भारतीय प्रौद्योगिकी संस्थान खड़गपुर
INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Advertisement No.: R/01/2026 Dated January 01, 2026

Rolling Advertisement for various Faculty Positions

Indian Institute of Technology Kharagpur, an Institute of Eminence (IoE), is the first and the largest in the chain of IITs engaged in teaching, research and development requires faculty for its various academic units. The Institute invites online applications from Indian nationals, Persons of Indian Origin (PIOs) and/or Overseas Citizens of India (OCI) [*], possessing excellent academic background, commitment to top quality teaching and proven credentials for carrying out outstanding research and development for various Departments / Centres / Schools / Academy:

[*] Foreign Nationals (other than OCIs and PIOs) are encouraged to apply for faculty positions for fixed tenure not exceeding five years on contract basis subject to clearance from Government of India (GoI).

FACULTY OF ENGINEERING AND ARCHITECTURE

1) Department of Aerospace Engineering
2) Department of Agricultural and Food Engineering & Centre of Excellence in Precision Agriculture and Food Nutrition
3) Department of Architecture and Regional Planning & Centre of Excellence in Urban Planning and Design
4) Department of Artificial Intelligence
5) Department of Chemical Engineering
6) Department of Civil Engineering
7) Department of Computer Science and Engineering
8) Cryogenic Engineering Centre
9) Department of Electrical Engineering
10) Electronics and Electrical Communication Engineering & G.S Sanyal School of Telecommunication
11) Department of Industrial and Systems Engineering, Centre of Excellence on Safety Engineering and Analytics (CoE-SEA)
12) Subir Chowdhury School of Quality and Reliability
13) Department of Mechanical Engineering
14) Department of Metallurgical and Materials Engineering & Steel Technology Centre
15) Department of Mining Engineering
16) Department of Ocean Engineering and Naval Architecture
17) Ranbir and Chitra Gupta School of Infrastructure Design and Management
18) Rubber Technology Centre

FACULTY OF SCIENCES

1) Department of Chemistry
2) Department of Physics
3) Department of Mathematics
4) Department of Geology and Geophysics
5) Centre for Ocean, River, Atmosphere and Land Sciences (CORAL)

FACULTY OF BIOSCIENCE AND BIOTECHNOLOGY

1) Department of Bioscience and Biotechnology & P.K. Sinha Centre for Bioenergy and Renewables
3) School of Medical Science and Technology
4) Centre of Excellence in Affordable Healthcare

FACULTY OF INTERDISCIPLINARY STUDIES

1) Advanced Technology Development Centre
2) Centre for Computational and Data Sciences
3) Centre of Excellence for Indian Knowledge Systems

4) Materials Science Centre
5) School of Energy Science and Engineering
6) School of Water Resources
7) School of Environmental Science and Engineering
8) Department of Education
9) Department of Humanities and Social Sciences & Rekhi Centre of Excellence for the Science of Happiness
10) Deysarkar Centre of Excellence in Petroleum Engineering
11) Partha Ghosh School of Leadership
12) Rajendra Mishra School of Engineering Entrepreneurship
13) School of Nano Science and Technology

STANDALONE FACULTIES

Dean (RGSoIPL)
1) Rajiv Gandhi School of Intellectual Property Law & Centre of Excellence in Public Policy, Law and Governance

Dean (VGSoM)
2) Vinod Gupta School of Management

IMPORTANT NOTE

- The areas of specializations in Departments/Centres/Schools/Academy shall be based on the requirement by the respective Departments/Centres/Schools/Academy.
- The list of Department/School/Centre/Academy wise specialisations may be viewed at the home page of the online application portal.
- The Institute reserves the right to shortlist the candidates as per the requirement of the respective Department/Centre/School/Academy depending upon exigencies. Prospective Candidates are advised to constantly visit the Institute's website for updates.
- Considering the dynamic nature of constitution and structuring of academic units of the Institute, the Rolling advertisement will apply to all the existing academic units as per the Institute constitution.

ELIGIBILITY CRITERIA

Posts: Professor, Associate Professor and Assistant Professor
Qualifications for the Post(s): Ph.D. with first class or equivalent at the preceding degree in the appropriate branch with a very good academic record throughout. *Ph.D. should have been awarded on or before the last date of application.*

Qualifications for the post(s) in Rajiv Gandhi School of Intellectual Property Law: Ph.D. with first class or equivalent in LLM (Master of Laws) after LLB (Bachelor of Laws) with a very good academic record throughout. In case of procedural laws, exposure to litigation in Civil/Criminal courts of India for a minimum period of 5 years (**Specialization** – Tax law, Labour and Industrial Law, Criminal Law, Banking and Financial Laws, Insurance Law, Commercial Laws, Disability & Human Rights, Law & Technology, Procedural Laws).

Qualifications for the post(s) in Centre of Excellence in Public Policy, Law and Governance: Ph.D. with first class in MA/MSc/LLM (Master of Laws) after BA/BSc/LLB (Bachelor of Laws) with a very good academic record throughout.

