**PURDUE UNIVERSITY**
REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF A GRADUATE COURSE
(500-600 LEVEL)

**DEPARTMENT** ECE  
**EFFECTIVE SESSION**春08

**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: [ ]
Course Number: [ ]
Long Title: CONTROL OF ROBOT MANIPULATORS
Short Title: CONT ROBOT MANIPULTRS

**EXISTING:**

Subject Abbreviation: ECE
Course Number: 682

**TERMS OFFERED**

- [ ] Summer
- [ ] Fall
- [ ] Spring

**CAMPUS(ES) INVOLVED**

- [ ] Calumet
- [ ] N. Central
- [ ] Cont Ed
- [ ] Tech Statewide
- [ ] Ft. Wayne
- [ ] W. Lafayette
- [ ] Indianapolis

**COURSE ATTRIBUTES:** Check All That Apply

- [ ] Department
- [ ] Instructor
- [ ] Pass/Net Pass Only
- [ ] Satisfactory/Unsatisfactory Only
- [ ] Repeatable
- [ ] Variable Title
- [ ] Remedial
- [ ] Honors
- [ ] Full Time Privilege
- [ ] Off-Campus Experience

**COURSE DESCRIPTION (INCLUDE REQUISITES):**

- [ ] Cross-Listed Courses

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**Calumet Department Head** Date [Calumet Undergrad Curriculum Committee] Date

**Fort Wayne Department Head** Date [Fort Wayne Chancellor] Date

**Indianapolis Department Head** Date [Undergrad Curriculum Committee] Date

**North Central Department Head** Date [Date Approved by Graduate Council]

**West Lafayette Department Head** Date [Graduate Council Secretary] Date

**Graduate Area Committee Convener** 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: Deletion of ECE 682

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

ECE 682 Control of Robot Manipulators
Sem. 2. Class 3, cr. 3. (Offered in alternate years.)
Prerequisite: ECE 569, ECE 602. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites.

The dynamical models to design controllers for the manipulator motion are discussed in Lagrange's and Newton-Euler's formulations. To make the manipulator motion track a desired trajectory, the system will be designed using PID-controllers, eigenvalue assignment, and adaptive self-tuning control. The design of these controllers for compliant motion of the manipulators also is discussed in detail. The implementation of the foregoing controllers is outlined.

Reason: Course has not been taught for an extended period of time. Course has been deleted from the curriculum.

Mark J.T. Smith, Head
School of Electrical & Computer Engineering

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE ENGINEERING
CURRICULUM COMMITTEE

ECC Minutes #10
Date 12-3-07
Chairman ECC

Signature