

**The University of Michigan
College of Engineering
Curriculum Committee**

Agenda

December 17, 2002

1:30-3:30 p.m.

GM ROOM

Fourth Floor Lurie Engineering Center

1. Approval of Minutes from November 19, 2002 Meeting
2. Discussion of Expanded CC Authority When Deciding College-Wide Curriculum Issues
3. Science Liaison Experience – Presentation by Phil Savage
4. Psychology Sequencing – Discussion
5. HU/SS Requirements Fulfilled from Non LS&A School and Colleges
6. Report on LS&A Curriculum Committee Meetings – Jeanne Murabito
7. Request for Change in Chem E Biology/Life Science Requirement – Susan Montgomery
8. Course Approval Forms

**University of Michigan
College of Engineering
Curriculum Committee Meeting
Tuesday, November 19, 2002
1:30-3:00 p.m.
Lurie Engineering Center GM Room
Minutes**

Armin Troesch called the meeting to order at 1:45 p.m.

Members Present: A. Troesch, E. Chan, V. Chung, J. Fessler, P. Friedmann, W. Hansen, G. Herrin, J. Holloway, G. Hulbert, S. Montgomery, B. Noble, H. Peng, R. Robertson, P. Samson, S. Takayama

Members Absent: S. Pang

Guests: Henia Kamil, Nik Kapodes

The minutes of the last meeting were approved

Math Liaison Experience – Nik Katapodes

Nik Katapodes talked about his experience serving as math liaison for 5 years. He said having math liaisons did accomplish a few good things in ABET 2000—good remarks from ABET re: communication with the Math department. Labs and manuals for Math 215/216 were revised and they created an effective Power Point presentation.

Once the funding ended the presentations ended. Then a GSI was hired with grant money to continue the presentations. Nik stated that this position is vital.

Susan Montgomery suggested that the liaison could serve in the role of an ombudsperson.

Nik Kapopodes said that students aren't taught mechanics. Susan Montgomery said that the next challenge Nik added that on the other end – the Honor's course are very good, but the average student ends up being poorly instructed. Gary Herrin noted that there is a problem with retention in Honor's courses. It was noted that the best teachers are in the Honor's courses, and the regular courses are service courses.

Nik stated that the math department is receptive to working with the College of Engineering.

Gary Herrin asked if anyone has a joint appointment. The answer was no, but Nik Kapodes said that is a good idea. He stated that math 471 is a very good course, but math 371 is not as good, and math 450 needs major changes.

Armin Troesch said there should be follow up on this. Jeanne Murabito said that she wrote a draft but wants to incorporate Nik's comments into it.

It was decided to have a committee to work on this with Gary Herrin, James Holloway, and Susan Montgomery. Jeanne Murabito will call the meeting.

Potential Changes in ME 230, ME 300 – Greg Hulbert

Greg Hulbert gave a presentation on the sequence of courses.

This proposal will come to the CoE Curriculum Committee in January.

Twelve faculty teach courses – students say there is no consistency. This has an impact on the students who go on to graduate school. Too much information in too little a period of time.

Recommendation – to back to 3 separate required 3-credit classes.

Will Hansen Presentation on CEE Concentrations—Revisited

Will Hansen stated that he went back to his department and they added one more course for each subject area. 12 hours or 4 courses.

Armin Troesch asked if these courses are offered every year. Will said that CEE 521 and 527 are offered alternate even years. It was asked if one of those could switch to odd years.

Armin Troesch asked for a motion to approve the CEE Concentrations Proposal.

Discussion: James Holloway asked for the definition of **Geo Technical : Soil Mechanics**.

Motion carried (approved).

Course Approvals

Armin Troesch called for a motion to approve the following course modifications. This was moved and seconded:

Motion Carried (approved)

CHEM E 596	Modification – Changing Title; Changing Description
EECS 311	Modification – Changing Pre-Reqs
IOE 517	Deletion
ME 561	Modification – Removing AERO cross-listing; Changing Pre-Reqs

Adjournment: Motion to adjourn was made and seconded
Motion carried (approved)

Next Meeting

Tuesday, December 17, 2002

1:30-3:30 p.m.

