



## INDIAN INSTITUTE OF TECHNOLOGY ROORKEE APPOINTMENT TO FACULTY POSITIONS

Advt. No. Estt.(A)/ 355/A-86(6/2011)      Dated: September 30, 2011.

IIT Roorkee invites applications from Indian nationals for faculty positions at the levels of Professor, Associate Professor and Assistant Professor (all regular posts) and Assistant Professor (on contract). The Institute intends to fill up around 215 faculty positions through this advertisement in the following Departments/Centers:

Architecture & Planning, Biotechnology, Chemical Engineering, Chemistry, Civil Engineering, Earth Sciences, Earthquake Engineering, Electrical Engineering, Electronics & Computer Engineering, Humanities & Social Sciences, Hydrology, Management Studies, Mathematics, Mechanical & Industrial Engineering, Metallurgical & Materials Engineering, Paper Technology, Physics, Water Resources Development & Management, Alternate Hydro Energy Centre, Institute Computer Centre, Institute Instrumentation Centre and Centre of Nanotechnology.

The reservation policy of the Ministry of Human Resource Development, GoI will be applicable. The details of specializations in various Departments/Centres and requirements in terms of qualification and experience etc. can be seen on our website [www.iitr.ac.in](http://www.iitr.ac.in) or [www.iitr.ernet.in](http://www.iitr.ernet.in)

Interested candidates may apply on-line through website or on the prescribed application form which may be either downloaded from the website of the Institute or obtained from the Dy. Registrar, Establishment (A) Section, IIT Roorkee, Roorkee- 247 667 by sending self addressed, stamped (Rs10/- or Rs. 27/- if required by registered post) envelope of size 10" x 4". The completed application should reach **Deputy Registrar, Establishment (A) Section, IIT Roorkee, Roorkee-247 667 (Uttarakhand), on or before November 30, 2011.**

For any query, please contact:

Dean of Faculty Affairs, IIT Roorkee, Roorkee-247667

E-mail: [dfa@iitr.ernet.in](mailto:dfa@iitr.ernet.in); [adofa@iitr.ernet.in](mailto:adofa@iitr.ernet.in) Tel: +91-1332-285233, 285525 Fax. No.+91-1332-285433, website [www.iitr.ernet.in](http://www.iitr.ernet.in)

Note: Online application submission system has been developed to help the candidates in filling it. However, application will be considered only after getting hard copy of signed form with relevant documents before the last date.

**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**  
**RECRUITMENT OF FACULTY @IITR**

**Advt. No. Estt.(A)/ 355/A-86(6/2011)      Dated: September 30, 2011.**

IIT Roorkee invites applications from Indian nationals for faculty positions at the levels of Professor, Associate Professor, Assistant Professor (all regular posts) and Assistant Professor (on contract). The Institute intends to fill up around 215 faculty positions through this advertisement in the following Departments/Centers:

- 1. Architecture & Planning**
- 2. Biotechnology**
- 3. Chemical Engineering**
- 4. Chemistry**
- 5. Civil Engineering**
- 6. Earth Sciences**
- 7. Earthquake Engineering**
- 8. Electrical Engineering**
- 9. Electronics & Computer Engineering**
- 10. Humanities & Social Sciences**
- 11. Hydrology**
- 12. Management Studies**
- 13. Mathematics**
- 14. Mechanical & Industrial Engineering**
- 15. Metallurgical & Materials Engineering**
- 16. Paper Technology (Saharanpur Campus)**
- 17. Physics**
- 18. Water Resources Development & Management**
- 19. Alternate Hydro Energy Centre**
- 20. Institute Computer Centre**
- 21. Institute Instrumentation Centre**
- 22. Centre of Nanotechnology**

The reservation policy of the Ministry of Human Resource Development, GoI regarding SC,ST,OBC & Persons with disabilities will be applicable. The details of specializations in various Departments/Centres and requirements in terms of qualification and experience etc. are given below.

