College Curriculum Committee, 1420 Lurie Engineering Center Building



Form	Number
1287	

Action Requested

○ New Course⑥ 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

	Deletions - A & C complet	ely Effective Fall 2004
	A. CURRENT LISTING	B. REQUESTED LISTING
	Home Department Div # Course Number	Home Department Div # Course Number IOE 272 490
	Cross Listed Course Information	Cross Listed Course Information
Х	Course Title Directed Study, Research and Special Problems I	Course Title Undergraduate Directed Study, Research, and Special Problems
	TITLE Time Sched Max = 19 Spaces Spec Prob I	TITLE ABBRE- ABBRE- Time Sched Max = 19 Spaces UG Directed Study
	VIATION Transcript Max = 20 Spaces	VIATION Transcript Max = 20 Spaces UG Directed Study
х	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.	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. Topics may be chosen from any area of industrial and operations engineering. Student(s) must register for the indi section number of the instructor/advisor.
	PROGRAM OUTCOMES:	PROGRAM OUTCOMES:
	Degree Requirements  O Degree Requirement O Free Elective O Other O Tech Elective	Degree Requirements O Degree Requirement O Free Elective O Other O Tech Elective
Х	Prerequisites Permission of Department; mandatory pass/fail.  □ Enforced ○ Advised	Prerequisites Permission of Instructor.  © Enforced © Advised
	Credit maximum 4 credit hours per term Restrictions	Credit Not for Graduate Credit; maximum 4 credit hours per term. Restrictions
X	Level of Credit  Undergrad only Ugrad or Non-Rickhrm Grad Rackham Grad All Credit types  Non-Rickhrm Grad Rickhrm Grad Wadd1 Work  Ugrad or Rickhrm Grad or Rickhrm Grad Wadd1 Work  Ugrad or Rickhrm Grad or Rickhrm Grad	Level of Credit  ☑ Undergrad only ☐ Backham Grad ☐ Non-Rickhm Grad ☐ Non-Rickhm Grad ☐ Ugrad or Rickhm Grad
C.	Repeatability (Indi Research, Dir. Study, Dissertation:  Is this course repeatable?	Printing Information  (Optional) Print the course in the Bulletin  Print the course in the Time Schedule
x [	Class	Terms & ☐ I ☐ II ☐ IIIa ☐ IIIb ☐ III ☐ Half term ☐ 1st Freq. of ☐ 2nd ☐ Offering ☐ Yearly ☐ After Years ☐ Even Years ☐ Odd Years
	☐ Lab ☐ CR/NC ☒ Ann Arbor ☐ Lab ☐ Dis ☐ S/U ☐ Biological Station ☐ Dis ☐ Dind ☐ P/F ☐ Camp Davis ☐ Ind ☐ Other ☐ Y ☐ Extension	Cognizant Faculty  Lawrence Seiford  Title Professor  Member:  Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty
	Approval Curriculum Comm.	Submitted By. Home Dept. Cross-listed Dept.
	Faculty Rackham Cross listed Unit 1 Cross listed Unit 2	Home Dept. Cross-listed Dept(s).

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Trus Arabar zamba is mismaar int minai Arandra sinnai ils niili.	
Titles, restrictions, and course descriptions of all directed study courses a offered, and 2) specify the appropriate course based on the student's levi undergraduate student, 590 to Masters students, 801 to first-year doctors the Qualifying Exam.	elUnder the proposed change, 490 will be restricted to
***************************************	
	***************************************
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	***************************************
Are any special resources or facilities required for this course?	☐ Yes ⊠ No
Detail the Special requirements	
***************************************	

College Curriculum Committee, 1420 Lurie Engineering Center Building

Form Numbe
1288

#### Action Requested

New CourseModification of Existing CourseDeletion 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

	A CURRENT LISTING	B. REQUESTE	D LISTING					
_	Home Department Div # Course Number	Home Department		Div # Course Number				
	Cross Listed Course Information	IOE 272 590  Cross Listed Course Information						
X	Course Title Directed, Study, Research, and Special Problems II	Course Title Masters Directed S	tudy, Research, and Sp	ecial Problems				
	TITLE Time Sched Spec Prob II	TITLE Time Sched	Masters Direct					
	ABBRE- VIATION Transcript	ABBRE- VIATION Transcript	Masters Direct					
х	Max = 20 Spaces  Course Description	Max = 20 Spa	Publication (Max = 50 words)					
	Continuation of IOE 490.	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. Student(s) must register for the section number of the instructor/advisor. Maximum of six credits of IOE 590/593 may be counted toward the IOE Masters Degree.						
,	PROGRAM CUTCOMES:	PROGRAM OUTCOMES:						
	Degree Requirements O Degree Requirement O Free Elective O Other O Tech Elective	Degree Requirements  O Degree Requirement O Free Elective O Other O Core Course O Tech Elective						
Х	Prerequisites Permission of Instructor  Enforced Advised	Prerequisites Graduate Standing and Permission of Instructor  © Enforced © Advised						
	Credit 3 credits maximum	Credit	Advised					
	Restrictions  Level of Credit Credit Hours Contact	Restrictions  Level of Credit		Credit Hours Contact				
Х	☐ Undergrad only ☐ Ugrad or Non-Rickhim Grad ☐ Min Max ☐ Hrs/Wk <u>arr</u> ☐ Rackham Grad ☐ All Credit types	☐ Rackham Grad     ☐	Ugrad or Non-Rickhm Grad All Credit types	Min Max Hrs/Wk arr				
	□ Non-Rickhm Grad □ Rickhm Grad w/addf Work □ 3 Number of Wks arr	⊠ Non-Rokhm Grad	Rickhm Grad w/add*l Work	2 4 Number of Wks <u>arr</u>				
C.	Repeatability (Indi Research, Dir. Study, Dissertation:  Is this course repeatable? ② Yes ○ No  Maximum Hours? Maximum Times?  Can it be repeated in the same term? ② Yes ○ No		Print the course in the Bulletin Print the course in the Time Sched	lule .				
X	Class Graded © Lec Grading	Terms & <b>E</b> i <b>E</b> II <b>E</b> III	a 🔳 IIIb 🔳 III	Half term ☐ 1st				
<b></b>	Type(s)	Freq. of Offering Yearly Alt	er Years 🔲 Even Years 🔲 Odd	2nd Years				
	Lab	Cognizant Faculty Monroe Keyserling Title Professor  Member:  Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty						
ļ	Approval	<u> </u>	-					
	Curriculum Comm.	Submitted By:  Name, Signature & Department	Home Dept. Cross-lieted Cook	·//				
	Faculty	Home Dept	000	<del>/</del>				
	Rackham	Cross-listed Dept(s).						
	Cross listed Unit 1 Cross listed Unit 2	***************************************		100				

