural Design 4 C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 694	Credit Seminar				4	C
	Elective II				6	D
	Elective III				6	D
	Elective IV				6	D
	Elective V				6	D
	Specialization Elective I	3	0	0	6	C
	Specialization Elective II				6	D

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 616	Structural Dynamics	3	0	0	6	C
	Specialization Elective III				6	
	Specialization Elective IV				6	
CE 593	Dual Degree Project Stage I				36	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
	Specialization Elective V				6	D
	Specialization Elective VI				6	D
CE 594	Dual Degree Project Stage II				36	C

Table:

Course Number	Course Title
CE 448	Prestressed Concrete
CE 482	Construction Management
CE 602	Design of Offshore Structures
CE 603	Numerical Methods
CE 605	Applied Statistics

CE 610 Introduction to Earthquake Engg.
CE 611 Advanced Structural Mechanics
CE 615 Structural Optimisation
CE 617 Plates and Shells
CE 619 Structural Stability
CE 620 Finite Element Method
CE 621 Plastic Analysis
CE 624 Nonlinear Analysis
CE 625 Analysis of Offshore Structures
CE 629 Elastic Waves in Solids
CE 633 Soil Structure Interaction
CE 639 Green Building Design
CE 640 Foundation Engineering
CE 647 Soil Dynamics and Machine Foundations
CE 651 Bridge Engineering
CE 653: Structural Reliability and Risk Analysis
CE 679 Advanced Mechanics of Reinforced Concrete
CE 684 Advanced Geotechnical Earthquake Engineering
CE 713 Advanced Concrete Technology
CE 719 Construction Contracts
CE 720 Non-destructive Testing of Materials
CE 727 Construction Materials
CE 743 Condition Assessment and Rehabilitation of Structures
CE 771 Optimization in Civil Engineering

Table:

Course Number Course Title L T P C Course Tag
CE 401 Water Resources Engineering 3 0 0 6 C
CE 463 Probability and Statistics for Civil Engineers 3 0 0 6 C
CE 465ORCE 603 Numerical Methods in Civil EngineeringORNumerical Methods 23 10 00 66 CC
CE 407 Foundation Engineering 3 0 0 6 C
Elective I 6 D
CE 680 Mechanics of Water Waves 3 0 0 6 C
CE 769 Coastal and Ocean Environment 3 0 0 6 C

Table:

Course Number Course Title L T P C Course Tag
CE 707 Coastal, Port and Harbor Engineering 3 0 0 6 C
CE 798 Offshore Engineering 3 0 0 6 C
CE 694 Credit Seminar 4 C
Elective II 6 D
Elective III 6 D
Elective IV 6 D
Elective V 6 D

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 706	Ocean Engineering Laboratory	0	0	4	4	C
	Specialization Elective I				6	D
	Specialization Elective II				6	D
CE 593	Dual Degree Project Stage I				36	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
	Specialization Elective III				6	D
	Specialization Elective IV				6	D
CE 594	Dual Degree Project Stage II				36	C

Table:

Course Number	Course Title
CE 602	Design of Offshore Structures
CE 603	Numerical Methods
CE 605	Applied Statistics
CE 607	Numerical Techniques in Hydraulic Engineering
CE 713	Advanced Concrete Technology
CE 616	Structural Dynamics
CE 620	Finite Element Methods
CE 622	Reliability based Civil Engineering Design
CE 625	Analysis of Offshore Structures
CE 633	Soil Structure Interaction
CE 640	Foundation Engineering
CE 667	Hydraulic Structures
CE 687	Offshore Construction
CE 701	Remote Sensing Technology
CE 716	Data Processing in Remote Sensing
CE 731	Mechanics of Fluid Flow
CE 764	Hydro-informatics
CE 765	Environmental Fluid Mechanics
CE 767	Hazard Mitigation Management
CE 770	Ocean Renewable Energy