Interested candidates may apply on-line through website or on the prescribed application form which may be either downloaded from the website of the Institute or obtained from the Dy. Registrar, Establishment (A), Section, IIT Roorkee, Roorkee- 247 667 by sending self addressed, stamped (Rs10/- or Rs. 27/- if required by registered post) envelope of size 10" x 4". The completed application should reach **Deputy Registrar, Establishment (A) Section, IIT Roorkee, Roorkee-247 667 (Uttarakhand), on or before - November 30, 2011.**

Note: Online application submission system has been developed to help the candidates in filling it. However, application will be considered only after getting hard copy of signed form with relevant documents before the last date. Institute will not be responsible for the postal delay.

**Designations and pay structures are as follows :**

- (i)**Professor** : Pay structure: Pay Band 4 (Rs.37400-67000) with AGP Rs. 10500/- ) For direct recruits, minimum pay in the PB-4 to be fixed at Rs. 48000/- :
- (ii)**Associate Professor**: Pay structure: Pay Band 4 (Rs. 37400-67000 with AGP-Rs.9500/-) For direct recruits, minimum pay in the PB-4 to be fixed at Rs. 42800/-
- (iii)**Assistant Professor**: Pay structure: Pay Band 3 (Rs. 15600-39100 with AGP-Rs. 8000/-). For direct recruits minimum pay in the PB-3 to be fixed at Rs. 30,000 On completion of 3 years service as Assistant Professor, shall move to Pay Band-4 (Rs. 37400-67000) with an AGP of Rs. 9000/-).
- (iv)**Assistant Professor (On Contract)**: Pay structure: Pay Band-3 (Rs. 15600-39100 with AGP-Rs. 6000/-) with seven non-compounded advance increments (minimum starting pay of Rs. 20140). On completion of one year service shall move to AGP-of Rs. 7000/-

All other allowances are admissible as per institute rules.

**Qualifications & Experience:**

1. **Professor**: Ph.D. with first class or equivalent at the preceding degree in the appropriate branch with a very good academic record throughout and a minimum of 10 years' experience of which at least 4 years should be at the level of Associate Professor in IITs, IISc Bangalore, IIMs, NITIE Mumbai and IISERs.
2. **Associate Professor**: Ph.D. with first class or equivalent at the preceding degree in the appropriate branch with a very good academic record throughout and a minimum of 6 years teaching/industrial/research experience, of which at least three years should be at the level of Assistant Professor.
3. **Assistant Professor**: Ph.D. with first class or equivalent at the preceding degree in the appropriate branch with a very good academic record throughout and a minimum of 3 years industrial/research/teaching experience excluding, however, the experience gained while pursuing Ph.D.
4. **Assistant Professor (On Contract)** Ph.D. with first class or equivalent at the preceding degree in the appropriate branch with a very good academic record throughout.

**NOTE:**

1. Basic Degree in Architecture is essential for all new faculty positions in the deptt. of Arch. & Planning except for the existing faculty who are eligible for up gradation through an open selection.
2. In the case of faculty positions at Assistant Professor in the Department of Architecture & Planning, Ph.D. degree is not an essential requirement.

The requirement of the faculty positions and specializations, for the various Departments/Centres are given below:

### **1. Department of Architecture & Planning**

Planning	Professor
Architecture, Building Science and Technology	Associate Professor
Building Construction Management, Computer Applications for Architecture and Planning, Landscape Architecture, Product Design, Interior Design, Architectural Conservation, Sustainable Architecture, Environmental Design, Architecture, Urban Design, Urban Planning, Regional Planning, Rural Planning, Transportation Planning  In addition to the above, any other equivalent specializations in the field of Architecture and Planning.	Assistant Professor Assistant Professor (on contract)

### **2. Department of Biotechnology**

Biochemical Engg., Bioinformatics, Plant Biotechnology	Professor/ Associate Professor/ Assistant Professor /Assistant Professor (on contract)
Genetics & Molecular Biology	Professor
Biochemistry & Biophysics, Genetics & Molecular Biology, Biochemical Engg.	Associate Professor