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I.tles_restrictions_and course descriptions of all directed study course offered, and 2) specify the appropriate course based on the student's landergraduate student, 590 to Masters students, 801 to first-year doct the Qualifying Exam.	evelUnder the proposed change, 490 will be restricted to gral pre-candidates, and 900 to pre-candidates who have nassed
***************************************	
	***************************************
are any special resources or facilities required for this course?	☐ Yes ⊠ No
Detail the Special requirements	
	***************************************

College Curriculum Committee, 1420 Lurie Engineering Center Building

Form Number
1289

#### Action Requested

○ New Course⑥ 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. CU	IRRENT LISTI	NG			B. RI	EQUESTED LIST	<b>FING</b>	Div # Course Number 272 593			
٦	Home Depar	tment		Div #	Course Number	Home Dep	artment					
	Cross Listed (	Course Information				Course Title Ergonomics Professional Project						
]	Course Title											
L						Ergonom	ics Professional	Project				
	TITLE ABBRE-	Time Sched Max = 19 Spaces				TITLE ABBRE-	Time Sched Max = 19 Spaces	Ergonomics P				
_	VIATION	Transcript Max = 20 Spaces				VIATION	Transcript Max = 20 Spaces	Ergonomics P	Project			
e	ergonomi	c principles to	n project tha temp enhance the safe nan machine syste	ty, producti		organizat ergonom quality as register f	work as part of a tion on a design p ic principles to en spects of a huma or the section nu dits of IOE 590/5 Degree.	project that temp nhance the safet in machine syste mber of the instr	phasizes the ty, productivit m. Student( ructor/adviso	application of ty, and/or (s) must r. A maximun		
produced and a second		RAMIOUTCO	efg		i 🗀 j 🗀 k		RAM OUTCOM	ES:     e	hi	j		
	Degree Requ	Irements O Deg O Core	ree Requirement O Free e Course O Tecl	e Elective O Ot h Elective	her	Degree Req	uirements O Degree O Core Co		Elective O Other Elective			
]	Prerequisites	○ Enforced ○ Advi	sed			Prerequisites	Graduate Standing, Perr					
	redit estrictions					Credit Restrictions	2-4 credits per election					
]	evel of Credi   Undergrad (   Rackham G   Non-Rokhm   Ugrad or Ro	only Ugrad rad All Cre Grad Rokhn	or Non-Rokhm Grad edit types n Grad w/add'i Work	Credit Hours Min Max	Contact Hrs/Wk Number of Wks	Level of Cred Undergrad Rackham G Non-Rickhn Ugrad or R	onty Ugrad or Grad All Credit or Grad Rockhm (	Non-Rickhm Grad types Grad w/add'l Work	Credit Hours Min Max 2 4	Contact Hrs/Wk 2-4 Number of Wks 14		
-	ls this course Maximum	repeatable? • Ye Hours? 6 N	ch, Dir. Study, Dissertations  No Maximum Times?  2 term? Yes • No	1:			formation  Print the (Optional) Print the		dule	•		
		Graded ec Section Rec Sem		Lo	cation nn Arbor	Freq. of	I ■ II ■ IIIa ■ IIIb Yearly □ Alter Years	-		laif term 🔲 1st 🔲 2nd		
į			Obs Svu Ind P/F Other Y	□ B □ C	iological Station amp Davis xtension	Cognizant Facu Member:		roe Keyserling	Title Profe			
	pproval						ttach nomination if Cognic			у		
	Curricului	m Comm.				Signature Home Dep		ept. Cross-listed Bo				
	aculty					•			_			

2	89	

SUPPORTING STATEMENT  This is a clarification of the maximum hours of directed study that can be used toward the IOE Masters Program.
Are any special resources or facilities required for this course?
Detail the Special requirements

