

Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

Complete the following sections:

- New Courses - B & C completely
- Modifications - A modified information, B & C completely
- Deletions - A & C completely

Date 1/21/2004

Effective Fall 2004

A. CURRENT LISTING

B. REQUESTED LISTING

<p><input type="checkbox"/> Home Department _____ Div # _____ Course Number _____</p> <p><input type="checkbox"/> Cross Listed Course Information</p> <p><input checked="" type="checkbox"/> Course Title <b>Directed Study, Research and Special Problems I</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">TITLE ABBREVIATION</td> <td style="width: 25%;">Time Sched Max = 19 Spaces Transcript Max = 20 Spaces</td> <td style="width: 60%;">Spec Prob I</td> </tr> </table> <p><input checked="" type="checkbox"/> Course Description Individual or group study, design, or laboratory research in a field of interest to the student or group. Topics may be chosen from any area of industrial and operations engineering including management, work measurement, systems, and procedures.</p> <p><b>PROGRAM OUTCOMES:</b>  <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k</p> <p><b>Degree Requirements</b>    <input type="radio"/> Degree Requirement    <input type="radio"/> Free Elective    <input type="radio"/> Other  <input checked="" type="radio"/> Core Course                    <input type="radio"/> Tech Elective</p> <p><input checked="" type="checkbox"/> Prerequisites    Permission of Department; mandatory pass/fail.  <input type="radio"/> Enforced    <input type="radio"/> Advised</p> <p><input type="checkbox"/> Credit Restrictions    maximum 4 credit hours per term</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Level of Credit</b></td> <td style="width: 15%;">Credit Hours</td> <td style="width: 15%;">Contact Hrs/Wk</td> <td style="width: 15%;">Contact</td> </tr> <tr> <td> <input type="checkbox"/> Undergrad only    <input type="checkbox"/> Ugrad or Non-Rckhm Grad  <input type="checkbox"/> Rackham Grad    <input type="checkbox"/> All Credit types  <input type="checkbox"/> Non-Rckhm Grad    <input type="checkbox"/> Rckhm Grad w/add'l Work  <input checked="" type="checkbox"/> Ugrad or Rckhm Grad                 </td> <td>Min    Max _____ 2 _____ 4</td> <td>_____ arr</td> <td>_____ arr</td> </tr> </table>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces	Spec Prob I	<b>Level of Credit</b>	Credit Hours	Contact Hrs/Wk	Contact	<input type="checkbox"/> Undergrad only <input type="checkbox"/> Ugrad or Non-Rckhm Grad <input type="checkbox"/> Rackham Grad <input type="checkbox"/> All Credit types <input type="checkbox"/> Non-Rckhm Grad <input type="checkbox"/> Rckhm Grad w/add'l Work <input checked="" type="checkbox"/> Ugrad or Rckhm Grad	Min    Max _____ 2 _____ 4	_____ arr	_____ arr	<p><input type="checkbox"/> Home Department _____ Div # _____ Course Number _____</p> <p><input type="checkbox"/> Cross Listed Course Information</p> <p><input type="checkbox"/> Course Title <b>Undergraduate Directed Study, Research, and Special Problems</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">TITLE ABBREVIATION</td> <td style="width: 25%;">Time Sched Max = 19 Spaces Transcript Max = 20 Spaces</td> <td style="width: 60%;">UG Directed Study</td> </tr> </table> <p><input type="checkbox"/> Course Description for Official Publication (Max = 50 words) Individual or group study, design, or laboratory research in a field of interest to the student or group. 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- Approval
- Curriculum Comm.
  - Faculty
  - Rackham
  - Cross listed Unit 1
  - Cross listed Unit 2

Submitted By:     Home Dept.     Cross-listed Dept.

Name, Signature & Department  
 Home Dept. \_\_\_\_\_  
 Cross-listed Dept(s): \_\_\_\_\_



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Approval

Curriculum Comm. \_\_\_\_\_

Faculty \_\_\_\_\_

Rackham \_\_\_\_\_

Cross listed Unit 1 \_\_\_\_\_

Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept.  Cross-listed Dept.

Name, Signature & Department  
 Home Dept. [Signature]  
 Cross-listed Dept(s). \_\_\_\_\_

### SUPPORTING STATEMENT

Titles, restrictions, and course descriptions of all directed study courses are being modified to: 1) reduce the total number of courses offered, and 2) specify the appropriate course based on the student's level. Under the proposed change, 490 will be restricted to undergraduate student, 590 to Masters students, 801 to first-year doctoral pre-candidates, and 900 to pre-candidates who have passed the Qualifying Exam.

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Are any special resources or facilities required for this course?