### **3. Department of Chemical Engineering**

Energy Engg, Industrial Pollution Abatement, Biochemical Engg.	Professor
Modelling & Simulation, Optimization and Control	Associate Professor
Transfer Processes, Process Engg., Chemical Engg. Design, Chemical Process Control, Chemical Technology, Hydrocarbon Process Engg., Safety and Risk Management, Chemical Reaction Engg., Chemical Engg., Thermodynamics, Modeling and Simulation, Industrial Pollution Abatement, Energy Engg.	Assistant Professor
Transfer Processes, Process Engg., Chemical Engg. Design, Chemical Process Control, Chemical Technology, Hydrocarbon Process Engg. Safety and Risk Management, Chemical Reaction Engg., Chemical Engineering Thermodynamics, Modelling and Simulation, Industrial Pollution Abatement, Energy Engg.	Assistant Professor (on contract)

#### 4. Department of Chemistry

Liquid-Liquid Extraction of Metals; Physical Chemistry with research experience in Polymer chemistry	Professor
Organic Materials Syntheses/Organic Synthesis/Bioinorganic & Coordination Chemistry/Nano-materials Chemistry/Radiochemistry & Analytical chemistry/Theoretical Chemistry	Associate Professor
<b>Analytical</b> M.Sc in Analytical/Physical/Inorganic chemistry with research work in Analytical Chemistry. <b>Physical</b> M.Sc. in Physical Chemistry with research work in (i) Experimental Physical Chemistry (ii) Thermodynamics/Surface Chemistry (iii) Theoretical (Modeling & Simulation) (iv) Reaction Dynamics <b>Organic</b> M.Sc. in Organic Chemistry with research work in Physical Organic Chemistry <b>Inorganic</b> M.Sc. in Inorganic Chemistry with research experience in (i) Transition/main group organometallics (ii) Solid State Chemistry with X-ray crystallography	Assistant Professor

#### 5. Department of Civil Engineering

<b>I. Environmental Engg.:</b> Waste Water Treatment	Associate Professor
Environmental System Modeling, Physico Chemical Treatment of Water and/or Waste treatment	Assistant Professor
<b>II. Hydraulic Engg:</b> Wind Engg., Ground Water Hydrology & Irrigation Engg., Hydro Power	Professor
Hydraulics & Water Resources, Fluid Mechanics	Assistant Professor
<b>III. Geomatics Engg. :</b> Geomatics/Geoinformatics	Associate Professor
Photogrammetry, GPS, GIS, Remote Sensing	Assistant Professor
<b>IV. Geotechnical Engg. :</b> Ground Improvement Engg., Soil Dynamics, Static & Dynamic Soil Structure Interaction, Numerical Modeling/Probabilistic approaches in Geotech.	Associate Professor
Rock Mechanics/Rock & Underground Engg., Engg. Behaviour of Soils, Shallow & Deep Foundations.	Assistant Professor

<b>V. Structural Engg. :</b> Bridge Engineering, Laminated Composites	Professor
Laminated Composites, Sandwich Structures, Non-Linear Behavior of Concrete, R.C. Structure in Fire	Associate Professor
Construction Management, Reliability & Risk Analysis, Wind Engineering, Nonlinear behavior of Reinforced concrete	Assistant Professor
<b>VI. Transportation Engg. :</b> Transportation Planning	Associate Professor
Traffic Engineering, Highway Engineering	Assistant Professor

#### **6. Department of Earth Sciences**

Economic Geology/Mineral Exploration, Seismology	Professor/Associate Professor
Sedimentology, Hydrogeology, Exploration Geophysics, Mineralogy/Crystallography, Petrology (Igneous/Metamorphic)/Geochemistry, Geophysical Signal Processing, Petroleum Geology, Geomorphology, Geophysical Modeling and Data Inversion	Assistant Professor

#### **7. Department of Earthquake Engineering**

Instrumentation, Structural Dynamics, Engineering Seismology & Seismotectonics	Professor
Engineering Seismology & Seismotectonics	Associate Professor
Soil Dynamics, Structural Dynamics	Assistant Professor

#### **8. Department of Electrical Engineering**

Instrumentation and Signal Processing (including Biomedical Instrumentation), Electric Drives & Power Electronics, Power System Engineering (including High Voltage Engineering), System & Control (including Robotics)	Professor/ Associate Professor/ Assistant Professor/ Assistant Professor (on contract)
Note: Essential qualifications: Basic degree in engineering in one of the following streams: -Electrical      -Instrumentation -Electronics    -Power Engineering -Control	