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 401	Water Resources Engineering	3	0	0	6	C
CE 463	Probability and Statistics for Civil Engineers	3	0	0	6	C
CE 465ORCE 603	Numerical Methods in Civil EngineeringORNumerical Methods	23	10	00	66	CC
CE 407	Foundation Engineering	3	0	0	6	C
Elective I					6	D
CE 712	Digital Image Processing of Remotely Sensed Data	3	0	0	6	C
CE 701	Remote sensing Technology	3	0	0	6	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 694	Credit Seminar				4	C
Elective II					6	D
Elective III					6	D
Elective IV					6	D
Elective V					6	D
Specialization Elective I					6	D
Specialization Elective II					6	D

Table:

Course Number	Course Title	L	T	P	C	Course Tag
CE 630	Geographical Information Systems in Civil Engineering	3	0	0	6	C
CE 703	Remote sensing Lab	0	0	4	4	C
Specialization Elective III					6	D
CE 593	Dual Degree Project Stage I				36	C

Table:

Course Number	Course Title	L	T	P	C	Course Tag
Specialization Elective IV					6	D
Specialization Elective V					6	D
CE 594	Dual Degree Project					

Stage II 36 C

Table:

Course Number Course Title
CE 710 Remote Sensing and GIS for Water Resources Management
CE 714 Remote sensing in Geotechnical Engineering
CE 771 Optimization in Civil Engineering
CE 607 Numerical Techniques in Hydraulic Engineering
CE 669 Physical and Stochastic Hydrology
CE 608 Eco hydroclimatology
CE 705 Photogrammetric Engineering
CE 763 Digital Methods in Terrain Data Analysis
GNR 633 Remote Sensing & GIS Applications to Mineral and Hydrocarbon Exploration
GNR 647 Microwave Remote sensing
GNR 651 Digital Photogrammetry and Cartography
GNR 636 Remote Sensing of Vegetation

Table:

Course
Code Course
Name Credit
Structure Credits Remarks
L T P
CE 401 Water Resources Engineering 3 0 0 6 Core Course
CE 463 Probability and Statistics for Civil
Engineers 3 0 0 6 Core Course
CE 465 Numerical Methods in Civil Engineering 3 0 0 6 Core
Course
CE 407 Foundation Engineering 3 0 0 6 Core Course
CE 717 Construction Planning and Control 3 1 0 8 PG Core
CE 4xx Departmental UG ElectiveI 3 0 0 6 Departmental UG
Elective
CE 718 Construction Materials Laboratory 0 0 4 4 PG Lab
Total Credits 42

Table:

Course
Code Course
Name Credit
Structure Credits Remarks
L T P
CE 4xx Departmental UG Elective II 3 0 0 6 Departmental UG
Electives
CE 4xx Departmental UG Elective III 3 0 0 6
CE 4xx Departmental UG Elective IV 3 0 0 6
CE 4xx Departmental UG Elective V 3 0 0 6

CE 719 Construction
Contracts 3 0 0 6 PG Core
CE xxx PG Elective I 3 0 0 6 PGElective
CE 722 Construction
Management Studio 0 0 4 4 PG Lab
CE 694 Credit seminar 4 Seminar
Total Credits 44

Table:

Course
Code Course
Name Credit
Structure Credits Remarks
L T P
CE 713 Advanced
Concrete Technology 3 0 0 6 PG core
CE xxx PG Elective II 3 0 0 6 PG Elective
CE xxx DDP-I 36 Project - Stage I
Total Credits 48

Table:

Course
Code Course
Name Credit
Structure Credits Remarks
L T P
CE xxx PG
Elective III 3 0 0 6 PG
Elective
CE xxx PG Elective IV 3 0 0 6 PG Elective
CE xxx DDP-II 36 Project
– Stage II
Total Credits 48

Table:

Course Number Course Title
CE-723 Construction equipments and personnel management
CE-725 Construction economics and finance
CE-727 Construction materials
CE-729 Quality and safety in construction
CE-741 Formwork for concrete structures
CE-743 Condition assessment and rehabilitation of structures
CE-771 Optimization in civil engineering
CE-720 Non Destructive Testing of Materials
US-602 Fundamentals of urban science and engineering
US-603 Research methods for urban science

US-604 Management techniques for urban systems
CE-639 Green building design
CE-707 Coastal, Port and Harbour Engineering
CE-687 Offshore Construction
CE-605 Applied statistics
CE-776 Transportation Project Evaluation and Decision Making
CE-603 Numerical Methods
CE-657 Computing in Civil Engineering

Table:

M Tech Faculty Advisors
Transportation Systems Engineering (CE 1)
Junior M Tech Prof. Gopal Patil
Senior M Tech Prof. Tom Mathew

Geotechnical Engineering (CE 2)
Junior M Tech Prof. Santiram Chatterjee
Senior M Tech Prof. Ashish Juneja

Water Resource Engineering (CE 3)
Junior M Tech Prof. Arpita Mondal
Senior M Tech Prof. Jyothiprakash

Structural Engineering (CE 4)
Junior M Tech & Senior M Tech Prof. Ravi Sinha

Ocean Engineering (CE 5)
Junior M Tech Prof. Manasa Behera
Senior M Tech Prof. R. Balaji

Construction Technology and Management (CE 7)
Junior M Tech Prof. Venkata Santosh Kumar Delhi
Senior M Tech Prof. Prakash Nanthagopalan

Dual Degree Faculty Advisors
Transportation Systems Engineering (CE 1) Prof. Tom Mathew
Structural Engineering (CE 4) Prof. Ravi Sinha

B.Tech Faculty Advisors
B.Tech First Year Prof. Nagendra Velga, Prof. Avijit Maji, Prof. Swagata Basu, Prof. Muhmmad Salman, Prof. Manish Kumar
B.Tech Second Year Prof. Sauvik Banerjee, Prof. R.Balaji, Prof. RAAJ Ramsankaran, Prof. Meera Raghunandan, Prof. Arpita Mondal
B.Tech Third Year Prof. Prasenjit Basu, Prof. Indu, Prof. Venkata Santosh D., Prof. Jayadipta Ghosh, Prof. Subimal Shosh
B.Tech Fourth Year Prof. Arghadeep Laskar, Prof. Amit Das, Prof. Manasa Ranjan Behera, Prof. P.Vedagiri

Address:

The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

Table:

Name	Email	Contact	Year of Retirement
Prof. Rao E P	ceepria[at]iitb.ac.in	9757052973	2023
Kamal M Bajoria	kmb[at]iitb.ac.in	02225767332	2020
Jnanendra Nath Mandal	jnmiitb[at]gmail.com	9969777944	2020
A K Rastogi	akr@civil.iitb.ac.in	9967153542	2017
A Sreevidya	asvidya@iitb.ac.in		2016
Madhav N Kulkarni (Retd. Lt. Col.)			2007
D M Dewaikar	dmde[at]iitb.ac.in	9820055838	2007
P K Sikdar	sikdar.pk@gmail.com		2006
B S Pani	bspani[at]iitb.ac.in	09820120057	2006
Venkatachalam G	gvee[at]civil.iitb.ac.in	9820605352	2005
K Gopal Rao	kgr[at]civil.iitb.ac.in	0992024799	2005
Prof. S L Dhingra	dhingra[at]gmail.com	9820345493	2004
Nitish Kumar Bairagi		09830325619	2004
Rao C S		08912757525	2004
J S R Murthy	jsr_mrthy@yahoo.com	08828187603	2002
D N Buragohan	dnburagohain@yahoo.com	9823113622	2002
R Ranganathan	rang123@gmail.com	9819373735	2001
Chandrasekaran V S	vschandrasekaran@gmail.com	08041503431	2000
Limaye R G		02225708329	2000
Joshi S G		09820037279	1998
Ramakrisahnan T V	-		1996
S. Guruji			1996
Mohan Kalani	mohan.kalani@gmail.com	02225781478	1996
R.Y. Soni			1996
S H Nagaraja	shnagaraja@vsnl.com		1995
Kulkarni K R			1995
V.D. Dixit		2225976526	1993
S. Chatterjee			1992
R.S. Ayyar			1991
S Narasimhan	snarasimhansmailbox@rediffmail.com	08025280672	1990
Prof. B.V. Rao			1989
Prof. Tarun Kant, FNAE, FNASc, FASc, FNA	tkant@civil.iitb.ac.in	02225771090	2011
R.K. Katti			1988
C.K. Ramesh			1986
M.A. Alasingrachar			1986
J.T. Panicker			1985
R.P. Mhatre	-		
Prof. M. C. Deo, FNAE	mcdeo[at]civil.iitb.ac.in	9820956090	2024