College Curriculum Committee, 1420 Lune Engineering Center Building

		Form	Numbe	r
		1290		

#### 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

	A. CURRENT LISTING		B. Ri	EQUESTED LISTING		
_	Home Department Div		Home Dep	artment	Div	# Course Number
	IOE 272 Cross Listed Course Information	9 690	Cross Listed	Course Information		
	Course Title Graduate Study in Selected Problems I		Course Title			
	TITLE ABBRE- VIATION Transcript Time Sched Max = 19 Spaces Grad Study in Selected	d Problems I	TITLE ABBRE-	Time Sched Max = 19 Spaces		
	VIATION Transcript Max = 20 Spaces		VIATION	Transcript Max = 20 Spaces		
		]i	_a		] ]f	
	Prerequisites Permission of Graduate Committee	Other	Prerequisites	O Core Course	nent O Free Elective O Tech Elective	Other
=	Credit Advised		Credit	○ Enforced ○ Advised		
	Restrictions  Level of Credit Credit Hour	e Contact	Restrictions  Level of Cree	<u> </u>		
	Undergrad only Ugrad or Non-Rekhm Grad  Rackham Grad All Credit types Non-Rekhm Grad Rekhm Grad w/add1 Work Ugrad or Rekhm Grad	Hrs/Wkarr	Undergrad Rackham G Non-Rickhr Ugrad or Re	only Ugrad or Non-Roki irad All Credit types or Grad Rokhm Grad w/ad	Min	Max Hrs/Wk  Number of Wks
C.	Repeatability (Indi Research, Dir. Study, Dissertation:  Is this course repeatable?	-		formation Print the course in (Optional) Print the course in		
	☐ Hec ☐ Sem ☐ A-E ☐ Sem ☐ CR/NC ☐	Location Ann Arbor	Freq. of	I ■ II ■ IIIa ■ IIIb ■ III Yearly □ Alter Years □ Even	Years Odd Years	Half term ☐ 1st ☐ 2nd
	☐ Dis ☐ Ind ☐ P/F ☐	Biological Station Camp Davis Extension	Cognizant Facu Member: Grad Course: At	Ity Monroe Keyso ttach nomination if Cognizant Facu		Professor
	Approval Curriculum Comm.		Name, Signature	<u> </u>	Cross-listed Sept.	
	Faculty Rackham Cross listed Unit 1 Cross listed Unit 2		Home Dep Cross-listed Dep			113

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Littles, 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?
Detail the Special requirements

College Curriculum Committee, 1420 Lurie Engineering Center Building

Form Number
1291

#### 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

	A. CURRENT LISTING	B. REQUESTED LISTING
_	Home Department Div # Course Number	Home Department Div # Course Number
<u></u>	IOE 272 790  Cross Listed Course Information	Cross Listed Course Information
	Course Title Graduate Study in Selected Brableme II	Course Title
	Graduate Study in Selected Problems II	
	TITLE ABBRE- VIATION Time Sched Max = 19 Spaces Selected Probs II Transcript	TITLE Time Sched  ABBRE- VIATION Transcript  Time Sched  Max = 19 Spaces  Transcript
	Max = 20 Spaces  Course Description	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 O Degree Requirement O Free Elective O Core Course O Tech Elective Prerequisites Permission of Graduate Committee O Enforced Advised	Program Outcomes:  a b c d e f g h i k  Degree Requirements O Degree Requirement O Free Elective O Other O Core Course O Tech Elective
	Credit	Enforced
	Restrictions  Level of Credit Hours Contact	Restrictions  Level of Credit
	Undergrad only Ugrad or Non-Rickhm Grad All Credit types	Undergrad only Ugrad or Non-Rickhm Grad Min Max Contact Hrs/Wk Min Max Non-Rickhm Grad Rickhm Grad Rickhm Grad Rickhm Grad Waddfl Work Ugrad or Rickhm Grad Waddfl Work Of Wks
C.	Repeatability (Indi Research, Dir. Study, Dissertation:  Is this course repeatable?	Printing Information Print the course in the Bulletin (Optional) Print the course in the Time Schedule
<b>-</b>	Class Graded C Lec Grading	Terms & ■ I ■ ii ■ iiia ■ liib ■ iii ■ Half term □ 1st
	Rec	Freq. of Offering Yearly Alter Years Even Years Odd Years  Cognizant Faculty Monroe Keyserling Title Professor Member:  Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty
Ī	Approval	Submitted By: ■ Home Dept. □ Cross-listed Dept.
		Name, Signature & Department Home Dept.
	Faculty Rackham Cross listed Unit 1 Cross listed Unit 2	Cross-listed Dept(s).

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SUPPORTING STATEMEN	NΤ	4E	ΓFA	Δ	ST	S	LIN	B.	n	P	IÞ	ì.	
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itles, restrictions, and course descriptions of all directed study courses are being modified to: 1) reduce the total number of course fered, and 2) specify the appropriate course based on the student's level. Under the proposed change, 490 will be restricted to indergraduate student, 590 to Masters students, 801 to first-year doctoral pre-candidates, and 900 to pre-candidates who have par the Qualifying Exam.	ssed	
nis course has been on the books and not changed since 1968. Students no longer elect IOE 690 or 790.	•	
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	······	
e any special resources or facilities required for this course?		
Detail the Special requirements		
	••••	
	••••	

