Computer Engineering
Bachelor of Science Degree

Curriculum Year 2024-2025

FRESHMAN YEAR

First Semester		Cr	Term Completed		Second Semester		Cr	Term Completed	
CH 1010/1011	General Chemistry and Lab[1]	4			ENGR 1410/1411	Programming and Problem Solving[1,5]	3		
ENGL 1030	Composition and Rhetoric[1]	3			MATH 1080	Calculus of One Variable II[1]	4		
ENGR 1020/1021	Engineering Disciplines and Skills[1,2]	3			PHYS 1220	Physics with Calculus I[1]	3		
MATH 1060	Calculus of One Variable I[1,3]	4				Arts & Humanities/Social Science Req.[4]	3		
	Arts & Humanities/Social Science Req.[4]	3				Arts & Humanities/Social Science Req.[4]	3		
		17					16		

SOPHOMORE YEAR

First Semester		Cr	Term Completed		Second Semester		Cr	Term Completed	
ECE 2010	Logic and Computing Devices[1]	3			ECE 2000	Introduction to ECE	1		
ECE 2020	Electric Circuits I[1]	3			ECE 2120	Electrical Engineering Lab II[1]	1		
ECE 2090	Logic and Computing Devices Lab	1			ECE 2220	C and Unix Programming for ECE[1]	3		
ECE 2110	Electrical Engineering Lab I[1]	1			ECE 2620	Electric Circuits II[1]	3		
ECE 2210	Python Programming for ECE[1]	3			ECE 2720	Computer Organization[1]	3		
MATH 2060	Calculus of Several Variables[1]	4			ECE 2730	Computer Organization Lab	1		
PHYS 2210	Physics with Calculus II[1]	3			MATH 2080	Intro to Ordinary Differential Equations[1]	4		
		18					16		

JUNIOR YEAR

First Semester		Cr	Term Completed		Second Semester		Cr	Term Completed	
ECE 2230	Data Structures and Algorithms in ECE[1]	3			ECE 3170	Random Signal Analysis[1]	3		
ECE 3110	Electrical Engineering Lab III	1			ECE 3220	Introduction to Operating Systems[1]	3		
ECE 3200	Electronics I[1]	3			ECE 3270	Digital Computer Design[1]	3		
ECE 3300	Signals, Systems & Transforms[1]	3			ECE 3520	Programming Systems[1]	3		
ECE 3710	Microcontroller Interfacing[1]	3			MATH 4190	Discrete Mathematical Structures I	3		
ECE 3720	Microcontroller Interfacing Lab	1							
MATH 3110	Linear Algebra[1]	3							
		17					15		

SENIOR YEAR

First Semester		Cr	Term Completed		Second Semester		Cr	Term Completed	
ECE 4090	Intro to Linear Control Systems[1]	3			ECE 4960	Integrated System Design II	2		
ECE 4950/4951	Integrated System Design I[1]	2				Arts & Humanities/Social Science Req.[4]	3		
PCID 3140	Technical Communication[6]	3				CpE Technical Requirement[7]	3		
	CpE Technical Requirement[7]	3				CpE Technical Requirement[7]	3		
	CpE Probability & Statistics Req.[8]	3				GLCH/Special Requirement[9]	3		
	Oral Communication Requirement[4]	3							
		17					14		

[1] This course must be passed with a grade of C or better to transfer into Computer Engineering from General Engineering or another major or to satisfy later course requirements.

[2] The combination of ENGR 1050 and ENGR 1060 or the combination of ENGR 1510 and 1520 may be substituted for ENGR 1020. Normally satisfies three credits of the Global Challenges requirement. Check DegreeWorks for your situation. (Otherwise, three credits of the Global Challenges requirement must be met with three additional credits.)

[3] Depending on a student's math placement based on the Clemson Mathematics Placement Test score, ACT mathematics score, or SAT mathematics score, MATH 1040 and MATH 1070 may be substituted for MATH 1060; or the student may be required to take MATH 1030 or MATH 1050 before enrolling in MATH 1060.

[4] See General Education Requirements. Three General Education credits must also satisfy the South Carolina REACH Act Requirement. See the South Carolina REACH Act Requirement in Academic Regulations. Some students meet this requirement upon admission to Clemson. Check DegreeWorks for your situation. For the Oral Communication Requirement, most students take COMM 1500/1501 or COMM 2500/2501.

