

ADMISSION BROCHURE 2023-24

M.TECH.
DAM SAFETY AND
REHABILITATION



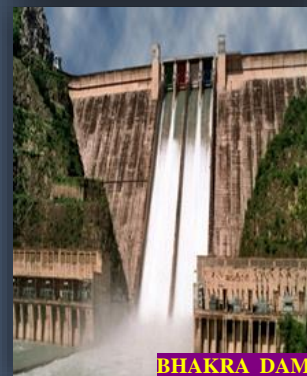
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

ROORKEE- 247 667 (INDIA)

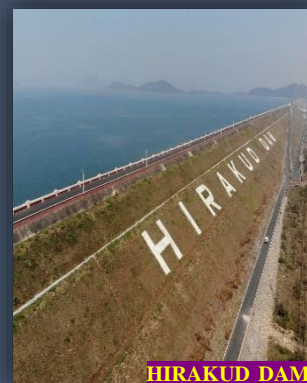
INDIA'S ICONIC DAMS



TEHRI DAM



BHAKRA DAM



HIRAKUD DAM



TUNGBHADRA DAM



SARDAR SAROVAR DAM

Background of the Course

India has 5334 large dams in operation, and about 411 are under construction. There are more than 90,000 small and medium dams in the country, in addition to large dams. These dams have been built to ensure water safety, which is essential for food and energy security. In addition to this, there are numerous dams all over the world. IIT Roorkee has played a significant role in designing and executing these dams since its inception in 1847.

The safety of these dams is of utmost importance. Many of the existing dams are very old and need rehabilitation. Keeping these concerns in view, the Ministry of Water Resources, River Development & Ganga Rejuvenation, through the Central Water Commission, initiated the DRIP project in April 2012 with World Bank's assistance. IIT Roorkee is the academic partner in this Programme. To cover more dams in the project, phase II and phase III of the DRIP programme have been approved by the Ministry of Jal Shakti, Government of India, on October 29, 2020. The dam safety bill 2021 was enacted on December 14, 2021, and it makes it mandatory for dam owners to ensure the safety of their dams.

Considering the importance of dam safety and rehabilitation, IIT Roorkee started a new M Tech. Programme in dam safety and rehabilitation with effect from session 2021–22. The third batch of the programme will be starting with effect from July 17, 2023. The Programme is jointly run under the aegis of **International Centre of Excellence for Dams** by the faculty members drawn from Departments of Hydrology, Civil Engineering, Earthquake Engineering, Water Resources Development and Management, and Architecture and Planning.

About the Institute

Indian Institute of Technology Roorkee has its roots in the Roorkee College, established in 1847 as the first engineering college in India. It was rechristened as Thomason College of Civil Engineering in 1854 after its mentor James Thomason. After about 100 years of distinguished services, the college was elevated to the University of Roorkee on November 25, 1949, as the first Engineering University of independent India. On September 21, 2001, the University was converted into an IIT by the Government of India. IIT Roorkee is one of the biggest technical institutions in the country having the largest number of academic units. It has 23 academic departments covering engineering, architecture and planning, humanities & social sciences, and management programmes, 1 school, 6 academic centres, 7 academic service centres and 6 supporting units. IIT Roorkee is offering various courses like 12 undergraduate courses in engineering and architecture, 3 dual degree programmes and about 48 postgraduate courses in engineering, architecture, sciences, computer

applications and business administration, besides research programmes at the doctoral level.

IIT Roorkee has a highly qualified and motivated faculty of about 500+ members engaged in research, consultancy, and teaching. The faculty members offer their expertise through consultancy services to private/public sector and government agencies. Currently, the Institute has around 8000+ students, with approximately 50% as undergraduate students, 20% as postgraduate students and 30% as research scholars.

Several academic and research centres of the Institute are engaged in interdisciplinary research, and many collaborative programmes exist with institutions in India and abroad. Central Library has more than 4,00,000 volumes of books and periodicals. Institute Computer Centre, Education Technology Cell with a full-fledged television studio, Continuing Education Centre, and Institute Instrumentation Centre with highly sophisticated instruments also serve the Institute community's needs as central facilities.

IIT Roorkee is entirely residential, with well-designed hostels (Bhawans) both for boys and girls, and family accommodation for married students, a sprawling sports ground, a swimming pool, a boat club, and a host of students' clubs with facilities for different games, including tennis, squash, and billiards etc. The Institute offers various extra-curricular activities like NCC, rowing, mountaineering, and trekking, which provide excellent opportunities for self-development. The campus also houses a CBSE-affiliated senior secondary school.

