

**INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY  
POWAI, MUMBAI - 400 076**

**INFORMATION SHEET**

Faculty positions at the level of Professor/Associate Professor/Assistant Professor in its various academic Departments, Centres, Schools and Inter-disciplinary programs has been advertised by the Institute vide advertisement No.I-50/2013-2014. The various requirements and other related information are stated below.

**Reservation:** Without any compromise on qualification, experience and competence, reservation as per Government of India rules - 15%, 7 ½ % and 27% for SCs, STs and OBCs respectively is applicable at entry level positions of Assistant Professor in Science and Technology departments. However, in recruitment of faculty posts in subjects other than science and technology reservation of shall also be applied in full including for the posts of Associate Professors and Professors. Necessary certificates must be enclosed with the application form. GOI policy on reservation of faculty positions also include persons with Physical disability.

**This is a rolling advertisement. There is no last date.**

**QUALIFICATION:**

Ph.D. with First class or equivalent (in terms of Grades etc.) at the preceding degree and a good academic record throughout.

**EXPERIENCE:**

Professor	A minimum of ten years teaching/research/professional experience of which at least 4 years should be at the level of Associate Professor in a research organization or industry as on the date of application. The candidate should have demonstrated leadership in research in a specific area of specialization in terms of guidance of Ph.D. students, strong record of publications in reputed journals and conferences, patents, laboratory/course development and/or other recognized relevant professional activities.
Associate Professor	A minimum of six years teaching/research/professional experience of which 3 years should be at the level of Assistant Professor, Senior Scientific Officer/Senior Design Engineer in a research organization or industry as on the date of application. The candidate should have demonstrated adequate experience of independent research in terms of guidance of M.Tech. and Ph.D. students, publications in reputed journals and conferences, patents, laboratory/course development and/or other recognized relevant professional activities.
Assistant Professor	A minimum of three years teaching/research/professional experience, excluding the experience gained while pursuing Ph.D. Candidate should have demonstrated research capabilities in terms of publications in reputed journals and conferences. <i>Eligible candidates with less than the requisite experience may be taken as Assistant Professor (Contractual basis) in the pay band of Rs.15600-39100 PB-3 with sufficient number of advance increments.</i>

## PAY BAND :

<p><u>PROFESSOR</u></p> <p><b>PB-4 (Rs.37400-67000) with Academic Grade Pay of Rs.10,500/- p.m.</b></p> <p><i>For Direct recruits, minimum pay in the Pay Band to be fixed at Rs.48,000/- p.m.</i></p>	<p>1. Allowances as admissible to Central Government employees apply.</p> <p>2. A Cumulative Professional Development Allowance of Rs.3.0 Lakhs in a block of 3 years is admissible to all faculty.</p>
<p><u>ASSOCIATE PROFESSOR</u></p> <p><b>PB-4 (Rs.37400-67000) with Academic Grade Pay of Rs.9,500/- p.m.</b></p> <p><i>For Direct recruits, minimum pay in the PB-4 to be fixed at Rs.42,800/- p.m.</i></p>	
<p><u>ASSISTANT PROFESSOR</u></p> <p><b>PB-3 (Rs.15600-39100) with Academic Grade Pay of Rs.8,000/- p.m.</b></p> <p><i>For Direct recruits, minimum pay in the Pay Band to be fixed at Rs.30,000/- p.m.</i></p>	

## GENERAL INFORMATION

1. Separate application must be sent if a candidate is applying for a faculty position in more than one Department/Centre etc.
2. Candidates should have an excellent academic record, good communication skills, a commitment to high quality undergraduate and post-graduate education and demonstrated ability to carryout original and creative research.
3. The Institute encourages interaction of the faculty with industry, other research and professional institutions. Consultancy is encouraged at IIT Bombay and liberal consultancy policies are in practice.
4. Facilities for Research and Development activities exist in all the Departments and Centres. These are being continuously modernized with contemporary equipment and services. Good facilities also exist for computing. The Institute has a well stocked library with 4 lakhs volumes of books and journals, 2000 current periodicals and other research materials.
5. A technology business incubator hosted by the Institute, called the Society for Innovation and Entrepreneurship (SINE), (<http://www.sineiitb.org>) serves to promote technology based entrepreneurship by faculty.
6. Reimbursement of relocation charges of upto Rs.1.0 Lakhs for faculty from abroad for reimbursement of air fare for self and spouse and cost of transportation of goods. Reimbursement of upto Rs.50,000/- for self and family and transport of goods for faculty joining from within India.
7. Seed grant up to Rs. 10 Lakh is available to new faculty members. This enables an early start to research work until project funding from external agencies can be obtained.

