# Electrical and Computer Engineering PhD

COLLEGE OF ENGINEERING

## About the Program

The PhD in Electrical and Computer Engineering is designed to develop electrical engineers who have a clear understanding of the importance of electrical engineering. Doctoral students are prepared to identify a research area in electrical engineering and analyze the literature, develop theory, perform experimentation, and develop their own methodologically rigorous research studies. Students complete their studies with a mastery of the fundamental critical thinking and analytic skills and competencies necessary for electrical and computer engineering. Graduates are well prepared to enter the workforce in a range of engineering companies, universities, research organizations, federal agencies and nonprofit organizations.

**Time Limit for Degree Completion:** 7 years

**Campus Location:** Main

**Full-Time/Part-Time Status:** Students are able to complete the didactic portion of the PhD degree program through classes offered after 4:30 p.m.

**Interdisciplinary Study:** Engineering research is highly interdisciplinary and draws on collaboration with members of the faculty and students within all departments of the College of Engineering, in the Mathematics Department and departments engaged in the study of the physical sciences, and at the Lewis Katz School of Medicine at Temple University.

**Areas of Specialization:** The areas of specialization within the Electrical Engineering PhD include:

- Cyber physical systems
- Digital data communication and network
- Digital signal processing and digital image processing
- Microelectronics and computer architectures
- Signal processing and speech processing
- Smart systems and control

In the first term, the student and the Electrical and Computer Engineering (ECE) Graduate Program Director jointly initiate a Plan of Study. This form lists all required courses and the program requirement sequence for the student to follow. The Plan of Study is used to track the student's progress, with an annual annotation and update as the student completes various benchmarks in the PhD program.

**Job Prospects:** The program is primarily intended for individuals who wish to pursue careers in industry, government and academia in a highly creative environment. The program is dedicated to producing engineers who will contribute to advancements in electrical engineering. In the past, most graduates with the PhD in Electrical and Computer Engineering were employed in high-tech industries in research and development positions.

**Non-Matriculated Student Policy:** Up to 9 credits of graduate Engineering coursework may be taken at Temple University on a non-matricul

## Admission Requirements and Deadlines

**Application Deadline:**

*Fall:*

- December 15 (Fellowship Consideration)
- January 15 (Final Fellowship/Early Assistantship Consideration)
- March 1 (Final Admissions)

*Spring:* November 1

Applications are processed on a continual basis. Ordinarily, the applicant is informed of an admissions decision within 4 to 6 weeks of receipt of all supporting application documents.

*APPLY ONLINE to this graduate program*.

***Review tuition and financial assistant deadlines to ensure financial aid consideration for the intended term of study.***

Both admissions and financial aid award decisions originate in the Department of Electrical and Computer Engineering within the College of Engineering. Applicants who plan to matriculate full-time are automatically considered for financial aid awards so no separate application for financial aid is required.

**Letters of Reference:**

*Number Required:* 3

*From Whom:* Letters of recommendation should be obtained from college or research faculty who are familiar with the applicant's competency. If the applicant has an established career in engineering, one of the letters should be provided by the applicant's immediate supervisor. Any applicant who has been out of school long enough that relevant academic reference letters appear impractical should provide recommendations by the applicant's previous or current immediate supervisor(s).

**Coursework Required for Admission Consideration:** Students not adequately prepared for advanced courses may be required to take a number of prerequisites. The Department of Electrical and Computer Engineering identifies the needed coursework on a case-by-case basis.

**Master's Degree in Discipline/Related Discipline:** A master's degree is not required, but preferred.

**Bachelor's Degree in Discipline/Related Discipline:** A bachelor's degree is required.

University regulations stipulate that the applicant must have earned a 3.0 grade-point average on a 4.0 scale in their undergraduate studies, but admission exceptions are made for a variety of circumstances. (See Graduate School Policy 02.23.11.03.) The ECE Graduate Program Director helps the applicant navigate the admission possibilities and assists in the assessment of their overall educational qualifications with respect to the departmental requirements for the PhD program.

Official transcripts from all institutions of higher education attended, whether or not a degree was awarded, must be submitted. International applicants submit official transcripts or official NACES-accredited evaluation documentation that validates completion and conferral of a degree, diploma and/or certificate. All applicants must ensure transcripts and/or NACES-accredited documentation are sent directly from the institution(s) or NACES-accredited evaluation agency via email to gradengr@temple.edu or to the Temple University College of Engineering, 1947 N. 12th Street, Philadelphia, PA 19122-6077.

**Statement of Goals:** Describe your relevant technical experiences, career goals, and specific research interests in one to two pages.

**Standardized Test Scores:**
GRE: Required. Scores that are not more than 5 years in advance of the application date are sent by Educational Testing Service (ETS) to test code 2945. (See Graduate School Policy 02.23.12.) Applicants who require a waiver of the GRE should consult the ECE Graduate Program Director concerning the mechanics and consequences of obtaining an exception.

