TENNESSEE STATE UNIVERSITY

ELECTRICAL ENGINEERING ACADEMIC MAP: DEGREE BS (128 CREDIT HOURS)

This degree map is a semester-by-semester course schedule for students majoring in **Electrical Engineering**. The milestones listed to the right of each semester are designed to keep a student on track to graduate in four years. The schedule serves as a general guideline to help build a full schedule each semester. Milestones are courses and special requirements necessary for timely progress to complete a major. When one or more milestones are missed, students should consult with an academic advisor to determine if another degree path would be more suitable. The College of Engineering encourages students to meet with the academic advisor at the beginning of each semester.

The goal of the undergraduate program in Electrical Engineering is to offer a high quality, broad-based degree that is complimented by basic applied research, public service, and preparation of its graduates for starting positions in industry, government and/or pursue graduate study in related fields. Engineering is a profession in which the knowledge of mathematics and natural science is crucial. One of the major engineering curriculum objectives at Tennessee State University is to provide students with the ability to systematically apply engineering fundamentals to the design of engineering components, systems and processes. Electrical engineering students build upon basic sciences through engineering science and design courses. Thus, entering students must have a strong background in mathematics and science. The Program Educational Objectives (PEO) and the Student Outcomes (SO) of the BSEE program and enrollment information are listed in the University's Undergraduate catalog and website http://www.tnstate.edu/ece/undergrad.aspx Students who have satisfied all placement requirements determined at the time of admission should follow the four-year curriculum as detailed in the tables below. To make steady progress towards the degree, students must complete each course with a grade of 'C' or better. Electrical engineering students must have a grade of "C" or better in all prerequisite courses. The grade of "D" in pre-requisite and major courses must be repeated the next time the course is offered. Students cannot graduate with more than two "D" grades.

Another milestone for students is the Engineering Entrance Examination (EEE). Students with a minimum Grade Point Average of 2.5 in the following courses: CHEM 1110/1111, MATH 1910, MATH 1920, PHYS 2110/2111, PHYS 2120, and with a minimum cumulative Grade Point Average of 2.5 are waived from taking the EEE. Students with less than 2.5 GPA, must pass this exam with, a score of 76% overall and 75% on each part (calculus, chemistry and physics) before being allowed to enroll in upper division courses (3000-4000 level).

Between the sophomore and senior years, students must engage in a practical engineering work experience. This practicum is a full-time, continuous eight (8) week activity. Seniors must take an exit examination (Senior Exit Exam) prior to graduation and they must enroll in ENGR 4201 – Engineer-in-Training Lab and receive a satisfactory grade. At the beginning of the final year, students must meet with the academic advisor and file an approved graduation checklist; seniors should come prepared with the latest transcript and any evaluation of transfer credits. It must be remembered that during the final year, students are unable to transfer more than six (6) credit hours.

Tennessee State University recognizes that students have diverse learning, life, and professional experiences. The University provides opportunities for students to earn college credit toward the degree through a number of assessment options that evaluate their learning experiences. These paths are grouped under the category "Prior Learning Assessment" (PLA). Various means of earning PLA credit at TSU are the following: Advanced Placement Program, American Council of Education (ACE) Military Credit, College Level Exam Program (CLEP), DSST Credit by Examination Program (includes DANTES Examination), Institutional Course Challenge Exams (Departmental Exams), International Baccalaureate Credit, Other Military Service, Portfolio Assessment. To learn more about PLA contact your academic advisor or the Office of Student Support Services for Adult and Distance Learners at (615) 963-7001 or adultstudentsupport@tnstate.edu.

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Department Web Address: http://www.tnstate.edu/ece/

Fall Schedule		Milestones
Semester 1	**Hrs.**	**Semester 1**
ENGL 1010	3	Pre-requisite Course: Must be taken before HIST 2010, HIST 2020, HIST 2030; Minimum Grade of "C" Required.
MATH 1910*	4	Pre-requisite Course: Must be taken before MATH 1920; PHYS 2110/2111; and ENGR 2230 Minimum Grade of "C" Required.
CHEM 1110/1111**	4	Pre-requisite Course: Must be taken before ENGR 3300; Minimum Grade of "C" Required.
ENGR 1020	1	Pre-requisite course: Must be taken before ENGR 2230 Required Minimum grade of "C" Required.
EECE 1151	1	Minimum Grade of "C" Required.
UNIV 1000 ***	1	Minimum Grade of "C" Required.
Total Hours	**14**	