Qualifications for the post(s) in Department of Education: Physics, Chemistry, Mathematics, Economics: (a) Post-Graduate Degree in concerned disciplines with Ph.D. in concerned disciplines. (b) B.Ed. is desirable.

Education (Philosophy of Education/Indian Education/Child Development & Educational Psychology/Sociology & Economics of Education/Environmental Education/Curriculum Development/Research/Policy/Assessment & Evaluation): (a) M.Ed. with Ph.D. in Education

Experience for the Posts:

Posts	Experience required for the post
Professor	A minimum of 10 years' teaching / research / industrial experience of which at least 4 years should be at the level of Associate Professor in IITs, IISc Bangalore, IIMs, NITIE Mumbai and IISERs or at an equivalent level in any such other Indian or foreign Institution(s) of comparable standards.
Associate Professor	A minimum of 6 years teaching / research / industrial experience, of which at least 3 years should be at the level of Assistant Professor or equivalent positions in IITs, IISc Bangalore, IIMs, NITIE Mumbai and IISERs or in any such other Indian or foreign Institution(s) of comparable standards.
Assistant Professor Grade I	At least 3 years teaching / research / industrial experience, excluding however, the experience gained while pursuing Ph.D.
Assistant Professor Grade II	• Candidates with less than 3 years experience may be appointed on contractual basis as Assistant Professor Grade II. • At the entry level they may be placed in Level 10 of Pay Matrix with basic pay of Rs. 70,900 or Rs. 84,800 in Level 11 of Pay Matrix depending upon the experience and shall move to level 12 of Pay Matrix with a minimum basic pay of Rs. 1,01,500 on completion of 3 years of requisite experience and on assessment of satisfactory performance.

Pay level and Pay Matrix for the Posts:

Position	Level and Pay Matrix	Pay Band (Pre-revised)	AGP (Pre-revised)	Minimum basic pay in pay level	Gross emoluments (approx) including DA/Transport Allowance at the prevailing rate
Professor	Level-14A Pay Matrix: Rs.159100-220200/-	PB-4 Rs. 37,400-67,000/-	Rs. 10,500	Rs. 1,59,100	Rs. 2,57,066
Associate Professor	Level-13A2 Pay Matrix: Rs. 139600-211300/-	PB-4 Rs. 37,400-67,000/-	Rs. 9,500	Rs. 1,39,600	Rs. 2,26,256
Assistant Professor Grade I	Level-12 Pay Matrix: Rs. 101500-167400/-	PB-3 Rs. 15,600-39,100/-	Rs. 8,000	Rs. 1,01,500	Rs. 1,66,058
* Assistant Professor Grade I in IITs, IISc Bangalore, IIMs, NITIE Mumbai and IISERs on completion of 3 years of service shall move to Level 13A1 of Pay Matrix and will, however, continue to be designated as Assistant Professor Grade I.					

Reservation: Without any compromise on qualification, experience and competence, reservation for SC/ST/OBC/EWS/PWD categories is applicable as per MoE/Government of India rules. The certificates issued by the Competent Authority needs to be attached in support of his/her claim.

Accommodation: Suitable residential accommodation as per rules will be provided in the Campus of the Institute on joining the Institute.

Incentives for pursuing Excellence in teaching and research:

a) Faculty Start Up Research Grant (FSRG) be provided to new faculty members to develop a strong research proposal for extramural support, with a part of the background work being funded by an intramural start up grant.
b) A Cumulative Professional Development Allowance (CPDA) of Rs. 3 Lakhs for every block period of 3 years (Rupees one lakh per year) may be made available to every member of the faculty on reimbursable basis to meet the expenses for participating in both national and international conferences, paying the membership fee of various professional bodies and contingent expenses.

c) An additional amount of Rs. 50,000/- is given to a faculty member for attending conferences abroad who is a Principal Investigator of a Sponsored Project amounting to at least Rs. 15 Lakhs and has at least three Published Papers in referred journals in the preceding three years.
d) Reimbursement of relocation charges within India / abroad of upto Rs. 1,50,000/- to the faculty members at the time of their joining.
e) Interest free soft advance of Rs. 50,000/- to the newly recruited faculty members.
f) Honorarium of Rs. 15,000/- per month to the faculty members who have been awarded the S.S. Bhatnagar Prize OR who are fellows of at least two National Academies.
g) Transport Allowance and Telephone Allowance will be re-imbursed as per rules.
h) Free local telephone facility in the Department as well as residences within the campus.
i) Children Education Allowance (CEA) / LTC facility as per Government of India rules.
j) Medical facility for self and other dependent family members in the B C Roy Technology Hospital within the campus and for referrals to Speciality Hospitals as per IIT Kharagpur rules.

