

ELECTRICAL AND COMPUTER ENGINEERING

Graduate Programs

The School of Electrical and Computer Engineering offers three graduate degrees, all in electrical engineering: Master of Engineering (MEngEE), Master of Science (MSEE), and Doctor of Philosophy (PhDEE). These graduate degree programs are flexible in course selection and emphasis. Both the Master of Engineering and the Master of Science programs are available online.

Master of Engineering

- This degree program is tailored to students who wish to gain advanced knowledge and expertise in subject areas associated with their professional pursuits.
- This non-research, non-thesis, instructional program is ideal for Distance Education students or for baccalaureate graduates interested in professional development.
- This program is available online.
- Requirements: 33 credit hours of coursework. Specific requirements for the MEngEE program are available on the web in the document entitled "Memorandum to Graduate Students"; see <https://ece.okstate.edu/>.

Master of Science

- This degree program is tailored to students who wish to gain advanced knowledge in subject areas associated with their professional pursuits.
- The program emphasizes research as part of the learning experience and culminates with the defense of a thesis.
- This program is ideal for students who wish to pursue a PhD.
- This program is available online.
- Requirements: 24 credit hours of coursework and 6 credit hours of thesis research. Specific requirements for the MSEE program are available on the web in the document entitled "Memorandum to Graduate Students"; see <https://ece.okstate.edu/>.

The Doctor of Philosophy

- This degree program is tailored to students who desire to have a teaching and research career in academia or a research career in industry or government laboratories.
- This program is ideal for those students who have a passion to acquire in-depth knowledge.
- The program emphasizes the creation of new knowledge during the research process, the publication of that knowledge, and the defense of a dissertation.
- Requirements: 73 total credit hours beyond the BSEE/BSCpE degree. Specific requirements for the PhD program are available on the web in the document entitled "Memorandum to Graduate Students"; see <https://ece.okstate.edu/> (<https://ece.okstate.edu/>).

The School of Electrical and Computer Engineering also offers a "4+1" degree program that combines the BSEE/BSCpE degree programs with the MEngEE degree program. The "4+1" program is only available to OSU baccalaureate students. It is designed to be completed in five

years and to give students a broad-based undergraduate education in electrical engineering or computer engineering along with a highly in-depth graduate education in a few key areas. This program is ideal for those students who want advanced knowledge to enhance their competitiveness in the workforce and to satisfy their longing for in-depth knowledge that cannot be obtained in the baccalaureate degrees. Specific requirements for the "4+1" program are available on the web in the document entitled "Memorandum to Graduate Students"; see <https://ece.okstate.edu/>.

Students typically select coursework and participate in research projects in the following areas:

- Analog, mixed-signal, and RF electronics
- Artificial intelligence, machine learning and data fusion
- Biomedical engineering
- Communication systems, cybersecurity, and networks
- Computer architecture, VLSI digital circuits and computer arithmetic
- Control systems, robotics, and mechatronics
- Digital signal, image, and video processing
- Electromagnetics and THz sciences
- Energy and power
- Microcontrollers and embedded control
- Photonics and electro-optics

Admission Requirements

Admission to the Graduate College, as described under "General Regulations" in the "Graduate College" section of the University Catalog is required. Graduation from an electrical engineering or computer engineering program accredited by the ABET is required for admission to the School of Electrical and Computer Engineering. GRE scores are also required for admission to the doctoral program in the School of Electrical and Computer Engineering. Specific information is available on the web in the document entitled "Memorandum to Graduate Students"; see <https://ece.okstate.edu/>.

Graduates from non-engineering fields such as mathematics, physics and computer science are also admitted to the School of Electrical and Computer Engineering graduate programs if an evaluation of the applicant's official transcript indicates that the applicant is prepared to succeed in graduate-level coursework in electrical and computer engineering, or can be expected to do so after a reasonable amount of remedial coursework has been completed. This condition also applies to graduates of unaccredited engineering programs and engineering technology programs.

Degree Requirements

The Master of Engineering degree in Electrical Engineering (MEngEE) is awarded to those students who successfully complete an approved plan of study. The degree requires 33 credit hours of coursework; a thesis is not required. The plan of study requires, at a minimum, 24 hours of 5000-level courses, covering four areas in electrical and computer engineering (designated by second digit of the course number). Most plans of study include additional 5000-level courses, depending upon the background and particular educational goals of the student. Additional remedial work in undergraduate electrical and computer engineering courses may be required for students who do not have a sufficient background in electrical engineering. Specific requirements for the MEngEE program are

available on the web in the document entitled “Memorandum to Graduate Students”; see <https://ece.okstate.edu/> (<https://ceat.okstate.edu/ece/>).

The Master of Science degree in Electrical Engineering (MSEE) is awarded to those students who successfully complete an approved plan of study. The degree requires 24 credit hours of coursework plus 6 credit hours for the thesis. In addition to the thesis requirement, the plan of study requires, at a minimum, 21 hours of 5000-level courses in at least two areas in electrical and computer engineering (designated by second digit of the course number). Most plans of study include additional 5000-level courses, depending upon the background and particular educational goals of the student. Each student is encouraged to include courses in supporting disciplines such as mathematics, physics, computer science or other engineering fields. Additional remedial work in undergraduate electrical and computer engineering courses may be required for students who do not have a sufficient background in electrical engineering. Specific requirements for the MSEE program are available on the web in the document entitled “Memorandum to Graduate Students”; see <https://ece.okstate.edu/> (<https://ceat.okstate.edu/ece/>).

The Doctor of Philosophy (PhDEE) degree is granted to recognize high achievement in coursework selected from the broad field of electrical and computer engineering. The degree is conferred on those who demonstrate the ability to perform independent research in a chosen field of specialization that generates new knowledge, as presented in a dissertation. For this degree the Graduate College requires a minimum of 73 credit hours of acceptable academic work beyond the bachelor’s degree, including credit for the dissertation. Specific requirements for the PhD program are available on the web in the document entitled “Memorandum to Graduate Students”; see <https://ece.okstate.edu/> (<https://ceat.okstate.edu/ece/>).