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

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 Management” 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 power 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 has been 9 years across varied background including engineering, regulation, finance, accounting, economics, law and public policy. The program is suited for employees of Electricity Regulatory Commissions, Governments, Generation Companies (thermal, hydro and RE), Licensees (Transmission, Distribution and Trading), System Operators, Equipment Manufacturers including emerging technologies (like Green Hydrogen, Storage and EV), Banks & Financial Institutions, Insurance Funds, Investment Funds, Consultants, Investors and other stakeholders interested in this area.

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 of 1 to 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. See link above for more information.

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 hours of content per module spread over 8-9 weeks. The modules may also include hands on exercises/ assignments to assist better understanding of concepts.
- 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), covering a Discom, Power System Operator and/ or Power Exchange has been organized during the summer breaks.

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, 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 for the program are contributed by leading national and international experts. Modules can be completed in a duration of 1 to 3 years.

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<td>MBA 953: Power System Operation and Ancillary Services</td>
<td>MBA 956: Smart Grid Technologies and Implementation</td>
<td>MBA 959: Regulatory Capstone Project-I</td>
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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 schedule to guide students to achieve objectives of the projects, which include frontline and emerging topics of relevance.

https://emasters.iitk.ac.in/course/masters-in-power-sector
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
- 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
- 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 and sharing of Transmission charges
- Regulated Tariff Determination for Distribution
- Estimating Cost of Service
- Retail Tariff Design
- Distribution Sector Reforms
- Learnings from International Experiences in Power Sector
- RE Policy and Regulation
- Regulated Tariff determination of RE projects
- Market for RECs and ESCerts
- Rooftop solar: Gross and Net Metering
- Energy Storage
- Solarization of Agriculture
- Market for Carbon Credit
- Competitive bidding for RE Based Projects
- RE Market: GDAM, RE-RTC etc
- PAT Mechanism
- Competition and Power Market Development
- Open Acess and Green Open Acess
- Power Exchange Products and Market Operations
- Retail Competition
- Cross border trading
- Power Market Derivatives
- Demand forecasting and Power Procurement Planning
- Competitive bidding for Conventional projects
- Smart Grid: Regulation and Implementation
- Smart Metering
- Consumer Complaints, Redressal and Ombudsman

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 this 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/ime/anoops/

Office of Digital Learning, IIT Kanpur, Indian Institute of Technology Kanpur - 208016
https://emasters.iitk.ac.in/course/masters-in-powser-sector