Eligibility for Admission

The Programme is open for sponsored officers from India and abroad with two years of relevant experience in Dam safety, rehabilitation, and other associated areas. GATE-qualified fresh engineering graduates with valid GATE scores are also admitted to the programme.

Eligibility for Sponsored Candidates*

1. Graduation/ Post Graduation degree in Civil/ Mechanical/ Earthquake/ Hydrology/ Water Resources Engineering/ equivalent,
2. Post-graduation degree in Physics/ Mathematics/ Geology/ Geophysics; Environmental Engineering/ equivalent,
3. Any other degree acceptable to the State Implementing agencies for regular appointment in the dam safety wings.

*The candidates applying for admission must have at least 60% aggregate marks or 6.00 CGPA on a 10–point scale at qualifying Graduation/ Post Graduation degree. For Indian candidates belonging to SC/ST category, the qualifying percentage is 55% aggregate marks or 5.5 CGPA on a 10–point scale. SC/ST category candidates must submit the requisite certificate along with the application from a competent authority.

Eligibility for GATE Qualified Candidates

1. B.E./ B. Tech degree in Civil Engineering/ equivalent with valid GATE score.

How to Apply

In-Service Engineers/ Officers

1. In service engineers/ officers should send their application through their departments at the following address:
Prof. N.K. Goel,
Coordinator, M Tech. course on Dam Safety and Rehabilitation,
IIT Roorkee, Roorkee –247667,
coordinator.dsr@iitr.ac.in; goelhy@gmail.com;
Mobile: +91–9412393851; *(Preferably leave WhatsApp message/ SMS before calling)*
Office: +91–1332–285814 *(Preferable number between 9 am to 8 pm on working days)*
2. The advanced applications may be sent to the coordinator.dsr@iitr.ac.in for checking the eligibility for admission. This should be done as soon as possible and latest by May 31, 2023. The sponsorship letter by the government will be required by June 26, 2023. The admission letter will be issued by June 30, 2023, for the candidates who have been duly sponsored by their Departments and selected by IIT Roorkee.
3. A copy of the application should be sent to CPMU of CWC also at dir-drip-cwc@nic.in.
4. The candidates applying for admission must have at least 60% aggregate marks or 6.00 CGPA on a 10–point scale at the qualifying degree level. For Indian candidates belonging to SC/ST category, the qualifying percentage is 55% aggregate marks or 5.5 CGPA on a 10–point scale. SC/ST category candidates must submit the requisite certificate along with the application from a competent authority.
5. The officers should not bring their families in the beginning. The family should be brought only after getting the family accommodation by IIT Roorkee. Otherwise, the officers should make their own arrangements for family accommodation outside the IIT R campus.

6. GATE-qualified fresh engineers should apply through the PG admission portal of IIT Roorkee. This form is primarily for the sponsored officers working in dam safety and rehabilitation and associated fields in India and abroad.
7. International students can apply through ITEC/ICCSR/ASEAN or other MEA portals through Indian Embassies in their respective countries. Such students can also apply through the International Relations Portal of IIT Roorkee <https://ir.iitr.ac.in/HowToApply>.

Number of Seats: 30

22 for sponsored officers and 8 for GATE-qualified fresh graduates. 5 seats are reserved for foreign in-service engineers engaged in dam safety activities.

Faculty

The Programme is jointly delivered by the IIT Roorkee faculty members drawn from the Departments of Hydrology, Civil Engineering, Earthquake Engineering, WRDM, Architecture and Planning, and the National and International experts under the aegis of **International Centre of Excellence for Dams**.

Fees & Estimated Annual Expenses

International Candidates

International candidates sponsored by various agencies/organisations must pay the Institute fee at the following rates:

1. Candidates from SAARC countries — US\$ 2000 (per annum)
2. Candidates from other countries — US\$ 4000 (per annum)
3. Admission fee – US\$ 500 (one time at the time of admission)

The International officers should ensure their funding source at their end and send the application only through the sponsoring agency.

Indian Sponsored / Gov Sponsored International Candidates

1. The total fee to be paid to the Institute is of the order of **Rs. 200,000**. The Institute fee is paid semester-wise. The notification for the fee for the session 2022-23 is given in Annexure I. The fee for the session 2023-24 shall be notified in the month of May/June. No major change in the fee structure anticipated.
2. The Institute fee is required to be paid in four instalments at the beginning of each semester by the candidates who are selected and admitted to the course. Provisions may be made to either pay this amount in advance to

the officers being deputed or reimburse the amounts to them on receipt of the Institute fee receipt.