College Curriculum Committee, 1420 Lurie Engineering Center Building

Form Number

#### Action Requested

○ New Course

Modification of Existing Course

O 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 Deletions - A & C completely A. CURRENT LISTING B. **REQUESTED LISTING** Home Department Div# Course Number Home Department Div# Course Number IOF 272 801 Cross Listed Course Information Cross Listed Course Information Course Title Course Title Directed Research First-Year Doctoral Directed Research Time Sched Time Sched TITLE TITLE First Year Doc Dir Res Max = 19 Spaces Max = 19 Spaces ABBRE-ABBRE-Transcript Max = 20 Spaces VIATION Transcript VIATION FirstYear Doc Dir Res Max = 20 Spaces Course Description Course Description for Official Publication (Max = 50 words) Directed research on a topic of mutual interest to the student and the Directed research on a topic of mutual interest to the student and the instructor. This course complements IOE 800, First-Year Doctoral instructor. Student(s) must register for the section umber of the Seminar. Research presented in IOE 802. instructor/advisor. PROGRAM OUTCOMES: **PROGRAM OUTCOMES:** ]a □b □c □d □e □f □g □h □i □i □k a b c d e f g h i j k O Degree Requirement O Free Elective O Core Course O Tech Elective Degree Requirements O Degree Requirement O Core Course O Free Elective O Tech Elective Prerequisites IOE 800; concurrent with IOE 802; mandatory satisfactory/unsatisfactory Prerequisites (OE Ph.D. Pre-candidate, Permission of Instructor. ○ Enforced ○ Advised ○ Enforced Advised Credit 1-3 credits per election Restrictions Restrictions Level of Credit Level of Credit Contact Credit Hours Credit Hours Contact ☐ Ugrad or Non-Rickhm Grad ☐ All Credit types Undergrad only Hrs/Wk Undergrad only Ugrad or Non-Rickhm Grad Rackham Grad Min Max ☐ Rackham Grad
☐ Non-Rckhm Grad
☐ Ugrad or Rckhm Grad Hrs/Wk 14 ☐ All Credit types ☐ Rickhm Grad w/add'l Work Non-Rokhm Grad ☐ Rickhm Grad w/add1 Work Number 1 \_1\_\_ 3 Ugrad or Rickhm Grad of Wks of Wks Repeatability (Indi Research, Dir. Study, Dissertation: Printing Information (Optional) ☑ Print the course in the Bulletin
 ☑ Print the course in the Time Schedule Is this course repeatable? • Yes • No Maximum Hours? Maximum Times? Can it be repeated in the same term? • Yes O No C Lec
C Rec
Sem
C Lab
Dis
Ind
Other Class 📕 I 📕 II 🔳 IIIa 📕 IIIb 📕 III Terms & Half term 🗖 1st ☐ Lec☐ Rec☐ Sem☐ Lab☐ Dis Grading Type(s) Location ☐ A-E ☐ CR/NC ☑ S/U ☐ P/F ☐ Y Offering Yearly Alter Years Even Years Odd Years Ann Arbor Biological Station Camp Davis Cognizant Faculty Monroe Keyserling Title Professor Extension ☐ Other Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty Approval Submitted By: Home Dept. Cross-listed Dept ☐ Curriculum Comm. Name, Signature & Department Home Dept. ☐ Faculty Cross-listed Dept(s). □ Rackham □ Cross listed Unit 1 Cross listed Unit 2

## Form Number

SUPPORTING STATEMENT		
This is a modification of course title and description to reflect current IQE	E.Ph.D. program practices.	
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		***************************************
Are any special resources or facilities required for this course?	☐ Yes ⊠ No	
Detail the Special requirements		
***************************************		
		***************************************

College Curriculum Committee, 1420 Lurie Engineering Center Building

Form Number
1293

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

	A. CI	URRENT LISTING	Ì			B. RI	EQUESTED LISTI	NG		
	Home Depa	urtment		Div#	Course Number	Home Dep	artment		Div #	Course Number
Ш	IOE			272	916					
	Cross Listed	Course Information				Cross Listed	Course Information			
	Course Title Profession	onal Thesis Projec	t			Course Title	···			<del></del>
	TITLE	Time Sched Max = 19 Spaces	Prof Thesis P	roj		TITLE	Time Sched			
	ABBRE- VIATION	Transcript Max = 20 Spaces	Prof Thesis P	roj		ABBRE- VIATION	Max = 19 Spaces Transcript May 20 Spaces			
	Course Desc	· · · · · · · · · · · · · · · · · · ·	<u> </u>			Course Descr	Max = 20 Spaces ription for Official Publication	(Max = 50 words)		
		GRAM OUTCOME b	is;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	hi	jk		BRAM OUTCOME	S:  e	h □i	
	Degree Req	Degree Core Co			ner	Prerequisites	quirements O Degree R O Core Cou	Requirement		**
믬	Credit	○ Enforced ○ Advised		<del></del>		Credit	○ Enforced ○ Advise	kd		
ш	Restrictions Level of Cree	dia			0-1-1	Restrictions  Level of Cree	alle "			<del>,</del>
	Undergrad Rackham Non-Rckhi	lonly ☐ Ugrad or N Grad ☐ All Credit t m Grad ☐ Rckhm Gi	lon-Rokhm Grad ypes rad w/addī Work	Credit Hours Min Max arr arr	Contact Hrs/Wkarr  Number of Wksarr	Undergrad Rackham ( Non-Rckhr	only Ugrad or N Grad All Credit ty n Grad Rokhm Gr	lon-Rokhm Grad ypes ad w/add1 Work	Credit Hours Min Max	Contact Hrs/Wk Number of Wks
C.	Is this cours Maximum	peatability (Indi Research, it se repeatable? • Yes ( in Hours? Maxin e repeated in the same term	O No mum Times?			Printing Ir	formation Print the co	ourse in the Bulletin ourse in the Time Schedi	ale	
		Lec Section	Lec Gradin		ation	Freq. of	t 📰 II 📰 tila 📰 itib			ulfterm ☐ 1st ☐ 2nd
		Rec Sem Lab Olis Olis Olis	Sern A-E Lab CR/N Dis S/U Ind P/F Other Y	C ⊠A ⊟Bi	nn Arbor ological Station amp Davis dension	Offering Cognizant Face	Yearly ☐ Alter Years ☐  withy Monro  Attach nomination if Cogniza	e Keyserling	Title Profes	SOT
_	Approval						ubmitted By: Home Dep	ot. Crose listed Dept.	<b>&gt;</b>	
Е	J Curricult	ım Comm.				Name, Signature Home Dej				
		m sted Unit 1 — sted Unit 2 —				Cross-listed De	pt(s).			119