8. The Institute provides a Cumulative Professional Development Allowance (CPDA) of Rs. 3 Lakhs for every block period of 3 years, a minimum of Rs. 2 Lakhs is earmarked for presenting papers at conferences and a maximum Rs. 1 Lakh is available towards membership fee of professional bodies and contingency expenditure. One additional conference in the block period is supported from IRCC/donation funds subject to availability.
9. The posts carry allowance such as D.A., T.A., D.A. on T.A., H.R.A. as per rules of the Institute which at present correspond to those admissible to Central Government employees stationed at Mumbai. Depending upon the qualifications and experience, higher salary may be offered in deserving cases.
10. Candidates called for interview will be re-imbursed air fare by Economy class (By Air India only) from the place of their residence and back by the shortest route.
11. About 90% of the faculty and research staff live on the Campus. The Institute endeavours to provide suitable accommodation to all faculty. However, initially new faculty may have to stay in transit accommodation. Every faculty quarter on campus is provided with intercom and broadband Internet access.
12. Most of the day-to-day facilities are available on the Campus including two banks, a post office, a small shopping center, two schools (upto 12<sup>th</sup> standard) for children, a well equipped 65 bed hospital, sports facilities including a swimming pool and vast play-ground for field games. Cultural facilities include film clubs, Classical music societies, debating and drama and a hobbies club. The Staff Club in particular is a center of social and cultural activities.
13. The Institute may consider candidates whose area of specialization lie outside those stated herein, provided these persons have an outstanding record.
14. No correspondence will be entertained from candidates regarding postal delays, conduct & result of interview and reasons for not being called for interview.

**AREAS OF SPECIALIZATION**

[Aerospace Engineering](#), [Chemical Engineering](#), [Chemistry](#), [Civil Engineering](#), [Computer Science & Engineering](#), [Earth Sciences](#), [Electrical Engineering](#), [Energy Science & Engineering](#), [Humanities & Social Sciences](#), [Industrial Design Centre](#), [Mathematics](#), [Mechanical Engineering](#), [Metallurgical Engineering & Materials Science](#), [Physics](#), [Biosciences and Bioengineering](#), [School of Management](#), [Centre for Environmental Science & Engineering](#), [Centre for Studies in Resources Engineering](#), [Centre for Technology Alternatives for Rural Areas](#), [Centre for Distance Engineering Education Programme](#), [Industrial Engineering & Operations Research](#), [Systems & Control Engineering](#)

<b><u>Aerospace Engineering</u></b>	<b><u>Specializations</u></b>
Professor	Aircraft Design and Air Transportation
Associate Professor Assistant Professor	Theoretical/computational/experimental study and technology development in all areas of aerospace engineering, including, but not limited to, Aerospace Structures; Aerospace Propulsion; Aerodynamics; CFD; Aerospace Flight Dynamics, Navigation, Guidance and Control; Aerospace Systems Design & Systems Engineering; Air Transportation; covering heavier/lighter than air systems, fixed/rotary wing aircraft, UAVs & MAVs, missiles, launch vehicles and spacecraft.

\* Last updated in September, 2010

<b><u>Chemical Engineering</u></b>	<b><u>Specializations</u></b>
Professor Associate Professor Assistant Professor	Reaction Engineering and Catalysis, Interfacial Science & Engineering, Transport and Separation Processes, Process Systems Engineering & Control, Food & Biochemical Engineering, Polymer and Materials, Nanotechnology, Thermodynamics, Membrane Science & Technology, Electrochemical Engineering

\* Last updated in March, 2010

<u>Chemistry</u>	<u>Specializations</u>
Professor	Spectroscopy and Dynamics Computational and Theoretical Organic Chemistry Organometallic Synthesis and Homogeneous Catalysis
Associate Professor	Spectroscopy and Dynamics Carbohydrate Chemistry Nucleic Acid Chemistry
Assistant Professor	All areas of Chemistry

\* Last updated in August, 2011

<u>Civil Engineering</u>	<u>Specializations</u>
Professor Associate Professor	Transportation Systems Engineering Geotechnical Engineering Remote Sensing Engineering Structural Engineering Water Resources Engineering Coastal and Ocean Engineering
Assistant Professor	Transportation Engineering Infrastructure Systems Remote Sensing and Geodesy Water Resources, Hydraulics, Environmental Engineering and Ocean Engineering Structural Engineering Geotechnical Engineering Civil Engineering materials

\* Last updated in March, 2010

<u>Computer Science &amp; Engineering</u>	<u>Specializations</u>
Professor Associate Professor Assistant Professor	Any area of Computer Science & Information Technology

\* Last updated in March, 2010

<u>Earth Sciences</u>	<u>Specializations</u>
Professor	Gravity and magnetic studies preferably having experience in marine geophysical data analysis and interpretation.
Associate Professor	Isotope Geochronology preferably having experience in noble Gas TIMS mass spectrometry.

