CEAS-14-ECE-009

REQUEST TO COLLEGE CURRICULUM COMMITTEE FOR CURRICULAR IMPROVEMENTS

DEPARTMENT: Electrical and Computer Engineering **PROPOSED EFFECTIVE SEMESTER:** F15 **COLLEGE:** CEAS

PROPOSED IMPROVEMENTS

Academic Program
- ☐ New degree*
- ☐ New major*
- ☐ New curriculum*
- ☐ New concentration*
- ☐ New certificate
- ☐ New minor
- ☐ Revised major
- ☐ Revised minor
- ☐ Admission requirements
- ☐ Graduation requirements
- ☐ Deletion ☐ Transfer
- ☐ Other (explain**)

Substantive Course Changes
- ☐ New course
- ☐ Pre or Co-requisites
- ☐ Deletion (required by others)
- ☐ Course #, different level
- ☐ Credit hours
- ☐ Enrollment restriction
- ☐ Course-level restriction
- ☐ Prefix ☐ Title and description (attach current & proposed)
- ☐ General education (select one) Not Applicable
- ☐ Other (explain**)

Misc. Course Changes
- ☐ Title
- ☒ Description (attach current & proposed)
- ☐ Deletion (not required by others)
- ☐ Course #, same level
- ☐ Variable credit
- ☐ Credit/no credit
- ☐ Cross-listing
- ☐ COGE reapproval
- ☐ Other (explain**)

**** Other:**

Title of degree, curriculum, major, minor, concentration, or certificate:

Existing course prefix and #: ECE 2500 **Proposed course prefix and #:** **Credit hours:** 3

Existing course title: Digital Logic

Proposed course title:

Existing course prerequisite & co-requisite(s): MATH 1110 or equivalent with grade of 'C' or better

Proposed course prerequisite(s)
If there are multiple prerequisites, connect with "and" or "or". To remove prerequisites, enter "none."

Proposed course co-requisite(s)
If there are multiple corequisites, they are always joined by "and."

Proposed course prerequisite(s) that can also be taken concurrently:

Is there a minimum grade for the prerequisites or corequisites?
The default grades are D for undergraduates and C for graduates.

Major/minor or classification restrictions:
List the Banner 4 character codes and whether they should be included or excluded.

For 5000 level prerequisites & corequisites: Do these apply to: (circle one) undergraduates graduates both

Specifications for University Schedule of Classes:

a. Course title (maximum of 30 spaces): Digital Logic

b. Multi-topic course: ☒ No ☐ Yes

c. Repeatable for credit: ☒ No ☐ Yes

d. Mandatory credit/no credit: ☐ No ☐ Yes

e. Type of class and contact hours per week (check type and indicate hours as appropriate)

1. ☐ Lecture
2. ☐ Lab or discussion
3. ☒ Lecture/lab/discussion (2-3)
4. ☐ Seminar or ☐ studio
5. ☐ Independent study
6. ☐ Supervision or practicum

CIP Code (Registrar's use only):

Chair/Director _____ Date 10/7/14

Chair, College Curriculum Committee _____ Date _____

Dean _____ Date: _____ Graduate Dean: _____ Date _____

Curriculum Manager: Return to dean ☐ Date _____ Forward to: _____ Date _____

Chair, COGE/ PEB / FS President _____ Date _____

FOR PROPOSALS REQUIRING GSC/USC REVIEW:

* ☐ Approve ☐ Disapprove	Chair, GSC/USC	Date
* ☐ Approve ☐ Disapprove	Provost	Date

Revised May 2007. All previous forms are obsolete and should not be used.

1. Explain briefly and clearly the proposed improvement.

   Updating catalog description.

2. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.)

   This course is taken by many students in their freshman year. The new catalog text better communicates not only content but relevance/applications to prospective students.

3. Effect on other colleges, departments or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.

   None envisioned.

4. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.

   None significant, but as this is typically the first course taken by a student in the major, it addresses that audience more effectively.

5. Effects on enrolled students: Are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time. If a required course will be offered during summer only, provide a rationale.

   None envisioned.

6. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?

   Students enrolled within engineering programs. Approximately 120 students per semester enroll.

7. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? How often will course(s) be offered? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)

   No additional demand on resources is anticipated.

8. General education criteria. For a general education course, indicate how this course will meet the criteria for the area or proficiency. (See the General Education Policy for descriptions of each area and proficiency and the criteria. Attach additional pages as necessary. Attach a syllabus if (a) proposing a new course, (b) requesting certification for baccalaureate-level writing, or (c) requesting reapproval of an existing course.) This is not a GEN-ED course.

9. List the learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program. This change does not impact learning outcomes, which will remain unchanged.

10. Describe how this curriculum change is a response to assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities. We continue to work to increase our visibility and desirability of our electrical and computer engineering programs. This change supports those efforts.

11. (Undergraduate proposals only) Describe, in detail, how this curriculum change affects transfer articulation for Michigan community colleges. For course changes, include detail on necessary changes to transfer articulation from Michigan community college courses. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section. There is no anticipated change, as course content is not changing.

CURRENT CATALOG TEXT

ECE 2500 Digital Logic Analysis and design of combinational and sequential logic systems. Prerequisite: MATH 1110 or equivalent; with a grade of "C" or better. 3 hours (2 - 3)

PROPOSED CATALOG TEXT

ECE 2500 Digital Logic Design of digital logic circuits used in computers and mobile devices such as laptops, smartphones and tablets. Boolean algebra, logic circuit minimization, arithmetic logic, programmable logic, memory circuits and state machine design. Prerequisite: MATH 1110 or equivalent; with a grade of "C" or better. 3 hours (2 - 3)