General Information

- **Candidates who applied against previous rounds of advertisements but did not receive any communication are encouraged to freshly apply against this Rolling advertisement.**
- Minimum requirement of experience may be relaxed in respect of outstanding candidates.
- Degrees obtained by the candidate should have been awarded by a recognized University / Institute.
- Mere eligibility will not vest any right on any candidate for being called for interview. The decision of the Institute in all matters will be final. No correspondence will be entertained from the candidates in connection with the process of selection / interview.
- The Institute reserves the right to call for interview only those candidates shortlisted on the basis of their qualification, experience, research and publication records and departmental requirements, interaction in the department, etc.
- The candidates should be preferably below 35 years of age for the post of Assistant Professor.
- The Institute reserves the right to fill or not to fill any or all the posts advertised.
- Persons employed in Government Organizations / Quasi Government Organizations should submit their application through proper channel.
- Travel support to the extent of Air fare (economy class) by the shortest route within India and Institute Guest House facilities free of charges in the campus to the candidates for appearing in the interview for faculty position.
- Canvassing in any manner may entail disqualification of the candidature.
- Any dispute with regard to the selection / recruitment process will be subject to Courts / Tribunals having jurisdiction over Kolkata.

Candidates possessing requisite qualification & experience are required to **apply online ONLY** (https://erp.iitkgp.ac.in/Jobs/auth/facapps.htm).

Hardcopy of the application is not required. Candidates are requested to upload PDF files of all degree certificates/testimonials/caste certificate/age proof certificate etc. as file attachment at an appropriate place. Also, it is mandatory for the candidates to upload the links [**] of their following videos as per the instructions given in the application portal;

1. **Link of a 5-minutes video explaining their current research**
2. **Link of a 5-minutes video explaining their future research plan**
3. **Link of a 5-minutes video of their teaching demonstration**

[**] Submitting any link other than their own video as mentioned, may result in the application being rejected at the initial stage of the selection process.

If any technical problem is encountered during online application, please contact - erp.facrec@iitkgp.ac.in

Candidates may also contact the Heads of the various Departments / Centres / Schools / Academy. Their address, phone numbers and email are available on Institute webpage.

कुलसचिव / Registrar

भारतीय प्रौद्योगिकी संस्थान खड़गपुर
INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Subject: Area of specialisations for Faculty Recruitment against advertisement No. R/01/2026 dt: January 01, 2026.

The applicants may go through the websites of the respective academic units for more details on specialisations, areas of research etc. as the key areas mentioned below is indicative and not exhaustive and not limited to these areas only.

FACULTY OF ENGINEERING AND ARCHITECTURE

1) Department of Aerospace Engineering

Preferred Areas: Supersonic and Hypersonic Experimental Aerodynamics, Experimental and Computational High-Speed Aeroacoustics, Reacting Flows, DNS and LES of compressible flows, Turbomachinery aerothermodynamics, Future gas turbine engines, Supersonic Combustion, UAV MAV and Drone Technology, Vibration control of Large Aerospace Structures, Aero elasticity, Composites and Smart Structures, Reconfigurable Helicopter, Aircraft and Satellite Control, Avionics, Inertial Navigation, Inter-Planetary Satellite Mission, Real Time Control of Aerodynamics for Drag Reduction, Distributed Space System, Future Aircraft Design, Loss of Control Prediction of Aircraft and its Recovery.

Other Areas: Space Debris Mitigation, Radar Evading Aircraft Design, Urban Air Mobility System Design, Turbomachinery aerothermoelasticity, Rocket Propulsion, Ion and Electric Propulsion, Stability of flows, Aerodynamics of Natural Flyers.

2) Department of Agricultural and Food Engineering & Centre of Excellence in Precision Agriculture and Food Nutrition

Preferred Areas: Farm Machinery and Power [Precision Agriculture, Human factors, AI/ML applications, CAD and 3D printed agri-machines, Drones, Robots and UGVs applications in agricultural operations, Renewable energy]; Land and Water Resources Engineering [AI/ML, IoT, RS, GIS and MCDA applications in sustainable land & water resources management, Groundwater vulnerability & pollution risk, Investigation and modeling of seawater intrusion, Simulation-Optimization modeling, Rainwater harvesting, Artificial recharge, Conjunctive Use planning and management, Cost-effective automated precision irrigation systems]; Food Process Engineering [Equipment & Machines development with hygienic practices and automation, AI/ML applications, Functional foods and nutraceuticals, RTE health foods, Fortified foods, Transport processes, Solar drying, High-pressure processing, Modified atmosphere packaging, Biodegradable packaging films]; Agricultural Biotechnology [Food Biotechnology, Bioethanol production, Organic waste valorization, Volatilome and secondary Metabolite study of medicinal and aromatic plants, Heat stress & Phosphorous starvation in plants under abiotic stresses]; Aquacultural Engineering [Design of hydraulic structures, fresh & brackish water farm structures, fishing gear and cage culture for improved fish production, Aquaponics, AI/ML and RS applications in Aquaculture, Fisheries biology]; Agricultural Systems and Management [Resource conservation techniques, Greenhouse Gas emission analysis, Climate-resilient agriculture, Climate Change adaptation strategies, Organic farming, Hydroponics, Agri-Aqua system, Non-invasive soil sensors, Multiplex nano-based sensors for soil testing, Digital soil mapping].