GM Room-LEC

Wolfe, Judy

To: Armin Walter Troesch
Subject: Request for Rules Change (fwd)

----- Forwarded message -----

Date: Tue, 10 Dec 2002 11:37:10 -0500
From: "Jenkins, Janice" <jenkins@engin.umich.edu>
To: James Wilkes <wilkes@umich.edu>
Cc: "Director, Stephen W." <director@umich.edu>, troesch@umich.edu,
"Sweigert, Martha" <sweigert@engin.umich.edu>
Subject: RE: Request for Rules Change

As you know, I'm sure, a quorum is necessary to transact business. I'm not sure you can 'suspend rules' to override the quorum requirement. If you want me to look this up I will, but I'd suggest you forget it. If a motion was passed during this 'suspension' and there was no challenge, you're probably clear. Bottom line (cynically) is that without a challenge, you can probably do anything you want to. Notice, I said without a challenge.

Robert says 'instead of a formal motion to suspend the rules, it is more usual to ask for general consent to do business...' and if no one objects, the chair directs 'the member to proceed just as if the rules had been suspended.' I trust that was the case, i.e., agreement by the body.

As far as the future is concerned, the issue of a quorum is paramount. I'm disinclined (for the reasons you mention) to endorse a change of the quorum number, but given the meager attendance by the faculty, perhaps it is a necessity. Typically, worst case scenario, is 10% of membership (endorsed by Robert). Given past participation, maybe that's the number. That's sad (my editorial comment), but maybe it's the truth.

It will require a Bylaws amendment for sure. (I'm just giving top of the head advice here. My COE Bylaws are in Ann Arbor and I am not.) But quorum requirements are typically Bylaws rules. Yet COE Bylaws are weird and different from most I'm acquainted with. Hey, they even violate the Regents' Bylaws, for christ sake. We just do it our own way, the university be damned. Our disagreement with university rules is so gross, I can't believe we get by with it. Sorry, I'm a rule-based person. Maybe a female trait.

Remember, amendments must be publicized in advance of the meeting, and can't undergo further 'amendments' at the meeting. You can only vote on those publicized. So the proposed changes need to be crafted well in advance of the Feb meeting. I will be returning to Ann Arbor somewhat regularly next year, but probably not until mid or late January. I can probably get my secretary to send me my copy of the Bylaws if you need further advice before then.

I retire on 31 Dec 2002. Retirees can't serve as committee members. Do you know what the plan is to replace me? I think Director can do that with a simple interim appointment.

-----Original Message-----

From: James Wilkes [mailto:wilkes@umich.edu]
Sent: Tuesday, December 03, 2002 2:26 PM
To: jenkins@umich.edu
Cc: Director, Stephen W.; troesch@umich.edu
Subject: Request for Rules Change

Janice:

Sorry to trouble you near your retirement, but if you don't have time to take action yourself, would you please forward this request to your successor or another member of the Rules Committee and make sure that the wheels are actively set in motion?

You may recall that I succeeded you as the parliamentarian at the CoE faculty meetings. At such a meeting yesterday, we were challenged as to whether or not a quorum existed. It did not - we had about 35 and 60 are needed. (No members of the Rules Committee were present.) We voted to suspend the quorum requirement for that one meeting (a somewhat dubious procedure) before then voting on some items, none of which was of great importance. But one day there might be something really important, and we want to do the right thing in the event of any legal challenge.

Therefore, Dean Director and I request that the Rules Committee propose a revision to the rules in such a way that will:

1. Enable the faculty to conduct (i.e., not prohibit) business at the CoE meetings, even though there may only be 20 or 30 faculty members (or perhaps even fewer) present.

2. Still protect the faculty as a whole from something being railroaded through by a handful of members.

I have some suggestions, but would prefer that the Rules Committee take the initiative. If necessary, I would be glad to meet with the committee (except for the three weeks starting 15 January). An ideal timetable would be for the Rules Committee to have something concrete to present at the next faculty meeting - presumably in February 2003. After discussion at that meeting, a proposed rules change could then be submitted for vote by the whole faculty.