Spring Schedule		Milestones
Semester 2	**Hrs.**	**Semester 2**
ENGL 1020	3	Pre-requisite Course must be taken before HIST 2010, HIST 2020, HIST 2030; HIST 2060; HIST 2070, or HIST 2700. Minimum Grade of "C" Required.
MATH1920*	4	Co-Requisite Course: Must be taken with PHYS 2110/2111; Pre-requisite Course: Must be taken before enrolling in MATH 2110; Minimum Grade of "C" Required.
PHYS 2110/2111*	4	Pre-requisite Course must be taken before PHYS 2120/2121, MATH 3120, and ENGR 2110; Minimum Grade of "C" Required.
COMM 2200	3	Minimum Grade of "C" Required.
Humanities Elective**	3	Minimum Grade of "C" Required.
Total Hours	**17**	

Fall Schedule		Milestones
Semester 3	**Hrs.**	**Semester 3**
MATH 2110	4	
PHYS 2120/2121	4	Pre-requisite Course: Must be taken before ENGR 2000/2001, ENGR 2250, ENGR 3300; Minimum Grade of "C" Required.
ENGR 2110	3	Pre-requisite Course: Must be taken before ENGR 2120; Minimum Grade of "C" Required.
ENGR 2230	3	Pre-requisite Course: Must be taken before ENGR 2000, ENGR 2001; EECE 3061, ENGR 3400; Minimum Grade of "C" Required.
HIST 2010*	3	Minimum Grade of "C" Required.
Total Hours	**17**	Pre-requisite for Engineering Entrance Exam/Application Required and Minimum GPA of 2.50 overall and in Math 1910, 1920, CHEM1110/1111 and PHYS 2110, 2111, 2120 courses.

Spring Schedule		Milestones
Semester 4	**Hrs.**	**Semester 4**
		All Students are required to take and pass Engineering Entrance Exam (EEE) before enrolling in upper division (3000-4000) Engineering and major courses.
MATH 3120*	3	Pre-requisite Course: Must be taken before EECE 2120, ENGR 3400; Co-Requisite with ENGR 2000 and ENGR 2001. Minimum Grade of "C" Required.
ENGR 2000/2001*	4	Co-Requisite with MATH 3120: Pre-requisite Course; Must be taken before EECE 2120, EECE 3100, EECE 3101; EECE3301; Minimum Grade of "C" Required.
ENGR 2250	3	Minimum Grade of "C" Required.
ENGR 2120	3	Minimum Grade of "C" Required.
HIST 2020/30**	3	
Total Hours	**16**	

*All students are required to take and pass the Engineering Entrance Examination (EEE) prior to enrolling in the Junior and Senior level major (EECE) and engineering (ENGR) courses. EEE Score_____ Date_____

Fall Schedule		Milestones
Semester 5	**Hrs.**	**Semester 5**
EECE 2120	3	Pre-requisite Course: Must be taken before EECE 3200, EECE 3210 and EECE 3300; EECE 3410; Minimum Grade of "C" Required.
EECE 3100/3101	4	Pre-requisite Course: Must be taken before EECE4150; EECE 4300; EECE 4360/4361. And EECE 4800. Minimum Grade of "C" Required.
ENGR 3250	3	Co-requisite with EECE 3100, EECE 3101; Pre-requisite Course: Must be taken before EECE 3300; EECE 3410; EECE 3500; EECE 4000, EECE 4100; EECE 4300; EECE 4410; EECE 4800; ENGR 4500. Minimum Grade; of "C" Required.
ENGR 3300	2	Pre-requisite Course: Must have taken Before EECE 3300; Minimum Grade of "C" Required.
EECE 3061	1	Pre-Requisite Course: Must be taken before EECE 4310; Minimum Grade of "C" Required.
ENGR 4400	3	Minimum Grade of "C" Required.
Total Hours	**16**	

