To: The Engineering Faculty  
From: School of Electrical and Computer Engineering  
Re: ECE 30417  

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

**ECE 30417 Engineering Optics Laboratory**  
Semesters offered: Spring  
Non-repeatable  
Credit 1  

Pre/Co-requisites:  
ECE 30100  
ECE 30411 or ECE 31100  
MA 26200 or (MA 26500 and (MA 26600 or MA 36600))  

**Course Description**  
A set of laboratory experiments dealing with fundamentals and basic applications of geometrical optics, beams, polarization optics, wave optics and Fourier optics.  

**Reason**  
This is a new courses in the ECE Optics path that complements ECE 30416 with hands-on experience.  

**History of Previous Offering**  
This is a new course.  

Michael R. Melloch, Associate Department Head of ECE
ECE 30417- Engineering Optics Laboratory

Lab Hours: 3 Credits: 1
Professional Attributes
Upper Level Lab

Normally Offered: Each Spring

Course Prerequisites and Co-requisites:
This class is designed for advanced undergraduate students. Official co-requisites are ECE 301 (Signals & Systems) and ECE 311 (Electromagnetism). Ideally, you should be comfortable with these topics: differential equations, matrix algebra, electromagnetism (Maxwell’s equations), uniform plane waves, reflection and refraction of plane waves, basics of Fourier series and Fourier transforms. It is highly recommended to take 30416 concurrently.

Catalog Description:
A set of laboratory experiments dealing with fundamentals and basic applications of geometrical optics, beams, polarization optics, wave optics and Fourier optics.

Course Objectives:
This laboratory course is designed around three goals. First, the student should find confirmation and reinforcement of topics covered in EE 30412 Second, the student should be able to apply optical principals 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.

Supplementary Information:
Will be offered spring only semesters effective fall 2016.


Lab Outline:

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Coherence Effects