



Department of Management Sciences (DoMS)

Indian Institute of Technology Kanpur
Kanpur - 208016

eMasters Degree in “Power Sector Regulation, Economics and Finance”

Department of Management Sciences (DoMS) has made several successful strides towards policy/ regulatory research, teaching, advisory and consultancy in the diverse areas of power/ energy sector. The eMasters Degree program in “Power Sector Regulation, Economics and Finance” is a multi-disciplinary program approved by the Senate, IIT Kanpur. It provides **conceptual and applied understanding of the policy and regulatory framework of the sector from power system, economic, financial, regulatory and legal perspectives.**

Target Group

The program, delivered in online mode is designed for working professionals with a **minimum experience of 2 years.** The average experience of the last two cohorts - 9 years across varied background including engineering, regulation, finance, accounting, economics, law and public policy. The program is suited for **officials/ employees of Regulatory Commissions, Government, Generation Companies (thermal, hydro and RE), Licensees (Transmission, Distribution and Trading), System Operators, Open Access Consumers, Equipment Manufacturers, Banks & Financial Institutions, Insurance & Investment Funds, Consultants, Academicians and other energy sector stakeholders including Green Hydrogen, Storage, EV, Coal, Oil & Gas etc.**

Admission Criteria and Partial Fee Waiver

Further details about minimum qualification, admission criteria, application process, timelines and fee structure are available at <https://emasters.iitk.ac.in/course/masters-in-power-sector>

A **partial fee waiver upto 3 modules** may be granted, at the sole discretion of the institute, to candidates nominated/ sponsored by eligible entities including **PSUs, Government, Regulatory Commissions, Statutory bodies, Defence, MSME and other Corporates.** For more information on fee waiver please visit <https://emasters.iitk.ac.in/faqs#faqWaiver>

Next round of admission will open in October.

Pedagogy and Program Delivery (Online Mode)

- The program content is delivered through **recorded, live and live interactive sessions through online mode.** The live/ interactive sessions and online exams are scheduled over the weekend.
- More than 20-24 hours of content per module is spread over 8-9 weeks. The modules also include hands on exercises/ case studies/ assignments, as appropriate, to enable better understanding of concepts in applied contexts.
- **Online resources** are identified and, **selected ebooks** are provided by IIT Kanpur to the students.
- All students are encouraged to visit IIT Kanpur campus for an **immersive campus experience and interaction.**
- Institutional visit (voluntary) - Discom, Power System Operator and/ or Power Exchange during summer break.

Curriculum and Module Structure

The program, building on foundations of economics, accounting and finance, provides an in-depth understanding of the policy and regulatory aspects for generation (thermal, hydro and RE), transmission, distribution, trading, power system operation, power procurement, power market, smart grid, electricity tariff etc. Apart from faculty from relevant departments of IIT Kanpur, the sessions are contributed by **leading national and international experts. Modules can be completed in a duration of 1 to 3 years.**

Quarter 1	Quarter 2	Quarter 3	Quarter 4
MBA 951: Fundamentals of Economics, Accounting and Finance	MBA 954: Power Sector Regulation in Practice: MYT Framework for Generation, Transmission & Distribution	MBA 957: Power Procurement: Principles and Practice	MBA 961: Designing Retail Electricity Tariff
MBA 952: Power Sector Reform and Regulation: Economic Principles and Evolution	MBA 955: Competition and Power Market Development	MBA 958: Renewable Energy: Policy, Regulation and Market	MBA 962: Power Sector Regulation: Legal aspects, Emerging Issues and International Perspectives
MBA 953: Power System Operation and Ancillary Services	MBA 956: Smart Grid Technologies and Implementation	Regulatory Capstone Project	MBA 963: Project Financing for Energy and Infrastructure Sectors *

* New Module Introduced

Supervised Regulatory Capstone Projects help the students to apply the concepts learned and devise solutions for real-life challenges. Multiple interactive sessions with the supervisor(s) are scheduled to guide students to achieve objectives of the projects, which include frontline and emerging topics of relevance.

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Program Faculty and Experts

- Faculty members of IIT Kanpur from Department of Management Sciences, Electrical Engineering, Economics and Sustainable Energy Engineering.
- Leading industry experts and noted academicians at national and international level.
- A list of faculty and experts associated with the program is available at <https://emasters.iitk.ac.in/course/masters-in-power-sector>

Key Topics (A Snapshot)

- Indian Power Sector – Structure and Reforms
- Electricity Act, 2003 and Amendments
- National Electricity Policy and Tariff Policy
- Electricity Rules and Amendments
- Key CERC and SERC Regulations
- Learning from Judgements of APTEL and Supreme Court
- Distribution Sector Reforms
- Understanding Perfect Competition and Monopoly
- Theories & Economics of Regulation
- Pricing and Regulation of Natural Monopoly
- Fundamentals of Accounting and Finance
- Concepts of Project Financing
- Power System Operation
- Indian Electricity Grid Code
- Deviation Settlement Mechanism
- Ancillary Services
- Congestion Management
- Demand Response and Demand Side Management
- Security Constrained Economic Dispatch (SCED)
- Market Based Economic Dispatch (MBED)
- Tariff Determination for Generation, Transmission, Distribution and Renewable Energy
- Multi-year Tariff Framework
- Regulated Tariff Determination for Thermal and Hydro
- Transmission Pricing & Sharing of Transmission charges
- Regulated Tariff Determination for Distribution
- Estimating Cost of Service
- Free Cashflow Evaluation
- Sources of Finance for Energy and Infrastructure Projects
- Retail Tariff Design
- Learnings from International Experiences in Power Sector
- RE Policy and Regulation
- Feed-in Tariff, RPO, HPO and ESO
- Regulated Tariff determination of RE projects
- Competitive Bidding for RE Based Projects
- Market for RECs and ESCerts
- Rooftop Solar: Gross and Net Metering
- Energy Storage
- Solarisation of Agriculture
- Market for Carbon Credit
- RE Market: GDAM, RE-RTC, Hybrid RE
- Green Hydrogen: Technology, Economics, Regulatory and Policy Aspects
- Competition and Power Market Development
- Open Access and Green Open Access
- Power Exchange Products and Market Operations
- Retail Competition
- Cross Border Trading
- Power Market Derivatives
- Demand Forecasting and Power Procurement Planning
- Planning for Resource Adequacy
- Competitive Bidding for Conventional Projects
- Smart Grid: Regulation and Implementation
- Smart Metering
- Consumer Complaints, Redressal and Ombudsman
- Charging Infrastructure for Electrical Vehicles (EVs)
- Project Risks - Identification and Mitigation
- Term Sheet, Covenants and Loan Documentation

Program Governance and Award of Degree

- The program is conducted under the aegis of the Office of Digital Learning as per the approved rules and guidelines.
- The eMasters programs have their own academic governing structure like other academic programs of IIT Kanpur. **Course grading policies are similar to other academic programs.**
- Candidates, having successfully completed all the academic requirements, would be awarded the eMaster degree by the IIT Kanpur at its convocation. Graduated students get **IIT Kanpur Alumni status**.

Follow all updates and further information about the program through following links



Department of Management Sciences, Indian Institute of Technology Kanpur - 208016

<https://www.iitk.ac.in/doms/>

Program Coordinator: Prof. Anoop Singh

<https://www.iitk.ac.in/doms/anoops/>



Office of Digital Learning, IIT Kanpur, Indian Institute of Technology Kanpur - 208016

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