

**1. Course number and name: EE 3102 Circuits and Electronics Laboratory II**

**2. Credits and contact hours:** 2 cr.; 1 hour of lecture and 3 hours of laboratory per week

**3. Instructor or course coordinator's name:** Steve Koester, Ted Higman

**4. Textbook (title, author, publisher, and year):**

Lab manual downloaded from class home page

**5. Specific course information**

**a. Brief description of the content of the course (catalog description):**

Experiments in circuits/electronics. Team design project.

**b. Prerequisites or co-requisites:** EE 3101 or CSE or department consent, attendance first day of class

**c. Indicate whether a required, elective, or selected elective:** Required

**6. Specific goals for the course**

**a. Specific outcomes of instruction:**

1. A familiarity with the whole design process.
2. An ability to consider alternative technologies and design strategies.
3. A familiarity of with the use simulation tools in the design process.
4. An ability to prototype, de-bug, and construct a working electronic system.
5. An ability to work effectively in a group setting.
6. The ability to record and document their design process in a laboratory notebook and in a final report in accordance with standard engineering practice.

**b. Explicitly indicate which of the ABET student outcomes are addressed by the course:**

In accordance with ABET accreditation criteria, all engineering programs must demonstrate that their students achieve certain outcomes. This list of outcomes may be found on the abet.org website. Of the outcomes listed in the ABET Criterion 3 (enumerated as (1) through (7)), this course teaches skills which help the student achieve the following outcomes:

- (1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- (2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- (3) an ability to communicate effectively with a range of audiences
- (4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

**7. Brief list of topics to be covered**

1. Project introduction and group organization
2. Preliminary design
3. Final design proposal with simulation
4. Prototype testing and final board design
5. Final demonstration

**Last Updated: March 26, 2019**