Please tell me what you can do to get this needed change implemented, with copies to:

Steve Director: director@umich.edu
Armin Troesch: troesch@umich.edu (Curriculum Committee)
Martha Sweigert: sweigert@engin.umich.edu

Many thanks, best regards, and happy retirement - I remember you telling me last year about your lovely view over Lake Michigan.

Jim Wilkes

P.S. I'm sending a blind copy of this to Martha - my e-mail only had room for two carbon copies.

To: Murabito, Jeanne
Subject: RE: Psychology Series

-----Original Message-----

From: Fichialos, Jill
Sent: Tuesday, December 03, 2002 12:05 PM
To: Herrin, Gary
Subject: RE: Psychology Series

You may want to consider dropping the requirement to 200 level courses (instead of 300). If you think about it, a 300 level course is likely to have 2 pre-requisite courses (a 100 level and a 200 level). At least that is the case with most of our 300 level courses. OR require a sequence of 3 courses. In psychology we have made an effort to have the 300 level courses geared toward students who are concentrators in psychology or who have an "advanced"/junior level knowledge of the discipline. I would assume the 200 level courses are better suited for engineering students who just want a "taste" of psychology. Hope that helps! Let me know if you have any questions!

Jill Wardle Fichialos
Student Services Associate
University of Michigan
Psychology Undergraduate Office
jillfi@umich.edu
1343 East Hall
(734) 647-3723

-----Original Message-----

From: Herrin, Gary
Sent: Monday, December 02, 2002 7:06 PM
To: Fichialos, Jill; gdherrin@caen.engin.umich.edu
Cc: Murabito, Jeanne
Subject: RE: Psychology Series

The HU/SS requirement is on pg 63 (top right hand side) of the following Engin Bulletin:

<http://www.engin.umich.edu/students/bulletin/9ugprograms.pdf>

We since many LSA courses were lowered in numbering from 300 level to 200 level it appears we (Engin) will need to revisit this rule. Perhaps you have a suggestion on how we might proceed that would meet the intent of the rule?

Gary D. Herrin, Ph.D.
Asst Dean for Undergraduate Education
1011 Lurie Engineering Center
The University of Michigan
Ann Arbor, Michigan 48109-2102

Office: 734-647-7105
Cell: 734-646-1100
FAX: 734-647-7126

-----Original Message-----

From: Fichialos, Jill

Sent: Monday, December 02, 2002 4:18 PM
To: gdherrin@caen.engin.umich.edu
Subject: Psychology Series

Hello, I need your assistance! We are seeing a lot of engineering students who have questions about the "psychology series" that is a requirement in the engineering school. Unfortunately, none of my staff or advisors know much about this requirement. The students claim that they have been referred to us by an engineering advisor. Is there any particular person we could refer these students to? One of their big concerns seem to be that they are required to take an upper level psychology class, but for most of those classes there is a 200 level course listed as a pre-requisite. Any help with this matter would be appreciated. Thanks in advance!

Jill Wardle Fichialos
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jillfi@umich.edu
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(734) 647-3723

Wolfe, Judy

Subject: Psychology Series, HU/SS requirements and more (fwd)

----- Forwarded message -----
Date: Tue, 3 Dec 2002 16:06:53 -0500
From: armin troesch <troesch@engin.umich.edu>
To: "Murabito, Jeanne" <murabito@engin.umich.edu>
Cc: troesch@engin.umich.edu
Subject: Re: Psychology Series, HU/SS requirements and more

Jeanne,

Yes, we need to put this on the agenda.

Also, the Faculty Meeting yesterday produced "interesting" results. There were the usual 25 or so interested faculty in attendance. When Steve asked for a vote to accept the minutes, it was pointed out that we did not have a quorum and thus the minutes could not be approved. The "less-than-a quorum" majority voted to waive the quorum requirements, much to the distress of several of the participants. This rule of "less-than-a quorum" majority carried over into the CC presentation, allowing for the passage of the all of the CC items brought forward for a vote. After the meeting, Steve requested that we talk to the Faculty Rules committee to see if we could DECREASE the number of issues that would be brought before the College Faculty for action. I told Steve that we, the CC, would discuss it and propose a change to the Rules Committee.

