

Bachelor of Science in Electrical Engineering (BSEE) Degree Requirements

General Core (62 Hours)		
Notes	Course Hours	Description
	3-3-4	CHEM 1310 – General Chemistry (or CHEM 1211K)
	3-0-3	CS 1301 –Intro to Computing
	10-0-10	MATH 1551, 1552, 2551 –Differential, Integral, Multiv. Calc
	4-0-4	MATH 1554 – Linear Algebra
	4-0-4	MATH 2552 – Differential Equations
	6-6-8	PHYS 2211, 2212 – Introductory Physics I, II
1,6	X-X-3	Science Elective
6	2-0-2	APPH 1040/1050 – Wellness
	6-0-6	ENGL 1101, 1102 – English Composition I, II
5,6	6-0-6	Humanities electives
2,6	3-0-3	History/Government elective
3	3-0-3	Economics elective
5,6	6-0-6	Social Sciences electives

Elective Hours (Hours Vary Depending on Thread Combinations)		
11	3-0-3	Probability & Statistics Course
10	Varies	ECE Senior Design Sequence
3	Varies	Approved Electives

EE Common Core (26 Hours)		
Notes	Course Hours	Description
	1-0-1	ECE 1100 – ECE Discovery Studio
	3-0-3	ECE 2020 – Fundamentals of Digital System Design
	2-3-3	ECE 2026 – Introduction to Signal Processing
	1-3-2	ECE 2031 – Digital Design Laboratory
	3-3-4	ECE 2035 or ECE 2036 – Programming elective
	3-0-3	ECE 2040 – Circuit Analysis
	1-0-1	ECE 3005 – Professional Communication
	3-0-3	ECE 3025 – Electromagnetics
	4-0-4	ECE 3040 – Microelectronic Circuits
	1-3-2	ECE 3043 - Microelectronics Lab

EE Threads – Choose TWO of the following threads		
EE Signal & Information Processing (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE 3084 - Signals and Systems
9	3-0-3	ECE 4270 - Fundamentals of DSP
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective
EE Telecommunications (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE 3600 – Computer Communications OR CS 3251 – Computer Networking
9	3-0-3	ECE 4601 – Communication Systems OR ECE 4606 – Wireless Communications
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective

EE Robotics (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE 3550 - Feedback Control Systems
9	3-3-4	ECE 4550 - Control System Design
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective
EE Electronic Devices (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE 3450 - Semiconductor Devices
9	3-0-3	ECE 4452 - Integrated Circuit Fabrication
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective
EE Circuit Technology (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE 3400 - Analog Electronics
9	3-0-3	ECE 4452 - Integrated Circuit Fabrication
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective
EE Bioengineering (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE4781 - Biomedical Instrumentation
9	3-0-3	ECE4784 - Engineering Electrophysiology
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective
EE Electrical Energy Systems (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE 3072 - Electrical Energy Systems
9	3-0-3	ECE 3300 - Electromechanical and Electromagnetic Energy Conversion
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective
EE Sensing (Thread)		
Notes	Course Hours	Description
9	3-0-3	ECE4390 - Introduction to Radars and Remote Sensing
8,9	Varies	Thread Pick
8,9	Varies	Thread Pick
7	Varies	ECE 3000/4000 Elective
	X-X-129	Total Hours for the EE Degree

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Notes:

1. Courses may be selected from the College of Science, except for Psychology courses or any special problems classes.
2. HIST 2111, HIST 2112, POL 1101, PUBP 3000, or INTA 1200.
3. ECON 2100, ECON 2101, ECON 2105, or ECON 2106.
4. Approved electives include courses (or excess hours) in ECE, other engineering, math, sciences, computing, management, humanities, social sciences, and ROTC. All other courses must be approved by the School.
5. An approved ethics course must be included in the elective hours. Approved courses include the list maintained at www.catalog.gatech.edu/students/ugrad/core/ethics.php plus CS 4002.
6. Courses used to satisfy these requirements may be taken on a pass-fail basis, subject to Institute limits. Courses used to satisfy other requirements may not be taken pass-fail, unless offered only on that basis.
7. ECE 3000/4000 electives are subject to School approval and must satisfy the following constraints:
 - a. All courses at the 3000-level or higher, including ECE 38XX and ECE 48XX. Exclusions: Junior Design Fundamentals Course (prerequisite for single-semester capstone) and ECE3077 (used to satisfy Probability and Statistics requirement).
 - b. Special problems, undergraduate research, and similar courses may not be included, except for three credit hours for one ECE Undergraduate Research sequence, either ECE 3951+3952 or ECE 4951+4952. For students completing the Research Option but not an ECE UROP sequence, three credit hours for ECE 4699 may be included.
8. Approved ECE Special Topics courses may count as credit towards a specific thread pick. Check with advising office.
9. Shared courses among threads:
 - a. In cases where two threads have the same pick, credit will be awarded to only one of the threads and the student will be required to choose a different course for the pick in the other thread.
 - b. In cases where two threads share a required course, the student will substitute an ECE 3000/4000 Elective.
10. Senior Design requirements may be satisfied in the following ways:
 - a. ECE two semester 4000 level ECE Culminating Design I + ECE Culminating Design II
 - b. Approved single-semester capstone (requires completion of the prerequisite ECE Design Fundamentals junior course, which counts as a free elective)
 - c. Students may be able to use a VIP project in one of the above options to satisfy Senior Design provided they meet the requirements as outlined at the following VIP page. (<https://www.vip.gatech.edu/how-vip-credits-count>)
11. CEE 3770 or ISYE 3770 or MATH 3670 or ECE 3077 (Must be taken on Letter/Grade basis)

Additional Requirements:

- A grade of "C" or better is required in (a) all ECE core and EE required courses, (b) CS 1301, (c) MATH 1551, 1552, 1554, 2551, 2552, and (d) PHYS 2211, 2212. A student who does not receive a grade of "C" or better in one of these courses must repeat the course and satisfy the requirement prior to enrolling in follow-on courses. A maximum of six credit hours of special problems, undergraduate research, and/or similar courses may be applied toward the degree. However, if the Research Option is completed, up to nine credit hours may be applied toward the degree.
- Courses that are cross-listed with ECE must be taken under the ECE number.
- In cases where two threads have the same pick, credit will be awarded to only one of the threads and the student will be required to choose a different course for the pick in the other thread.
- In cases where two threads share a required course, the student will substitute an ECE 3000/4000 Elective.
- Credit is not allowed for courses that substantially duplicate material from other completed courses.