SUPPORTING STATEMENT	
This course needs to be deleted because the P.E. degree is no longer support	rted by the IOE Department.
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	***************************************
	***************************************
Are any special resources or facilities required for this course?	☐ Yes ⊠ No
Datail the Cassial assuing and	
Detail the Special requirements	

College Curriculum Committee, 1420 Lurie Engineering Center Building

Form Numbe
1303

#### Action Requested

○ New Course⑥ 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

					A & C comple		, D a O complete	Eff	ective <u>Fall</u>	2004		
	A. CI	URRENT LISTIN	NG			B. <b>R</b> i	EQUESTED LIST	ΓING				
	Home Depa	artment		Div #	Course Number	Home Dec			Div #	Course Number		
						IOE			272	990		
	Cross Listed	Course Information				Conn Listari	Daving Later was time					
						Cross Listed	Course Information					
х	Course Title					Course Title						
	Dissertat	tion/Precandidat	e				ion Research: Pr	e-Candidate				
	TITLE ABBRE-	Time Sched Max ≠ 19 Spaces	Diss/Precand		,	TITLE ABBRE-	Time Sched Max = 19 Spaces	Diss Pre-Can	didate			
х	VIATION  Course Desc	Transcript Max = 20 Spaces	Diss/Precand			VIATION	Transcript Max = 20 Spaces	Diss Pre-Cand	didate 			
	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 tull-term candidacy enrollment.					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 tulf-term candidacy enrollment.						
ļ		TRAM OUTCOM					FAM OUTCOM					
-	Degree Req	b c d	ee Requirement O Free	Flective O Of	i ∐j ∐k her	Degree Rec	b _ c _ d _	Requirement O Free E	∐h ∐i Elective <b>O</b> Other	□j □k		
		O Core	Course O Tech	Elective			O Core Co	ourse O Tech i	Elective			
Х		Permission of Depart  Enforced Advis		·			Completion of IOE Qualif	iying Exam and Permissionsed	on of Instructor			
	Credit Restrictions					Credit Restrictions	I, II, III (2-8 credits); IIIa ,	IIIb (1-4 credits)				
ĺ	Level of Cred			Credit Hours	Contact	Level of Cred	dit		Credit Hours	Contact		
	☐ Undergrad ☐ Rackham (		or Non-Rickhm Grad fit types	Min Max	Hrs/Wk	Undergrad  ☐ Rackham (		Non-Rokhm Grad	Min Max	Hrs/Wk arr		
 	Non-Rickhr □ Ugrad or R	m Grad	Grad w/add'l Work		Number of Wks	☐ Non-Rckhn☐ Ugrad or R	n Grad 🔲 Fickhm 🤄	Grad w/add1 Work	2 8	Number of Wks arr		
C.	Is this cours Maximum	e repeatable? • Yes	aximum Times?				formation Print the Print the		dule			
—	Class _	Graded	O Lec Gradin			Terms &	I 🔳 II 🔳 IIIa 📕 IIIb	<b>—</b> III		alf term 🔲 1st		
-	.,,,,,,	Lec Section Rec Sem	O Rec O Sem	Lo	cation nn Arbor	Freq. of	Yearly Alter Years	_		□ 2nd		
		Lab Dis Ind	O Dis ⊠ S/U ⊙ Indi □ P/F	□ Bi	iological Station amp Davis ktension	Cognizant Fact Member:	ulty Mon	roe Keyserling	Title Profe	ssor		
		Other	○ Other □ ٢		now (OfUI)	Grad Course: A	ttach nomination if Cogniz	zant Faculty is not a regu	lar graduate faculty			
	Approval	ım Comm					ubmitted By: Home De	ept. Cross-listed Der	ot.			
		ım Comm				Name, Signature Home Dep	/>		1			
	Faculty	-	*	<del></del>		Cross-listed De						
	Rackhan					.,	-					
片		ted Unit 1       — ted Unit 2        _		<del></del>			***************************************			******************		
٦	VI 033 IIS						*****************		***************************************	12		

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Form	Nu	mbei

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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 passe the Qualifying Exam.
Are any special resources or facilities required for this course?
Detail the Special requirements