So.... the next agenda should include the formation of a proposal to INCREASE the number of actions that may be formally decided by the CC and DECREASE the number of issues that need to be brought to the full faculty for a vote.

Armin

p.s. Can we forward this to the whole CC to get the discussion process started?

On Tuesday, December 3, 2002, at 03:07 PM, Murabito, Jeanne wrote:

> Armin-
>
> I would like to add this to the agenda for the next CC meeting as a
> discussion item. What do you think?
>
> Jeanne
>
>
>
> Jeanne Murabito
> Director of Academic Support Services
> College of Engineering
> University of Michigan
> (734) 647-7098
> murabito@umich.edu
>
>
> -----Original Message-----
> From: Herrin, Gary
> Sent: Tuesday, December 03, 2002 12:13 PM
> To: Murabito, Jeanne

> Subject: FW: Psychology Series

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> Office: 734-647-7105
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> 1343 East Hall
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>

Wolfe, Judy

To: Murabito, Jeanne
Subject: RE: HU/SS question

-----Original Message-----

From: Sandy Swisher [mailto:sandys@umich.edu]
Sent: Wednesday, December 04, 2002 10:34 AM
To: Murabito, Jeanne
Subject: HU/SS question

I have a question for you. Would we have to accept the following course for humanities credit under new hu/ss rules. The reason I ask is that in the past we (ChE Department) have not allowed conversation courses. But I don't see any of the excepted designations described in #3 under the Definitions and Exceptions section of the new CoE HU/SS rules

GERMAN 306. Conversation Practice.

Instructor(s):

Prerequisites & Distribution: GERMAN 232; concurrent enrollment in a 300-level course is encouraged but not necessary. Students who have previously participated in a 400-level GERMAN conversation course may not register for GERMAN 305 or 306. (1). (Excl). Offered mandatory credit/no credit. This course does not satisfy the language requirement. May not be included in a concentration plan or minor in German. May not be repeated for credit.

Credits: (1).

Thanks
Sandy

COURSE #	CLASS	CREDIT	TYPE	CROSS LIST
	Courses Outside USA			
	ARCHITECTURE			
ARCH 212	Understanding Architecture	3	HU X	HISTART 212
	ART AND DESIGN (010)			
ARTDES 112	History of Photography	3	HU	HISTART 112
113	Introduction to the Visual Arts	4	HU X	HISTART 113
	ATMOSPHERIC, OCEANIC AND SPACE SCIENCES (241)			
AOSS 111	Introduction to Global Change II	4	SS	NRE 111, SOC 111, UC 111
	BUSINESS ADMINISTRATION (Law, History and Communication)			
LHC 412	American Business History	3	X	HIST 569
	DANCE (671)			
DANCE 260	The Art of Dance: An Introduction to American and European Dance History, Aesthetics, and Criticism	3	HU	RCHUM 260
	ENGINEERING			
ENGIN 451	Technology and Society	3	SS	MFG 451
	NATURAL RESOURCES AND ENVIRONMENT (711)			
NRE 111	Introduction to Global Change II	4	SS	AOSS 172, NRE 111, UC 111
335	Introduction to Environmental Politics: Race, Class and Gender	4	SS	AAS 322
336	Environment and Inequality	4	SS	AAS 332
375	Natural Resource Economics	3	SS X	ECON 360
	PUBLIC HEALTH			
PUBHLT H				
MCO 475	Introduction to Medical Sociology	3	SS	SOC 475
HMP 661	Economics of Health Services	3	SS X	ECON 438
	PUBLIC POLICY (396)			
PUBPOL 573	Benefit-Cost Analysis	4	SS X	ECON 573
	EDUCATION			
EDUC 440	Teaching English	3	HU X	ENGL 489
	MANUFACTURING (Engineering)			
MFG 451	Technology and Society	3	SS	ENGIN 451

COURSE	CLASS	CREDIT	TYPE	CROSS LIST
	NURSING			
NURS 220	Perspectives in Women's Health	3	SS	W/S 220

Chemical Engineering Department
University of Michigan

Date: December 12, 2002
To: College Curriculum Committee
From: Susan Montgomery, Chair, ChE Undergraduate Committee
Re.: Biology / life science requirement change

The Chemical Engineering department proposes a change to the definition of our undergraduate program's biology/life elective. The current description reads:

"Biology/Life science elective currently fulfilled by Biol. 162 (5 cr), with 2 credits going to free electives. Elective waived if bio-focused technical elective chosen. See department for list of eligible courses."

