Purdue University
Request for Addition, Expiration, or Revision of a Graduate Course
(50000-50000 LEVEL)

Department: School of Aeronautics & Astronautics
Effective Session: Fall 2011

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

1. New course with supporting documents (complete proposal form)
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
8. Change in instructional hours
9. Change in course description
10. Change in course requisites
11. Change in semesters offered
12. Transfer from one department to another

Proposed:
Subject Abbreviation: AAE
Course Number: 69600
Long Title: Theory and Practice of Multivariable Control
Short Title:

Existing:
Subject Abbreviation: AAE
Course Number: 69600

Terms Offered:
Check All That Apply:
- Fall
- Spring
- Summer

Campus(es) Involved:
- Calumet
- Fort Wayne
- Indianapolis
- N. Central
- Tech Statewide
- W. Lafayette

Abbreviated title will be entered by the Office of the Registrar if omitted. (50 Characters Only)

Credit Type:
1. Fixed Credit: Cr. Hrs. (Check One)
   - X) 3.0
2. Variable Credit Range: Minimum Cr. Hrs
   To
   Maximum Cr. Hrs.
3. Equivalent Credit: Yes
   No
4. Thesis Credit: Yes
   No

Course Attributes:
Check All That Apply:
1. Pass/No Pass Only
2. Satisfactory/Unsatisfactory Only
3. Repeatable
4. Maximum Repeatable Credit:
5. Credit by Examination
6. Registration Approval Type
   Department
   Instructor
7. Variable Title
8. Honors
9. Full Time Privilege
10. Off Campus Experience

Schedule Type
- Lecture
- Presentation
- Laboratory
- Lab Prep
- Studio
- Distance
- Clinic
- Experiential
- Research
- Ind. Study
- Pract/Observ

Weeks Offered

% of Credit Allocated

Course Description (Include Requisites/Restrictions):

Calumet Department Head: Date

Calumet School Dean: Date

Calumet Undergrad Curriculum Committee: Date

Fort Wayne Department Head: Date

Fort Wayne School Dean: Date

Fort Wayne Chanceller: Date

Undergrad Curriculum Committee: Date

North Central Department Head: Date

North Central School Dean: Date

Graduate Council: Date

North Central School Dean: Date

Graduate Council Secretory: Date

North Central Department Head: Date

Graduate Council: Date

Indianapolis Department Head: Date

Indianapolis School Dean: Date

Indianapolis Undergrad Curriculum Committee: Date

West Lafayette Department Head: Date

West Lafayette College/School Dean: Date

West Lafayette Undergrad Curriculum Committee: Date

Juilee Area Committee Convener: Date

Graduate Dean: Date

West Lafayette Registrar: Date

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

DEPARTMENT: School of Aeronautics & Astronautics
EFFECTIVE SESSION: Fall 2011

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

☐ 1. New course with supporting documents (complete proposal form)
☐ 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

PROPOSED:
Subject Abbreviation: AAE
Course Number: 69600
Long Title: 
Short Title: 

EXISTING:
Subject Abbreviation: AAE
Course Number: 69600
Long Title: 
Short Title: 

Abbreviated title will be entered by the Office of the Registrar if omitted. (20 CHARACTERS ONLY)

TERMS OFFERED
Check All That Apply:
☐ Fall
☐ Spring
☐ Summer

CAMPUS(ES) INVOLVED
Calumet
Cont Ed
Pt. Wayne
Indianapolis
☒ W. Lafayette

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 ☒
4. Thesis Credit: Yes ☒ No ☐

COURSE ATTRIBUTES: Check All That Apply
1. Pass/Not Pass Only
☐ 2. Satisfactory/Unsatisfactory Only
☐ 3. Repeatable
☐ 4. Credit by Examination
☐ 5. Special Fees
☐ 6. Registration Approval Type
☐ 7. Variable Title
☐ 8. Honors
☐ 9. Full Time Privilege
☐ 10. Off Campus Experience

Schedule Type: Minutes Per Mtr. 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):

Calumet Department Head Date

Calumet School Dean Date

Calumet Undergrad Curriculum Committee Date

Fort Wayne Department Head Date

Fort Wayne School Dean Date

Fort Wayne Chancellor 11/30/2010

Indianapolis Department Head Date

Indianapolis School Dean Date

Undergrad Curriculum Committee Date

North Central Department Head Date

North Central School Dean Date

Date Approved by Graduate Council

West Lafayette Department Head Date

West Lafayette College/School Dean Date

Graduate Council Secretary Date

Graduate Area Committee Convener Date

Graduate Dean Date

West Lafayette Registrar Date

OFFICE OF THE REGISTRAR
TO: The Faculty of the College of Engineering
FROM: The Faculty of the School of Aeronautics and Astronautics
RE: Deletion of AAE 69600

The faculty of the School of Aeronautics and Astronautics has approved the deletion of the following course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

AAE 69600 Theory and Practice of Multivariable Control
Sem. 1, Class 3, Cr. 3
Prerequisite: AAE 56400 or consent of instructor.

Theory, methodology, and software productivity tools for the analysis and design of model-based control systems with multiple actuators and multiple sensors. Control oriented model parameterizations and modeling errors. Definitions and criteria for robust stability and performance. Linear controller synthesis: formulation and solution to the H2 and H00 optimization problems. Design methodologies based on the H2 and H00 optimization problems: practical cost functions, use of frequency shaping filters, and design iterations. Methods to simplify the control law: state-space truncation/residualization of plant model or controller. Practical considerations: nonlinear fixes to accommodate actuator limits, control law discretization, and input/output scaling of control law. Mechatronic design examples.

Reason:
The course has not been taught for an extended period of time and content is included in currently offered courses. Course has been deleted from the curriculum.

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

APPROVED FOR THE FACULTY OF THE SCHOOLS OF ENGINEERING, BY THE ENGINEERING CURRICULUM COMMITTEE
ECC Minutes #4
Date 10/19/10
Chairman ECC K. Cipra