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

DEPARTMENT: ECE
EFFECTIVE SESSION: Fall 2008

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: ECE
- Course Number: 670
- Long Title: Modeling and Optimization of High-Performance Interconnects

EXISTING:

- Subject Abbreviation: ECE
- Course Number: 670
- Long Title: Modeling and Optimization of High-Performance Interconnects

TERMS OFFERED:

- Summer
- Fall [X]
- Spring

CAMPUS(ES) INVOLVED:

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

COURSE ATTRIBUTES: Check All That Apply:

- 7. Registration Approval Type
  - Department
  - Instructor
- 8. Variable Title
- 9. Remedial
- 10. Honors
- 11. Full Time Privilege
- 12. Off Campus Experience

COURSE DESCRIPTION (INCLUDE REQUISITES):

Sem. 1 of even years.
Prerequisite: ECE-559 (or equivalent), or consent of instructor

### Credit Type

<table>
<thead>
<tr>
<th>Instructional Type</th>
<th>Minutes Per Mtg</th>
<th>Meetings Per Week</th>
<th>% of Credit Allocated</th>
<th>Delivery Method (Asyn. Or Syn.)</th>
<th>Delivery Medium (Audio, Internet, Live, Text-Based, Video)</th>
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<td>Ind. Study</td>
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<td>Pract/Obser</td>
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Cross-Listed Courses

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

Indianapolis Department Head Date
Indianapolis School Dean Date
Undergrad Curriculum Committee Date

North Central Department Head Date
North Central Chancellor Date

West Lafayette Department Head Date
West Lafayette School Dean Date

Graduate Area Committee Convener Date
Graduate Dean Date
West Lafayette Registrar Date

OFFICE OF THE REGISTRAR

Signed: 3-12-09
# Request for Addition, Expiration, or Revision of a Graduate Course

**Department**: ECE  
**Effective Session**: Fall 2008

**Instructions**
- Please check the items below that describe the purpose of this request.

## Proposed
- New course with supporting documents (complete proposal form)
- Change in course attributes
- Add existing course offered at another campus
- Change in instructional hours
- Expiration of a course
- Change in course description
- Change in course number
- Change in course semesters offered
- Change in course title
- Transfer from one department to another
- Change in course credit type

## Existing
- Subject Abbreviation: ECE
- Course Number: 670
- Long Title: Modeling and Optimization of High-Performance Interconnects
- Short Title: Interconnects

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

## Terms Offered
- Check all that apply:
  - [ ] Summer
  - [X] Fall
  - [ ] Spring

## CAMPUS(ES) Involved
- Calumet
- Cont Ed
- N. Central
- Tech Statewide
- Pt. Wayne
- W. Lafayette
- Indianapolis

## Credit Type

<table>
<thead>
<tr>
<th>Credit Type</th>
<th>1. Fixed Credit: Cr. Hrs.</th>
<th>2. Variable Credit Range: Minimum Cr. Hrs. (Check One)</th>
<th>3. Equivalent Credit: Yes/No</th>
<th>4. Thesis Credit: Yes/No</th>
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</thead>
</table>

## Instructional Type

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<tr>
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<th>Experiential</th>
<th>Research</th>
<th>Ind. Study</th>
<th>Pract/Observ</th>
</tr>
</thead>
</table>

## Course Attributes

- [ ] 1. Pass/Not Pass Only
- [ ] 2. Satisfactory/Unsatisfactory Only
- [ ] 3. Repeatable
- [ ] 4. Max Repeatable Credit
- [ ] 5. Designator Required
- [ ] 6. Special Fees
- [ ] 7. Registration Approval Type
- [ ] 8. Variable Title
- [ ] 9. Remedial
- [ ] 10. Honors
- [ ] 11. Full Time Privilege
- [ ] 12. Off Campus Experience

## Course Description (Include Requisites)

Sem. 1 of even years.

Prerequisite: ECE-559 (or equivalent), or consent of instructor

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**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**

**Undergrad Curriculum Committee**

**Date**

**North Central Department Head**

**Date**

**North Central Chancellor**

**Date**

**Date Approved by Graduate Council**

**Date**

**Graduate Council Secretary**

**Date**

**West Lafayette Department Head**

**Date**

**West Lafayette College/School Dean**

**Date**

**West Lafayette Registrar**

**Date**

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**Office of the Registrar**
TO: The Faculty of the College of Engineering  
FROM: The Faculty of the School of Electrical and Computer Engineering  
RE: ECE 670 Changes in Terms Offered, Prerequisite and Content

The faculty of the School of Electrical and Computer Engineering has approved the following changes in ECE 670. This action is now submitted to the Engineering Faculty with a recommendation for approval.

From: **ECE 670 – Modeling and Optimization Of High-Performance Interconnects**  
Sem. 1. Class 3, cr. 3.  
Prerequisite **ECE 559, 608.** Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.


To: **ECE 670 – Modeling and Optimization of High-Performance Interconnects**  
Sem. 1 of even years. Class 3, cr. 3  
Prerequisite: ECE 559 (or equivalent), or consent of instructor


Reason: The course prerequisite, text and content have been changed to reflect the updated content of the course.

Mark J. T. Smith  
Head, Electrical and Computer Engineering

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

**ECC Minutes**  
Date  
Chairman ECC
Supporting Documentation

ECE 670 – Modeling and Optimization Of High-Performance Interconnects

Required Text: None.

Recommended References:

Lectures                  Principal Topics
2  Introduction: Trends of VLSI Interconnects, Challenges of Interconnect Design
6  Extraction of RLC Parasitics
3  RLC Simulation
2  Elmore Delay Model
7  Reduced Order Modeling
2  Driver Modeling and Delay Calculation
6  Repeater Insertion and Planning
6  Timing-Driven Placement
6  High-Performance Routing
1  Mid-term Exam
3  Term Project Presentation