Assistant Professor	<p>Isotope Geochronology preferably having experience in noble Gas TIMS mass spectrometry.</p> <p>Geophysics with specialization in Seismics/Seismology</p> <p>Petrophysics related to Petroleum exploration</p> <p>Theoretical Geophysics/ Geophysical modeling/ Geophysical Signal processing</p> <p>Hydrology : Ph.D. in Hydrology, Experience related to ground water exploration, numerical modeling or ground water and contaminant transport and solution equilibria.</p> <p>Petrology/geochemistry with experience in electron/ion probe microanalysis</p>
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\* Last updated in April, 2014

<u>Electrical Engineering</u>	<u>Specializations</u>
Professor	Power electronics and power system, communication networks, semiconductor memory, control theory and VLSI CAD tool development
Associate Professor	Micro/nano electronics, communication theory, control theory
Assistant Professor	<p>Communication Systems.</p> <p>Signal and Image processing.</p> <p>Micro/nanoelectronics,</p> <p>VLSI Design .</p> <p>Control theory and applications.</p> <p>Power Electronics and Power Systems.</p> <p>Embedded Systems.</p>

\* Last updated in March, 2010

<u>Energy Science &amp; Engineering</u>	<u>Specializations</u>
Professor	Energy Management, Process Integration, Clean Coal, Bioenergy, Electrical energy systems, Grid connection of renewables, power electronics and controls, Solar Thermal, Solar Photovoltaics.
Associate Professor Assistant Professor	<p>Electrical, energy systems, Grid connection of renewables, power electronics and controls for application to renewable energy efficiency and integration</p> <p>IC engines, alternate fuels, fuel cell, hydrogen storage, clean coal combustion, bioenergy and chemicals, solar thermal, solar PV, wind, hybrid systems.</p> <p>Dyesensitized PV, nanomaterials for energy, batteries, energy storage, microbial fuel cells.</p>

\* Last updated in March, 2010

<u>Humanities &amp; Social Sciences</u>	<u>Specializations</u>
<i>Economics</i> Professor Associate Professor Assistant Professor	Finance, Econometrics, Mathematical economics, Macroeconomics, Public policy, International trade and finance, Agricultural economics, Industrial economics, Development economics.

<u>Humanities &amp; Social Sciences</u>	<u>Specializations</u>
<b>English</b> Professor Associate Professor Assistant Professor	Literary theory, Drama/ Theatre/ Performance, Novel/Narratology, Cultural Studies, Women's Studies, Autobiography Studies, Theoretical Linguistics with specialization in Morphology, Semantics or Cognitive Science
<b>Philosophy</b> Professor Associate Professor Assistant Professor	Contemporary Western Philosophy and Indian Philosophy
<b>Psychology</b> Professor Associate Professor Assistant Professor	Clinical Psychology, Cognitive Psychology and Organizational Behaviour
<b>Sociology</b> Professor Associate Professor Assistant Professor	Sociology of development, Urban / rural sociology, Science, Technology and Society, Ethnicity and religion, Research Methods
<i>Cell for Indian Science and Technology in Sanskrit</i> Associate Professor	Astronomy (Jyotisha), Mathematics (Ganita), Metaphysics
Professor Associate Professor Assistant Professor	Communication Skills

\* Last updated in October, 2013

<u>Industrial Design Centre</u>	<u>Specializations</u>
Professor	Product Design
Associate Professor	Animation Design Ergonomics
Assistant Professor	Transportation Design / Auto Design Animation Design / Gaming Design Interaction Design Product Design Communication Design

\* Last updated in March, 2010

<u>Mathematics</u>	<u>Specializations</u>
Professor Associate Professor Assistant Professor	Algebra, Algebraic Geometry, Algebraic Topology, Combinatorics, Differential Geometry, Functional Analysis, Harmonic Analysis, Number Theory, Numerical Analysis, Partial Differential Equations, Probability

	and Statistics.
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\* Last updated in March, 2010