Yes  No

Detail the Special requirements

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**B. REQUESTED LISTING**

<p>Home Department _____ Div # _____ Course Number _____</p> <p>Cross Listed Course Information _____</p> <p>Course Title _____</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">TITLE ABBREVIATION</td> <td style="width: 30%;">Time Sched Max = 19 Spaces</td> <td style="width: 50%;"></td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td></td> </tr> </table> <p>Course Description                  Students work as part of a team within a production or service organization on a design project that emphasizes the application of ergonomic principles to enhance the safety, productivity, and/or quality aspects of a human machine system.</p> <p><b>PROGRAM OUTCOMES:</b>  <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k</p> <p>Degree Requirements <input type="radio"/> Degree Requirement <input type="radio"/> Free Elective <input type="radio"/> Other  <input type="radio"/> Core Course <input type="radio"/> Tech Elective</p> <p>Prerequisites <input type="radio"/> Enforced <input type="radio"/> Advised</p> <p>Credit Restrictions                  Level of Credit  <input type="checkbox"/> Undergrad only <input type="checkbox"/> Ugrad or Non-Rckhm Grad  <input type="checkbox"/> Rackham Grad <input type="checkbox"/> All Credit types  <input type="checkbox"/> Non-Rckhm Grad <input type="checkbox"/> Rckhm Grad w/add'l Work  <input type="checkbox"/> Ugrad or Rckhm Grad</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Credit Hours</th> <th>Contact Hrs/Wk</th> </tr> <tr> <td>Min</td> <td>Max</td> <td>Number of Wks</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces			Transcript Max = 20 Spaces		Credit Hours		Contact Hrs/Wk	Min	Max	Number of Wks	_____	_____	_____	<p>Home Department <b>IOE</b> Div # <b>272</b> Course Number <b>593</b></p> <p>Cross Listed Course Information _____</p> <p>Course Title  <b>Ergonomics Professional Project</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">TITLE ABBREVIATION</td> <td style="width: 30%;">Time Sched Max = 19 Spaces</td> <td style="width: 50%;"><b>Ergonomics Project</b></td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td><b>Ergonomics Project</b></td> </tr> </table> <p>Course Description for Official Publication (Max = 50 words)                  Students work as part of a team within a production or service organization on a design project that emphasizes the application of ergonomic principles to enhance the safety, productivity, and/or quality aspects of a human machine system. Student(s) must register for the section number of the instructor/advisor. A maximum of six credits of IOE 590/593 may be counted toward the IOE Masters Degree.</p> <p><b>PROGRAM OUTCOMES:</b>  <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k</p> <p>Degree Requirements <input type="radio"/> Degree Requirement <input type="radio"/> Free Elective <input type="radio"/> Other  <input type="radio"/> Core Course <input type="radio"/> Tech Elective</p> <p>Prerequisites Graduate Standing, Permission of Instructor  <input type="radio"/> Enforced <input checked="" type="radio"/> Advised</p> <p>Credit Restrictions                  2-4 credits per election</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Credit Hours</th> <th>Contact Hrs/Wk</th> </tr> <tr> <td>Min</td> <td>Max</td> <td>Number of Wks</td> </tr> <tr> <td>2</td> <td>4</td> <td>14</td> </tr> </table>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces	<b>Ergonomics Project</b>		Transcript Max = 20 Spaces	<b>Ergonomics Project</b>	Credit Hours		Contact Hrs/Wk	Min	Max	Number of Wks	2	4	14
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Approval

Curriculum Comm. \_\_\_\_\_

Faculty \_\_\_\_\_

Rackham \_\_\_\_\_

Cross listed Unit 1 \_\_\_\_\_

Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept.  Cross-listed Dept.

Name, Signature & Department  
 Home Dept. [Signature]  
 Cross-listed Dept(s). \_\_\_\_\_

**SUPPORTING STATEMENT**

This is a clarification of the maximum hours of directed study that can be used toward the IOE Masters Program.

[Dotted lines for supporting statement]

Are any special resources or facilities required for this course?  Yes  No

Detail the Special requirements

[Dotted lines for special requirements]

Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 1/21/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

Home Department IOE	Div # 272	Course Number 690
Cross Listed Course Information		
Course Title Graduate Study in Selected Problems I		
TITLE ABBREVIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces	Grad Study in Selected Problems I
Course Description		

Home Department	Div #	Course Number
Cross Listed Course Information		
Course Title		
TITLE ABBREVIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces	
Course Description for Official Publication (Max = 50 words)		

**PROGRAM OUTCOMES:**  
 a  b  c  d  e  f  g  h  i  j  k

**Degree Requirements**     Degree Requirement     Free Elective     Other  
     Core Course     Tech Elective

Prerequisites    Permission of Graduate Committee  
 Enforced     Advised

Credit Restrictions

<b>Level of Credit</b> <input type="checkbox"/> Undergrad only <input type="checkbox"/> Ugrad or Non-Rckhm Grad <input checked="" type="checkbox"/> Rackham Grad <input type="checkbox"/> All Credit types <input type="checkbox"/> Non-Rckhm Grad <input type="checkbox"/> Rckhm Grad w/add'l Work <input type="checkbox"/> Ugrad or Rckhm Grad	<b>Credit Hours</b> Min    Max arr    arr	<b>Contact Hrs/Wk</b> arr	<b>Contact Hrs/Wk</b> Number of Wks arr
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**PROGRAM OUTCOMES:**  
 a  b  c  d  e  f  g  h  i  j  k

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**C.**    Repeatability (Indl Research, Dir. Study, Dissertation):  
 Is this course repeatable?     Yes     No  
 Maximum Hours?    \_\_\_\_\_    Maximum Times?    \_\_\_\_\_  
 Can it be repeated in the same term?     Yes     No

<b>Class Type(s)</b> <input type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input checked="" type="checkbox"/> Ind <input type="checkbox"/> Other _____	<b>Graded Section</b> <input type="radio"/> Lec <input type="radio"/> Rec <input type="radio"/> Sem <input type="radio"/> Lab <input type="radio"/> Dis <input checked="" type="radio"/> Ind <input type="radio"/> Other	<b>Grading</b> <input type="checkbox"/> A-E <input type="checkbox"/> CR/NC <input checked="" type="checkbox"/> S/U <input type="checkbox"/> P/F <input type="checkbox"/> Y	<b>Location</b> <input type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension
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**Printing Information (Optional)**     Print the course in the Bulletin  
 Print the course in the Time Schedule

Terms & Freq. of Offering     I     II     IIIa     IIIb     III    Half term     1st     2nd  
 Yearly     Alter Years     Even Years     Odd Years

Cognizant Faculty Member:    Monroe Keyserling    Title Professor

Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty

**Approval**

Curriculum Comm.    \_\_\_\_\_

Faculty    \_\_\_\_\_

Rackham    \_\_\_\_\_

Cross listed Unit 1    \_\_\_\_\_

Cross listed Unit 2    \_\_\_\_\_

Submitted By:     Home Dept.     Cross-listed Dept.