3. Other expenses like field Trips, Books, Lecture notes etc., shall be as per actuals.
4. The sponsoring organisations shall also bear the expenses related to the sponsored officers' salary, travel expenses related to the course, and dearness allowance for the days of absence from the headquarters of the sponsoring organisations as per Gol rules. Such costs will be directly payable to the candidates, and the officers shall be treated on duty during the Programme.

List of Courses:

Course	Semester
1. Basics of Disaster Management and its Implementation Concepts	First
2. Hydrologic Safety Evaluation of dams	First
3. Programme Elective Course –I	First
4. Programme Elective Course –II	First
5. Sediment Management in Reservoirs	Second
6. Dam Safety Surveillance, Instrumentation and Monitoring	Second
7. Seminar	Second
8. Programme Elective Course –III	Second
9. Programme Elective Course –IV	Second
10. Programme Elective Course –V	Second
11. Dissertation Stage-I (to be continued next semester)	Third
Dissertation Stage-II (contd. From the third semester)	Fourth

List of Programme Electives:

1. Assessing and Managing Risks Associated with Dams
2. Seepage through Dams
3. Assessment and Management of Environmental issues in Reservoirs
4. Earthquake Geotechnical Engineering
5. Study tour/ Case studies
6. Geo-Mechanics
7. Geospatial Technology for Monitoring of Dams
8. Hydraulic and structural design of dams, spillways, and energy Dissipators
9. Ground Improvement and Geo-synthetics
10. Contract and Financial Management
11. Sustainable Tourism around Dams

12. Earth Retaining Structures and Dams (Concrete, RCC, CFRD, Arch, Earth, Rockfill dams & Barrages)
13. Seismic Safety of Embankment Dams
14. Concepts of Planning & Design of Hydro-Mechanical Components in Dams
15. Engineering Seismology and Hazard Assessment for dams



APPLICATION FORM

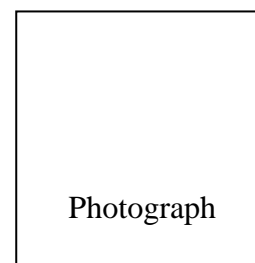
M. TECH. PROGRAMME ON DAM SAFETY AND REHABILITATION INTERNATIONAL CENTRE OF EXCELLENCE FOR DAMS

3rd Course: July 17, 2023, to July 16, 2025

(IMPORTANT: Applicant may please ensure that he/she satisfies the necessary eligibility criteria)

An advance copy of the completed application and academic transcripts (in English) be directly sent to **Prof. N.K. Goel, Coordinator, M. Tech. Programme on Dam Safety and Rehabilitation, International Centre of Excellence for Dams, Department of Hydrology, Indian Institute of Technology Roorkee, Roorkee- 247667, India** (email IDs: coordinator.dsr@iitr.ac.in; goelhy@gmail.com) on or before **May 31, 2023**.

1. Full Name:
in block letters (underline surname)
2. Father's Name
3. Mother's Name
4. Gender (Male/ Female)
5. Nationality:
(Any change in nationality may be indicated with the period)
6. Date and Place of birth:
7. Parentage (your country of origin):
8. Passport details (for foreign candidates only)
Passport number: Place of Issue:
Date of Issue: Date Validity:
9. Present address (correspondence address):
House No. /Flat No and street:
City/Town with Pin Code:
State and Country:
Mobile no with country code:
Email:
10. Emergency address:
House No. /Flat No and street:
City/Town with Pin Code:
State and Country:
Mobile No with Country Code:
Email:



11. Official Address:
 House No. /Flat No and street:
 City/Town with Pin Code:
 State and Country:
 Mobile No with Country Code:
 Email:
12. Dates and place of the previous stay in India *(for International Applicants Only)*:

13. Occupation:
14. Expected duration of stay:
15. Places to be visited:
16. Name of Indian Mission where visa will be applied *(for International Applicants only)*
 Name of City and Country:
 Phone No.:
 Email:
17. Source of funding:
18. Whether accompanied by spouse/ dependent. If so. give particulars:
 Name:
 Passport number: Place of Issue:
 Date of Issue: Date Validity:
 (Family to be brought only after ensuring the permission and accommodation availability)
19. Qualifying Degree:
20. Mathematics at Graduation Level (Yes/No):
21. Qualifications (highest Degree first): *(Attach photocopies of mark sheets & certificates)*

College/Institute Name & address	Degree or Examination passed	Year of Passing	Division with % of marks secured	Minimum duration of the Degree	Main Subject(s)

- Note: 1. The percentage in the qualifying should necessarily be given.
 2. Certificate of equivalence should be given if the name of the Degree is not the same as per essential Qualifications mentioned.
 3. Duration of the qualifying degree after 10+2 education after preschool should be necessarily mentioned.