#### **9. Department of Electronics & Computer Engineering**

<b>I. System Modeling &amp; Control:</b> Circuits and Systems, Fuzzy Control, Robotics, Embedded Control, Digital Image Processing and Robotic Vision.	Professor/ Associate Professor/ Assistant Professor/ Assistant Professor (on contract)
<b>II. Communication Systems:</b> Speech & Image Processing, Wireless Communication, CDMA Systems, Data Networks,	Professor/ Associate Professor/ Assistant Professor/

Communication Protocols, Optical Communication, Signal Processing.	Assistant Professor (on contract)
<b>III. Computer Science &amp; Engineering:</b> Theoretical Computer Science, Software Engineering, Network and Information Security, Database Management, Data Mining, Cloud Computing, Compilers, Computer Networks, Parallel & Distributed Computing, Soft Computing, Mobile Computing, Bioinformatics.	Professor/ Associate Professor/ Assistant Professor/ Assistant Professor (on contract)
<b>IV. RF &amp; Microwave Engineering:</b> Adaptive Antennas, Reconfigurable Antennas, Theoretical Electromagnetics, RF/Microwave Devices & Systems, Computational Electromagnetics, Antenna Theory & Design, Microwave Remote Sensing.	Professor/ Associate Professor/ Assistant Professor/ Assistant Professor (on contract)
<b>V. Microelectronics and VLSI:</b> VLSI Design & Technology, Semiconductor Devices, VLSI Circuit Design, MEMS, Nano Technology, Semiconductor Device Fabrication and Reliability.	Professor/ Associate Professor/ Assistant Professor/ Assistant Professor (on contract)
<b>Note:</b> Candidate must possess an M.Tech. or equivalent degree in the appropriate area.	

#### **10. Humanities & Social Sciences Department**

English, Economics	Associate Professor
Philosophy, Psychology, Economics	Assistant Professor

#### **11. Department of Hydrology**

Groundwater B.E./B.Tech in Civil/Agriculture Engg. & experience in Ground water Modeling and Management	Assistant Professor/ Assistant Professor (on contract)
Surface Water B.E./B.Tech. in Civil/Agriculture Engg. & experience in Water Resources Planning & Management/Hydroinformatics	Assistant Professor/ Assistant Professor (on contract)
Watershed Management B.E./B.Tech in Agriculture Engg. & experience in Watershed Management	Associate Professor/Assistant Professor /Assistant Professor (on contract)

#### **12. Department of Management Studies**

Marketing, Human Resources, Operations, Finance and General Management	Professor/ Associate Professor/ Assistant Professor/ Assistant Professor (on contract)
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### 13. Department of Mathematics

Control Theory & Robotics, Optimization Techniques, Computerized Tomography, Statistical Inference	Professor
Applied Algebra, Cryptology, Computational Fluid Dynamics, Image Processing, Computer Applications, Operations Research, Biomathematics, Special functions	Associate Professor
Any branch of Mathematics including Statistics, Operations Research and Computer Applications	Associate Professor / Assistant Professor / Assistant Professor (on contract)

### 14. Department of Mechanical & Industrial Engineering

#### I. Machine Design Engineering:

Stress Analysis, Tribology, Vibrations and Noise, Vehicle Dynamics, Machine Design, Machine Dynamics, Machine Diagnostics, Instrumentation and Control, Mechatronics, Composite Materials, Fracture Mechanics, Computational Mechanics, Solid Mechanics, Applied Mechanics, CAD/CAM and Robotics.

Associate Professor / Assistant Professor

#### II. Production & Industrial Engineering

Industrial Engineering, Welding Engineering, Manufacturing Systems, Reverse and Concurrent Engineering, Maintenance Engineering, Ergonomics, Metal Casting, Quality Engineering, CAM/CIM, Advanced Manufacturing Processes, Metal Forming, Machining of Materials, Machine Tool Design, Operations Management, Supply Chain Management, Surface Engineering, Plastic Moulding, Composites.

Professor / Associate Professor / Assistant Professor

#### III. Thermal Engineering:

Combustion, I.C. Engines, Heat Transfer, Fluid Power, Conventional & Non-Conventional Energy Systems, Fluid Mechanics, CFD, Refrigeration and Air-conditioning, Cryogenics, Renewable Energy, Turbomachines, Thermodynamics.