College Curriculum Committee, 1420 Lurie Engineering Center Building

Form Number 1304

#### Action Requested

○ New Course⑥ 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

				- A & C complet		, D & O complete	<b>Ef</b> i	fective <u>Fall</u>	2004
A. C	URRENT LISTIN	IG			B. RI	EQUESTED LIS	TING		
Home Depa	artment		Div #	Course Number	Home Dep	artment	-	Div # 272	Course Numbe
Cross Listed	Course Information					Course Information		212	990
Course Title Disserta	tion/Candidate				Course Title Dissertat	ion Research: Ca	andidate		
TITLE	Time Sched Max = 19 Spaces	Diss/Cand			TITLE	Time Sched Max = 19 Spaces	Dissertation 0	Cand	
ABBRE- VIATION	Transcript Max = 20 Spaces	Diss/Cand			ABBRE- VIATION	Transcript Max = 20 Spaces	Dissertation C	Cand	
admitted is, the fir	for dissertation value of the candidate standard examinately enrollment.	itus. The defen	se of the di	ssertation, that	Dissertat to Candid instructor	iption for Official Publication research by a dacy. Student m /advisor. The d nination) must be nt.	a doctoral studer nust register for the dis	the section r ssertation (e	umber of the .g., the final
		e f g	h DElective O	i j k	PROG		_e	h i	jk
X Prerequisites	O Core		h Elective	fidate	Prerequisites	O Core C Graduate School authori	ourse O Tech	Elective	
Credit	○ Enforced ◆ Advise					○ Enforced ⑥ Advi	sed	t doctoral candidat	e and P.I.
Restrictions Level of Cre	-414			T -	Restrictions		io (4 creans)		
Undergrad Rackham Non-Rekh	donly ☐ Ugrad o Grad ☐ All Cred m Grad ☐ Rckhm	r Non-Rokhm Grad it types Grad w/addf Work	Credit Hours Min Max	Contact Hrs/Wk Number of Wks	Level of Cred  ☐ Undergrad ☐ Rackham G ☐ Non-Rickhm ☐ Ugrad or Re	only Ugrad or Grad Ali Credi n Grad Rockhm	r Non-Rickhm Grad t types Grad w/add'l Work	Credit Hours Min Max 4 8	Number
C. Re Is this cours Maximum	ppeatability (Indi Research se repeatable? • Yes	O No eximum Times?	<u> </u>		Printing In	formation		edule	of Wks14
Class Type(s)	Lec Section	○ Lec Gradir ○ Rec ○ Sem □ A-E	Lo	cation	Freq. of	I ■ II ■ IIIa ■ IIIb	_		lalf term ☐ 1st ☐ 2nd
	Lab Dis	Cab         CR/N           Dis         S/U           Ind         P/F           Other         Y		nn Arbor iological Station amp Davis xtension	Cognizant Facu Member:	Mor	nroe Keyserling	Title Profe	essor
	<del></del> -				Grad Course: At	ttach nomination if Cogni	zant Faculty is not a regu	ılar graduate faculi	у
Approval  Curriculu	ım Comm.				Su Name, Signature	abmitted By: Home D	en Cross-listed De	pt.	
☐ Faculty	_	·	· · · · · · · · · · · · · · · · · · ·		Home Dep Cross-listed Dep	ot. <u>84</u>		<u> </u>	
☐ Cross lis	ted Unit 1 -						***************************************		12:

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offered, and 2) specify the appropriate course based on the student undergraduate student, 590 to Masters students, 801 to first-year do	doctoral pre-candidates, and 900 to pre-candidates who have passed
he Qualifying Exam.	
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are any special resources or facilities required for this course	
Detail the Special requirements	

P. 02

FAX NO.

# THE UNIVERSITY OF MICHIGAN -- COLLEGE OF ENGINEERING Course Approval Request

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Numbe 1337

Action Requested

O New Course

Modification of Existing Course

Course

Complete the following sections: New Courses - B & C completely

Modifications - A modified Information, B & C completely

Date 2/19/2004

A. CURRENT LISTING	Deletions - A & C cor	Topletely Effective Winter 200						
Home Doportmora MFG	0N # Course Num 275 503	riomo Department						
Cross Ushed Cour: : Information OMS	091 703	MFG Course M 2/3 503  Cross Dated Course Information						
Course Tille  7/TLE ARBRE ARBRE	4.6	Course Title  Manufacturing Project  TITLE Time Sched						
VIATION Transcript Max = 20 Spaces  Course Description		Manufacturing Project  VIATION  Transcipil  Max = 30 Spaces  MFG Project						
Core County Core County Core County Core Core Core Core Core Core Core Core		Course Description for Official Publication (Maxx - 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         k						
Undergrad and Al Credit types Rechitate Grad Rechitate Grad Rechitate Grad Uprad or Rechitate Grad Uprad or Nor-Rehitat Grad Uprad or Nor-Rehitat Grad Rechitate Grad Rechitate Grad Rechitate Grad Rechitate Grad Rechitate	Credit Hours Contact Min Max Hardvik  Number of Wits	Undergrad only  If Stackham Grad  I Ugrad or Richem Grad  Ugrad or Ron-Richem Grad  Ugrad or Non-Richem Grad  Ugrad or Non-Richem Grad  Ugrad or Non-Richem Grad						
Repeatability (Indi Resourch, Dir. Study, Dissorbitor) Is this course repeatable? O Yes O No Musimum Hours? Maximum Times? Cru it ha repeated in the same term? O Yes O No		Privating Information 19 Print the course in the Bulletin (Optional) 19 Print the course in the Tune Schoolde						
II Close		Tenns 4 图 1 图 1 回 1 日 1 日 1 日 1 日 1 日 1 日 1 日 1 日 1 日						
Type(s)   Lec   Grades   O Loc   Grading		Offering Yearly Di Ator Years Di Even Years Di Cod Years  Cognizant Faculty S Jack Hu Tille Professor.						
Then O Sem Bi A E C C C C C C C C C C C C C C C C C C	Location  Ann Alber  Globalcal Station  Camp Davis  Estension	Offering Yestiy 13 Ator Years 15 Even Years 15 Odd Yests Cognizant Faculty						

	***************************************
	Form Number
	1337
	1337
SUPPORTING STATEMENT	
The course was modified from a non-graded (S/U) to graded (A-E) so	ale. The course must be un-crosslisted due to the difference
petween the Business School Grading scale (Excellent- Fail) and the	College of Engineering, grading scale (A-E). The grades car
e converted from the A-E grading scale to Excellent - Fail grading so	cale
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	***************************************
re any special resources or facilities required for this course?	☐ Yes ☐ No
	Lifes Ling
Detail the Special requirements	
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☐ Cross listed Unit 2

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number 1340

#### Action Requested

New CourseModification of Existing CourseDeletion 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

