

**College of Engineering
College of Science**
Minor: Circuits and Electronics (MCEL)
For students graduating in 2013

APPROVED
COMMISSION ON UNDERGRADUATE
STUDIES AND POLICIES

Offered By:
The Bradley Department of Electrical and Computer Engineering

The minor in Circuits and Electronics requires 21 credit hours and is open to all students in the College of Engineering, except students who are enrolled in the Electrical or Computer Engineering degree program. Students may "double count" courses in the Minor with those required for graduation in their Major degree provided the Major has no restrictions to the contrary. For successful completion of the Minor, students must maintain a 2.0 in-Minor GPA with a minimum grade of C- or better in all courses that will be counted towards the minor.

Students shall complete one of the following courses:

ENGE 1104 Engineering Your Digital Future	(2)	Pre: 1024
ENGE Digital Future Transition	(1)	Pre: 1114

1. Students shall complete either:

ECE 2004: Electric Circuit Analysis	(2)	Requires a C- or better in ENGE 1104 or 1204, Pre: ENGE 1104 or ENGE 1204, Co: 2074, MATH 2214
and		
ECE 2074: Electric Circuit Analysis Lab	(1)	Pre: 1114
or		
ECE 2054: Applied Electrical Theory	(3)	Pre: PHYS 2306. Co: MATH 2214
or		
ECE 3054: Electrical Theory	(3)	Pre: PHYS 2306. Co: MATH 2214
and		
ECE 2074: Electric Circuit Analysis Lab	(1)	Pre: 1114

2. Students shall complete the following lower division courses:

ECE 2204: Electronics	(3)	Pre: 2004. Co: 2274
ECE 2274: Electronic Networks Lab I	(1)	Pre: 2074. Co: 2204

3. Students shall perform a capstone design project by completing at least three (3) credits from the following courses. Note that several of these courses have prerequisites that must be completed before a student can enroll in the course.¹

ECE 4206: Electronic Circuit Design	(3)
ECE 4244: Intermediate Semiconductor Processing Laboratory	(3)

¹ Research and thesis projects must be approved by the Minor Curriculum Committee prior to beginning the research. In addition, a 4994 course must be pre-approved by the ECE Department as a capstone design course that includes significant writing and oral components and may be used by course substitution for any approved ECE capstone course.

ECE 4224: Power Electronics	(3)
ECE 4994: Undergraduate Research	(3)
UH 4994: Honors Thesis	(6)

4. Students shall complete the balance of 21 credits from the following courses. Note some of these courses may have prerequisite courses that are not required to complete the minor. It is the obligation of the student to complete all prerequisites.

ECE 2704: Signals and Systems	(3)	Pre: 2004. (MATH 2214 or MATH 2214H).
ECE 3004: AC Circuit Analysis	(3)	Pre: 2704. Co: 3074.
ECE 3204: Analog Electronics	(3)	Pre: 2204. 2704. Co: 3274.
ECE 3274: Electronic Circuits Lab II	(1)	Pre: 2274. 3074. Co: 3204.
ECE 4205-6: Electronic Circuit Design	(3-3)	Pre: 3204 for 4205, 4205 for 4206.
ECE 4214: Semiconductor Device Fundamentals	(3)	Pre: 2204 or MSE 3204 or PHYS 3455.
ECE 4224: Power Electronics	(3)	Pre: 3204.
ECE 4234: Semiconductor Processing	(3)	Pre: 2204 or 3054.
ECE 4235: Principles of Electronic Packaging	(3)	Pre: 2204 or 3054 for 4235; 2204, (4235 or MSE 4236) for 4236. Co: 3054 for 4235.
ECE 4244: Intermediate Semiconductor Processing Laboratory	(3)	Pre: 4234 or MSE 4234.
ECE 4605-4606: Radio Engineering	(3-3)	Pre: 3106, 3204, 3614 for 4605; 4605 for 4606. Co: 4675 for 4605.
ECE 4675,4676: Radio Engineering Lab	(1-1)	Pre: 3106, 3204 for 4675; 4675 for 4676. Co: 4605 for 4675; 4606 for 4676.
ECE 4994: Undergraduate Research	(3)	