Professor / Associate Professor / Assistant Professor

**Note:** Candidates must have done B. Tech. or Equivalent in Mechanical / Production / Industrial Engineering.

### 15. Department of Metallurgical & Materials Engineering

Extractive Metallurgy- preferably in the area of ferrous/non ferrous extraction; Polymer Technology- preferably in the area of Engineering polymers and their applications; industrial Metallurgy-preferably in the area of deformation processes and joining technology; Physical Metallurgy-preferably in the area of electronic materials; Corrosion-preferably in	Associate Professor / Assistant Professor
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the area of corrosion, prevention and protection.	
Structural Ceramics and Tribology	Assistant Professor

### **16. Department of Physics**

Atomic, Molecular & Laser Physics, High Energy Physics	Associate Professor
Atmospheric Physics, Atomic, Molecular & Laser Physics, Condensed Matter Physics/Material Science, Instrumentation/Engineering Physics, Nuclear Physics.	Assistant Professor

### **17. Department of Paper Technology, Saharanpur Campus**

1. Chemical Engg./Mech. Engg./Chemistry (Specialization: Paper Tech/Polymer Tech.) 2. Electronics & Communication (Specialization: Communication and Control)	Professor
1. Chemical Engg./Paper Engg./Chemistry (Specialization: Paper Tech/Polymer Tech/Biotech.) 2. Physics (Specialization: Condensed Matter Physics) 3.English	Associate Professor
Polymer Engg: (Specialization: Polymer Engg./Polymer Technology) 1.Chemical Engg.: (Specialization: Process Control, Transfer Processes', Reaction Engg. Modeling and Simulation, Polymer Processing, Paper Technology, Environmental) 2.Management: (Specialization: Marketing Management, Human Resource Management, General Management, IT Management, Strategic Management) with basic degree in Management. 3.Humanities: (Specialization:Economics/Social Sciences) 4. Chemistry 5.Mechanical/Industrial Engg. (with knowledge of Machine/Geometrical Drawing and Computer Graphics) 6.Electrical Engg. 7.Electronics & Communication Engg. 8.Computer Engg./Science 9.Civil Engg. 10.Mathematics	Assistant Professor

### **18. Department of Water Resources Development & Management**

Civil Engineering with specialization in Construction Techniques/Management.	Assistant Professor
Civil Engineering with specialization in Design of Hydraulic Structures/Hydro Power Engineering.	
Mechanical Engineering with Specialization in Hydro Turbines/Construction Plant & machinery/Hydro	

Mechanical Equipments.	
Electrical Engineering with Specialization in Power System/High Voltage Engg./Control & Instrumentation/Hydro electric System Designs.	

### 19. Alternate Hydro Energy Centre

SHP Design and Testing (Turbine) and Solar Energy, Biomass conversion and environment conservation	Professor
SHP Planning & Designs (Civil)	Associate Professor
Small Hydro Power with bachelor Degree in Civil, Electrical or Mechanical Engineering.	Assistant Professor
Renewable Energy (Solar, Wind, fuel cell) with bachelor degree in Civil, Electrical, Mech. or Chemical Engg.	
Water pollution treatment and pollution modeling with bachelor degree in Civil or Environmental Engg.	

### 20. Institute Computer Centre

Computer Networks	Associate Professor
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### 21. Institute Instrumentation Centre

Experimental Condensed matter Physics/ Vacuum Technology/Thin film /Nano Material	Professor
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### 22. Centre of Nanotechnology

<b>Electronics &amp; Computer Engineering:</b> B.Tech. (Electronics), M.Tech. (with specialization in Solid State Electronics /Microwave) and experimental research work in the area of Fabrication/Testing of Nanodevices at the level of Ph.D.	Assistant Professor
<b>Physics:</b> M.Sc. in Physics with experimental research work in the area of Nanoscience/Nanotechnology related to the Condensed Matter Physics at the level of Ph.D.	Assistant Professor
<b>Chemistry:</b> M.Sc. in Chemistry with experimental research work in the area of Nanoscience/Nanotechnology at the level of Ph.D.	Assistant Professor
<b>Metallurgical &amp; Materials Engineering:</b> B.Tech.(Metallurgy/Materials Engg.), M.Tech. (Physical Metallurgy/Materials Engg./Materials Technology) with experimental research work in the area of Materials Engg. related to Nanotechnology at the level of Ph.D.	Assistant Professor
M.Sc.(Physics/Chemistry)/M.Tech. (Solid State	Assistant Professor