FACULTY

The Department invites applications for faculty positions at all levels from outstanding candidates with UG Civil Engineering background as per the details available atfaculty recruitment page. Please check eligibility criteria and area of research in the advertisement. Applications from the renowned academicians of reputed institutions for short duration visiting positions are also welcome.

Why join IIT Bombay ?

POST DOCTORAL FELLOWSHIP

The department invites applications from the PhD Scholars who have already submitted thesis and carried out some outstanding work in their doctoral program for an Institute Post-Doctoral Fellowship (IPDF) position in the department. Interested scholars should first contact the prospective mentoring faculty from the department for initiating their application process with a mutually agreed research proposal.
Please follow the link for further details of process.Click here

Ph.D. ADMISSIONS

The CE Dept. offers Ph.D. in Civil Engineering degree in the following specialization(s):

The application for admission, prospective students should specify one research area in which they are interested to work during their doctoral study. They are also advised to interact with prospective research supervisor(s) at the department and prepare research proposal(s) before they appear for the written test/interviews for admission.
Check theIITB Ph.D. Admission pagefor application materials, application deadlines and advertisement seeking application from prospective candidates.
For details on admission requirements, admission procedure, categories, Ph.D. program requirements, fees etc., please see theIITB Ph.D. Information Brochure.

M.TECH. ADMISSIONS

The CE Dept. offers M.Tech in Civil Engineering degree in the following specialization(s):

The application for admission, prospective students should specify the specialization(s) in which they are interested to pusue their master's degree.
For details on admission requirements, admission procedure, categories, M.Tech. program requirements, fees etc., please see theIITB M.Tech. Information Brochure.
Check theIITB Postgraduate Admission pagefor application materials, application deadlines and advertisement seeking application from prospective candidates.
Information on the Graduate Aptitude Test in Engineering (GATE) can be found at theGATE office webpage.

B.TECH. AND DUAL DEGREE ADMISSIONS

The Civil Engineering Department offers four-year Bachelor of Technology in Civil Engineering. Admission to B.Tech is only through IIT-JEE (Advanced) and JoSAA. B.Tech.and M.Tech dual degree is only through conversion by the B.Tech students in the begining of their 4th year, based on the CPI requirement and other norms of the department.

Further information on these can be found in theIITB WebPages on B.Tech. and Dual Degreeadmissions

and on Joint Entrance ExaminationJEE.

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay, Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

Address:
The Head,Department of Civil Engineering,Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in

Traffic Flow Modeling And Simulation; Transportation Network Optimization, Traffic Control And Management;

Earthquake Vibration Control; Damage Detection In Structures; Guided Wave Propagation And Scattering In Structures; Condition/health Monitoring Of Bridge Structures;

Structural Dynamics And Earthquake Engineering; Vibration Control; Seismic Hazard Assessment; Service Life Assessment, Repair, Rehabilitation And Retrofitting Of RC Buildings;

Dynamic Behaviour Of Structures And Equipment; Development And Design Of Energy-absorbing And Base-isolating Devices; Earthquake Resistant Design And Vulnerability Evaluation Of Structures And Facilities;

Environmental Geotechnology; Valorization Of Industrial Waste(s); Gas Hydrates

Finite Element Analysis; Analysis And Control Of Vibrations; Structural Dynamics; Composite Mechanics; Rehabilitation Of Deteriorated Structures; Computational Mechanics;

Sustainable Urban Transportation Planning, Land Use Transport Modelling, Travel Survey Design And Analysis;Travel Behaviour And Choice Modelling, Air Travel Demand Modelling, Capacity And Level Of Service Of Traffic Facilities.