Applicants who earned their baccalaureate degree from an institution where the language of instruction was other than English, with the exception of those who subsequently earned a master’s degree at a U.S. institution, must ensure official scores are reported directly by the testing agency for a standardized test of English and meet one of these minimums:

- TOEFL iBT
  - On or after January 21, 2026 – 4.5
  - Before January 21, 2026 – 79
- IETLS – 6.5
- PTE Academic – 53
- Duolingo – 110

**Resume:** Current resume required.

**Advanced Standing:** Both transfer credit for courses taken at another institution while matriculated at Temple and/or advanced standing credit for courses taken within the 5-year period prior to matriculating at Temple may be applied toward the PhD-level didactic coursework requirement. Written approval is required from the student’s doctoral advisor, the College’s Associate Dean for Graduate Study, and the Graduate School. (See Graduate School Policy 02.24.21.) Up to six credits of advanced standing for courses taken within the 5-year period prior to matriculating at Temple may be used to satisfy the master’s-level didactic coursework requirement. Approval of the ECE Graduate Program Director is required. The courses must be equivalent to courses offered at Temple in the student's area of study and research, and the grades must be "B" or better.

# Program Requirements

**General Program Requirements:**

*Number of Credits Required Beyond the Bachelor’s:* 60, including 45 credits of graduate-level didactic coursework and 15 research credits, including preliminary PhD examination and dissertation research

*Number of Credits Required Beyond the Master's:* 30, including 15 credits of graduate-level didactic coursework and 15 research credits, including preliminary PhD examination and dissertation research

*Required Courses:*

## Post-Baccalaureate (for students WITHOUT a master's degree in Electrical Engineering)

| Code | Title | Credit Hours |
|---|---|---|
| **Required Seminar** | | |
| ECE 5600 | Graduate Seminar | 0 |
| **Core Courses** [1] | | **45** |
| **Research Courses** [2] | | **15** |
| ECE 9991 | Directed Research (1-9 credits) | |
| ECE 9994 | Preliminary Examination Preparation (1-2 credits) | |
| ECE 9998 | Pre-Dissertation Research (1 credit minimum) | |
| ECE 9999 | Dissertation Research (2 credits minimum) | |
| **Total Credit Hours** | | **60** |

1 Coursework is typically selected by the student's Doctoral Advisory Committee. It may include up to 6 credits of CEE 9182 Independent Study I and/or CEE 9282 Independent Study II. Two Independent Study courses are permitted for students requiring 60 credits for a PhD.

2 Sample distribution of the 15 credits associated with PhD examinations and dissertation research is shown, although the actual distribution of credits can vary across courses depending on the student's particular needs. Completion of the required 15 credits includes a minimum of 1 credit but no more than 2 credits of ECE 9994, a minimum of 1 credit of ECE 9998, and a minimum of 2 credits of ECE 9999, with the further stipulation that the minimum number of credits taken in ECE 9994, ECE 9998 and ECE 9999 combined is 6.

## Post-Master's (for students WITH a master's degree in Electrical Engineering)

| Code | Title | Credit Hours |
|---|---|---|
| **Required Seminar** | | |
| ECE 5600 | Graduate Seminar | 0 |
| **Core Courses** [1] | | **15** |
| **Research Courses** [2] | | **15** |
| ECE 9991 | Directed Research (1-9 credits) | |
| ECE 9994 | Preliminary Examination Preparation (1-2 credits) | |
| ECE 9998 | Pre-Dissertation Research (1 credit minimum) | |
| ECE 9999 | Dissertation Research (2 credits minimum) | |
| **Total Credit Hours** | | **30** |

1 Coursework is typically selected by the student's Doctoral Advisory Committee. It may include up to 3 credits of CEE 9182 Independent Study I. Only one Independent Study course is permitted for students requiring 30 credits for a PhD.

2 Sample distribution of the 15 credits associated with PhD examinations and dissertation research is shown, although the actual distribution of credits can vary across courses depending on the student's particular needs. Completion of the required 15 credits includes a minimum of 1 credit but no more than 2 credits of ECE 9994, a minimum of 1 credit of ECE 9998, and a minimum of 2 credits of ECE 9999, with the further stipulation that the minimum number of credits taken in ECE 9994, ECE 9998 and ECE 9999 combined is 6.

# Contacts

## Department Information:

College of Engineering
ATTN: ECE Programs
1947 N. 12th Street
Philadelphia, PA 19122-6077
gradengr@temple.edu
215-204-7800

## Submission Address for Application Materials:

https://connect.temple.edu/portal/gr_applytoday

## Department Contacts:

*Admissions:*
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