Electronics/Metallurgy/Materials Science/Materials Engg./Materials Technology) with research work in the area of Modelling and Simulation related to Nanomaterials/Nanosystems at the level of Ph.D.	
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**LAST DATE**

The filled application should reach the Institute upto **30.11.2011** at the address given below:

Dy. Registrar, Establishment (A) Section,  
Indian Institute of Technology Roorkee,  
Roorkee – 247 667  
Uttarakhand, INDIA

**NOTE:**

- (i) The Institute intends to fill up around 215 faculty positions at all the levels through this advertisement .
- (ii) Incomplete applications in any respect will not be entertained by the Institute.
- (iii) Mere fulfilment of the above mentioned qualifications & experience does not entitle a candidate to be called for interview. Institute will further make the criteria on the recommendations of departments to arrive at a reasonable number of candidates to be called for interview for each department.
- (iv) The Institute reserves the right to consider and to fill or not to fill positions in any of the above/and or any other specialization(s)/Department(s)/Centre(s).
- (v) The number of posts may vary as per need of the Institute at the time of recruitment.
- (vi) The minimum requirement of qualifications and/or experience may be relaxed in respect of outstanding candidates.
- (vii) Separate applications must be submitted if a candidate is applying in more than one department.
- (viii) Those who have already applied for a faculty position earlier will have to apply again on the prescribed application form by the last date if they wish to be considered against this advertisement.
- (ix) In the case of faculty positions at entry level in the streams of Architecture & Planning, the requirement of Ph.D. degree has been waived. However, such candidates will be required to obtain their Ph.D. within 05 years from the date of joining the Indian Institute of Technology Roorkee.
- (x) Reservation policy will be applicable as per the MHRD (Govt. of India) norms /rules. For availing reservation, the category certificate will be required.
- (xi) 3% of the vacancies are reserved for persons with disabilities as per GoI rules subject to producing the Disability Certificate in the prescribed format (to download click here) issued by the Competent Medical Board.
- (xii) The selected persons may be posted at any of the Campuses of the Indian Institute of Technology Roorkee as per the requirement of the Institute from time to time.

- (xiii) No correspondence, whatsoever, will be entertained from the candidates regarding postal delays, conduct and result of interview and reasons for not being called for interview or selection.
- (xiv) The candidates called for interview will be paid 2<sup>nd</sup> Class AC train fare from the place of their residence in India to Roorkee and back by the shortest route. Candidates coming from abroad are entitled for 2<sup>nd</sup> Class AC train fare only for inland travel.
- (xv) The Modified Guidelines for Screening and shortlisting of candidates for various faculty positions are available at **Annexure-I**.

### **Historical Perspective**

IIT Roorkee has its roots in the Roorkee College, which was set up in 1847. It was renamed as the Thomason College of Civil Engineering in 1854. The College laid the foundation of modern engineering education and the use of Civil Engineering practices in the infrastructure development of the country. The irrigation infrastructure in the form of dams and canals, roads and highways, railway, bridges etc. in the country- all have been the outcome of the engineering education imparted in this-the only engineering institution in the country at that point of time.

It got elevated as the first technical University of the country in 1948 through the University Roorkee Act, 1947 passed by the United Provinces Legislature.

University of Roorkee also became the first institution in the country to offer postgraduate programs in engineering and technology in 1955. On September 21, 2001, the University was converted into an IIT by the Government of India through an Act of Parliament and recognized as an Institution of National importance.

Roorkee is the entry point of Uttarakhand state. It is on the way to Mussoorie and Haridwar from Delhi. IIT Roorkee has a beautiful green campus. Various sports facilities including Billiards, Swimming, Hockey, Football and Yoga are available in the Campus. The Institute provides 100% accommodation to faculty members. A good C.B.S.E. School is available in the Campus which provides admission to the children of newly joining faculty throughout the year.