	A COMPLETE CONTRACTOR AND A CONTRACTOR A	· _	
	A. CURRENT LISTING	B. REQUESTED LISTING	
	Home Department Div # Course Number Materials Science & Engineering 281 242	Home Department MATSCIE	Div# Course Number 281 242
	Cross Listed Course Information	Cross Listed Course Information	
	Course Title	Course Title Physics of Materials	-
	TITLE ABBRE- Time Sched Max = 19 Spaces	TITLE Time Sched Physics of Matls.	····
	VIATION Transcript Max = 20 Spaces	ABBRE- VIATION Transcript Max = 20 Spaces Phys of Matis	
	Course Description	Course Description for Official Publication (Max = 50 words) Basic principles and applications of solid state Mathematical and physical description of class mechanics, crystallography and diffraction. Ap including band structure, bonding and physical	sical and quantum oplications to solids,
	PROGRAM OUTCOMES:  a b c d e f g h i j k  Degree Requirements O Tech Elective Octore Course O Free Elective	PROGRAM OUTCOMES:    X   a   X   b     c     d   X   e     f     g     h	为i则是k
Х	Prerequisites Preceded or accompanied by Physics 240, Math 216.  ○ Enforced ⊙ Advised	Prerequisites Physics 240 and preceded or accompanied by Math 216.  © Enforced © Advised	
	Credit Restrictions	Credit Restrictions	
	Level of Credit  Undergrad only Rackham Grad Rockham Grad Ugrad or Non-Rockham Grad	Level of Credit  Undergrad only  Rakham Grad  Non-Rekhm Grad  Ugrad or Rokhm Grad  Ugrad or Non-Rekhm Grad  Ugrad or Non-Rekhm Grad  4	
C.	Repeatability (Indi Research, Dir. Study, Dissertation:  Is this course repeatable? O Yes O No  Maximum Hours? Maximum Times?  Can it be repeated in the same term? O Yes O No	Printing Information (Optional) Print the course in the Bulletin	
	Class   Type(s)   X   Lec   Section   O   Rec   Rec   Section   O   Sem   X   A-E   CR/NC   X   Ann Arbor	Terms &	Haif term 1st 2nd
	□ Lab	Cognizant Faculty R. Goldman Temper: S. Yalisove	Asst. Professor Assoc. Professor
		Grad Course: Attach nomination if Cognizant Faculty is not a regular gradu	agulty
	Curriculum Comm.  Faculty	Submitted By: ■ Home Dept. □ Cross-listed Dept.  Name, Signature & Department  Home Dept. John W. Halloran, Dept. Chair  Cross-listed Dept(s).	
Ē	Rackham Cross listed Unit 1 Cross listed Unit 2		127

Form	Number
1340	)

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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
Physics 240 and preceded or accompanied by Math 216" to better reflect the background
knowledge and skills required for this course.
······································
Are any special resources or facilities required for this course?
The day special resources of racinities required for this course:
Detail the Special requirements
•

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number 1345

#### Action Requested

New CourseModification of Existing CourseDeletion of Course

Complete the following sections:

New Courses - B & C completely

Modifications - A modified information, B & C completely

Date 2/23/2004

	Deletions - A & C complet		i, b & C completely	Effe.	ctive <u>Fall</u>	2004
	A. CURRENT LISTING	_	EQUESTED LIS	STING		
	Home Department Div # Course Number	Home De		STING	Div#	Course Number
	Materials Science & Engineering 281 330	MATSCII			281	330
	Cross Listed Course Information	Cross Listed	Course Information			<del></del>
		:				
	Course Title	Cause Title				
Ш	Course Title	Course Title Thermod	ynamics of Materi	als		
	TITLE Time Sched	TITLE	Time Sched	Thermo of Mat	le	
	ABBRE- VIATION Transcript	ABBRE-	Max = 19 Spaces Transcript			
_	Max = 20 Spaces	VIATION	Max = 20 Spaces	Thermo of Mat	IS 	
Ш	Course Description		ription for Official Publication S of thermodynami		ne og u op oor	Appliantions
			and liquid materials			
		reaction	s. Phase diagrams	. Ellingham, Po	urbaix and	
			s. Defects in solid	s. Interfaces. S	tatistical	
		tnermod	ynamics.			
;						
	PROGRAM OUTCOMES:	P.200	244 20722			
	□ ROGRAM OBICOMES:   □ a □ b □ c □ d □ e □ f □ g □ h □ i □ j □ k	PROG   ⊠ a   ⊠	RAM OUTCOM b □c □d 🌣		<b>□ 6</b> ⊠:	
	Degree Requirements			Quirement O Tech Ele	□h ⊠i	M J M K
	O Core Course O Other Free Elective	200.00	O Core Cour O Free Elect	se O Other	Clive	
х	Prerequisites Chem 210, Phys 140/141, Math 215 or Math 285, and prec. or accom. by MSE 350 O Enforced O Advised	Prerequisites	Chem 130 or 210, Phys 14 © Enforced © Advised	0/141, Math 215, and M	SE 220 or 250.	
	Credit Restrictions	Credit Restrictions				
	Level of Credit Credit Credit Hours Contact	Level of Cr			Credit Hours	Contact
	□ Undergrad only □ All Credit types □ Rickham Grad □ Rackham Grad □ Rockham Grad w/add¹) Work ■ Min Max □ Number	□ Rackham	Grad □ Rckhm	dit types Grad w/add'l Work	Min Max	Hrs/Wk 4
	☐ Non-Hocknin Grad ☐ Ugrad or Richtin Grad ☐ Ugrad or Non-Richtin Grad ☐ Ugrad or Non-Richtin Grad	□ Non-Rokhr □ Ugrad or F □ Ugrad or N	n Grad Ickhm Grad Ion-Rickhm Grad		4 4	Number of Wks 14
C.	Repeatability (Indi Research, Dir. Study, Dissertation:	Printing In	formation 🗵 Print the co	urse in the Butletin		1
~·	Is this course repeatable? O Yes O No Maximum Hours? Maximum Times?		(Optional) ⊠ Print the co	urse in the Time Schedu	ıle	
	Can it be repeated in the same term? O Yes O No					
	Class Graded © Lec Grading		II O II O IIIa O IIIb I	<b>3</b> III	Н	alf term 1 1st
_	Class	Freq. of Offering	Yearly 🗆 Alter Years 🗖	Even Years 🗖 Odd Y	ears	<b>™</b> du
	☐ Lab ☐ S/U ☐ Biological Station☐ Dis ☐ Olid ☐ P/F ☐ Carmin Davis	Cognizant Fac		Gibala	Title Profe	
	☐ Ind ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Member:		Martin ki-Millunchick	Profe Asst.	ssor Professor
		Grad Course:	Attach nomination if Cognizar	nt Faculty is not a regula	r graduate faculty	·
_	Approval		ubmitted By: Home Dept	. Cross-listed Dept.	1/1	
L	Curriculum Comm.	Name, Signature Home De	1.5. 141 14.14	n, Dept. Chair	11/1-	
	Faculty ————————————————————————————————————	Cross-listed De			1	<del>"</del>
	Rackham					
	Cross listed Unit 1		***************************************			129
	Cross listed Unit 2		*****		******************	147