[5] ENGR 1640 or the combination ENGR 1070, ENGR 1080, and ENGR 1090 may be substituted for ENGR 1410.

[6] ENGL 3140 or the combination AS 3090, AS 3100, and AS 4090 may be substituted for PCID 3140.

[7] Nine credits selected from BIOE 3700*, BIOE4310*, BIOE 4350*, BIOE 4710*, ECE 3210*, ECE 4050^{+}, ECE 4100, ECE 4160*, ECE 4270, ECE 4290, ECE 4300, ECE 4310, ECE 4380, ECE 4400, ECE 4420, ECE 4490, ECE 4550, ECE 4590*, ECE 4600, ECE 4670, ECE 4680, ECE 4730, ECE 4740, ECE 4910^{+}, ECE 4920^{+}, ECE 4930^{+}, ECE 4980^{+}, and ECE 4990^{+}. A maximum of six credits of courses marked with an asterisk and a maximum of three credits of courses marked with a plus may be used to satisfy this requirement.

[8] ECE 4270 or ECE 4300 or ECE 4400. The course selected cannot also be used to meet the CpE Technical Requirement.

[9] Select a 3000- or 4000-level Global Challenges course with a prefix other than ENGR. If the six credits of the Global Challenges requirement are satisfied by other requirements such as the Electrical or Computer Engineering Technical requirement, select any of the following: Three additional credits from Humanities and Social Sciences for Engineering Curricula; or any additional three-credit, 4000-level course from the list of courses in footnote 7 above; or a course selected from the following list: ECE 4040, ECE 4060, ECE 4080, ECE 4180, ECE 4190, ECE 4200, ECE 4220, ECE 4320, ECE 4330, ECE 4340, ECE 4360, ECE 4370, ECE 4460, ECE 4570, ECE 4580, ECE 4610, ECE 4700, ECE 4710, or ME 3100; or one additional course selected from MATH 4120, MATH 4340, MATH 4350, MATH 4400, MATH 4410, or MATH 4530.

(more on next page)

NOTES:

1. If a student has completed all of the courses listed in the General Engineering core, in order to register for a complete schedule, they may need to consider registering for courses required in the engineering degree program they intend to pursue. Students should see the list of possible courses in the Major Specific Coursework section of the General Engineering Program entry. Major specific coursework is coursework outside the General Engineering coure that will count towards an engineering major once a student has officially changed their major. Note that not all courses will count towards every engineering major. The courses listed in the Major Specific Coursework should not be considered alternatives or substitutes for the courses listed in the General Engineering core. If a student takes one of these other courses in place of the courses specifically listed in the General Engineering core, they could delay their eligibility to transfer from General Engineering into one of the degree-granting programs in engineering.
2. To transfer from General Engineering or other majors into the Computer Engineering program, students must have a cumulative grade-point average of 2.00 in courses taken at Clemson and must have earned a C or better in each course of the General Engineering Core.
3. A student is allowed to enroll in ECE courses (excluding ECE 2070, ECE 2080, ECE 3080) only when all prerequisites have been passed with a grade of C or better.
4. All Computer Engineering students must have a cumulative grade-point average of 2.00 to enroll in any 3000- or 4000-level ECE course. If this condition is not met each term, enrollment in these upper-level courses may be restricted. Students must fill out a Variance Request form which will be reviewed by the Departmental Variance Committee. Strict adherence to the committee decision is required.
5. No student may exceed a maximum of two attempts, excluding a W, to complete successfully any ECE course. A third and final attempt will only be considered by a written Variance Request to be reviewed by the Departmental Variance Committee before the deadline to add a course in a subsequent term. Students who do not complete a Variance or who have a Variance denied are not eligible to continue in the Electrical Engineering major. Strict adherence to the committee decision is required.
6. Depending on a student's math placement, they may be invited to take part in the General Engineering Learning Community where they complete the following courses: ENGR 1000, ENGR 1010, ENGR 1100, ENGR 1110, ENGR 1510, ENGR 1520, and ENGR 1640. The combination of ENGR 1510 and ENGR 1520 may be substituted for ENGR 1020. ENGR 1640 may be substituted for ENGR 1410.

Updated 10 June 2024