Name, Signature & Department  
 Home Dept.    [Signature]  
 Cross-listed Dept(s).    \_\_\_\_\_

**SUPPORTING STATEMENT**

Titles, restrictions, and course descriptions of all directed study courses are being modified to: 1) reduce the total number of courses offered, and 2) specify the appropriate course based on the student's level. Under the proposed change, 490 will be restricted to undergraduate student, 590 to Masters students, 801 to first-year doctoral pre-candidates, and 900 to pre-candidates who have passed the Qualifying Exam.

This course is redundant with other directed study courses. It has not been modified since 1968.

Are any special resources or facilities required for this course?

Yes  No

Detail the Special requirements



Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
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 Deletions - A & C completely

Date 1/21/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

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Approval

- Curriculum Comm. \_\_\_\_\_
- Faculty \_\_\_\_\_
- Rackham \_\_\_\_\_
- Cross listed Unit 1 \_\_\_\_\_
- Cross listed Unit 2 \_\_\_\_\_

Submitted By:     Home Dept.     Cross-listed Dept.  
 Name, Signature & Department    [Signature]  
 Home Dept.    \_\_\_\_\_  
 Cross-listed Dept(s).    \_\_\_\_\_

**SUPPORTING STATEMENT**

Titles, restrictions, and course descriptions of all directed study courses are being modified to: 1) reduce the total number of courses offered, and 2) specify the appropriate course based on the student's level. Under the proposed change, 490 will be restricted to undergraduate student, 590 to Masters students, 801 to first-year doctoral pre-candidates, and 900 to pre-candidates who have passed the Qualifying Exam.

This course has been on the books and not changed since 1968. Students no longer elect IOE 690 or 790.

Are any special resources or facilities required for this course?

Yes  No

Detail the Special requirements

Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 1/21/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

Home Department		Div #	Course Number
Cross Listed Course Information			
Course Title <b>Directed Research</b>			
TITLE ABBREVIATION	Time Sched Max = 19 Spaces		
	Transcript Max = 20 Spaces		
Course Description Directed research on a topic of mutual interest to the student and the instructor. This course complements IOE 800, First-Year Doctoral Seminar. Research presented in IOE 802.			

Home Department		Div #	Course Number
IOE		272	801
Cross Listed Course Information			
Course Title <b>First-Year Doctoral Directed Research</b>			
TITLE ABBREVIATION	Time Sched Max = 19 Spaces	<b>First Year Doc Dir Res</b>	
	Transcript Max = 20 Spaces	<b>FirstYear Doc Dir Res</b>	
Course Description for Official Publication (Max = 50 words) Directed research on a topic of mutual interest to the student and the instructor. Student(s) must register for the section number of the instructor/advisor.			

**PROGRAM OUTCOMES:**  
 a  b  c  d  e  f  g  h  i  j  k

**Degree Requirements**     Degree Requirement     Free Elective     Other  
 Core Course                     Tech Elective

Prerequisites IOE 800; concurrent with IOE 802; mandatory satisfactory/unsatisfactory  
 Enforced     Advised

Credit Restrictions

Level of Credit		Credit Hours		Contact Hrs/Wk
<input type="checkbox"/> Undergrad only	<input type="checkbox"/> Ugrad or Non-Rckhm Grad	Min	Max	_____ 14 _____
<input checked="" type="checkbox"/> Rackham Grad	<input type="checkbox"/> All Credit types	_____ 1 _____	_____ 3 _____	Number of Wks _____ 14 _____
<input type="checkbox"/> Non-Rckhm Grad	<input type="checkbox"/> Rckhm Grad w/add'l Work			
<input type="checkbox"/> Ugrad or Rckhm Grad				

**PROGRAM OUTCOMES:**  
 a  b  c  d  e  f  g  h  i  j  k

**Degree Requirements**     Degree Requirement     Free Elective     Other  
 Core Course                     Tech Elective

Prerequisites IOE Ph.D. Pre-candidate, Permission of Instructor.  
 Enforced     Advised

Credit Restrictions 1-3 credits per election

Level of Credit		Credit Hours		Contact Hrs/Wk
<input type="checkbox"/> Undergrad only	<input type="checkbox"/> Ugrad or Non-Rckhm Grad	Min	Max	_____ 14 _____
<input checked="" type="checkbox"/> Rackham Grad	<input type="checkbox"/> All Credit types	_____ 1 _____	_____ 3 _____	Number of Wks _____ 14 _____
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<input type="checkbox"/> Ugrad or Rckhm Grad				

**C.** Repeatability (Indic Research, Dir. Study, Dissertation):  
 Is this course repeatable?  Yes     No  
 Maximum Hours? \_\_\_\_\_ Maximum Times? \_\_\_\_\_  
 Can it be repeated in the same term?  Yes     No

Class Type(s)	Graded Section	Grading	Location
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**Printing Information**     Print the course in the Bulletin (Optional)  
 Print the course in the Time Schedule

Terms & Freq. of Offering     I     II     IIIa     IIIb     III    Half term  1st  2nd  
 Yearly     Alter Years     Even Years     Odd Years

Cognizant Faculty Member: Monroe Keyserling    Title Professor

Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty

Approval

Curriculum Comm. \_\_\_\_\_

Faculty \_\_\_\_\_

Rackham \_\_\_\_\_

Cross listed Unit 1 \_\_\_\_\_

Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept.     Cross-listed Dept.