When working to formulate the list of courses that would allow a student to waive the bio/life science elective, we realized that our goal for this requirement was very specific, focusing on cell biology, and few technical elective courses would be appropriate to waive it. In addition, we felt that it would not be in the best interest of the students to reduce the total number of technical electives. For this reason, we'd like to change the description to read:

"See department for list of courses that satisfy the Biology/Life science elective."

For your information, the current list of courses that satisfy the elective include:

- Biology 162 – Introductory Biology – 5 credits, 2 go to free electives
- Biochemistry 415 (medical school) – Requires 2 semesters of organic chemistry – 3 credits.
- Biology 207 – Introductory microbiology – Officially requires Biology 162, students could take only with my permission, to ensure they have had appropriate high school biology background. For students with a strong biology background (AP level), Biology 162 is too simple and not appropriate. – 4 credits, 1 goes to free electives.

COURSE APPROVAL FORMS

December 17, 2002

AERO 585	Modification – Changing Course Description; Changing Level of Credit; Changing Grading from S/U P/F to A-E
AOSS 171	Modification – Changing Home Department; Changing Title; Changing Course Description
AOSS 172	Modification – Changing Home Department; Changing Title; Changing Course Description
CHEM E 330	Modification – Changing Title
CHEM E 583	Deletion
EECS 401	Modification – Changing Pre-reqs.; Changing Credit Restrictions
EECS 425	Modification – Changing Pre-reqs.
EECS 546	Modification – Changing Terms and Frequency of Offering
IOE 633	Deletion

Course Approvals



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 11/19/2002
 Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Home Department</td> <td style="width: 10%;">Div #</td> <td style="width: 60%;">Course Number</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td colspan="3">Cross Listed Course Information</td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td colspan="3">Course Title</td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="font-size: small;">TITLE ABBRE- VIATION</td> <td style="font-size: small;">Time Sched Max = 19 Spaces Transcript Max = 20 Spaces</td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td colspan="3">Course Description</td> </tr> <tr> <td colspan="3"> <input checked="" type="checkbox"/> A series of seminars by noted speakers designed to acquaint graduate students with contemporary research and technological issues in the aerospace industry. 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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. Iain Boyd Iain Boyd, Aerospace Eng

Cross-listed Dept(s): _____

SUPPORTING STATEMENT

This course is a weekly seminar with a different speaker each week. Except for at most one internal speaker each term, the speakers will be individuals carrying out research and development activities in government, industry and university facilities outside the University of Michigan. The seminar series is designed to expose our students to a broader range of research and technology issues than can be covered in formal course and research activities within the department. The students will do a short term paper on one of the seminar topics.

It was an oversight by the Department to not recognize this as a course appropriate for upper level undergraduate students when the original paperwork was submitted.

Lined area for additional text or comments.

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

Detail the Special requirements

This course is dependent on the facilities in the Boeing Lecture Hall (1109 EXB)

Lined area for detailing special requirements.

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

Form Number
 954

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
 Deletions - A & C completely

Date 6/10/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

C. PROPOSED LISTING

X	Home Department Atmospheric, Oceanic, & Space Sciences	Div # 241	Course Number 171	Home Department Program on the	Div # 367	Course Number 110
	Gross Listed Course Information: Geology Science 377 171 Biology 328 110 SNRE 711 110 University Course 495 110			Gross Listed Course Information: Atmospheric, Oceanic, & Space Science 241 171 Geology Science 377 171 Biology 328 110 SNRE 711 110		
X	Course Title Introduction of Global Change			Course Title Introduction of Global Change: Physical Processes		
	TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Intro Global Chng I	TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Intro Global Chng I
		Transcript Max = 20 Spaces	Global Chng		Transcript Max = 20 Spaces	Global Chng
X	Course Description The course will consider the evolution of the universe, the earth and its environments, and the evolution of living organisms. Consideration will be given to fundamental processes by which organisms grow and reproduce, how they interact with their environments, and the distribution of major groups of organisms on earth.			Course Description Students learn about the evolution of the universe, Earth, our environment and our planets living organisms. Global Change I, which is part of the GC curriculum, assumes no prior science background. Homework and laboratories use computer-based systems modeling and analysis, and includes a presentation.		
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C	Repeatability (and 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			Printing Information (Optional): <input type="checkbox"/> Print the course in the Bulletin <input type="checkbox"/> Print the course in the Time Schedule		
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	Terms & Frequency of Offering: <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> Yearly			Cognizant Faculty Member: _____ Title: Professor		
	Grad Course: Attach no. _____			Home Dept. <input type="checkbox"/> Cross-listed Dept. _____		