Base Isolation For Earthquake-resistant Design; Vibration Control Using Tuned Mass Dampers; Non-linear Dynamic Analysis; Non-classically Damped Systems; Stochastic Earthquake Analysis; Active Control Of Structures;

Centrifugemodelling; Environmental Geotechnics; Soil Reinforcements; Slope Stabilization; Waste Materials Utilization;

Urban Drainage/storm Water Management; Sedimentation In Channels And Rivers; Urban Water Infrastructure Management; Hydrologic Disaster Management; Water Quality Modelling In Rivers,Ponds, Lakes And Estuaries;

Groundwater Flow And Pollution Investigation; Computational Fluid Dynamics; Coastal Hydrodynamics; Watershed Management; Application Of Numerical Methods In Water And Environment;

Nonlinear Dynamics; Stability And Control; Computational Mechanics; Solid Mechanics;

Welcome to my website. My area of research and teaching expertize are in 'Geotechnical Engineering' with emphasis on 'Geotechnical Earthquake Engineering', 'Soil Dynamics', 'Foundation Engineering', 'Computational Geomechanics', 'Dynamic Soil-Structure Interaction', 'Liquefaction', 'Disaster Mitigation and Management', 'Railway Geotechnics', 'Seismic Hazard' etc. For further details, please visit my website: https://www.civil.iitb.ac.in/~dc/ and the website of Geotechnical Earthquake Engineering (GEE) laboratory: https://geelabiitb.wixsite.com/geel

Water Resources Systems Analysis: Reservoir Operation, Policy Issues, Multi-objective Analysis, Conventional As Well As Soft Computing Optimization Techniques, Basin Wise Water Resources Estimation. Stochastic Hydrological Modeling: Reservoir Sedimentation. Rain Water Harvesting: Airport And Road Side Storm Water Drainage System. Water Supply And Sewerage Systems: Irrigation Water Management. Genetic Algorithms And Genetic Programming: Artificial Neural Networks. Single Site And Multi Site Reservoir Inflow Prediction, Rainfall-runoff Modeling, Meteorological Parameter Prediction. Non-linear Dynamic Analysis Using Chaos Theory: Chaotic Analysis Of Rainfall, Runoff, Meteorological Parameters Catchment Classification Using Chaotic Analysis. Singular Spectrum Analysis: Single Variate And Multi Variate Time Series Analysis.

Earthquake Engineering; Reliability Of Structures; Structural Dynamics; Vulnerability/fragility Assessment; Risk Analysis; Uncertainty Quantification; Structural Steel; Cold-formed Steel; Inelastic Analysis And Design; Stone Block Masonry

Dynamic soil behaviour, tunnelling and underground space, deep foundations and ground improvement works.

Hydro-climatology : Regional Modeling And Understanding Of Indian Monsoon; Statistical Downscaling; Atmosphere- Land Surface Interactions; Climate Change Projections And Impacts Assessment; Seasonal And Sub-seasonal Prediction Of Monsoon; Hydro-climatic Extremes; Hydrology : Meso-scale Hydrologic Modeling; Uncertainty Modeling; Eco-hydrology;

Structural Health Monitoring Using Vibration And Wave Based Approaches, Condition Assessment Of Structures Using NDT, Ultrasonic NDE And Imaging Of Materials, Passive Acoustic Emission (AE) Monitoring Of Structures, Guided Wave Propagation, Modelling Of Laminated Composite And Sandwich Structures, FRP Retrofitting Of Structures, Impact Response Of Structures

Transportation Systems Planning; Transportation Network Optimization; Traffic Operations; And Freight Transportation Modeling.