Name, Signature & Department  
 Home Dept. [Signature]  
 Cross-listed Dept(s) \_\_\_\_\_



Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 1/21/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

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Approval

- Curriculum Comm. \_\_\_\_\_
- Faculty \_\_\_\_\_
- Rackham \_\_\_\_\_
- Cross listed Unit 1 \_\_\_\_\_
- Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept.  Cross-listed Dept.  
 Name, Signature & Department  
 Home Dept. [Signature]  
 Cross-listed Dept(s). \_\_\_\_\_

**SUPPORTING STATEMENT**

This course needs to be deleted because the P.E. degree is no longer supported by the IOE Department.

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Are any special resources or facilities required for this course?  Yes  No

Detail the Special requirements

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Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 1/29/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

<p><input type="checkbox"/> Home Department _____ Div # _____ Course Number _____</p> <p><input type="checkbox"/> Cross Listed Course Information _____</p> <p><input checked="" type="checkbox"/> Course Title <b>Dissertation/Precandidate</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">TITLE ABBRE- VIATION</td> <td style="width: 20%;">Time Sched Max = 19 Spaces</td> <td style="width: 60%;">Diss/Precand</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td>Diss/Precand</td> </tr> </table> <p><input checked="" type="checkbox"/> Course Description                  Dissertation work by doctoral student not yet admitted to status as candidate. The defense of the dissertation, that is, the final oral examination, must be held under a full-term candidacy enrollment.</p> <p><b>PROGRAM OUTCOMES:</b>  <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k</p> <p><b>Degree Requirements</b>    <input type="radio"/> Degree Requirement    <input type="radio"/> Free Elective    <input type="radio"/> Other                     <input type="radio"/> Core Course                    <input type="radio"/> Tech Elective</p> <p><input checked="" type="checkbox"/> Prerequisites    Permission of Department                     <input type="radio"/> Enforced    <input type="radio"/> Advised</p> <p><input checked="" type="checkbox"/> Credit Restrictions</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Level of Credit</td> <td style="width: 20%;">Credit Hours</td> <td style="width: 20%;">Contact Hrs/Wk</td> <td style="width: 30%;">Contact</td> </tr> <tr> <td> <input type="checkbox"/> Undergrad only    <input type="checkbox"/> Ugrad or Non-Rckhm Grad  <input type="checkbox"/> Rackham Grad    <input type="checkbox"/> All Credit types  <input type="checkbox"/> Non-Rckhm Grad    <input type="checkbox"/> Rckhm Grad w/add'l Work  <input type="checkbox"/> Ugrad or Rckhm Grad                 </td> <td>Min    Max</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td></td> <td>Number of Wks</td> <td>_____</td> </tr> </table>	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Diss/Precand		Transcript Max = 20 Spaces	Diss/Precand	Level of Credit	Credit Hours	Contact Hrs/Wk	Contact	<input type="checkbox"/> Undergrad only <input type="checkbox"/> Ugrad or Non-Rckhm Grad <input type="checkbox"/> Rackham Grad <input type="checkbox"/> All Credit types <input type="checkbox"/> Non-Rckhm Grad <input type="checkbox"/> Rckhm Grad w/add'l Work <input type="checkbox"/> Ugrad or Rckhm Grad	Min    Max	_____	_____			Number of Wks	_____	<p><input type="checkbox"/> Home Department <b>IOE</b> Div # <b>272</b> Course Number <b>990</b></p> <p><input type="checkbox"/> Cross Listed Course Information _____</p> <p><input type="checkbox"/> Course Title <b>Dissertation Research; Pre-Candidate</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">TITLE ABBRE- VIATION</td> <td style="width: 20%;">Time Sched Max = 19 Spaces</td> <td style="width: 60%;">Diss Pre-Candidate</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td>Diss Pre-Candidate</td> </tr> </table> <p><input type="checkbox"/> Course Description for Official Publication (Max = 50 words)                  Dissertation work by doctoral student who has passed the IOE Qualifying Exam with Pass or Conditional Pass, but is not yet admitted to candidacy. Student must register for the section number of the instructor/advisor. The defense of the dissertation, that is, the final oral examination, must be held under a full-term candidacy enrollment.</p> <p><b>PROGRAM OUTCOMES:</b>  <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k</p> <p><b>Degree Requirements</b>    <input type="radio"/> Degree Requirement    <input type="radio"/> Free Elective    <input type="radio"/> Other                     <input type="radio"/> Core Course                    <input type="radio"/> Tech Elective</p> <p><input type="checkbox"/> Prerequisites    Completion of IOE Qualifying Exam and Permission of Instructor                     <input type="radio"/> Enforced    <input checked="" type="radio"/> Advised</p> <p><input type="checkbox"/> Credit Restrictions                  I, II, III (2-8 credits); IIIa, IIIb (1-4 credits)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Level of Credit</td> <td style="width: 20%;">Credit Hours</td> <td style="width: 20%;">Contact Hrs/Wk</td> <td style="width: 30%;">Contact</td> </tr> <tr> <td> <input type="checkbox"/> Undergrad only    <input type="checkbox"/> Ugrad or Non-Rckhm Grad  <input checked="" type="checkbox"/> Rackham Grad    <input type="checkbox"/> All Credit types  <input type="checkbox"/> Non-Rckhm Grad    <input type="checkbox"/> Rckhm Grad w/add'l Work  <input type="checkbox"/> Ugrad or Rckhm Grad                 </td> <td>Min    Max</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td></td> <td>Number of Wks</td> <td>_____</td> </tr> </table>	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Diss Pre-Candidate		Transcript Max = 20 Spaces	Diss Pre-Candidate	Level of Credit	Credit Hours	Contact Hrs/Wk	Contact	<input type="checkbox"/> Undergrad only <input type="checkbox"/> Ugrad or Non-Rckhm Grad <input checked="" type="checkbox"/> Rackham Grad <input type="checkbox"/> All Credit types <input type="checkbox"/> Non-Rckhm Grad <input type="checkbox"/> Rckhm Grad w/add'l Work <input type="checkbox"/> Ugrad or Rckhm Grad	Min    Max	_____	_____			Number of Wks	_____
TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Diss/Precand																																			
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		Number of Wks	_____																																		
<p><b>C.</b></p> <p>Repeatability (Indic Research, Dir. Study, Dissertation):                  Is this course repeatable?    <input checked="" type="radio"/> Yes    <input type="radio"/> No                  Maximum Hours? _____ Maximum Times? _____                  Can it be repeated in the same term?    <input type="radio"/> Yes    <input type="radio"/> No</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Class Type(s)</td> <td style="width: 20%;">Graded Section</td> <td style="width: 20%;">Grading</td> <td style="width: 40%;">Location</td> </tr> <tr> <td> <input type="checkbox"/> Lec  <input type="checkbox"/> Rec  <input type="checkbox"/> Sem  <input type="checkbox"/> Lab  <input type="checkbox"/> Dis  <input checked="" type="checkbox"/> Ind  <input type="checkbox"/> Other _____                 </td> <td> <input type="checkbox"/> Lec  <input type="checkbox"/> Rec  <input type="checkbox"/> Sem  <input type="checkbox"/> Lab  <input type="checkbox"/> Dis  <input checked="" type="radio"/> Ind  <input type="radio"/> Other _____                 </td> <td> <input type="checkbox"/> A-E  <input type="checkbox"/> CR/NC  <input checked="" type="checkbox"/> S/U  <input type="checkbox"/> P/F  <input type="checkbox"/> Y                 </td> <td> <input checked="" type="checkbox"/> Ann Arbor  <input type="checkbox"/> Biological Station  <input type="checkbox"/> Camp Davis  <input type="checkbox"/> Extension                 </td> </tr> </table>	Class Type(s)	Graded Section	Grading	Location	<input type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input checked="" type="checkbox"/> Ind <input type="checkbox"/> Other _____	<input type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input checked="" type="radio"/> Ind <input type="radio"/> Other _____	<input type="checkbox"/> A-E <input type="checkbox"/> CR/NC <input checked="" type="checkbox"/> S/U <input type="checkbox"/> P/F <input type="checkbox"/> Y	<input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension	<p><b>Printing Information</b>    <input checked="" type="checkbox"/> Print the course in the Bulletin                  (Optional)    <input checked="" type="checkbox"/> Print the course in the Time Schedule</p> <p>Terms &amp; Freq. of Offering    <input checked="" type="checkbox"/> I    <input checked="" type="checkbox"/> II    <input checked="" type="checkbox"/> IIIa    <input checked="" type="checkbox"/> IIIb    <input type="checkbox"/> III</p> <p>Half term    <input type="checkbox"/> 1st                     <input type="checkbox"/> 2nd</p> <p>Yearly    <input type="checkbox"/> Alter Years    <input type="checkbox"/> Even Years    <input type="checkbox"/> Odd Years</p> <p>Cognizant Faculty Member: _____ Title: Professor</p> <p>Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty</p>																												
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Approval

