

# The Graduate Certificate in Power Systems Engineering



Department of Electrical and Computer Engineering

Newark College of Engineering

**New Jersey Institute of Technology**

### WHY PURSUE A GRADUATE CERTIFICATE IN POWER SYSTEMS ENGINEERING?

Society is becoming more aware than ever of the need to provide an affordable, secure, reliable, and environmentally sound energy future. Meeting energy needs is becoming more challenging with the continuously growing global demand for conventional energy sources and an increasing awareness of the need to protect the environment. Due to infrastructure and personnel growth in the power utility industry and significant challenges to develop environmentally clean alternate energy sources, there is a substantial job market now with potentially growing demand for engineers to handle future critical needs. Exploiting renewable energy sources – sun, wind, geothermal (wave,) hydraulic and others – presents a most urgent partial solution, and together with the task of increasing energy efficiency use provides immense opportunities for engineering talents. To manage a complex power generation, control and distribution system, and operate it efficiently and in compliance with the maze of technical, financial, and regulatory constraints, a combination of management and technical skills are required. This graduate certificate and the Master's degree to which it is related offer an opportunity to obtain the needed knowledge.

### WHY STUDY POWER SYSTEMS ENGINEERING AT NJIT?

The Certificate in Power Systems Engineering is a unique interdisciplinary program that draws upon the full resources of New Jersey's science and technology university. The university has established research initiatives in nanotechnology, microelectronics, solar cells, and related areas. NJIT also has strong ties with leading power industries, such as PSE&G and ASCO Power Technologies, and is establishing a collaborative synergy with other prominent companies to educate future leaders and the workforce in the power and energy industry.

### WHAT WILL I LEARN?

The program provides a foundation and presents recent advances in power systems, power control, distribution and management systems, renewable energy sources, solar-cells, fuel-cells and other progress in energy production, control and management systems. Topics covered include:

- Steady-state analysis of power system networks
- Computer methods applied to power systems and digital computer techniques
- Short-circuit, load flow, and transient stability issues
- Transient performance of power systems
- Theoretical developments and computer methods
- Energy accounting control and economic theories for interconnected steam and hydroelectric power systems

### WHAT COURSES ARE OFFERED?

*Required: Core Courses*

ECE 610 Power System Steady-State Analysis  
ECE 612 Computer Methods Applied to Power Systems

*Select two (2) from:*

ECE 611 Transients in Power Systems  
ECE 613 Protection of Power Systems  
ECE 617 Economic Control of Interconnected Power Systems  
ECE 698 Selected Topics in Electrical and Computer Engineering

*Complete course descriptions can be found in the NJIT Online Catalog at <http://catalog.njit.edu/graduate>.*

\*Now or shortly available online.

Courses are subject to change.

√ Take care to select courses in proper order. Check course descriptions, because they state if one course must be taken before (i.e.; is a prerequisite to) another.

### WHERE ARE THE CLASSES OFFERED?

Courses are available at NJIT's Newark campus. Customized NJIT degrees and academic certificates can be brought on-site to your company or customized and conducted at a location convenient to a consortium of companies.

### FOR FURTHER INFORMATION:

Division of Continuing Professional Education  
1-800-624-9850 (Toll Free)  
1-973-596-3060 (New Jersey)  
Email: [cpe@njit.edu](mailto:cpe@njit.edu)

### WHAT IS THE TUITION FOR GRADUATE COURSES?

Use the tuition calculator to see the cost of your education quickly and easily. Visit:

<http://adultlearner.njit.edu/admissions/financialaid>

### IS FINANCIAL AID AVAILABLE?

There may be sources of financial aid or tax credits available:

<http://adultlearner.njit.edu/admissions/financialaid/index.php>

### CAN THE GRADUATE CERTIFICATE BE APPLIED TO AN ADVANCED DEGREE?

Courses in the Graduate Certificate program in Power Systems Engineering can be wholly applied to NJIT's MS in Electrical Engineering or MS in Power and Energy Systems.

### HOW DOES THE GRADUATE CERTIFICATE PROGRAM WORK?

In any given year, NJIT offers a new slate of Graduate Certificates, each in a specific area which is in a fast growing and employable profession. Each stand-alone credential is a milestone in its own right and can be a 12-credit springboard to a matching Masters Degree program at NJIT or elsewhere. The credential can be completed in as little as one academic year of part-time study. Many can be studied online, in whole or partially. The straightforward and rapid admissions process requires possession of an undergraduate degree with a satisfactory grade point average. A GRE or GMAT score is not a prerequisite. Depending on the program, courses can be taken online, on campus, or at NJIT extension sites around New Jersey. For a complete list of available Graduate Certificates, please visit:

<http://www.njit.edu/gradcert>.

### BRINGING A GRADUATE CERTIFICATE TO YOUR COMPANY

Arrangements can be made to bring a Graduate Certificate or Master's program on-site to your company. A customized Graduate Certificate can also be offered to match your company's area of technological and managerial specialty. For more information about Company Collaborative Graduate Certificates or enrollment in any of our Graduate Certificates, please contact Continuing Professional Education.

### ON THE WEB:

<http://www.njit.edu/gradcert> / <http://cpe.njit.edu/mobi>

### APPLY ONLINE:

<http://adultlearner.njit.edu/admissions>