Retaining Walls and Earth Pressure Reduction, RE Walls, Ground Improvement, Shallow and Deep Foundations, Deep Excavation Supporting Systems, Forensic Geotechnics.

Rainfall and Streamflow Modeling; Hydrologic Extremes; Sediment Transport in Rivers; Large-scale Water Projects; Transboundary Water Management; Groundwater Flow and Transport; Water quality in Rivers; Ecosystem Modeling; Human-Water Interactions; Hydrology Education; Complex Systems and Networks; Chaos Theory; Scaling and Fractals.

Traffic Safety, Modeling Pedestrian Behavior, Traffic Flow Modeling And Simulation, Traffic Management And Control, Public Transit System Design And Operation.

Evolutionary Algorithms For WRS Optimization; Reservoir Operation, Water Supply Systems; Surface Water Hydrology And Watershed Management; Statistical Modeling And Forecasting, Risk Analysis Of Floods And Droughts; Copulas For Uncertainty Modeling; Applications Of Softcomputing Techniques In WRM; Impacts Of Climate Change On Water Resources And Agriculture.

Application Of Structural, Solid, Fluid, And Statistical Mechanics To Biological Systems; Mechanics Of Bio-polymer Networks; Cellular Adhesion And Motility; DNA Mechanics; Mechanics Of Bio-films

Ocean/Coastal Engineering, marine/port/harbour/coastal structures, comprehensive analysis of hydro-morpho-dynamics, holistic repair, retrofitting & rehabilitation of port infrastructure

Machine intelligence and computer vision in alignment development;Optimization in transportation infrastructure development; Effects of highway infrastructure on driver behavior; Performance based highway infrastructure design; Innovative highway infrastructure design; High speed rail infrastructure planning; Transportation safety and security

Traffic And Intelligent Transportation Systems. Transportation Accessibility And Mobility . GIS And GNSS Applications In Transport

Remote Sensing And GIS Applications, High Definition Surveying, Surface Hydrological Processes

Ocean And Coastal Engineering; Computational Ocean And Coastal Hydrodynamics; Modelling Of Tide, Storm And Tsunami; Impact Of Changing Climate; Wave And Tidal Energy; Wave-Current Interaction; Multi-phase Flow

Characterization Of Pavement Materials (Asphalt, Hot Mix Asphalt, Soil, And Aggregates), Recycled Asphalt Mixes, Warm Mix Asphalt, Locally Available Materials, Stabilization Of Soil And Aggregates, Intelligent Asphalt Compaction, Constitutive Modeling Of Pavement Materials, Simple Performance Tests (Rutting, Fatigue, Dynamic Modulus) On Asphalt Mixes, Pavements (Flexible And Rigid) Design And Evaluation, Forensic Investigation Of Pavements, Pavement Maintenance And Rehabilitation

Earthquake Engineering, Bridge Engineering, Risk And Reliability Analysis, Structural Resilience, Bridge Performance Assessment Under Multiple Hazards.

Energy Geotechnics; Thermo-hydro-mechanical Characterization Of Soil; Coupled (thermo-hydro) Flow In Ground; Engineering Of Foundations; Computational Geomechanics;

Rheology of cement based materials; Ultra high performance concrete; Cement and lime based plasters/renders; use of agro-industrial by-products in cement based products, 3D printing of concrete.

Hydrological prediction; Global hydrology; Transport in rivers; Self-organization in nature; Philosophy of science

Infrastructure planning and location-allocation model, Application of ICT in urban and regional planning, Urban policy assessment, Econometric and behavioral modeling

Experimental Study Of Reinforced And Prestressed Concrete, Finite Element Analysis Of Concrete Structures, Seismic Simulation.