Curriculum Comm. \_\_\_\_\_

Faculty \_\_\_\_\_

Rackham \_\_\_\_\_

Cross listed Unit 1 \_\_\_\_\_

Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept.     Cross-listed Dept.

Name, Signature & Department  
 Home Dept. \_\_\_\_\_  
 Cross-listed Dept(s). \_\_\_\_\_





Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 1/29/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

Home Department		Div #	Course Number
Cross Listed Course Information			
<input checked="" type="checkbox"/> Course Title Dissertation/Candidate			
TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Diss/Cand	
	Transcript Max = 20 Spaces	Diss/Cand	
<input checked="" type="checkbox"/> Course Description Election for dissertation work by a doctoral student who has been admitted to candidacy status. The defense of the dissertation, that is, the final oral examination, must be held under a full-term candidacy enrollment.			

Home Department		Div #	Course Number
IOE		272	995
Cross Listed Course Information			
<input checked="" type="checkbox"/> Course Title Dissertation Research: Candidate			
TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Dissertation Cand	
	Transcript Max = 20 Spaces	Dissertation Cand	
<input checked="" type="checkbox"/> Course Description Dissertation research by a doctoral student who has been admitted to Candidacy. Student must register for the section number of the instructor/advisor. The defense of the dissertation (e.g., the final oral examination) must be held under a full-term candidacy enrollment.			