Curriculum Comm.

Faculty

Backham

Cross listed Unit 1

Cross listed Unit 2

Submitted Name, Signature & Dept.
 Home Dept. A
 Cross-listed Dept(s) E
 S
 G
 B
 L
 Robert M. Owen, LSA Assoc. Dean (spm)

Printed Name: W. Perry Samson
 Title: Professor
 Printed Name: M. John Knott
 Title: Professor
 Printed Name: E. David Allen
 Title: Professor
 Printed Name: M. Deborah Goldberg
 Title: Professor

Form Number

954

SUPPORTING STATEMENT

The home department should move from AOSS to Environ so that scheduling is trialized, as well as other needed arrangements
UC crosslisting no longer necessary.

Are any special resources or facilities required for this course? Yes

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 6/10/2002
 Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<input checked="" type="checkbox"/>	Home Department Atmospheric, Oceanic, & Space Sciences	Div # 241	Course Number 171		Home Department Program on the Environment	Div # 367	Course Number 110		
<input checked="" type="checkbox"/>	Cross Listed Course Information Geology Science 377 171 Biology 328 110 SNRE 711 110 University Course 495 110				Cross Listed Course Information Atmospheric, Oceanic, & Space Science 241 171 Geology Science 377 171 Biology 328 110 SNRE 711 110				
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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 _____					Cognizant Faculty Member: Perry Samson Title Professor				
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					Location <input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension				
Approval <input type="checkbox"/> Curriculum Comm. _____ <input type="checkbox"/> Faculty _____ <input type="checkbox"/> Rackham _____ <input type="checkbox"/> Cross listed Unit 1 _____ <input type="checkbox"/> Cross listed Unit 2 _____					Submitted By: <input checked="" type="checkbox"/> Home Dept. <input type="checkbox"/> Cross-listed Dept. Name, Signature & Department Home Dept. AOSS/Perry Samson _____ Cross-listed Dept(s). Environ/John Knott _____ SNRE/David Allen _____ Geology/Joel Blum _____ Biology/Deborah Gutberg _____ _____ _____				



Action Requested

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

Complete the following sections:

New Courses - B & C completely
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 Deletions - A & C completely

Date 6/10/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

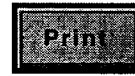
<input checked="" type="checkbox"/>	Home Department Atmospheric, Oceanic, & Space Sciences	Div # 241	Course Number 171		Home Department Program on the Environment	Div # 367	Course Number 110
<input checked="" type="checkbox"/>	Cross Listed Course Information				Cross Listed Course Information		
	Geology Science	377	171		Atmospheric, Oceanic, & Space Science	241	171
	Biology	328	110		Geology Science	377	171
	SNRE	711	110		Biology	328	110
	University Course	495	110		SNRE	711	110
<input checked="" type="checkbox"/>	Course Title Introduction of Global Change				Course Title Introduction of Global Change: Physical Processes		
	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Intro Global Chng I		TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Intro Global Chng I
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	Prerequisites <input type="radio"/> Enforced <input type="radio"/> Advised				Prerequisites <input type="radio"/> Enforced <input type="radio"/> Advised		
	Credit Restrictions				Credit Restrictions		
	Level of Credit <input type="checkbox"/> Undergrad only <input type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackhm Grad w/add'l Work <input type="checkbox"/> Non-Rackhm Grad <input type="checkbox"/> Ugrad or Rackhm Grad <input type="checkbox"/> Ugrad or Non-Rackhm Grad		Credit Hours Min Max	Contact Hrs/Wk Number of Wks		Level of Credit <input checked="" type="checkbox"/> Undergrad only <input type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackhm Grad w/add'l Work <input type="checkbox"/> Non-Rackhm Grad <input type="checkbox"/> Ugrad or Rackhm Grad <input type="checkbox"/> Ugrad or Non-Rackhm Grad	
						4	4
<input checked="" type="checkbox"/>	C. Repeatability (Indic 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				Printing Information (Optional) <input checked="" type="checkbox"/> Print the course in the Bulletin <input checked="" type="checkbox"/> Print the course in the Time Schedule		
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	Cognizant Faculty Member: <u>Perry Samson</u> Title <u>Professor</u>				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. AOSS/Perry Samson
 Cross-listed Dept(s). Environ/John Knott
SNRE/David Allen
Geology/Joel Blum
Biology/Deborah Goldberg



