

Electrical Engineering Major, Bachelor of Science (86 credit hours)

2019-2020

Electrical Engineering students are exposed to the concepts of electricity, electronics, and electromagnetism and how they apply to the generation of power, designing complex electrical systems, and the design of electromechanical machines. Students will have the opportunity to see various applications of Electrical Engineering from electronics, power systems, telecommunications, control systems, and signal processing.

20 credit hours from the Common Engineering Core:

- CPSC 2320: C++ Programming OR CPSC 2500, 1 credit hour
- ENGR 2001: Introduction to Engineering, 1 credit hour
- ENGR 2002: Introduction to Mechanical Laboratory, 1 credit hour
- ENGR 2003: Introduction to Electrical and Computer Laboratory, 1 credit hour
- ENGR 2010: Statics, 2 credit hours
- ENGR 2030: Circuit Analysis, 3 credit hours
- ENGR 2090: Systems Engineering, 2 credit hours
- ENGR 2110: Dynamics, 2 credit hours
- ENGR 2310: Computational Problem Solving, 3 credit hours
- ENGR 4950: Senior Design I, 2 credit hours
- ENGR 4960: Senior Design II, 2 credit hours

31 credit hours of Mathematics and Basic Sciences:

- CHEM 2110, General Chemistry I, 4 credit hours
- MATH 2010, Calculus I, 4 credit hours
- MATH 2020, Calculus II, 4 credit hours
- MATH 3010: Linear Algebra with Differential Equations, 4 credit hours
- MATH 3020, Calculus III, 4 credit hours
- MATH 3100, Differential Equations, 3 credit hours
- PHYS 2240, General Physics I, 4 credit hours
- PHYS 2250, General Physics, II, 4 credit hours

35 credit hours of major specific requirements:

- CPSC 2420, Computer Architecture, 2 credit hours
- ENGR 3030, Signals and Controls, 3 credit hours
- ENGR 3220, Electronics, 3 credit hours
- ENGR 3230, Analog Circuit Design, 3 credit hours
- ENGR 3240, Electromagnetic Fields, 3 credit hours
- ENGR 3250, Electromagnetic Waves, 3 credit hours
- ENGR 3270, Digital Logic, 3 credit hours
- ENGR 3280, Microcontrollers, 3 credit hours
- MATH 4010: Mathematical Statistics, 4 credit hours
- PHYS 3130, Modern Physics, 2 credit hours
- ENGR 4240, Communications Theory OR ENGR 4250, Digital Signal Processing, 3 credit hours

Elective Hours (3 hours) from:

- ENGR 4020, Mechatronics System Design, 4 credit hours
- ENGR 4050, Data Communications, 3 credit hours
- ENGR 4210, Solid State Devices, 3 credit hours
- ENGR 4230, Power Systems, 3 credit hours
- ENGR 4240, Communications Theory, 3 credit hours
- ENGR 4250, Digital Signal Processing, 3 credit hours

Remaining hours:

- Any ENGR courses 3000-level or above
- Any CPSC courses 3000-level or above

- ENGR 4950, is a Writing Intensive course in the Liberal Arts Program.
- ENGR 4960, is both a Writing and Speaking Intensive course in the Liberal Arts Program.
- CHEM 2110, fulfills the Scientific Ways of Knowing requirement in the Liberal Arts Program
- MATH 2010, fulfills the Quantitative Ways of Knowing requirement in the Liberal Arts Program.

NOTE: All students must complete 120 total credit hours to graduate from Anderson University.

Proposed course sequence:

Freshman: MATH 2010, CHEM 2110, ENGR 2001, 2002, 2003; MATH 2020, PHYS 2240, ENGR 2310
 Sophomore: MATH 3010, PHYS 2250, ENGR 2090, 2010, CPSC 2320/2500; MATH 3020, 3100, ENGR 2110, 2030
 Junior: MATH 4010, ENGR 3030, 3220, PHYS 3130; CPSC 2420, ENGR 3270, 3230
 Senior: ENGR 3260, 3240, 4950, ENGR 4210/4230/4240/4250; ENGR 3250, 4960, ENGR 4210/4230/4240/4250

Electrical Engineering Suggested Course Sequence 2019-2020

SEMESTER 1		SEMESTER 2	
MATH 2010	4 Hours	MATH 2020	4 Hours
CHEM 2110	4 Hours	PHYS 2240	4 Hours
ENGR 2001, 2002, 2003	3 Hours	ENGR 2310	3 Hours
ENGL 1100/ENGL 1110	3-4 Hours	ENGL 1120	3 Hours
LART 1050	1 Hour	Personal Wellness	2 Hours

SEMESTER 3		SEMESTER 4	
MATH 3010	4 Hours	MATH 3020	4 Hours
PHYS 2250	4 Hours	MATH 3100	3 Hours
ENGR 2010	2 Hours	ENGR 2030	3 Hours
ENGR 2090	2 Hours	ENGR 2110	2 Hours
CPSC 2320 or CPSC 2500	1 Hour	ENGR Skills Lab	0-1 Hour
ENGR Skills Lab	0-1 Hour	Foreign Language	4 Hours
COMM 1000	3 Hours		

SEMESTER 5		SEMESTER 6	
MATH 4010	4 Hours	ENGR 3270	3 Hours
ENGR 3030	3 Hours	ENGR 3230	3 Hours
ENGR 3220	3 Hours	CPSC 2420	2 Hours
ENGR Skills Lab	0-1 Hour	ENGR Skills Lab	0-1 Hour
PHYS 3130	2 Hours	BIBL 2000	3 Hours
Civic Ways of Knowing (POSC 2100)	3 Hours	Aesthetic Ways of Knowing (COMM 2550)	3 Hours

SEMESTER 7		SEMESTER 8	
ENGR 3280	3 Hours	ENGR 3250	3 Hours
ENGR 3240	3 Hours	ENGR 4020/4050/4210/4230/4240/4250	3 Hours
ENGR 4240/4250	3 Hours	ENGR 4960	2 Hours
ENGR 4950	2 Hours	ENGR Skills Lab	0-1 Hour
ENGR Skills Lab	0-1 Hour	Global/Intercultural Ways of Knowing (ENGR 2080)	3 Hours
Social/Behavioral Ways of Knowing (ECON 2010)	3 Hours	Christian Ways of Knowing (PHIL 3250)	3 Hours