<u><a href="#">Mechanical Engineering</a></u>	<u><a href="#">Specializations</a></u>
Professor Associate Professor	<p>Manufacturing Engineering: Design, Modeling and Optimization of Manufacturing Processes (Casting, Forming, Machining and Welding), Precision Manufacturing, Nonconventional Manufacturing Processes, CAD/CAM/CIM and Rapid Prototyping, Automation, Micro and Nano Manufacturing, Industrial Engineering and Operations Research, Logistics, Quality and Maintenance Systems.</p> <p>Thermal &amp; Fluids Engineering : Fluid Mechanics and Fluid Power, Nuclear Engineering, Heat Transfer, Thermal Engineering, Refrigeration and Cryogenics.</p> <p>Design Engineering: Stress Analysis, Fatigue, Fracture, FEM and BEM, Kinematics, Dynamics, Control, Instrumentation, Textile Machinery, Mechatronics, Nanotechnology, MEMS, Condition Monitoring, Tribology, Acoustics, Vibration and NoiseControl, System Design.</p>
Assistant Professor	Computational mechanics, Nuclear reactor thermalhydraulics, Computer integrated manufacturing, Refrigeration, Air conditioning and cryogenics, NEMS, MEMS and Mechatronics

\* Last updated in March, 2010

<u><a href="#">Metallurgical Engineering &amp; Materials Science</a></u>	<u><a href="#">Specializations</a></u>
Professor Associate Professor Assistant Professor	The MEMS Department is looking for academically exceptionally good candidates in the broad area of Metallurgical Engineering and Materials Science, whose expertise fits into the academic programme of the Department.

\* Last updated in November, 2012



<u>Physics</u>	<u>Specializations</u>
Professor	<p>Theory of electronics structure &amp; optical properties of polymers.            First Principles Electronic Structure Calculations of Novel Magnetic Systems.            Magnetic and magnetotransport properties of metallic thin films.            Magnetic properties of intermetallics.            Electronic Structure Theory of crystalline insulators, polymers and disordered metallic alloys.            Magnetism of lowdimensional spin systems and oxide materials</p>
Associate Professor	<p>Statistical Physics: Nonequilibrium and Biological systems.            Statistical mechanics of granular materials &amp; Polymers            Experimental Nuclear Physics (Relativistic heavy ion collisions)</p>
Assistant Professor	<p>Cosmology and Astro Particle Physics Theory            Nonlinear Optics, Ultra Fast Laser Spectroscopy, Photonics, Quantum Optics (All Experimental), Theoretical Quantum Optics.            Nano Materials &amp; Nano Structures            Theoretical Condensed Matter Physics (Many body theory)            Nuclear Physics Theory, Experimental Nuclear &amp; Particle Physics            Quatum Computing (Experimental)            BioPhysics (Diffusion dynamics in Biosystems (Experimental), Random processes in Complex system (theory)</p>

\* Last updated in March, 2010

<u>Department of Biosciences &amp; Bioengineering</u>	<u>Specializations</u>
Professor	Medical Instrumentation and Microbiosensors, Microbial degradation of aromatic compounds and metabolic engineering, Biomaterials, biointerfaces and nanomedicine
Associate Professor	Nanobiosensors BioMEMS Drug Delivery
Assistant Professor	Medical Signal and/or Image processing Biomechanics Physiological Systems Modelling Experimental and Computational Neuroengineering Rehabilitation Engineering Cell and Tissue Engineering Medical Instrumentation Medical Informatics & Telemedicine Bionanotechnology Biologist/Biophysicist interfacing the two areas.

\* Last updated in August, 2010

<u>Shailesh J. Mehta School of Management</u>	<u>Specializations</u> <b>Areas (in bold-face are current high need areas)</b>
Professor Associate Professor Assistant Professor	Corporate Law and Communication
	Decision Sciences/Quantitative Methods
	Entrepreneurship
	<b>Finance</b>
	Industrial Organization
	<b>Information Systems</b>
	International Business
	Intellectual Property Rights
	<b>Marketing</b>
	<b>Organizational Behavior/Human Resources Management</b>
	<b>Strategic Management</b>
	<b>Technology and Innovation Management</b>