3) Department of Architecture and Regional Planning & Centre of Excellence in Urban Planning and Design

Landscape Architecture, Interior Design, Architectural Conservation, Sustainable Habitat Design and Processes, Energy and Building Science, Building Services, Architectural Design Theory, Building Information Management, Parametric Design, Universal Design, Building Technology, Construction Materials and Management, Building Engineering and Management, Disaster Mitigation and Management;

Sustainable Urban Architecture, Society-culture and Architectural productions, Sustainable Environmental Design, Energy and Sustainability Auditing; Urban Planning, Housing, Transportation, Urban Design, Urban Utilities, Urban Geography, Urban Economics, Urban Sociology, Urban Finance, Environmental Planning, Heritage Conservation, Tourism, Planning Theory & Methods, Socio-Economic & Regional Planning, GIS & Remote Sensing, Urban Informatics, Disaster management, Urban Land Management, Planning Legislation.

4) Department of Artificial Intelligence

Machine Learning (ML): Deep learning, Reinforcement learning, Probabilistic and Bayesian models, Federated learning, Quantum ML, etc.; Artificial Intelligence (AI): Search and optimization, Knowledge representation and reasoning, Game theory, Multi-agent systems, Planning, Reasoning under uncertainty; Theoretical, Statistical, Mathematical foundations of AI / ML; Natural Language processing, Speech Processing, Text and Data Mining; Information Retrieval; Computer Vision; Robotics; Knowledge Modelling; Cognitive AI; Human-Computer Interactions; Hardware and Systems for AI and ML; Big Data; Data Engineering; Ethics of AI (fairness, accountability, transparency, explainability, bias, safety, privacy, trustworthiness); Responsible AI; Applications of AI to domain areas (such as but not limited to Cyber-physical systems, healthcare, bioinformatics, manufacturing, education, energy, earth sciences, transportation, communication, hardware design, social themes, agriculture, law)

5) Department of Chemical Engineering

Hydrogen Energy, De-Carbonization, Chemical Process Optimization Techniques, Computer Aided Process Design, Electrochemical Fuel Cell, Chemical Sensor, Transport Phenomena, Fluid Flow; Heat and Mass Transfer, Reaction Engineering, Thermodynamics; Instrumentation, Process Control, Chemical Process Technology; Petrochemicals, Pollution Control; Nano and Composite materials; Polymers; Chemical Process Safety, Green Energy.

6) Department of Civil Engineering

Hydraulic and Water Resources Engineering [Remote sensing applications in water resources; Physical process based modelling of terrestrial hydrology and climate; Experimental and computational hydraulics of environmental and engineered flows; Hydroclimatological extremes – floods and droughts; Coastal engineering; River engineering; Hydropower and dam engineering; Optimization and decision making in water resources]; Transportation Engineering; Environmental Engineering [Water quality and treatment, modelling of environmental processes, wastewater management, air pollution and control, climate change, noise pollution, EIA, risk assessment, solid and hazardous waste management, any other environment-related area]; Geotechnical Engineering [Experimental geomechanics with experience in laboratory and/or in-situ testing; Geotechnical instrumentation and remote sensing for terrestrial geomechanics applications; Clay mineralogy; Molecular modelling]; Structural Engineering.

7) Department of Computer Science and Engineering

Artificial intelligence: Artificial Intelligence, Computer Vision, Machine and Deep Learning, Natural Language Processing, The Web and Information Retrieval.

Systems: Computer Architecture, Computer Networks, Computer Security, Databases, Design Automation, Embedded and Cyber Physical Systems, High-performance Computing, Mobile Computing, Operating Systems, Compilers and Programming Languages, Software Engineering.
Theory: Algorithms & Complexity, Cryptography, Formal Methods.
Interdisciplinary Areas: Computational Biology & Bioinformatics, Computer Graphics, Computer Science Education, Economics & Computation, Human-Computer Interaction, Robotics, Visualization, Quantum Computing, Computational Social Science

8) Cryogenic Engineering Centre

Quantum Materials, Applied Superconductivity, Ultra Low Temperature Techniques, Refrigeration, Cryogenic Processes & Equipment, Liquid Hydrogen, LNG Technologies, Storage & Transfer.

