

**PURDUE UNIVERSITY**  
 REQUEST FOR ADDITION, EXPIRATION,  
 OR REVISION OF AN UNDERGRADUATE COURSE  
 (100-400 LEVEL)

10-01

DEPARTMENT ECE EFFECTIVE SESSION F07

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

- |                                     |  |                          |  |
|-------------------------------------|--|--------------------------|--|
| <input type="checkbox"/>            | 1. New course with supporting documents          | <input type="checkbox"/> | 7. Change in course attributes (department head signature only)  |
| <input checked="" 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 (department head signature only) |
| <input type="checkbox"/>            | 6. Change in course credit/type                  | <input type="checkbox"/> | 12. Transfer from one department to another                      |

<b>PROPOSED:</b>		<b>EXISTING:</b>		<b>TERMS OFFERED</b> Check All That Apply:	
Subject Abbreviation	<input type="text"/>	Subject Abbreviation	<u>ECE</u>	<input type="checkbox"/> Summer	<input type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring
Course Number	<input type="text"/>	Course Number	<u>655</u>	<b>CAMPUS(ES) INVOLVED</b>	
Long Title	<u>Superconductive Electronic Devices</u>			<input type="checkbox"/> Calumet	<input type="checkbox"/> N. Central
Short Title	<u>Supercon Elect Devices</u>			<input type="checkbox"/> Cont Ed	<input type="checkbox"/> Tech Statewide
Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)				<input type="checkbox"/> Ft. Wayne	<input checked="" type="checkbox"/> W. Lafayette
				<input type="checkbox"/> Indianapolis	

<b>CREDIT TYPE</b>		<b>COURSE ATTRIBUTES: Check All That Apply</b>			
1. Fixed Credit: Cr. Hrs.	<input type="text"/>	1. Pass/Not Pass Only	<input type="checkbox"/>	7. Registration Approval Type	<input type="checkbox"/>
2. Variable Credit Range:	<input type="text"/>	2. Satisfactory/Unsatisfactory Only	<input type="checkbox"/>	Department	<input type="checkbox"/>
Minimum Cr. Hrs.	<input type="text"/>	3. Repeatable	<input type="checkbox"/>	Instructor	<input type="checkbox"/>
(Check One) To <input type="checkbox"/> Or <input type="checkbox"/>		Maximum Repeatable Credit:	<input type="text"/>	8. Variable Title	<input type="checkbox"/>
Maximum Cr. Hrs.	<input type="text"/>	4. Credit by Examination	<input type="checkbox"/>	9. Remedial	<input type="checkbox"/>
3. Equivalent Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>		5. Designator Required	<input type="checkbox"/>	10. Honors	<input type="checkbox"/>
4. Thesis Credit: Yes <input type="checkbox"/> No <input type="checkbox"/>		6. Special Fees	<input type="checkbox"/>	11. Full Time Privilege	<input type="checkbox"/>
				12. Off Campus Experience	<input type="checkbox"/>

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)	Cross-Listed Courses	
Lecture								
Recitation								
Presentation								
Laboratory								
Studio								
Distance								
Clinic								
Experiential								
Research								
Ind. Study								
Pract/Observ								

COURSE DESCRIPTION (INCLUDE REQUISITES):

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Calumet Department Head	Date	Calumet School Dean	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date
Indianapolis Department Head	Date	Indianapolis School Dean	Date
North Central Department Head	Date	North Central Chancellor <u>G. S. Dean</u>	Date
West Lafayette Department Head	Date	West Lafayette College/School Dean	Date
		West Lafayette Registrar	Date

*Philip J. Pope 8/9/07*      *Marilyn D. Lewis 8/10/07*  
*Walt*      *Michael J. ... 4/4/07*      *Sandra Schaffer 8/16/07*

8/14/07  
 Jm

RECEIVED  
MAY 27 2007  
ENGINEERING  
ADMINISTRATION

**TO:** The Faculty of the College of Engineering  
**FROM:** The Faculty of the School of Electrical and Computer Engineering  
**RE:** Deletion of ECE 655

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 655 Superconducting Electronic Devices**

Sem. 2. Class 3, cr. 3. (Offered in alternate years.)

Prerequisite: ECE 606. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Wave equation called the Bogoliubov-de Gennes equation, consisting of two Schrodinger equations for the electron and time-reversed electron coupled by a 'paring potential'  $\Delta E(r)$ , is developed and used to describe electronic motion in superconductors. The first half of the course shows how the Bogoliubov-de Gennes equation, combined with a scattering theory of electronic transport, is used to obtain the current-voltage and current-phase relations for various types of superconducting devices. The second half of the course is devoted to a microscopic description of superconductivity, the electron-phonon interaction, experiments that demonstrate the macroscopic phase-coherence of the superconducting state, and defects, such as vortex motion, that limit the performance of superconducting devices.

**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 \_\_\_\_\_