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 6/10/2002
 Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<input checked="" type="checkbox"/>	Home Department Atmospheric, Oceanic, & Space Sciences	Div # 241	Course Number 171		Home Department Program on the Environment	Div # 367	Course Number 110	
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	Cognizant Faculty Member: _____				Title: Professor			
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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. AOSS/Perry Samson

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Action Requested

- New Course
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Complete the following sections:
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Terms & Freq. of Offering	Half term <input type="checkbox"/> 1st <input type="checkbox"/> 2nd																																																														
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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. AOSS/Perry Samson

Cross-listed Dept(s). Environ/John Knott
SNRE/David Allen
Geology/Joel Blum
Biology/Deborah Goldberg
u.c. sociology

25



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 6/10/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<input checked="" type="checkbox"/>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Home Department</td> <td style="width: 10%;">Div #</td> <td style="width: 20%;">Course Number</td> </tr> <tr> <td>Atmospheric, Oceanic, & Space Sciences</td> <td>241</td> <td>172</td> </tr> <tr> <td colspan="3">Cross Listed Course Information</td> </tr> <tr> <td>Geology Science</td> <td>377</td> <td>172</td> </tr> <tr> <td>Biology</td> <td>328</td> <td>111</td> </tr> <tr> <td>SNRE</td> <td>711</td> <td>111</td> </tr> <tr> <td>University Course</td> <td>495</td> <td>111</td> </tr> </table>	Home Department	Div #	Course Number	Atmospheric, Oceanic, & Space Sciences	241	172	Cross Listed Course Information			Geology Science	377	172	Biology	328	111	SNRE	711	111	University Course	495	111		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Home Department</td> <td style="width: 10%;">Div #</td> <td style="width: 20%;">Course Number</td> </tr> <tr> <td>Program on the Environment</td> <td>367</td> <td>111</td> </tr> <tr> <td colspan="3">Cross Listed Course Information</td> </tr> <tr> <td>Geol Science</td> <td>377</td> <td>172</td> </tr> <tr> <td>Sociology</td> <td>482</td> <td>111</td> </tr> <tr> <td>SNRE</td> <td>711</td> <td>111</td> </tr> <tr> <td>AOSS</td> <td>241</td> <td>172</td> </tr> </table>	Home Department	Div #	Course Number	Program on the Environment	367	111	Cross Listed Course Information			Geol Science	377	172	Sociology	482	111	SNRE	711	111	AOSS	241	172
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<p>Cognizant Faculty Member:</p> _____ _____ _____		<p>Cognizant Faculty Member:</p> Mary Anne Carroll _____ _____ _____ _____																																											
<p>Approval</p>		<p>Submitted By: <input checked="" type="checkbox"/> Home Dept. <input type="checkbox"/> Cross-listed Dept.</p>																																											