9) Department of Electrical Engineering

Machine Drives and Power Electronics: All areas of Electrical Machines, Drives, Power Electronics including Design of Electrical Machines, High frequency magnetics for power converters, Magnetically Levitated Drive System, EMI/EMC in power electronics converters, Wireless Power Transfer, Thermal management and packaging of power electronic converters, AI/ML in Power Electronics and Machine Drives.
Control System Engineering: All areas of Control System Engineering including Stochastic control, Systems Identification, Learning-based control, Control of Cyber Physical Systems, Aerial Robotics.
Power and Energy Systems: All areas in the PES domain.
Instrumentation and Integrated Electronics: All areas in Instrumentation and Integrated Electronics including Sensors, Instrumentations, Digital electronics, Digital VLSI Circuits & Architecture, Embedded systems.
Signal Processing and Machine Learning: All areas of Signal Processing and Machine Learning including Acoustic, Speech and Audio Signal Processing, Seismic Signal Processing, Signal Processing and Machine Learning on Embedded Platforms, (Convex) Optimization in Signals and Systems).

10) Department of Electronics and Electrical Communication Engineering & G.S Sanyal School of Telecommunication

Communications, Signal Processing, Wireless Networks, Image and Video Processing, Machine Learning, Circuits and Systems for Signal Processing, VLSI Design, RF and Microwave Engineering, Antenna and Propagation, RFIC.

G.S Sanyal School of Telecommunication

Communication Networks, Optical Networks, Optical Communications, Wireless Networks, Telecommunication Security, Network security, Physical layer security, Information Theory, embedded systems for communication, VLSI for communication, AI / ML in communication and networks, AI / ML in Signal processing for Communications, Quantum Communication, Quantum Networks, Optimization in Communication and networks, Neuronal signal processing for Communication and networks, Beyond 6G communications, Satellite communications, Communication services and applications in beyond 6G system, Wireless communications.

11) Department of Industrial and Systems Engineering & Centre of Excellence on Safety Engineering and Analytics (CoE-SEA)

Industrial and Systems Engineering; Operations Research; Production and Operations Managements; Logistics and Supply Chain Management; System Dynamics and Simulation;

Data Analytics, AI & ML applications in Industrial Engineering; Systems Analytics & Optimization; Manufacturing & Service Science; Engineering Ergonomics and Human Factors; Work Systems Design and Virtual Reality Applications; Safety Engineering and Analytics; Product Design and Life Cycle Management; Process Excellence; Quality Engineering; Statistical Quality Control; Management Information Systems and E-business; Any other areas related to Industrial Engineering.

Centre of Excellence on Safety Engineering & Analytics (CoE-SEA)

Safety engineering & management; Safety analytics; Prevention through design (PtD); Probabilistic risk assessment & uncertainty analysis; Ergonomics & human factors; Human error; behaviour & human reliability analysis; Occupational health; Injury epidemiology; Safety Economics; Industrial/ Mine/ Chemical process/ transportation/ Construction/ Infrastructure/ Agricultural/ Manufacturing & machinery/ Electrical/ Fire Safety; Cyber-physical systems safety & security; disaster management, Application of data analytics, virtual & augmented reality, IoT, AI, ML, human sensing technologies and other Industry 4.0/5.0 technologies & techniques in safety.

12) Subir Chowdhury School of Quality & Reliability

Quality Engineering, Reliability Engineering, Risk Analysis, Resiliency Analysis, Human Performance Assessment, Equipment Health Assessment, Physics-based Failure Analysis, Software Quality and Reliability, Reliability Testing and Data Analysis, Probabilistic Design of Structures, Cyber-Physical System Security.

13) Department of Mechanical Engineering

Additive Manufacturing; Laser Processing in Manufacturing; Machining; Modelling of Composite Manufacturing Processes; Surface Engineering; Precision-Micro-Nano Fabrication/Machining and Engineering; Robotics and Artificial Intelligence (AI); Computer-Integrated Manufacturing; Casting & Forming; Joining; others.

Experimental and/or Computational/Theoretical areas related to Fluid and Thermal Sciences and Engineering with preference to Refrigeration and Air conditioning; Gas Turbines; IC Engines; Turbomachinery; and dedicated methods/applications of Artificial Intelligence in fluid-thermal systems.

Multi-body dynamics and control; Mechanics of advanced materials (cellular structures and Metamaterials); Rail & Road Vehicle Dynamics;

Mechanical & Hydraulic Drives; Rotor dynamics; Experimental & Computational solid mechanics; Machine condition monitoring; Biomechanics; Friction, Wear and Lubrication in machine elements.

14) Department of Metallurgical and Materials Engineering & Steel Technology Centre

Extractive Metallurgy; Physical Metallurgy; Processing of Materials (Joining of Materials, solidification, Additive Manufacturing, etc.); Functional Materials (Energy Materials, Magnetic Materials, Electronic Materials including Semiconductor materials, Bio Materials, etc.); Computational Materials Science; Corrosion and High Temperature Oxidation; Any other Emerging Areas in Metallurgical and Materials Engineering.

15) Department of Mining Engineering

Mine Ventilation and Underground Environment, Mineral and Coal Processing, Mine Environment Engineering, Mine Safety and Health, Mine Planning, Mine Finance and Mineral Economics, Mine Digitization and Automation and Geo-Informatics.