**PROGRAM OUTCOMES:**  
 a  b  c  d  e  f  g  h  i  j  k

**Degree Requirements**  
 Degree Requirement  Free Elective  Other  
 Core Course  Tech Elective

**PROGRAM OUTCOMES:**  
 a  b  c  d  e  f  g  h  i  j  k

**Degree Requirements**  
 Degree Requirement  Free Elective  Other  
 Core Course  Tech Elective

Prerequisites Graduate School authorization for admission as a doctoral candidate.  
 Enforced  Advised

Prerequisites Graduate School authorization for admission as a doctoral candidate and P.I.  
 Enforced  Advised

Credit Restrictions

<b>Level of Credit</b>	<b>Credit Hours</b>	<b>Contact Hrs/Wk</b>
<input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad <input type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad w/add'l Work	Min Max _____	_____ Number of Wks

Credit Restrictions I, II, III (8 credits); IIIa, IIIb (4 credits)

<b>Level of Credit</b>	<b>Credit Hours</b>	<b>Contact Hrs/Wk</b>
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**C.** Repeatability (Indl Research, Dir. Study, Dissertation):  
 Is this course repeatable?  Yes  No  
 Maximum Hours? \_\_\_\_\_ Maximum Times? \_\_\_\_\_  
 Can it be repeated in the same term?  Yes  No

**Printing Information** (Optional)  
 Print the course in the Bulletin  
 Print the course in the Time Schedule

<b>Class Type(s)</b>	<b>Graded Section</b>	<b>Grading</b>	<b>Location</b>
<input type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input checked="" type="checkbox"/> Ind <input type="checkbox"/> Other _____	<input type="radio"/> Lec <input type="radio"/> Rec <input type="radio"/> Sem <input type="radio"/> Lab <input type="radio"/> Dis <input checked="" type="radio"/> Ind <input type="radio"/> Other	<input type="checkbox"/> A-E <input type="checkbox"/> CR/NC <input checked="" type="checkbox"/> S/U <input type="checkbox"/> P/F <input type="checkbox"/> Y	<input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension

Terms & Freq. of Offering:  I  II  IIIa  IIIb  III  
 Half term  1st  2nd  
 Yearly  Alter Years  Even Years  Odd Years

Cognizant Faculty Member: Monroe Keyserling Title Professor

Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty

Approval

Curriculum Comm. \_\_\_\_\_

Faculty \_\_\_\_\_

Rackham \_\_\_\_\_

Cross listed Unit 1 \_\_\_\_\_

Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept  Cross-listed Dept.

Name, Signature & Department  
 Home Dept. [Signature]  
 Cross-listed Dept(s) \_\_\_\_\_

**SUPPORTING STATEMENT**

Titles, restrictions, and course descriptions of all directed study courses are being modified to: 1) reduce the total number of courses offered, and 2) specify the appropriate course based on the student's level. Under the proposed change, 490 will be restricted to undergraduate student, 590 to Masters students, 801 to first-year doctoral pre-candidates, and 900 to pre-candidates who have passed the Qualifying Exam.

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Are any special resources or facilities required for this course?  Yes  No

Detail the Special requirements

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THE UNIVERSITY OF MICHIGAN - COLLEGE OF ENGINEERING  
 Course Approval Request  
 College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number  
 1337

Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

Complete the following sections:  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 2/19/2004

Effective Winter 2004

A. CURRENT LISTING

B. REQUESTED LISTING

<input checked="" type="checkbox"/>	Home Department MFG	Div # 275	Course Number 503
<input type="checkbox"/>	Cross Listed Course Information OMS	091	703
<input type="checkbox"/>	Course Title		
<input type="checkbox"/>	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces	
<input type="checkbox"/>	Course Description		

	Home Department MFG	Div # 275	Course Number 503
	Cross Listed Course Information		
	Course Title Manufacturing Project		
	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces	Manufacturing Project MFG Project
	Course Description for Official Publication (Max = 50 words) This project course is intended to provide students with an industrially-relevant team project work experience in manufacturing.		

PROGRAM OUTCOMES:

- a  b  c  d  e  f  g  h  i  j  k

- Degree Requirements:  Degree Requirement  Tech Elective  
 Core Course  Other  
 Prerequisite

Enforced  Advised

Credit Restrictions

- Level of Credit:  Undergrad only,  Rackham Grad,  Non-Rackham Grad,  Ugrad or Rackham Grad,  Ugrad or Non-Rackham Grad
- All Credit types,  Rackham Grad w/adv'l Work
- Credit Hours: Min, Max; Contact Hrs/Wk; Number of Wks

Repeatability (Incl Research, Dir. Study, Disruption)

Is this course repeatable?  Yes  No

Maximum Hours? Maximum Times?

Can it be repeated in the same term?  Yes  No

- Class Type(s):  Lec,  Rec,  Sem,  Lab,  Dis,  Ind,  Other
- Cred Sec:  Lec,  Rec,  Sem,  Lab,  Dis,  Ind,  Other
- Grading:  A-E,  CR/NC,  S/U,  Y
- Location:  Ann Arbor,  Biological Station,  Camp Davis,  Extension

PROGRAM OUTCOMES:

- a  b  c  d  e  f  g  h  i  j  k

- Degree Requirements:  Degree Requirement  Tech Elective  
 Core Course  Other  
 Prerequisite

Enforced  Advised

Credit Restrictions

- Level of Credit:  Undergrad only,  Rackham Grad,  Non-Rackham Grad,  Ugrad or Rackham Grad,  Ugrad or Non-Rackham Grad
- All Credit types,  Rackham Grad w/adv'l Work
- Credit Hours: Min, Max; Contact Hrs/Wk; Number of Wks

Printing Information (Optional):  Print the course in the Bulletin,  Print the course in the Time Schedule

Term & Freq. of Offering:  I,  II,  III,  I/II,  I/III,  II/III

Half term:  1st,  2nd

Yearly:  Yearly,  Alt. Years,  Even Years,  Odd Years

Cognizant Faculty Member: S. Jack Hu Title: Professor

Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty

Submitted By:  Home Dept,  Cross listed Dept

Name, Signature & Department

Home Dept: S. Jack Hu

Cross-listed Dept(s): James Rouse/HE

- Curriculum Comm.
- Faculty
- Rackham
- Cross listed Unit 1

Form Number

1337

**SUPPORTING STATEMENT**

The course was modified from a non-graded (S/U) to graded (A-E) scale. The course must be un-crosslisted due to the difference between the Business School Grading scale (Excellent - Fail) and the College of Engineering grading scale (A-E). The grades cannot be converted from the A-E grading scale to Excellent - Fail grading scale.

