

# Master of Science in Electric Power Systems Engineering



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### Program Overview

The Master of Science in Electric Power Systems Engineering (MSEPSE) provides graduate students a thorough understanding of the tools, methods, and practice of electric power engineering. The program goal is to provide an education that is directly applicable to a career in industry and is suitable for a new or recent graduate, as well as experienced professionals who want to receive the necessary retraining to change careers. It is a 30-credit hour degree that does not require a thesis, oral exam or on-campus residency.

### Admission Requirements

Students need to apply to the Electric Power Systems Engineering-Distance Track-MS in the Department of Electrical and Computer Engineering. The application is entered online via the Graduate School site <https://applygrad.ncsu.edu/apply/>.

It is preferable to seek admission to the MSEPSE program as soon as possible to assure integration into the advising process. Non-thesis MS students are advised by the MSEPSE Program Director. A person does not have to be admitted to a degree program to enroll in an online credit course. Prior to applying to Graduate School, a qualified individual may enroll in Engineering Online courses as a Non-Degree Studies (NDS) student. The NDS classification is designed for individuals who wish to undertake academic work but who are not currently admitted to a degree program. If the student is admitted to the MSEPSE program, a **maximum of twelve hours** of graduate-level transfer and NDS credits (B or better in each course) may apply toward the 30 credit-hour degree requirement.

The minimum requirements for admission to the graduate degree program in Electric Power Engineering are as follows:

- A bachelor's degree from an accredited college or university in electrical engineering.
- An overall GPA of at least 3.00/4.00.
- Completion of the general Graduate Record Exam (GRE) for all applicants.
- Statement of Purpose – a statement about your academic career, research, and career goals.
- Three strong recommendations from persons able to comment on the applicant's qualification for graduate study.
- Students who do not have a bachelor's degree from an accredited college or university in electrical engineering must satisfy the requirements listed at the MSEPSE graduate program website at <https://www.ece.ncsu.edu/grad/masters/epse>.

The distance education MSEPSE degree program is limited to those individuals who work or reside in the United States and to United States military personnel serving overseas. The Graduate School requires that all international applicants take the TOEFL or IELTS examination unless they have completed one year of study at a university in the United States. The exam must have been taken within 24 months of anticipated date of entry.

## Degree Requirements

Successful completion of 30 credit hours in courses as follows:

- 15 credit hours (5 with ECE prefix) are required as listed in Table 1.
- 6 credit hours (2 courses) are required as part of the program for professional skills development which are the capstone project component of the program: ECE 583 and ECE 584.
- 9 credit hours (3 courses) from the following for sub-specialization in power engineering: ECE 554, ECE 581, ECE 585, ECE 554, ECE 734, ECE 736, ECE 753.
- A minimum of 30 graded graduate-level credit hours is required to fulfill the degree requirements.
- Students must maintain a minimum 3.0 out of 4.0 cumulative GPA.
- All requirements for the degree must be completed within six years of enrolling in the first course appearing on the NC State graduate transcript.
- Admitted students must comply with the Graduate School regulations for continuous enrollment
  - <https://grad.ncsu.edu/students/rules-and-regulations/catalog/registration/continuous-registration/> or must request a leave of absence not to exceed two semesters.
- You can find out more about the degree requirements at <https://www.ece.ncsu.edu/grad/masters/epse>.

TABLE 1: Specialty Areas

Fall Semester	Spring Semester	Summer Semester
ECE 550: Power System Operation and Control Core 1	ECE 583: Power Engineering Practicum I Core 6	ECE 584: Power Engineering Practicum II Core 7
ECE 534: Power Electronics and Utility Applications Core 2	ECE 552: Electric Power Generation Renewables and Conventional Core 4	
ECE 586: Communications and SCADA Systems for Smart Grid Core 3	ECE 551: Smart Distribution Systems Core 5	
	<u>Students may select three elective courses from the following for the sub-specialization in power engineering:</u>	
	ECE 554: Electric Motor Drives	
	ECE 581: Power System Switchgear and Protection	
	ECE 585: The Business of the Electric Utility	
	ECE 734: Advanced Power Electronics	
	ECE 736: Power System Stability	
	ECE 753: Computational Methods	

## Course Registration

Distance-track students [register for online courses through Engineering Online](#). Those who wish to take only a few courses and not pursue a degree, do not need to apply for formal program admission to NC State University. However, students who wish to earn the MSEPSE degree must formally apply for admission to the Graduate School at <https://applygrad.ncsu.edu/apply/>.

To register for an Engineering Online course log into <https://www.webtools.ncsu.edu/engronline/> and submit the registration form. Students cannot register through the University MyPack Portal system for Engineering Online courses.

Courses for the Graduate Plan of Work are selected with the concurrence of the student's advisor. MSEPSE students are advised by the MSEPSE Program Director.

## Course Offerings

A list of distance education courses available for each semester can be found on the Engineering Online website at <https://www.engineeringonline.ncsu.edu/apply-and-enroll/online-courses/>. Full-time employed individuals can only enroll in two online courses per semester. It is highly recommended that new students enroll in only one online course during their first semester.

## Course Logistics

Online courses are the same as on campus courses in terms of content, requirements and academic rigor. On-campus class lectures are captured, digitized and placed on the Internet for distance students to access at any time and from any location. Students must, however, follow the on-campus class schedule in terms of submitting homework and taking exams. Course assignments, lecture notes, and handouts are made available to distance students on the course website. All in-class exams must be proctored.

## Contact Information

- For more information about the MSEPSE degree program available online, consult the MSEPSE website at <https://www.ece.ncsu.edu/grad/masters/epse> or contact:

Dr. Mesut Baran  
Program Director  
Electrical & Computer Engineering  
Keystone Science Center  
Telephone: 919.515.5081  
Email: [baran@ncsu.edu](mailto:baran@ncsu.edu)  
Program website: <https://www.ece.ncsu.edu/grad/masters/epse>

- For more information about the registration process, course offerings and course logistics, contact:

Dr. Linda Krute, Director of Distance Education Programs  
College of Engineering  
Telephone: 919.515.5440  
Email: [linda\\_krute@ncsu.edu](mailto:linda_krute@ncsu.edu)  
EOL web site: <https://engineeringonline.ncsu.edu>