16) Department of Ocean Engineering and Naval Architecture

Experimental and Theoretical Marine Hydrodynamics including CFD, potential flow simulations; Marine Structures including Marine safety and risk assessment; Wave hydrodynamics and hydroelasticity; Ship and offshore structure design and production; Control systems of ships/ underwater vehicles

17) Ranbir and Chitra Gupta School of Infrastructure Design and Management

Construction Technologies & Management, Utilities Infrastructure Design, Infrastructure Performance Monitoring and Evaluation, Predictive Maintenance, Restoration, Retrofitting and Rehabilitation, Asset Management, Net Zero Building, Building Energy Systems, Energy Auditing, Transport & Energy, AI and IOT applications in Infrastructure, Tourism Policy and Management, Sustainable Habitat Design and Management, Housing Infrastructure Planning and Design, Building Information Management, Lidar and Hyperspectral applications in Urban Infrastructure, GeoAI, and Scalable Geo Data, Transportation Technologies, Mobility Infrastructure Design & Construction, Freight Logistics.

18) Rubber Technology Centre

Assistant Professor and Associate Professor:

Specialization in Polymer/ Rubber/ Chemical engineering or technology.

Preferred Areas of research: Thermomechanical devulcanization, Recycling, upcycling, sustainability and circular economy, Thermoreversible crosslinking, Strategic application of rubber, Reactive processing, reactive extrusion, high performance rubber composites, 3D & 4D printing and additive manufacturing, Application of AI & ML in polymer and rubber technology, polymer and rubber for energy, electric vehicle, molecular simulation and FEM, flexible electronics, functional polymer materials, polymer physics etc.

FACULTY OF SCIENCES

1) Department of Chemistry

Physical Organic Chemistry (Reactive Organic Intermediates), Total Synthesis of Natural Products, Main Group Chemistry, Organometallics & Coordination Chemistry, Theoretical & Computational Chemistry, Magnetic Resonance Spectroscopy, Electrochemistry, Sustainable Energy Materials, Analytical Chemistry, Environmental Chemistry, Biophysical Chemistry, Biochemistry, Mass Spectroscopy, Ultrafast Spectroscopy and Imaging, Raman Spectroscopy and Imaging, Bioinorganic (porphyrin/corrole-based chemistry).

2) Department of Physics

Condensed Matter Physics, Devices and Related Technologies; Nuclear Physics; High Energy Physics; Astrophysics, Gravitation and Cosmology; Physics of Fluids; Statistical Physics; Soft Matter and Biophysics; Nonlinear Physics; Atomic and Molecular Physics; Optics and Photonics; Quantum Computation, Information and Technology; Mathematical Physics; Engineering Physics.

3) Department of Mathematics

Assistant Professor: Preferred Areas - Artificial Intelligence, Machine Learning, Natural Language Processing and Information Retrieval, Speech Processing, Text and Data Mining, Computer Systems, Database Systems, Data and Web Mining, Algorithms and Theory of Computation, Data Science &Big Data Analysis, Probability Theory, Stochastic Processes,

Statistical Inference, Design of Experiments, Regression Analysis, Time Series Analysis, Multivariate Statistics, Statistical Decision Theory, Optimization, Financial Mathematics.

Remaining Areas – Any branch of Mathematics.

Associate Professor: Preferred Areas - Computational Geometry, Topology, Combinatorial Matrix Theory, Algebraic k-theory, Statistical Inference.

Professor: Preferred Areas - Reliability Theory, Computational linear algebra, Commutative algebra, Applied Functional Analysis.

4) Department of Geology and Geophysics

Assistant Professor: Seismic method and prospecting, Radiometric method of prospecting, Electrical and Electromagnetic Geophysics. Metamorphic petrology, Hydrogeology, Engineering geology, Ore geology, Sedimentology, Micropaleontology, Isotope geochemistry, Stable isotope and low-temperature geochemistry (preferably silicate geochemistry), Igneous petrology, Vertebrate paleontology, Remote Sensing and Geographic Information Systems.

Associate Professor: Electrical and Electromagnetic Geophysics, Reservoir Geophysics and well logging, Invertebrate Paleontology and Paleobiology.

Professor: 3D seismic tomography, Near-surface Engineering geophysics.

5) Centre for Ocean, River, Atmosphere and Land Sciences (CORAL)

Urban Climate Science, Monsoon Dynamics, Physical Oceanography and modelling of Ocean processes, Modelling of Planetary Boundary Layer and Air-Sea Interactions, Modelling of Extreme Events and Climate, Carbon Sequestration, Blue Carbon, Biodiversity, Natural Hazards, Forest Remote Sensing, Ocean, River and Atmospheric Dynamics, Polar Climate and Cryosphere, AI/ML in earth system sciences.