Lined area for additional supporting statement text.

Are any special resources or facilities required for this course?

Yes  No

Detail the Special requirements

Lined area for detailing special requirements.



Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 2/23/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

<p>Home Department: <b>Materials Science &amp; Engineering</b>                  Div #: <b>281</b> Course Number: <b>242</b></p> <p>Cross Listed Course Information</p> <p>Course Title</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">TITLE ABBREVIATION</td> <td style="width: 15%;">Time Sched Max = 19 Spaces</td> <td style="width: 70%;"></td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td></td> </tr> </table> <p>Course Description</p> <p><b>PROGRAM OUTCOMES:</b>  <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k</p> <p><b>Degree Requirements</b>  <input type="radio"/> Degree Requirement <input type="radio"/> Tech Elective  <input type="radio"/> Core Course <input type="radio"/> Other  <input type="radio"/> Free Elective</p> <p>Prerequisites: <input checked="" type="checkbox"/> Preceded or accompanied by Physics 240, Math 216.  <input type="checkbox"/> Enforced <input checked="" type="checkbox"/> Advised</p> <p>Credit Restrictions</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"> <b>Level of Credit</b>  <input type="checkbox"/> Undergrad only  <input type="checkbox"/> Rackham Grad  <input type="checkbox"/> Non-Rackham Grad  <input type="checkbox"/> Ugrad or Rackham Grad  <input type="checkbox"/> Ugrad or Non-Rackham Grad                 </td> <td style="width: 30%;"> <input type="checkbox"/> All Credit types  <input type="checkbox"/> Rackham Grad w/add'l Work                 </td> <td style="width: 10%;"> <b>Credit Hours</b>                  Min: _____ Max: _____             </td> <td style="width: 30%;"> <b>Contact Hrs/Wk</b>                  _____  <b>Number of Wks</b>                  _____             </td> </tr> </table>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces			Transcript Max = 20 Spaces		<b>Level of Credit</b> <input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad	<input type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad w/add'l Work	<b>Credit Hours</b> Min: _____ Max: _____	<b>Contact Hrs/Wk</b> _____ <b>Number of Wks</b> _____	<p>Home Department: <b>MATSCIE</b>                  Div #: <b>281</b> Course Number: <b>242</b></p> <p>Cross Listed Course Information</p> <p>Course Title  <b>Physics of Materials</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">TITLE ABBREVIATION</td> <td style="width: 15%;">Time Sched Max = 19 Spaces</td> <td style="width: 70%;">Physics of Mats.</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td>Phys of Mats</td> </tr> </table> <p>Course Description for Official Publication (Max = 50 words)  <b>Basic principles and applications of solid state physics. Mathematical and physical description of classical and quantum mechanics, crystallography and diffraction. 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**Approval**

Curriculum Comm. \_\_\_\_\_

Faculty \_\_\_\_\_

Rackham \_\_\_\_\_

Cross listed Unit 1 \_\_\_\_\_

Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept.  Cross-listed Dept.

Name, Signature & Department  
 Home Dept. John W. Halloran, Dept. Chair

Cross-listed Dept(s): \_\_\_\_\_

**SUPPORTING STATEMENT**

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Are any special resources or facilities required for this course?

Yes  No

Detail the Special requirements

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Action Requested

- New Course
- Modification of Existing Course
- Deletion of Course

**Complete the following sections:**  
 New Courses - B & C completely  
 Modifications - A modified information, B & C completely  
 Deletions - A & C completely

Date 2/23/2004

Effective Fall 2004

**A. CURRENT LISTING**

**B. REQUESTED LISTING**

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**Approval**

Curriculum Comm. \_\_\_\_\_

Faculty \_\_\_\_\_

Rackham \_\_\_\_\_

Cross listed Unit 1 \_\_\_\_\_

Cross listed Unit 2 \_\_\_\_\_

Submitted By:  Home Dept.  Cross-listed Dept.

Name, Signature & Department

Home Dept. John W. Halloran, Dept. Chair

Cross-listed Dept(s): \_\_\_\_\_

**129**

**SUPPORTING STATEMENT**

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Are any special resources or facilities required for this course?

Yes  No

Detail the Special requirements



Action Requested

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Complete the following sections:

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- Deletions - A & C completely