Spring Schedule		Milestones
Semester 6	**Hrs.**	**Semester 6**
EECE 3200	3	Pre-requisite Course: Must be taken before EECE 3500, EECE4000; EECE 4100; EECE 4350. Minimum Grade of "C" Required.
EECE 3300/3301	4	Pre-requisite Course: Must be taken before EECE 3330; EECE 4101; EECE 4150. Minimum Grade of "C" Required.
ENGR 3400	3	Pre-requisite Course: Must be taken before EECE 3420. Minimum Grade of "C" Required.
EECE 3210	3	Co-requisite Course: Must be taken with EECE 3420; Minimum Grade of "C" Required.
ENGL	3	English Literature
Total Hours**	**16**	**Engineering Practicum**

Fall Schedule		Milestones
Semester 7	**Hrs.**	**Semester 7**
		All Electrical Engineering majors must review degree requirements with the Department Chair at least one semester prior to the one in which graduation is anticipated.
ENGR 4500*	1	Pre-requisite Course: Must be taken before ENGR 4510. Minimum Grade of "C" Required.
EECE 3410	3	Pre-requisite Course: Must be taken before EECE 3420; EECE 3430. Minimum Grade of "C" Required.
EECE 4000/4001	4	Pre-requisite Course: Must be taken before EECE 4020. Minimum Grade of "C" Required.
EECE 3500	3	Minimum Grade of "C" Required.
ENGR 4201*	0	Prerequisite: Senior Standing, Minimum Grade of "S" Required
EECE 4101	1	Minimum Grade of "C" Required.
Social Science Elective**	3	
Total Hours	**15**	

Spring Schedule		Milestones
Semester 8	**Hrs.**	**Semester 8**
		Take Senior Exit Exam and Apply for Graduation.
ENGR 4510*	1	Must be graduating senior. Minimum Grade of "C" Required.
EECE 3420	3	Minimum Grade of "C" Required.
EECE	3	Technical Elective (1)*
EECE	3	Technical Elective (2)*
ENGR 4900	1	Prof. Dev. Seminar
Humanities Elective**	3	Minimum Grade of "C" Required.
Social Science Elective**	3	
Total Hours	**17**	

(1) Technical and design electives must be chosen from the following courses with approval from the advisor

(EECE 33030, 3430, 4020, 4150, 4300, 4410, 4630, 4631, 4800)

(2) Social Science and Humanities Electives must be chosen from the approved list of general education courses.

(3) ENGR 4201 Engineering-in Training course must be taken during the graduation year. Student must pass this course with a satisfactory grade. Selected students will be encouraged to take the FE/EIT exam.

(4) Students must provide proof of practicum experience of a minimum of continuous eight (8) weeks.

Organization_____Location_____Dates_____Supervisor_____

(5) Student must take the ETS examination in the Final year. ETS date:_____ETS score_____

Employment Information:
Electrical Engineering graduates have many opportunities, such as employment with federal agencies, defense industry such as Boeing, Lockheed Martin, Harris Corporations, and private utility companies such as NES, TVA Georgia Power, and manufacturing plants such as GM. Our graduates also seek employment with communication companies such as AT&T Bell Labs. Some students continue their education and seek a Master's degree in Electrical Engineering, MBA, Law or Medicine. Over 30 percent of Electrical Engineering graduates pursue graduate study. Most other Electrical Engineering graduates also work in consulting engineering and research labs.

Representative Job Titles Related to this Major:
Job titles for Electrical Engineering graduates vary based upon prior experience in industry. Those with no experience may start as training on rotation to find the fit for interest; others start as a design engineer or an electrical engineer under the supervision of a senior engineer as part of a team. With experience, the titles change to reflect experience, responsibility and income leading to senior engineer title, project engineer, project manager, etc.

Representative Employers:
Representative employers include utility companies such as TVA, Georgia Power, NES, defense industry such as Lockheed Martin, Boeing, GE, Harris Corp, and Manufacturing industry such as GM, Ford Motor, SISCO, etc.

Graduate Study leading up to Ph.D. degree is available:
The department offers concentration in Electrical Engineering and Biomedical Engineering under the Master of Engineering Program and M.S. in Computer, Information and Systems Engineering. We also offer two concentrations under the Ph.D. in Computer, Information and Systems Engineering. Eligible students are encouraged to pursue graduate study at Tennessee State University

International study is available for all TSU students and may include opportunities for internships or taking course work towards various minors. International study may have an impact on the academic map; therefore, it is important to consult with the academic advisor for this major before participating in an international Program opportunity. Students interested in study abroad opportunities should contact the Office of International Programs and consult with their academic advisor.