FACULTY OF BIOSCIENCE AND BIOTECHNOLOGY

1) Department of Bioscience and Biotechnology & P.K. Sinha Centre for Bioenergy and Renewables

Biochemical, bioprocess and biosystem engineering, Biomechanics, Environmental biotechnology, Computational biology, Tissue engineering, Structural biology and structure based drug design. Stem cell biology, Developmental biology, Neurobiology, Host-pathogen interaction and related diagnostics and therapeutics.

2) School of Medical Science and Technology

Biomedical Engineering, Electronics/Electrical Engineering, Biomedical Instrumentation, Computational Biology/Medical Statistics, Biophysics/Biological Physics, Medical Physics, Implants, Radiopharmacy and Molecular Imaging, Biomedical Signal processing and Machine Learning, Omics in Healthcare and Medical doctor in Translational Research area. Applicants with relevant industrial R&D experience and translational research expertise in healthcare domain are encouraged.

4) Centre of Excellence in Affordable Healthcare

Electronics / Electrical / Mechanical Engineering or relevant fields with specialization in Biomedical Systems / Instrumentation, Biomedical Signal / Image Processing, Machine Learning and Embedded System Development; Assistive technology / Rehabilitation and Implants, Robotics; Low cost diagnostics & imaging, digital pathology, point-of-care device;

Low cost prosthetics which includes upper limb, knee, hip and shoulder implants, biomedical robotics. Candidates with experience in - translational research in healthcare domain with clinical partners / interdisciplinary work, prototype development / filing of intellectual property / commercialization will be given preference.

FACULTY OF INTERDISCIPLINARY STUDIES

1) Advanced Technology Development Centre

MEMS based sensors and Actuators; Integrated Photonics; VLSI and System on Chip (SoC); Mobile Computing for CPS/IoT, Edge/Fog/Cloud Computing for CPS/IoT; AI and ML for CPS, Speech; Image and Signal processing; Robotics & Automated Systems; Augmented Reality/Virtual Reality/Mixed Reality.

2) Centre for Computational and Data Sciences

Preferred Areas: Compiler/Scheduler/Architecture for Multi-core and GPGPUs; High Performance Computing (HPC) for Large Language Models, Computational Mechanics, Quantum computing and classical+quantum machine learning, Digital Twin Development.
Other Areas: Design, Optimization and Management of Hardware and Software for High-Performance Computing (HPC) Systems; High Performance Computing (HPC) for application domains including, but not limited to, Computational Biology / Computational Fluid Dynamics / Multi-scale Modelling / Computational Physics / Numerical Mathematics / Cryptanalysis / Computational Geo-Science / Atmospheric Modelling / Computational Mechanics / Green Computing.

3) Centre of Excellence for Indian Knowledge Systems

Indian Philosophy and Spirituality: Insights into ancient philosophies and spiritual practices.
Indian Science and Technology: Applications of ancient scientific knowledge in modern fields.
Indian Medicine: Traditional approaches to health and wellness, including Ayurveda.
Indian Arts and Literature: Exploration of Indian classical arts, language and literature.
Indian Governance and Administration: Understanding of ancient political systems and governance principles.

4) Materials Science Centre

Polymer rheology and processing; Ceramic science and engineering.

5) School of Energy Science and Engineering

Bio-Hydrogen, Bio fuels, Large area Perovskite Solar Cells (fabrication and characterization), Fuel Cells, Hydrogen Energy (production, storage and utilization), Advance battery systems, (fabrication, testing) Supercapacitors, thermal energy storage, Battery Energy Management Systems, Microgrid operation and control.

6) School of Water Resources

Research /Field / Industry experience in: (i) Groundwater Modelling and Management; Water Economics and Governance (ii) Hydro-informatics / Information and Communication Technology (ICT) in Water (iii) Water Pricing; Water Governance and Policy; Urban/Rural Water Supply Systems; Water and Wastewater Treatment and Reuse (iv) Industrial Wastewater Management.

7) School of Environmental Science and Engineering

Environmental Engineering [Water quality and treatment, modelling of environmental processes, wastewater management, air pollution and control, climate change, noise pollution, EIA, risk assessment, solid and hazardous waste management, any other environment-related area]

Sustainable Science and Engineering [Sustainable Science and Engineering; renewable energy; Sustainability and AI; Green Chemistry (cleaner production); Environmental law, policy and governance; Environmental Impact Assessment; Environmental Risk Assessment; Remote Sensing and GIS; green built environment; life cycle assessment; circular economy; modelling of environmental systems; water and wastewater treatment; solid and hazardous waste management; air quality and pollution control; global climate change - modeling and mitigation; carbon capture, control
and utilization.].

8) Department of Education

Preferred Areas: Mathematics, Physics, Economics, Education (Pedagogy)
Other Areas: Chemistry (Organic)

9) Department of Humanities and Social Sciences & Rekhi Centre of Excellence for the Science of Happiness

Economics (preferably in the areas of Behavioural Economics, Experimental Economics, Game Theory, Mathematical Economics, and Microeconometrics); Foreign Languages (French, German).