Date 2/23/2004

Effective Fall 2004

A. CURRENT LISTING

B. REQUESTED LISTING

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;">Home Department <b>Materials Science &amp; Engineering</b></td> <td style="width: 15%;">Div # <b>281</b></td> <td style="width: 15%;">Course Number <b>335</b></td> </tr> <tr> <td colspan="3">Cross Listed Course Information</td> </tr> <tr> <td colspan="3">Course Title</td> </tr> <tr> <td>TITLE ABBREVIATION</td> <td>Time Sched Max = 19 Spaces</td> <td></td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td></td> </tr> <tr> <td colspan="3">Course Description</td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>PROGRAM OUTCOMES:</b></td> </tr> <tr> <td colspan="3"> <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k                 </td> </tr> <tr> <td colspan="3">                     Degree Requirements <input type="radio"/> Degree Requirement <input type="radio"/> Tech Elective  <input type="radio"/> Core Course <input type="radio"/> Other  <input type="radio"/> Free Elective                 </td> </tr> <tr> <td colspan="3">                     Prerequisites <input checked="" type="checkbox"/> Math 216 and MSE 220 or 250  <input type="radio"/> Enforced <input checked="" type="radio"/> Advised                 </td> </tr> <tr> <td colspan="3">Credit Restrictions</td> </tr> <tr> <td>Level of Credit</td> <td>All Credit types</td> <td>Credit Hours</td> </tr> <tr> <td> <input type="checkbox"/> Undergrad only  <input type="checkbox"/> Rackham Grad  <input type="checkbox"/> Non-Rackham Grad  <input type="checkbox"/> Ugrad or Rackham Grad  <input type="checkbox"/> Ugrad or Non-Rackham Grad                 </td> <td> <input type="checkbox"/> All Credit types  <input type="checkbox"/> Rackhm Grad w/add'l Work                 </td> <td>                     Min Max                      _____                 </td> </tr> <tr> <td colspan="2"></td> <td>Contact Hrs/Wk</td> </tr> <tr> <td colspan="2"></td> <td>Number of Wks</td> </tr> </table>	Home Department <b>Materials Science &amp; Engineering</b>	Div # <b>281</b>	Course Number <b>335</b>	Cross Listed Course Information			Course Title			TITLE ABBREVIATION	Time Sched Max = 19 Spaces			Transcript Max = 20 Spaces		Course Description			<b>PROGRAM OUTCOMES:</b>			<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k			Degree Requirements <input type="radio"/> Degree Requirement <input type="radio"/> Tech Elective <input type="radio"/> Core Course <input type="radio"/> Other <input type="radio"/> Free Elective			Prerequisites <input checked="" type="checkbox"/> Math 216 and MSE 220 or 250 <input type="radio"/> Enforced <input checked="" type="radio"/> Advised			Credit Restrictions			Level of Credit	All Credit types	Credit Hours	<input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad	<input type="checkbox"/> All Credit types <input type="checkbox"/> Rackhm Grad w/add'l Work	Min Max _____			Contact Hrs/Wk			Number of Wks	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;">Home Department <b>MATSCIE</b></td> <td style="width: 15%;">Div # <b>281</b></td> <td style="width: 15%;">Course Number <b>335</b></td> </tr> <tr> <td colspan="3">Cross Listed Course Information</td> </tr> <tr> <td colspan="3">Course Title <b>Kinetics and Transport in Materials Engineering</b></td> </tr> <tr> <td>TITLE ABBREVIATION</td> <td>Time Sched Max = 19 Spaces</td> <td><b>Kin. and Transport</b></td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td><b>Kin &amp; Transp</b></td> </tr> <tr> <td colspan="3">Course Description Course Description for Official Publication (Max = 50 words) <b>Application of basic principles of molecular transport and mass, energy, and momentum balance to the solution of heat, diffusion, and fluid flow problems relevant to materials processing. 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<p>C.</p> <p>Repeatability (Indi Research, Dir. Study, Dissertation):                  Is this course repeatable? <input type="radio"/> Yes <input type="radio"/> No                  Maximum Hours? _____ Maximum Times? _____                  Can it be repeated in the same term? <input type="radio"/> Yes <input type="radio"/> No</p>	<p>Printing Information (Optional) <input checked="" type="checkbox"/> Print the course in the Bulletin  <input checked="" type="checkbox"/> Print the course in the Time Schedule</p>																																																																																													
<p>Class Type(s) <input checked="" type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other</p> <p>Graded Section <input type="radio"/> Lec <input type="radio"/> Rec <input type="radio"/> Sem <input type="radio"/> Lab <input type="radio"/> Dis <input type="radio"/> Ind <input type="radio"/> Other</p> <p>Grading <input checked="" type="checkbox"/> A-E <input type="checkbox"/> CR/NC <input type="checkbox"/> S/U <input type="checkbox"/> P/F <input type="checkbox"/> Y</p> <p>Location <input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension</p>	<p>Terms &amp; Freq. of Offering <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> IIIa <input type="checkbox"/> IIIb <input type="checkbox"/> III <input type="checkbox"/> Yearly <input type="checkbox"/> Alter Years <input type="checkbox"/> Even Years <input type="checkbox"/> Odd Years</p> <p>Half term <input type="checkbox"/> 1st <input type="checkbox"/> 2nd</p> <p>Cognizant Faculty Member: <u>M. Falk</u> <u>F. Filisko and T. Pollock</u> <u>J. Kieffer</u> Title <u>Asst. Professor</u> <u>Professors</u> <u>Assoc. Professor</u></p> <p>Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty</p>																																																																																													

Approval

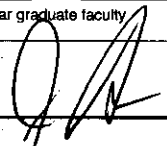
- Curriculum Comm.
- Faculty
- Rackham
- Cross listed Unit 1
- Cross listed Unit 2

Submitted By:  Home Dept.  Cross-listed Dept.

Name, Signature & Department

Home Dept. John W. Halloran, Dept. Chair

Cross-listed Dept(s): \_\_\_\_\_



**SUPPORTING STATEMENT**

MSE requests that the prerequisites for this course be changed from "advised" to "enforced" as now allowed by the new policy from the Registrar's Office. Furthermore, the Undergraduate Committee of MSE recommends that the current prerequisite requirement be changed to "Math 215 and 216, and MSE 220 or 250" to better reflect the background knowledge and skills required for this course.

Are any special resources or facilities required for this course?

Yes  No

Detail the Special requirements

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