

# ADMISSION BROCHURE 2024-25

M.TECH.  
DAM SAFETY AND  
REHABILITATION



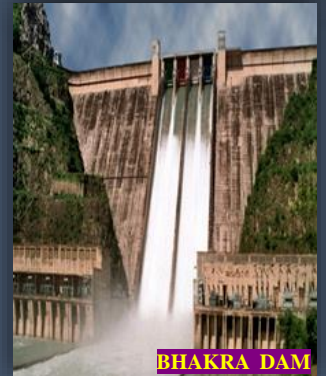
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

ROORKEE- 247 667 (INDIA)

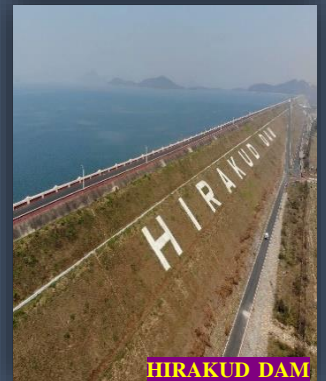
INDIA'S ICONIC DAMS



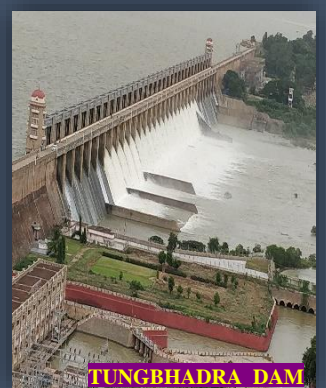
TEHRI DAM



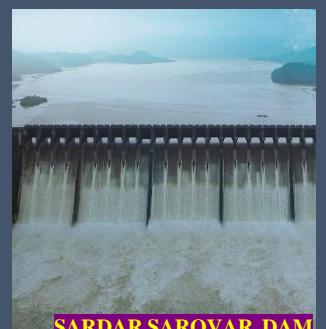
BHAKRA DAM



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 the 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 fourth batch of the programme will be starting with effect from July 17, 2024. The Programme is jointly run under the aegis of the **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,**  
Head, International Centre of Excellence for Dams,  
IIT Roorkee, Roorkee –247667,  
[head@iced.iitr.ac.in](mailto:head@iced.iitr.ac.in); [coordinator@iced.iitr.ac.in](mailto:coordinator@iced.iitr.ac.in);  
[coordinator.dsr@iitr.ac.in](mailto:coordinator.dsr@iitr.ac.in);  
Mobile: +91–9412393851; (*Preferably leave WhatsApp message/ SMS before calling*)  
Office: +91–1332–285654 (*Preferable number between 9 am to 8 pm on working days*)
2. The advanced applications may be sent to the [head@iced.iitr.ac.in](mailto:head@iced.iitr.ac.in) to check eligibility for admission. This should be done as soon as possible and, at the latest by **June 15, 2024**. The sponsorship letter by the government will be required by June 30, 2024. The admission letter will be issued by July 5, 2024, for the candidates who have been duly sponsored by their departments and selected by IIT Roorkee. These dates are tentative.
3. A copy of the application form should also be sent to CPMU of CWC at [dir-drip-cwc@nic.in](mailto:dir-drip-cwc@nic.in).
4. The PG admission portal will open around February– March 2024. The admission brochure for 2023–24 for sponsored officers can be accessed at  
[https://iitr.ac.in/Academics/static/Admission/PG/M.Tech/2023/M.Tech.\\_I\\_B\\_Sponsored\\_2023.pdf](https://iitr.ac.in/Academics/static/Admission/PG/M.Tech/2023/M.Tech._I_B_Sponsored_2023.pdf)  
Gate Qualified fresh engineers can access it  
[https://iitr.ac.in/Academics/static/Admission/PG/M.Tech/2023/M.Tech.IB\\_Regular\\_final.pdf](https://iitr.ac.in/Academics/static/Admission/PG/M.Tech/2023/M.Tech.IB_Regular_final.pdf)

5. The interested candidates should apply online on this link (<https://iitr.ac.in/Academics/Admission%20To%20M.Tech.M.Arch.M.U.R.P.%20Programmes.html>) to facilitate the admission process.
6. 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.
7. 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.
8. 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.
9. 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 the **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 / Gol 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 2023–24 is given in Annexure I. The fee structure for the session 2024–25 shall be announced soon. No major deviation in the fee structure is envisaged.
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
12. 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

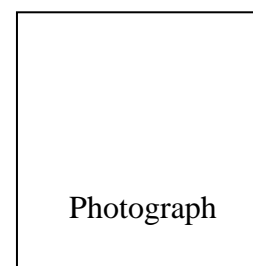
**3<sup>rd</sup> Course: July 17, 2024, to July 16, 2026**

*(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, Head, International Centre of Excellence for Dams, Indian Institute of Technology Roorkee, Roorkee- 247667, India (email IDs: [head@iced.iitr.ac.in](mailto:head@iced.iitr.ac.in))** on or before **May 15, 2024**. The application should necessarily be **uploaded on the admission portal of IIT Roorkee**.

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): .....
10. 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. A certificate of equivalence should be given if the name of the Degree is not the same as the 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

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## **SPONSORSHIP AND NO OBJECTION CERTIFICATE**

*(Not Required for IIT Roorkee Employees)*

The undersigned is pleased to confirm that Mr./Ms..... Who is working in this organization for the last ..... Years (**from...../...../.....to till date**) and is presently holding the rank/position of .....is hereby sponsored for pursuing PG programme in the Department of .....at Indian Institute of Technology Roorkee with specialization .....under sponsored category.