22. Professional/ work experience (Starting from the recent one):

Name of Department/ Organisation	Position held	Period		Details of work done
		From	To	

23. Knowledge of the English language (read/write/speak):
(Certificate for the level of proficiency attained be submitted)

24. Appeared in GRE or equivalent Examination (if yes, give details):

Place:

Date:

Signature of Applicant

SPONSORED/ NO OBJECTION CERTIFICATE

The undersigned is pleased to permit Mr./Ms. who is working in this organization for the last.....years (from to) and is presently holding the rank/position of for pursuing the M. Tech. in Dam Safety and Rehabilitation at IIT Roorkee.

His/her conduct and character has been good.

The Institution/Organization would relieve her/him immediately of joining the above Programme if selected for admission. If admitted, the candidate will be permitted to be present at the Institute as required by the M Tech's academic schedule. He/ she will continue to remain in service of this organization for the duration of the course.

IIT Roorkee's Necessary fees shall be payable by the sponsoring organisation to IIT Roorkee directly or through the officer. The necessary allowances shall be directly paid to the officer as per rules.

Signature of Head of the
Institute/Organization with seal

Place:

Name:

Date:

Designation:

Annexure I

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
FEE STRUCTURE FOR NEW M.Tech./M.Arch./M.U.R.P./M.Des STUDENTS TO BE ADMITTED AFTER 11.04.2022
(FOR SESSION 2022-23)

Particulars	APPLICABLE TO 2022-23 BATCH			
	M.Tech./M.Arch./M.U.R.P./M.Des. 1st Year		M.Tech./M.Arch./M.U.R.P./M.Des. 2nd Year	
	Autumn Semester	Spring Semester	Autumn Semester	Spring Semester
I. Semester Fees (To be paid every Semester)				
1. Institute Fees				
(a) Tuition Fees – Gen/OBC and Q.I.P./IITR-Staff	5000	5000	5000	5000
(b) Tuition Fees – Sponsored candidates	25000	25000	25000	25000
(c) Tuition Fees – SC/ST/PD (Not chargeable)	0	0	0	0
2. Semester charges				
(a) Student Establishment & Maintenance (Non refundable)	7000	7000	7000	7000
(b) Medical Insurance	750	750	750	750
(c) Miscellaneous	2500	2500	2500	2500
Total (a+b+c)	10250	10250	10250	10250
3. Hostel Charges (Per Semester)				
(a) Accommodation	6000	6000	6000	6000
(b) Electricity*	3000	3000	3000	3000
Total (a+b)	9000	9000	9000	9000
II. One time payments at the Time of Admission	6000	0	0	0
III. Deposits (Refundable)				
(a) Institute Caution Deposit	1000	0	0	0
(b) Library Deposit	2000	0	0	0
Total (a+b)	3000	0	0	0
IV. Mess Charges				
(a) Mess Advance towards Food Charges**	20400	20400	20400	20400
(b) One Time Mess Admission Fee (Non refundable)	4000	0	0	0
(c) Mess Security (Refundable)	2000	0	0	0
Total (a+b+c)	26400	20400	20400	20400
Grand Total for Gen/OBC and Q.I.P./IITR-Staff	59650	44650	44650	44650
Grand Total for Sponsored candidates	79650	64650	64650	64650
Grand Total for SC/ST/PD	54650	39650	39650	39650

NOTE:

- * This is the minimum charge for Bachelor Hostel. For married accommodation charges will be as per actual.
- ** Mess Advance towards food charges is subject to adjustment as per actual.
- Candidates admitted under EWS have to pay fee according to their respective categories i.e. General/OBC/SC/ST/PD.

20/05/22
 महावीर सिंह / MAHAVIR SINGH
 सहायक कुलसचिव / Asstt. Registrar
 छात्र कल्याण / Students welfare
 भा. प्रौ. सं. रुड़की / I.I.T. Roorkee

Mlc Bamea
 20/5/22
 (DOSW)
 अधिकाता, छात्र कल्याण
 Dear of Students' Welfare
 भारतीय प्रौद्योगिकी संस्थान रुड़की
 Indian Institute of Technology Roorkee