Offshore Geotechnical Engineering, Pipelinegeotechnics, Numerical Modelling, Offshore Soil Characterization.

Structural Reliability And Risk Assessment;Earthquake Engineering; Ageing And Corrosion Deterioration Problems; Seismic Fragility Analysis;Bridge Engineering; Machine Learning

Rainfall Runoff Modelling, Model Diagnostics, Hydrologic Predictions In Data Scarce Regions, Catchment Classification And Hydrologic Similarity, Multi-stakeholder Analysis Of Resource Constrained Systems, Decision Making Under Uncertainty.

Infrastructure Project Governance, Construction Project Management, Organization In Construction Projects And Infrastructure Sustainability, Structural Engineering

Detection, Attribution And Impact Of Climate Change, Spatio-Temporal Modeling Of Hydroclimatic Extremes, Regionalization And Frequency Analysis Of Floods And Droughts, Risk Assessment Under Non-stationarity, Urban Flooding, Hydrologic Statistics And Machine Learning, Uncertainty Modeling.

Microwave Remote Sensing; Uncertainty In Radar Based Rainfall; Nowcasting Of Precipitation; Applications Of Remote Sensing In Hydrology And Water Resources Engineering; Image Processing Using Syntheic Aperture Radar (SAR); Fuzzy Logic.

Earthquake Engineering, Seismic Isolation, Blast And Impact Resistant Structures

Earthquake Engineering, Probabilistic Seismic Risk Analysis Of Structures, Performance Prediction Of Structures Under Dynamic Loads, Building Code Evaluation.

Construction Materials, Concrete Technology, Alkali Activation, Geopolymerisation, Mineral Carbonation, Slags, Repair And Rehablitaiton Of Constructed Facilities

Sustainable Construction Management Practices, Building Energy Simulation, Lean Construction, Life Cycle Energy Analysis, Project Scheduling And Earned Value Analysis, Construction Project Lifecycle Management

Design And Analysis Of Steel And Concrete Structures,Formwork Analysis And DesignComputational Mechanics, Finite Element Analysis, Field Dislocation Mechanics, Analysis Of PDEs.

Thermal Remote Sensing, Modelling Evapotranspiration From RS, RS Applications In Hydrology, Drought Monitoring.

Coastal Engineering, Hydrodynamics, Wave-structure interaction, Coastal resilience, Climate change adaptation studies.

Landslides, probabilistic methods, risk and reliability analysis, Mesh-free techniques (Material Point Method), large deformation problems.

Behaviour of structural concrete, Nonlinear analysis of structures, Time-dependent behaviour of structures, Structural evaluation of 3D printed concrete members.

Construction Materials, Heritage Conservation, Durability of Structures, Characterization of Construction Materials.

Design and Construction of Rigid Pavements, Use of Recycled Aggregates in Concrete, Pavement Materials Characterization, Low-Cost Low-Carbon Concrete Pavements (Roller Compacted Concrete, Pervious Concrete, Precast Concrete, Geopolymers), Industrial and Agricultural Wastes in Pavements, Characterization of Concrete, Maintenance, Repair and Rehabilitation of Cement Concrete Pavements.

Driver Behavioural Modelling, Travel Behaviour Analysis, Choice Modelling and Econometric Analysis of User Behaviour in Urban Systems, Transportation Planning, Travel Demand Modelling and Forecasting

Connected Vehicles, Smart Cities, Vulnerable Road User Safety (VRU) Safety, Traffic Signals, Traffic Flow Modeling and Simulation, Transportation Network Optimization, Traffic Control and Management, Intelligent Transportation Systems (ITS)For appointment please refer to my calendar:click here

Computational mechanics, Phase field theory, Fracture mechanics, Finite element method

Address:
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in
The Head, Department of Civil Engineering, Indian Institute of Technology Bombay,Powai, Mumbai - 400076, India.
Phone:+91-22-2576 7301
Fax:+91-22-2576 7302
E-Mail:hod[at]civil.iitb.ac.in