### **Details of Work:**

<b>S.No.</b>	<b>Designation</b>	<b>Period</b>	<b>From</b>	<b>To</b>
1.				
2.				
3.				

His/Her conduct and character is good.

### **In addition, the following information may please be furnished:**

1. Mr./Ms \_\_\_\_\_ is working in our Institute/Organization (**Please write Yes/No**)\_\_\_\_\_.
2. Organization/Institute is agreed to sponsor Mr/Ms. \_\_\_\_\_ (**Please write Yes/No**)\_\_\_\_\_.
3. The candidate is a full-time regular/permanent employee of our Institute/Organization and is not on deputation/lien to/from any other Institution.  
(**Please write Yes/No**)\_\_\_\_\_.
4. Our Institute/Organization has relieved him/her for the period of \_\_\_\_\_ years w.e.f. \_\_\_\_\_ full time for the programme (**in case of Full Time**).

**OR**

Our Institute/organization has allowed him/her to register for M.Tech programme and attend the classes as per the time table of the department/centre till the completion of degree (**In case of Part Time**).

5. The Institute/Organization will **pay Full Salary and Allowances** during the tenure of his/her sponsorship (**Please write Yes/No**)\_\_\_\_\_.
6. The sponsorship for admission will not be withdrawn midway.
7. Our enterprise is registered in a stock exchange/had an annual turnover of above Rs. 5.0 crores in the past two years (for candidates working in a Firm/Company/Industry) (**Please write Yes/No**) \_\_\_\_\_.

**Place:** .....

**Signature of the Head of the Organization with seal.**

**Date :** .....

**Name** .....

**Designation**.....

## Annexure I

**(The fee structure for the session 2024-25 shall be announced around April 2024)**

**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE  
STRUCTURE OF FEE / CHARGE FOR SESSION 2023-24 PAYABLE BY M.Tech./M.Arch./M.U.R.P./M.Des. STUDENTS (Revised)**

Particulars	APPLICABLE TO 2023-24 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
<b>I. Semester Fees (To be paid every Semester)</b>				
<b>1. Institute Fees</b>				
(a) Tuition Fees – Gen/OBC and Q.I.P./IITR-Staff	5000	5000	5000	5000
(b) Tuition Fees – Sponsored candidates/In-service	25000	25000	25000	25000
(c) Tuition Fees – SC/ST/PD (Not chargeable)	0	0	0	0
<b>2. Semester charges</b>				
(a) Student Establishment & Maintenance (Non refundable)	7000	7000	7000	7000
(b) Medical Insurance	750	750	750	750
(c) Career Development Cell (CDC) [Including IITR-Staff]	300	300	300	300
(d) Miscellaneous	2500	2500	2500	2500
<b>Total (a+b+c+d)</b>	<b>10550</b>	<b>10550</b>	<b>10550</b>	<b>10550</b>
<b>3. Hostel Charges (Per Semester) #</b>				
(a) Accommodation	6000	6000	6000	6000
(b) Electricity*	3000	3000	3000	3000
<b>Total (a+b)</b>	<b>9000</b>	<b>9000</b>	<b>9000</b>	<b>9000</b>
<b>II. One time payments at the Time of Admission</b>	<b>6000</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>III. Deposits (Refundable)</b>				
(a) Institute Caution Deposit	1000	0	0	0
(b) Library Deposit	2000	0	0	0
<b>Total (a+b)</b>	<b>3000</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>IV. Mess Charges #</b>				
(a) Mess Advance towards Food Charges**	24300	24300	24300	24300
(b) One Time Mess Admission Fee (Non refundable)	4000	0	0	0
(c) Mess Security (Refundable)	2000	0	0	0
<b>Total (a+b+c)</b>	<b>30300</b>	<b>24300</b>	<b>24300</b>	<b>24300</b>
<b>Grand Total for Gen/OBC/Q.I.P.</b>	<b>63850</b>	<b>48850</b>	<b>48850</b>	<b>48850</b>
<b>Grand Total for Sponsored candidates</b>	<b>83850</b>	<b>68850</b>	<b>68850</b>	<b>68850</b>
<b>Grand Total for SC/ST/PD</b>	<b>58850</b>	<b>43850</b>	<b>43850</b>	<b>43850</b>
<b>Grand Total for IITR-Staff</b>	<b>5300</b>	<b>5300</b>	<b>5300</b>	<b>5300</b>

**NOTE:**

1. \* This is the minimum charge for Bachelor Hostel. For married accommodation charges will be as per actual.
2. \*\* Mess Advance towards food charges is subject to adjustment as per actual.
3. # These charges will not be applicable on the students to be admitted under NDNR(Non-Dining & Non-Residing) category.
4. Candidates admitted under EWS have to pay fee according to their respective categories i.e. General/OBC/SC/ST/PD.

  
 सहा. कुलसचिव / Assit Registrar  
 छात्र कल्याण / Students Welfare  
 भा. प्रौ. सं. रुड़की / I.I.T. Roorkee

  
 अधिष्ठाता, छात्र कल्याण  
 Dean of Students' Welfare  
 भारतीय प्रौद्योगिकी संस्थान रुड़की  
 Indian Institute of Technology Roorkee