

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

57-06

DEPARTMENT ECE EFFECTIVE SESSION Spr08

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 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 checked="" 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

Course Number

Long Title CONTROL OF ROBOT MANIPULATORS

Short Title CONTRL ROBOT MANIPULTRS

Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

EXISTING:

Subject Abbreviation ECE

Course Number 682

TERMS OFFERED

Check All That Apply:

- Summer Fall Spring

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 | |

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

- | | |
|--|---|
| <input type="checkbox"/> 1. Pass/Not Pass Only | <input type="checkbox"/> 7. Registration Approval Type |
| <input type="checkbox"/> 2. Satisfactory/Unsatisfactory Only | Department <input type="checkbox"/> Instructor <input type="checkbox"/> |
| <input type="checkbox"/> 3. Repeatable | <input type="checkbox"/> 8. Variable Title |
| Maximum Repeatable Credit: <input type="text"/> | <input type="checkbox"/> 9. Remedial |
| <input type="checkbox"/> 4. Credit by Examination | <input type="checkbox"/> 10. Honors |
| <input type="checkbox"/> 5. Designator Required | <input type="checkbox"/> 11. Full Time Privilege |
| <input type="checkbox"/> 6. Special Fees | <input type="checkbox"/> 12. Off Campus Experience |

Instructional Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Delivery Method (Asyn. Or Syn.)	Delivery Medium (Audio, Internet, Live, Text-Based, Video)
Lecture						
Recitation						
Presentation						
Laboratory						
Lab Prep						
Studio						
Distance						
Clinic						
Experiential						
Research						
Ind. Study						
Pract/Observ						

Cross-Listed Courses

COURSE DESCRIPTION (INCLUDE REQUISITES):

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 _____ Date _____

Michael Joltan 2/20/08
Undergrad Curriculum Committee _____ Date _____

North Central Department Head _____ Date _____ North Central Chancellor _____ 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 _____

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 Michael D. Stankovic