Office of the Registrar
FORM 40 REV. 5/11

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE (10000-40000 LEVEL)

DEPARTMENT: ECE EFFECTIVE SESSION: 201710

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

- ☐ 1. New course with supporting documents
- ☐ 2. Add existing course offered at another campus
- ☐ 3. Expiration of a course
- ☑ 4. Change in course number
- ☐ 5. Change in course title
- ☐ 6. Change in course credit/type
- ☐ 7. Change in course attributes (department head signature only)
- ☐ 8. Change in instructional hours
- ☐ 9. Change in course description
- ☑ 10. Change in course requisites
- ☐ 11. Change in semesters offered (department head signature only)
- ☐ 12. Transfer from one department to another

PROPOSED:		EXISTING:	
Subject Abbreviation	ECE	Subject Abbreviation	ECE
Course Number	30411	Course Number	31100
Long Title	Electric and Magnetic Fields		
Short Title			

Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)

TERMS OFFERED (Check All That Apply:)
☐ Summer ☑ Fall ☑ Spring

CAMPUS(ES) INVOLVED
☐ Calumet ☐ N. Central
☐ Cont Ed ☐ Tech Statewide
☐ Ft. Wayne ☑ W. Lafayette
☐ Indianapolis

CREDIT TYPE
1. Fixed Credit: Cr. Hrs.
2. Variable Credit Range:
Minimum Cr. Hrs
(Check One) To ☐ Or ☐
Maximum Cr. Hrs
3. Equivalent Credit: Yes ☐ No ☐

COURSE ATTRIBUTES: Check All That Apply
1. Pass/Not Pass Only ☐
2. Satisfactory/Unsatisfactory Only ☐
3. Repeatable ☐
Maximum Repeatable Credit:
4. Credit by Examination ☐
5. Fees ☐Coop ☐Lab ☐Rate Request
Include comment to explain fee
6 Registration Approval Type
Department ☐ Instructor ☐
7 Variable Title ☐
8 Honors ☐
9 Full Time Privilege ☐
10 Off Campus Experience ☐

Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated
Lecture				
Recitation				
Presentation				
Laboratory				
Lab Prep				
Studio				
Distance				
Clinic				
Experiential				
Research				
Ind. Study				
Pract/Observ				

Cross-Listed Courses

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
Requisites: Undergraduate level ECE 20100 Minimum Grade of C and (Undergraduate level PHYS 27200 Minimum Grade of D- or Undergraduate level PHYS 24100 Minimum Grade of D- or Undergraduate level PHYS 25100 Minimum Grade of D- or Undergraduate level PHYS 26100 Minimum Grade of D-) and (Undergraduate level MA 26200 Minimum Grade of D- or Undergraduate level MA 26600 Minimum Grade of D- or Undergraduate level MA 36600 Minimum Grade of D-).
Restrictions: Student must be enrolled in School of Electrical & Computer Engineering or School of Biomedical Engineering.
Continued study of vector calculus, electrostatics, magnetostatics, and Maxwell's Equations. Introduction to electromagnetic waves, transmission lines,

***COURSE LEARNING OUTCOMES**
I. an ability to work with electrostatic fields and to be able to find electric and potential fields from charge distributions including the presence of dielectric materials.
II. an ability to work with magnetostatic fields and to be able to find magnetic fields from current distributions including the presence of magnetic materials.
III. an ability to work with time varying fields including wave propagation.
IV. an ability to work with transmission lines in the time and frequency domains

Calumet Department Head	Date	Calumet School Dean	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date
Indianapolis Department Head	Date	Indianapolis School Dean	Date
North Central Faculty Senate Chair	Date	Vice Chancellor for Academic Affairs	Date
West Lafayette Department Head	1/29/16 Date	West Lafayette College/School Dean	3/3/16 Date
		West Lafayette Registrar	Date

OFFICE OF THE REGISTRAR

To: The Faculty of the College of Engineering

From: The Faculty of the School of Electrical and Computer Engineering

RE: Changes to an existing course: ECE 31100 change in number and requisites.

The faculty of the School of Electrical and Computer Engineering has approved the following changes. This action is now submitted to the Engineering Faculty with a recommendation for approval.

FROM: **ECE 31100 Electric and Magnetic Fields**
Sem. 1, 2. Lecture 3, Credit 3
Requisites: Undergraduate level ECE 20100 Minimum Grade of D- and (Undergraduate level PHYS 27200 Minimum Grade of D- or Undergraduate level PHYS 24100 Minimum Grade of D- or Undergraduate level PHYS 25100 Minimum Grade of D- or Undergraduate level PHYS 26100 Minimum Grade of D-) and (Undergraduate level MA 26200 Minimum Grade of D- or Undergraduate level MA 26600 Minimum Grade of D- or Undergraduate level MA 36600 Minimum Grade of D-)
Restrictions: Student must be enrolled in School of Electrical & Computer Engineering or School of Biomedical Engineering.

Continued study of vector calculus, electrostatics, magnetostatics, and Maxwell's Equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas.

TO: **ECE 30411 Electric and Magnetic Fields**
Sem. 1, 2. Lecture 3, Credit 3
Requisites: Undergraduate level ECE 20100 Minimum Grade of C and (Undergraduate level PHYS 27200 Minimum Grade of D- or Undergraduate level PHYS 24100 Minimum Grade of D- or Undergraduate level PHYS 25100 Minimum Grade of D- or Undergraduate level PHYS 26100 Minimum Grade of D-) and (Undergraduate level MA 26200 Minimum Grade of D- or Undergraduate level MA 26600 Minimum Grade of D- or Undergraduate level MA 36600 Minimum Grade of D-).
Restrictions: Student must be enrolled in School of Electrical & Computer Engineering or School of Biomedical Engineering.

Continued study of vector calculus, electrostatics, magnetostatics, and Maxwell's Equations. Introduction to electromagnetic waves, and transmission lines.

Approved for the faculty of the Schools of Engineering by the Engineering Curriculum Committee
ECC Minutes 15 Date 3/22/16
Chairman ECC

REASON: This course is part of the Core Curriculum for the BSEE and degree. Subsets of Core Curriculum courses serve as prerequisites for most upper division ECE electives. In addition, a degree requirement for all ECE students is to achieve a GPA in all major-area (ECE) courses of at least a 2.0. Therefore, in order to ensure that ECE students are as well prepared as possible for upper division ECE courses, as well as to facilitate their achievement of the minimum major-area GPA of 2.0, a minimum grade requirement in the key ECE prerequisite course is being proposed. The change in number is proposed in order to update to the ECE five digit numbering scheme.

For V. Ragu Balakrishnan, Head
School of Electrical and Computer Engineering

ECE 5-Digit Course Numbering

First Digit: Level

6 – Graduate only courses

5 – Dual level

4 – Senior Level

3 – Junior Level

2 – Sophomore Level

1 – First Year Level

2nd and 3rd Digits: ECE Area

00 – CNSIP

02 – Automatic Control

04 – Fields and Optics

06 – Microelectronics and Nanotechnology

08 – Computer Engineering

10 – Power and Energy Systems

12 – VLSI

14 – BIS

4th and 5th Digits:

Mostly arbitrary – keep in prereq order if possible within ECE area. When updating, use same last two digits, i.e. ECE 30500 → ECE 30605, etc.

Special Cases:

X9595 for all experimental courses.

X99XX for all seminar or similar courses

XXX99 for all professional practice courses

490XX for all Sr. Design courses