Rekhi Centre of Excellence for the Science of Happiness

Psychology (with specialisation in the areas of Positive Psychology, Clinical Psychology, Cognitive Psychology, Neuropsychology, and Educational Psychology); Neuroscience (with specialization in Happiness Studies), Economics (with specialization in the areas of Behavioural and Wellbeing Economics); Climate Change and Sustainability (with specialization in Human Wellbeing and Happiness)

10) Deysarkar Center of Excellence in Petroleum Engineering

Assistant Professor: Petrophysics, Offshore Oil and Gas Operations, Deepwater Operations and Subsea Technology, Health, Safety, and Environment in Upstream Petroleum Engineering, Natural Gas Engineering, Petroleum Economics, Artificial lift techniques, Unconventional Reservoirs: Offshore Drilling Engineering, Geothermal Wells.

Associate Professor: Reservoir Engineering, Reservoir Simulation, Enhanced Oil Recovery, Application of AI/ML in Reservoir Engineering and Simulation.

Professor: Drilling and completion, Hydrofracking and Production Enhancement, CO2 geo-storage, geothermal energy.

11) Partha Ghosh School of Leadership

Preferred Areas: Enlightened Humane Leadership that is holistic and inter-disciplinary and exceeds Management and technical skill-power, Corporate experience in executive role (even as an intern for 1 year or so), Experience in leading large research teams or programs, Communication skills (both written and verbal), Cross-cultural knowledge system experience (Knowledge systems of India and the world), Organizational experience in conducting social activities and programs, Exposure to multiple cultures both at the national and international

levels, High end Operational skills bridging the Digital networks and the grounded and grassroots experiential world.

Other Areas: Business and Operational Leadership with Data Analytics, Predictive Analytics for Decisive Leadership, Transformational Leadership through Digital Ecosystem and networking, Deep Learning and Artificial Intelligence (DL and AI) for Technological Leadership.

12) Rajendra Mishra School of Engineering Entrepreneurship (RMSoEE)

Product Engineering & Innovation: Design Thinking, Product Design and Development, Intelligent Manufacturing, Innovation Management. Simulation and Modeling; Rapid Prototyping; System architecture & Integration; Quality Engineering, Planning, and Control.

Entrepreneurship: Entrepreneurship development & Ecosystem; Start-up & venture creation; Social Entrepreneurship; Entrepreneurship Finance & economics; Risk and Budget Management; Growth & sustainability of startups; Entrepreneurial leadership; Legal aspects of business and IP management; Human Resource management; Marketing Management & Research.

Technology Innovation: Artificial Intelligence and Data Sciences for Enterprise creation; Robotics, Electronic devices; Bio-medical devices & Bio Sciences; Cyber-physical systems; Agripreneurship; Intelligence system Design and IOT; Sustainable Energy management; Sustainable waste Management.

13) School of Nano-Science & Technology

Flexible and wearable nanoelectronics, Carbon-based nanomaterials, 2D materials beyond graphene, Carbon and Quantum dots, Nanoelectronics and quantum devices, Nanostructured materials next generation for supercapacitors, Thermoelectric nanomaterials, Additive manufacturing with nanomaterials, Nano-enabled sensors and MEMS/NEMS and IoT sensors, and Actuators, AI-driven nanostructure optimization, Nano–AI convergence for materials and devices, Hybrid nanomaterials for soft robotics and flexible devices, Smart nano materials with self-healing capability, Nanomaterials for wear, corrosion, and radiation absorbing, AI and ML nanotechnololgy, Biomedical Nanotechnology and devices, Nanocomposites.

STANDALONE FACULTIES

1) Rajiv Gandhi School of Intellectual Property Law (RGSoIPL) & Centre of Excellence in Public Policy, Law and Governance

Intellectual Property Laws, Taxation Law, Commercial & corporate laws, Competition law, Technology & Law, Procedural laws.

Centre of Excellence in Public Policy, Law and Governance

Public Policy, Public Administration, Law and Governance, Law and Economics.

2) Vinod Gupta School of Management (VGSoM)

Preferred Areas: Business Analytics and Emerging Technologies (AI for Business Applications, Business Analytics, Advanced Business Analytics, Emerging Technologies such as Cloud Computing, Big Data, Internet of Things, Augmented Reality/Virtual Reality, Metaverse, Digital Twin, Industry 4.0, Enterprise Systems, Digital Transformation, Digital Business, Cyber Security, Advanced Econometrics (including Experimental Econometrics)), Economics (Business Environment, Macroeconomics), Finance and Accounting (FinTech and Blockchain Applications in Finance, Actuarial Science & Modelling, Accounting Analytics), General

Management (Business law, Managerial and Organizational communication), Human Resource Management and Organizational Behaviour (Analytics in HR and OB, Industrial Relations, Labour Laws), Marketing Management (Marketing Analytics, Marketing Research, Retail Marketing, International Marketing), Production and Operations Management (Operations Management, Project Management) & Strategy (Strategic Management, International Business).