\* Last updated in October, 2012

<u>Centre for Environmental Science &amp; Engineering</u>	<u>Specializations</u>
Professor	Biodegradation and Remediation of Petrochemical Wastes, Environmental Application of Nanomaterials and Toxicological Implications, Biotransformation and Toxicity Evaluation of Complex Organic Pollutants, Environmental Systems Modelling and Optimization, Physicochemical and Biological Treatment Processes, Air Pollution Control, Technologies and Mitigation Strategies for Climate Change.
Associate Professor	Physicochemical and Biological Treatment Processes Environmental Systems Modelling Analysis of hydro climatic extremes Solid Waste Management
Assistant Professor	Air Quality Management – Measurements and Modelling Air Pollution Control Aerosol Science and Engineering Sustainable Development (Policies and Actions), Environmental Law Environmental Management; Cleaner Technologies and Preventive Environmental Management Microbial Ecology, Environmental Microbiology Ecosystem monitoring – structure and function, risk assessment, modelling, response to climate change Environmental Impact Assessment

\* Last updated in July, 2013

<u>Centre for Studies in Resources Engineering</u>	<u>Specializations</u>
Professor Associate Professor Assistant Professor	<ul style="list-style-type: none"> <li>• Oceanography</li> <li>• Atmospheric Remote Sensing</li> <li>• Water Resources</li> <li>• Climate Change Modeling</li> <li>• Snow, Glaciers, Ice studies</li> <li>• Natural Hazards and Disaster Management</li> <li>• Forestry and Ecology</li> <li>• Planetary Sciences</li> <li>• Geocomputation and Scientific Visualization</li> <li>• Computer Vision and image analysis for remote sensing data</li> <li>• Surveying and geodesy</li> <li>• Urban Development and Town Planning</li> <li>• Agricultural Engineering</li> </ul> <p>The candidate is expected to have a strong background in the use of remote sensing and geospatial tools in the domain areas of his/her expertise, and experience in mathematical modeling. The candidate should have studies mathematics subjects during his/her undergraduate (e.g. B.Sc./BE/B.Tech. Etc.) degree programs. For more information : <a href="mailto:head@csre.iitb.ac.in">head@csre.iitb.ac.in</a></p>

\* Last updated in September, 2012

<a href="#"><u>Centre for Technology Alternatives for Rural Areas</u></a>	<b><u>Specializations</u></b>
Professor Associate Professor Assistant Professor	Description : Areas including and not limited to Development Studies with special emphasis on Public-Policy and Governance issues, Environmental issues such as Global Warming and Clean Development Mechanism, and also Economics and Conservation. Technology Transfer and Extension and in the Context of Regional Planning and Development. Design and implementation of Development Projects. Sociology of Science, History of Science & Technology in the context of Regional Development in India. Natural Resources Planning and Utilization: (i) Soils and Agriculture (including Horticulture, Organic Farming), (ii) Energy (including renewables), (iii) Water Resources (including Micro-Watershed) <i>Detailed description may be seen on the webpage (<a href="http://www.ctara.iitb.ac.in">www.ctara.iitb.ac.in</a>)</i>

\* Last updated in June, 2011

<a href="#"><u>Centre for Distance Engineering Education Programme</u></a>	<b><u>Specializations</u></b>
Assistant Professor	Educational Technology Instructional Design Educational Psychology Computer Science Education research

\* Last updated in June, 2011

<a href="#"><u>Industrial Engineering &amp; Operations Research</u></a>	<b><u>Specializations</u></b>
Associate Professor	Evolutionary games, Stochastic games and their applications.
Assistant Professor	Candidates with proven research work and training in one or more areas will be considered: <ul style="list-style-type: none"> <li>• Methodologies of Data science and Network models in the context of Industrial Engineering and Operations Research.</li> <li>• Focused work in the applications of quantitative methods for analysis and design of engineering and service systems such as Communication systems, Health care, Infrastructure systems, Logistics, Manufacturing systems, Supply and value chains, Transportation systems and others.</li> <li>• Focused work in contemporary themes of methodologies relevant to Industrial Engineering and Operations Research like Financial Engineering, Game theory, Optimization, Pricing and revenue management, Risk analysis, Simulation, Statistics, Stochastic control, Stochastic models, etc.</li> </ul> <p>Also, candidates with excellent research work and very good academic background in all other areas of Industrial Engineering and Operations Research, broadly construed, will continue to be considered.</p>

\* Last updated in September, 2014

<u>Systems &amp; Control Engineering</u>	<u>Specializations</u>
Associate Professor Assistant Professor	Systems Science (Theory and Applications) Systems Engineering (Theory and Applications) Systems Optimization (Theory and Applications) Fault Diagnosis Control Systems (Theory and Applications)

\* Last updated in March, 2010

Date: Updated in September, 2014

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