Electrical Engineering, PhD

Program Description

Degree Awarded: PHD Electrical Engineering
The PhD in electrical engineering is awarded upon evidence of excellence in research leading to a scholarly dissertation that is a contribution to knowledge.

Graduate courses and programs are offered in the following six areas of specialization: control systems; electric power and energy systems; electromagnetics, antennas and microwave circuits; electronic and mixed-signal circuit design; physical electronics and photonics; and signal processing and communications.

At a Glance

- College/School: Ira A. Fulton Schools of Engineering
- Location: Tempe campus

Degree Requirements

84 credit hours, a written comprehensive exam, an oral comprehensive exam, a prospectus and a dissertation

Doctoral students are required to complete 84 credit hours of academic credit beyond the bachelor's degree. The following summarizes the degree course requirements:

Master's degree (30 credit hours)
from any accredited institution

Electives 500-level or above (18 credit hours)
at least nine credit hours of EEE courses
Research Class or Omnibus Courses (12 credit hours)
can be 400-level and above or
EEE 792 Research (12)

Dissertation (12 credit hours)
EEE 799 Dissertation (12)

Additional Curriculum Information
The 84 credit hours include 30 credit hours from the master's degree, a required 18 credit hours of
doctoral coursework, 12 credit hours of research (EEE 792), and 12 credit hours (and only 12 credit
hours) of dissertation (EEE 799).

The additional 12 credit hours can be more hours of research (EEE 792) or can be coursework as
determined by the supervisory committee. At least nine credit hours of the minimum requirement of 18
credit hours of doctoral coursework must be in electrical engineering. EEE 790 Reading and Conference
can be used for no more than three credit hours toward the required 18 but does not count toward the nine
hours of 500-level EEE classes required.

All courses counting toward the required 18 credit hour minimum must be at the 500 level or higher.
(Note: All courses having the prefix EEE 591 count as 400-level courses.) No more than one three-hour
reading and conference course (EEE 790) may be taken as part of the 18 credit hour requirement. The
content of any proposed reading and conference course must be reviewed and approved by the electrical
engineering graduate program chair before a student registers for the course.

A qualifying examination, a comprehensive exam and the dissertation defense are required. Additional
information on the program can be found in the Blue Student Guide published and available on the
program's website.

Admission Requirements
Applicants must fulfill the requirements of both the Graduate College and the Ira A. Fulton Schools of
Engineering.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree, in any
field, from a regionally accredited institution.

In general, a student must have a minimum GPA of 3.00 (scale is 4.00 = "A") in all undergraduate
coursework and a minimum GPA of 3.50 (scale is 4.00 = "A") in all graduate coursework for admission
to the doctoral program. A student usually must hold a master's degree before being admitted to the
doctoral program. Direct doctoral admission is available for students graduating from an
ABET-accredited electrical engineering program with a GPA of 3.60 (scale is 4.00 = "A") or higher.

All applicants must submit:
1. graduate admission application and application fee  
2. official transcripts  
3. proof of English proficiency  

**Additional Application Information**  
An applicant whose native language is not English must provide proof of English proficiency regardless of current residency.  

International students seeking teaching assistantships must demonstrate proficiency in spoken English by scoring at least 26 on the speaking portion of the internet-based TOEFL or 50 on the ASU-administered Speaking Proficiency English Assessment Kit.  

A student whose master's degree is not from a U.S. institution must score 156 or higher on the quantitative section of the GRE General Test. A good score on the writing portion is considered desirable.  

A student whose undergraduate degree is not in electrical engineering may need to take appropriate undergraduate courses to establish a baseline of knowledge in the discipline.  

Applicants should see the program website for application deadlines.  

**Career Opportunities**  
Graduates have an advanced understanding and ability to develop and contribute to electrical engineering concepts and theories. They can apply these concepts and theories to one of six areas of specialization.  

Career examples include:  

- computer hardware engineer  
- computer and information research scientist  
- computer network architect  
- director of engineering  
- electrical engineer  
- electrical engineering researcher  
- energy engineer  

**Contact Information**  
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