Please verify your data for New Curriculum Course Request for department: ECE; college: A.
Go to the following URL to complete your worklist items: https://bwfp1.cc.wmich.edu:7102/wfbprod

Date of request: 03-AUG-2019
Request ID: A-2019-ECE-22
College: A
Department: ECE
Initiator name: Ralph Tanner
Initiator email: ralph.tanner@wmich.edu
Proposed effective term: 202040
Does course need General Education approval?: N
Will course be used in teacher education?: N
If 5000 level course, prerequisites apply to: U

Proposed course data:
Change Course ECE 3510
Specific Course Change type selected: Other (explain**)
Specific Course Change type selected: Type of Class
Existing course prefix and number: ECE 35102. Select class type: Lecture/Lab/Discussion
How many contact hours per week for this course? 5
Other (** explain) Convert this class from three (3) hours of lecture per week to two (2) hours of lecture and one three (3) hour lab meeting per week.
A. Please choose Yes or No to indicate if this class is a Teacher Education class: No
B. Please choose the applicable class level: Undergraduate
C. Please respond Yes if this is a current general education course and/or a course being submitted for the new WMU Essential Studies program. Please respond No if it is neither: No
D. Explain briefly and clearly the proposed improvement. This change would replace one hour of lecture with a three hour laboratory session each week to provide the students to have a hands-on experience of implementing the concepts discussed in the lectures.
E. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.)
Currently, students are attempting to implement the concepts independently. By providing a laboratory session, the students will have the time, materials, and direction to implement the concepts in an organized manner.
F. List the student 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.
(1) An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
G. Describe how this curriculum change is a response to student learning assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities. This change will provide the students the opportunity to experience the application of the principles of engineering, science, and mathematics to solve complex problems.
H. 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. ECE 3510 is an elective for one of the tracks in Computer Science. This change will improve the learning outcomes for any student in Computer Science that elects to take ECE 3510.
I. Effect on your department's programs. Show how the proposed change fits with other departmental offerings. ECE 3510 is an elective for student in the Computer Engineering curriculum and in the Electrical Engineering curriculum. This change will improve the learning outcomes for any
student in either of these programs that elects to take ECE 3510 J. 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. There will be no effect upon currently enrolled students. This course is typically offered once per year in the fall semester. Typical enrollment is between 10 and 30 students. Available teaching laboratory space has been identified within the ECE department.

K. 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? Currently, this course only addresses theory. We believe that the inclusion of a laboratory, in order to also address implementation, will make this course more attractive not only to students in Computer Engineering, but also to students in Computer Science and Electrical Engineering.

L. 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.) This change will require assigned time for one faculty member to develop the laboratory experiences. The change will also require teaching laboratory space which can be shared with other courses that use teaching laboratories. The required laboratory space has been identified and it is available. The change will require an ongoing commitment to provide a graduate TA to conduct the laboratory. The department chair has committed to provide this resource. This course is offered once per year in the fall semester. It is expected that the course offering schedule will not change.

M. With the change from General Education to WMU Essential Studies, this question is no longer used. For courses requesting approval as a WMU Essential Studies course, a syllabus identifying the student learning outcomes and an action plan for assessing the student learning outcomes must be attached in the Banner Workflow system.

N. (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.

ECE 3510 is aimed at students in the Computer Engineering curriculum. It is also available to students in Electrical Engineering and Computer Science. We anticipate that any student (regardless of curriculum) would take this course in their Junior year. There is no need for a change in prerequisites for this change. Therefore, there would be no effect on the articulation from Michigan community college courses.

O. Current catalog copy:
ECE 3510 - Engineering Of Rt Systems
Characterizing, modeling, and specifying real time systems. Designing, programming and verifying sequential and concurrent real time systems. Additional Information
Campus: Main Schedule: Lecture Instructional Method: Traditional
Prerequisites and Restrictions: ECE 2510 Minimum Grade of C OR CS 2230 Minimum Grade of C
This course is restricted to the following major(s): Computer Engineering (CEGJ) Electrical Engineering (EENJ)

P. Proposed catalog copy:
ECE 3510 - Engineering Of Rt Systems
Characterizing, modeling, and specifying real time systems. Designing, programming and verifying sequential and concurrent real time systems. Software engineering processes in real time system development. Case studies and project. Additional Information
Campus: Main Schedule: Lecture and Laboratory (2-3)
Instructional Method: Traditional
Prerequisites and Restrictions: ECE 2510 Minimum Grade of C OR CS 2230 Minimum Grade of C
This course is restricted to the following major(s): Computer Engineering (CEGJ) Electrical Engineering (EENJ) Computer Science

Department Curriculum Chair approver: Raghvendra Gejji

Department Curriculum Chair comment:

Date: 28-AUG-2019

Department approver: Ralph Tanner

Chair comment:

Date: 09-OCT-2019