

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

DEPARTMENT ECE EFFECTIVE SESSION 201620

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

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

<b>PROPOSED:</b> Subject Abbreviation <u>ECE</u> Course Number <u>30413</u> Long Title <u>Introduction to Optics Laboratory</u> Short Title _____ <small>Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)</small>	<b>EXISTING:</b> Subject Abbreviation <u>ECE</u> Course Number <u>41300</u>	<b>TERMS OFFERED</b> Check All That Apply: <input type="checkbox"/> Summer <input type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring <b>CAMPUS(ES) INVOLVED</b> <input type="checkbox"/> Calumet <input type="checkbox"/> N. Central <input type="checkbox"/> Cont Ed <input type="checkbox"/> Tech Statewide <input type="checkbox"/> Ft. Wayne <input checked="" type="checkbox"/> W. Lafayette <input type="checkbox"/> Indianapolis
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<b>CREDIT TYPE</b> 1. Fixed Credit: Cr. Hrs. _____ 2. Variable Credit Range: _____ Minimum Cr. Hrs. _____ (Check One) To <input type="checkbox"/> Or <input type="checkbox"/> Maximum Cr. Hrs. _____ 3. Equivalent Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>	<b>COURSE ATTRIBUTES: Check All That Apply</b> 1. Pass/Not Pass Only <input type="checkbox"/> 2. Satisfactory/Unsatisfactory Only <input type="checkbox"/> 3. Repeatable <input type="checkbox"/> Maximum Repeatable Credit: _____ 4. Credit by Examination <input type="checkbox"/> 5. Fees <input type="checkbox"/> Coop <input type="checkbox"/> Lab <input type="checkbox"/> Rate Request <input type="checkbox"/> Include comment to explain fee _____ 6 Registration Approval Type <input type="checkbox"/> Department <input type="checkbox"/> Instructor <input type="checkbox"/> 7 Variable Title <input type="checkbox"/> 8 Honors <input type="checkbox"/> 9 Full Time Privilege <input type="checkbox"/> 10 Off Campus Experience <input type="checkbox"/>
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Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Cross-Listed Courses
Lecture					
Recitation					
Presentation					
Laboratory					
Lab Prep					
Studio					
Distance					
Clinic					
Experiential					
Research					
Ind. Study					
Pract/Observ					

**COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):**  
This laboratory course is designed around three goals. First, the student should find confirmation and reinforcement of topics covered in ECE 30412. Second, the student should be able to apply optical principles to the solution of problems, and to be able to define limitations to these applications. Third, the student should acquire "breadboarding" skills, i.e. be able to build an optical instrument by assembling a set of optical components. This course comprises a set of laboratory experiments on geometrical optics: Lens, prism, Physical optics: Polarizers, gratings, interferometers, diffraction elements, Fourier optics: Optical Fourier transform, spatial filtering, and holography. There is a final project where students can design a practical optical instrument based on their knowledge from the lab. • Co-requisites are ECE 31100, ECE 30100, and ECE 30412 [all may be taken concurrently].

**\*COURSE LEARNING OUTCOMES**  
i) An ability to design, construct, and test a simple optical system by assembling a set of optical components. [c]  
ii) An ability to test the operation of simple interferometers. [b]  
iii) An ability to make holograms using lab equipment. [b]  
iv) An ability to design practical optical system (e.g.: barcode scanner, laser microphone, etc.) and analyze its performance. [c]

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 _____
<i>Jeffrey Z...</i> _____ Date <u>3/7/16</u>	<i>Michael J. Davis</i> _____ Date <u>3/11/16</u>
West Lafayette Department Head _____ Date _____	West Lafayette College/School Dean _____ Date _____
	West Lafayette Registrar _____ Date _____

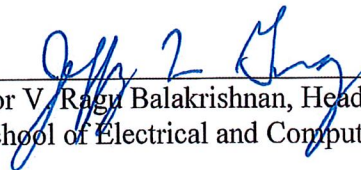
**To:** The Faculty of the College of Engineering  
**From:** The Faculty of the School of Electrical and Computer Engineering  
**RE:** Changes to ECE 41300

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 41300 Introduction to Optics Laboratory**  
Sem. 1. Lab 3, Credits 1  
Requisites: Undergraduate level ECE 30100 Minimum Grade of D- and Undergraduate level ECE 20800 Minimum Grade of D- and Undergraduate level ECE 31100 Minimum Grade of D- and Undergraduate level ECE 41200 Minimum Grade of D- [may be taken concurrently]  
Course Description: A set of laboratory experiments dealing with fundamentals and applications of geometrical optics, polarization optics, wave optics, and Fourier optics.

**TO:** **ECE 30413 Introduction to Optics Laboratory**  
Sem. 2. Lab 3, Credits 1.  
Requisites: ECE 31100 and ECE 30100 and ECE 30412 [all may be taken concurrently], ECE 208  
Course Description: A set of laboratory experiments dealing with fundamentals and applications of geometrical optics, polarization optics, wave optics, and Fourier optics.

**REASON:** These changes are intended to accompany similar changes in ECE 41200, improving on the progression of courses from the 200 level to 300 & 400 level courses, for students who wish to focus their studies more precisely in the optics area.

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

Approved for the faculty of the Schools  
of Engineering by the Engineering  
Curriculum Committee

ECC Minutes 14 Date 3-1-16  
Chairman ECC 