



# University Bulletin

## Undergraduate Degree Programs

### Electrical Engineering

*University Park, College of Engineering (E E)*

PROFESSOR W. KENNETH JENKINS, *Head of the Department of Electrical Engineering*

Electrical Engineering (E E) is one of the broadest of all engineering majors and is much more than just building electrical circuits. Electrical engineering is the application of electronics, electrical science and technology, and computer systems to the needs of society. An electrical engineer is responsible for designing and integrating electronic/electrical systems in diverse industries such as defense, communications, transportation, manufacturing, health care, construction, and entertainment.

The mission of our undergraduate program is to provide a high-quality education in electrical engineering for our students and to instill in them the attitudes, values, and vision that will prepare them for lifetimes of success, continued learning, and leadership in their chosen careers. A combination of required and elective courses ensures that students acquire a broad knowledge base in electrical circuits, digital systems, electronic devices, electromagnetics, and linear systems, as well as expertise in one or more areas of specialization. Additional problem-solving skills and practical experience are developed through design projects and laboratory assignments, which also provide opportunities for developing team-building and technical communication skills.

The BSEE Program provides undergraduates with the broad technical education necessary for productive employment in the public or private sector, and it develops in them an understanding of fundamentals and current issues important for future years of learning. Our program prepares students following graduation for:

1. Electrical engineering practice in technical assignments such as design, product development, research, manufacturing, consulting, testing, sales, and management;
2. Proficiency in the use of modern design tools;
3. Participation and leadership on teams comprised of individuals with diverse professional and cultural backgrounds;
4. Effective written and oral communication skills;
5. Appreciation of the implications of design in a global, societal, and ethical context;
6. Continued learning through such activities as graduate school, distance education, professional training, and membership in professional societies.

For the B.S. degree in Electrical Engineering, a minimum of 129 credits is required. This baccalaureate program in Electrical Engineering is accredited by the Engineering Accreditation Commission of ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone 410-347-7700; or [www.abet.org \(http://www.abet.org\)](http://www.abet.org).

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(27 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in REQUIREMENTS FOR THE MAJOR)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**REQUIREMENTS FOR THE MAJOR:** 111-113 credits

(This includes 27 credits of General Education courses: 9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses; 9 credits of GWS courses.)

**PRESCRIBED COURSES** (65 credits)

CHEM 110 GN(3) [\[1\]\(#mnote01\)](#), CHEM 111 GN(1), EDSGN 100(3), MATH 140 GQ(4) [\[1\]\(#mnote01\)](#), MATH 141 GQ(4) [\[1\]\(#mnote01\)](#), PHYS 211 GN(4) [\[1\]\(#mnote01\)](#), PHYS 212 GN(4) (Sem: 1-2)  
CMPEN 271(3) [\[1\]\(#mnote01\)](#), CMPEN 275(1), E E 210(4) [\[1\]\(#mnote01\)](#), E E 310(4) [\[1\]\(#mnote01\)](#), E SC 314(3) [\[1\]\(#mnote01\)](#), MATH 220 GQ(2), MATH 230(4), MATH 250(3), PHYS 213 GN(2), PHYS 214 GN(2) (Sem: 3-4)  
E E 316(3) [\[1\]\(#mnote01\)](#), E E 330(4) [\[1\]\(#mnote01\)](#), E E 350(4) [\[1\]\(#mnote01\)](#) (Sem: 5-6)  
ENGL 202C GWS(3) (Sem: 7-8)

**ADDITIONAL COURSES** (19-21 credits)

Select 1 credit of First-Year Seminar (Sem: 1-2)  
ENGL 015 GWS(3) or ENGL 030 GWS(3) (Sem: 1-2)  
CMPSC 201 GQ(3) or CMPSC 121 GQ(3) (Sem: 1-2)  
CAS 100A GWS(3) or CAS 100B GWS(3) (Sem: 3-4)  
ECON 002 GS(3) or ECON 004 GS(3) (Sem: 3-4)  
Select 3-4 credits from I E 424(3), PHYS 410(3-4), STAT 401(3), STAT 414(3), or STAT 418(3) (Sem: 5-6)  
E E 402W(3) or E E 403W(3) (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (27 credits)

Select 6 credits from program-approved list of 300-level courses (Sem: 5-6)  
Select 6 credits from program-approved lists of 300-level or 400-level courses (Sem: 5-6)  
Select 6 credits from program-approved list of 400-level courses (Sem: 7-8)  
Select 3 credits of engineering /science courses from a program-approved list (Sem: 7-8)  
Select 6 additional credits, which may include up to 6 credits of ROTC, up to 6 co-op credits, and others from a program-approved list (Sem: 7-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Summer Session 2008

Blue Sheet Item #: 36-06-069

Review Date: 4/15/08

UCA Revision #1: 8/16/06

UCA Revision #2: 7/27/07

EN

©2001-2008. All rights reserved.

This is the official bulletin of The Pennsylvania State University. Programmatic expectations for General Education are those in effect at the time of admission to degree candidacy, and college and major requirements are those in effect at the time of entry to college and major. These are accurately indicated in each student's degree audit.

The University reserves the right to change the requirements and regulations listed here and to determine whether a student has satisfactorily met its requirements for admission or graduation, and to reject any applicant for any reason the University determines to be material to the applicant's qualifications to pursue higher education. Nothing in this material should be considered a guarantee that completion of a program and graduation from the University will result in employment.

The University Faculty Senate has responsibility for and authority over all academic information contained in the Undergraduate Bulletin.