Form	Number
1345	

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MSE requests that the prerequisites for this course be changed from " advised" to "enforced,"
<u>as now allowed by the new policy from the Registrar's Office. Furthermore, the Undergraduate</u>
Committee of MSE recommends that the current prerequisite requirement be changed to
"Chem 130 or 210, Phys 140/141, Math 215, 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?
The any special resources of facilities required for this course:
Detail the Special requirements

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number 1346

#### Action Requested

New CourseModification of Existing CourseDeletion 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

		Deletions - A & C comp		n, b & C complete	Effe	ective Fall	2004		
	A. CURRENT LISTING		•	REQUESTED L	ISTING				
	Home Department	Div# Course Number		<del></del>		Div#	Course Number		
	Materials Science & Engineering	281 335	MATSCI	E		281	335		
	Cross Listed Course Information		Cross Lister	d Course Information					
	Course Title		Course Title	-					
			Kinetics	and Transport in I	Materials Engine	ering			
	TITLE ABBRE- VIATION Transcript Time Sched Max = 19 Spaces Transcript		TITLE ABBRE-	Time Sched Max = 19 Spaces	Kin. and Tran	sport			
	VIATION Transcript Max = 20 Spaces		VIATION	Transcript Max = 20 Spaces	Kin & Transp				
	Course Description		Course Description for Official Publication (Max = 50 words)  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.  Introduction to radiative heat transfer. Empirical approaches to and dimensional analysis of complex transport problems including convection, turbulence, and non-Newtonian flow.						
	PROGRAM OUTCOMES:		PROGRAM OUTCOMES:						
	Degree Requirements  Degree Requirement  Degree Requirement  O Core Course  O Other	Elective	Degree Requirements						
х	O Free Elective Prerequisites Math 216 and MSE 220 or 250		Prerequisites Math 215 and 216, and MSE 220 or 250.						
	○ Enforced ○ Advised	<del></del>		⊕ Enforced ○ Advised					
	Credit Restrictions		Credit Restrictions						
	Level of Credit  Undergrad only All Credit types Rokham Grad Rokhm Grad w/add'l Work Non-Rokhm Grad Ugrad or Rokhm Grad Ugrad or Non-Rokhm Grad	Credit Hours Contact Min Max Hrs/Wk  Number of Wks		only ☐ Alf Cre	edit types n Grad w/add'l Work	Credit Hours Min Max 4 4	Contact Hrs/Wk 4  Number of Wks 14		
C.	Repeatability (Indi Research, Dir. Study, Dissertation is this course repeatable? O Yes O No Maximum Hours? Maximum Times?  Can it be repeated in the same term? O Yes O No		Printing in	formation ⊠ Print the α (Optional) ⊠ Print the α	ourse in the Bulletin ourse in the Time Sched	iule	•		
	Class   X   Lec   Graded   ○ Lec   Gradin	Location	Freq. of Offering	I Maril □ IIIa □ IIIb Vearly □ Alter Years □	Even Years  Odd \		Haiff term ☐ 1st ☐ 2nd		
	□ Dis □ Dis □ 9/F □ Ind □ P/F □ Other □ Y	Camp Davis Extension	Cognizant Fac Member: Grad Course:	F. Filisko	M. Falk p and T. Pollock . Kieffer ant Faculty is not a regul	Asso	essors oc. Professor		
,	Approval		S	ubmitted By: Home Dep	t. Cross-listed Dept	1 //	//		
	Curriculum Comm.		Name, Signatur Horne De	e & Department		( ) //N			
Γ	Faculty ————		<ul> <li>Cross-listed De</li> </ul>			41			
	] Rackham			r 1-1'		1 .			
	Cross listed Unit 1		-	******************************			***************************************		
Ę	Cross listed Unit 2		<del>-</del>	***************************************		*****************	131		

Form	Number
1346	

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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?
The any special resources of facilities required for this course?
Detail the Special requirements