

TO: The Faculty of the College of Engineering

FROM: The Faculty of the School of Industrial Engineering

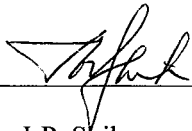
RE: Creation of new course – IE 56100: Introduction to Convex Optimization, and cross-listing with AAE course (AAE 56100 – Introduction to Convex Optimization)

The faculty of the School of Industrial Engineering has approved the following new course number, and cross-listing with the previously approved course in AAE. This action is now submitted to the Engineering Faculty with a recommendation for approval.

Course #: IE 56100 – Introduction to Convex Optimization
Term Offered: Sem. 1; Lecture 3, Cr. 3

Prerequisites: Graduate Standing or Instructor Permission
Description: See EFD 75-16

Reason: Convex Optimization courses have been offered within both AAE and IE in recent years. AAE has determined that establishing a permanent course number for a course in convex optimization is prudent and submitted EFD 75-16 to do so. Given that optimization and operations research is a core area within IE, the faculty wish to create a corresponding course number in IE and cross-list the sections when offered. Many IE students have taken the previous offerings of convex optimization in AAE.



Tom I-P. Shih
Professor and Head
School of Aeronautics and Astronautics



Abhijit Deshmukh
Professor and Head
School of Industrial Engineering

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

DEPARTMENT School of Aeronautics & Astronautics EFFECTIVE SESSION Fall 2017

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

<input type="checkbox"/> 1. New course with supporting documents (complete proposal form)	<input checked="" type="checkbox"/> 7. Change in course attributes
<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 type="checkbox"/> 4. Change in course number	<input type="checkbox"/> 10. Change in course requisites
<input type="checkbox"/> 5. Change in course title	<input type="checkbox"/> 11. Change in semesters offered
<input type="checkbox"/> 6. Change in course credit/type	<input type="checkbox"/> 12. Transfer from one department to another

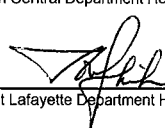
PROPOSED: Subject Abbreviation <u>AAE</u> Course Number <u>56100</u> Long Title <u>Introduction to Convex Optimization</u> Short Title <u>Intro. Convex Opt.</u> <small>Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)</small>	EXISTING: Subject Abbreviation _____ Course Number _____	TERMS OFFERED Check All That Apply: <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Summer CAMPUS(ES) INVOLVED <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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CREDIT TYPE 1. Fixed Credit: Cr. Hrs. <u>3</u> 2. Variable Credit Range: Minimum Cr. Hrs _____ (Check One) To _____ Or _____ Maximum Cr. Hrs _____ 3. Equivalent Credit: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 4. Thesis Credit: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	COURSE ATTRIBUTES: Check All That Apply 1. Pass/Not Pass Only <input type="checkbox"/> 2. Satisfactory/Unsatisfactory Only <input type="checkbox"/> 3. Repeatable <input type="checkbox"/> 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 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	150	2	15	100	
Recitation					
Presentation					IE 56100
Laboratory					
Lab Prep					
Studio					
Distance					
Clinic					
Experiential					
Research					
Ind. Study					
Pract/Observ					

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS): (Note: If description will not fit in space provided, please create a separate document and attach it to this form.)
 Introduction to convex analysis, convex optimization problems, algorithms of convex optimization and measures of their complexity, and applications of convex optimization in aerospace engineering. Recognition of convex optimization problems that arise in scientific and engineering applications. Introduction to software tools to solve convex optimization problems. (Requisites: Graduate Standing or Instructor Permission)

COURSE LEARNING OUTCOMES: (Note: If course learning outcomes will not fit in space provided, please create a separate document and attach it to this form.)
 Be able to... 1. understand basics of convex analysis and convex optimization problems; 2. understand and develop basic algorithms of convex optimization and their complexities; 3. apply convex optimization to solve engineering problems;

Calumet Department Head _____ Date _____	Calumet School Dean _____ Date _____	Calumet Director of Graduate Studies _____ Date _____
Fort Wayne Department Head _____ Date _____	Fort Wayne School Dean _____ Date _____	Fort Wayne Director of Graduate Studies _____ Date _____
Indianapolis Department Head _____ Date _____	Indianapolis School Dean _____ Date _____	IUPUI Associate Dean for Graduate Education _____ Date _____
North Central Department Head _____ Date _____	North Central School Dean _____ Date _____	North Central Director of Graduate Studies _____ Date _____
West Lafayette Department Head  _____ Date <u>12/12/2016</u>	West Lafayette College/School Dean _____ Date _____	Date Approved by Graduate Council _____ Date _____
Graduate Area Committee Convener _____ Date _____	Graduate Dean _____ Date _____	Graduate Council Secretary _____ Date _____
		West Lafayette Registrar _____ Date _____

OFFICE OF THE REGISTRAR

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
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(50000-60000 LEVEL)

DEPARTMENT Industrial Engineering EFFECTIVE SESSION Fall 2017

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| <input type="checkbox"/> 2. Add existing course offered at another campus | <input type="checkbox"/> 8. Change in instructional hours |
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North Central Department Head _____ Date _____	North Central School Dean _____ Date _____	North Central Director of Graduate Studies _____ Date _____
<i>Abli' Dadullah 2/3/17</i> West Lafayette Department Head _____ Date _____	West Lafayette College/School Dean _____ Date _____	Date Approved by Graduate Council _____ Date _____
Graduate Area Committee Convener _____ Date _____	Graduate Dean _____ Date _____	Graduate Council Secretary _____ Date _____
		West Lafayette Registrar _____ Date _____

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