Curriculum Comm. _____

Faculty _____

Rackham _____

Cross listed Unit 1 _____

Cross listed Unit 2 _____

Name, Signature & Department

Home Dept. AOSS/Perry Samson _____

Cross-listed Dept(s): Environ/John Knott _____

SNRE/David Allen _____

Geology/Joel Blum _____

Biology/Deborah Goldberg _____

D. J. ... _____



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 6/10/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<input checked="" type="checkbox"/>	Home Department Atmospheric, Oceanic, & Space Sciences	Div # 241	Course Number 172		Home Department Program on the Environment	Div # 367	Course Number 111	
	Cross Listed Course Information				Cross Listed Course Information			
	Geology Science	377	172		Geol Science	377	172	
	Biology	328	111		Sociology	482	111	
	SNRE	711	111		SNRE	711	111	
	University Course	495	111		AOSS	241	172	
<input checked="" type="checkbox"/>	Course Title Introduction to Global Change II				Course Title Introduction to Global Change II: Human Impacts			
	TITLE ABBREVIATION	Time Sched Max = 19 Spaces			TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Global Change II	
		Transcript Max = 20 Spaces				Transcript Max = 20 Spaces	Glob Chng II	
<input checked="" type="checkbox"/>	Course Description An introduction to the evolution of life and the human species on earth, with focus on problems of global change produced by recent human advances in technology and institutions.				Course Description for Official Publication (Max = 50 words) Students study the impact of human population growth on land, air, water, energy resources and biological diversity, and political and policy considerations for sustainability. Global Change II assumes no prior background and can be taken without prior enrollment in Global Change I. Homework and laboratories use computer-based spatial analysis, group discussion and presentation.			
PROGRAM OUTCOMES:				PROGRAM OUTCOMES:				
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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				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 type="radio"/> Enforced <input type="radio"/> Advised				Prerequisites None <input type="radio"/> Enforced <input checked="" type="radio"/> Advised				
Credit Restrictions				Credit Restrictions				
Level of Credit		All Credit types		Credit Hours		Contact Hrs/Wk		
<input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Non-Rackhm Grad <input type="checkbox"/> Ugrad or Rackhm Grad <input type="checkbox"/> Ugrad or Non-Rackhm Grad		<input type="checkbox"/> All Credit types <input type="checkbox"/> Rackhm Grad w/add'l Work		Min Max		Number of Wks		
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Repeatability (Indic Research, Dir. Study, Dissertation): Is this course repeatable? <input type="radio"/> Yes <input checked="" type="radio"/> No Maximum Hours? _____ Maximum Times? _____ Can it be repeated in the same term? <input type="radio"/> Yes <input checked="" type="radio"/> No				Printing Information (Optional) <input checked="" type="checkbox"/> Print the course in the Bulletin <input checked="" type="checkbox"/> Print the course in the Time Schedule				
Class Type(s) <input checked="" type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other _____				Graded Section <input type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other _____				
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				Location <input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension				
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Cognizant Faculty Member: _____				Mary Anne Carroll 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. AOSS/Perry Samson _____

Cross-listed Dept(s). Environ/John Knott _____

SNRE/David Allen.....

Geology/Joel Blum.....

Biology/Deborah Goldberg.....



Action Requested

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

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

Date 6/10/2002
 Effective Winter 2003

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<input checked="" type="checkbox"/>	Home Department Atmospheric, Oceanic, & Space Sciences	Div # 241	Course Number 172		Home Department Program on the Environment	Div # 367	Course Number 111	
	Cross Listed Course Information				Cross Listed Course Information			
	Geology Science	377	172		Geol Science	377	172	
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	SNRE	711	111		SNRE	711	111	
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<input checked="" type="checkbox"/>	Course Title Introduction to Global Change II				Course Title Introduction to Global Change II: Human Impacts			
	TITLE ABBREVIATION	Time Sched Max = 19 Spaces			TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Global Change II	
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Credit Restrictions				Credit Restrictions				
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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				Location <input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension				
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Submitted By: Home Dept. Cross-listed Dept.

Name, Signature & Department
 Home Dept. AOSS/Perry Samson

Cross-listed Dept(s). Environ/John Knott
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- Deletion of Course

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Date 6/10/2002

Effective Winter 2003

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<input checked="" type="checkbox"/>	Home Department Atmospheric, Oceanic, & Space Sciences	Div # 241	Course Number 172		Home Department Program on the Environment	Div # 367	Course Number 111	
<input checked="" type="checkbox"/>	Cross Listed Course Information Geology Science 377 172 Biology 328 111 SNRE 711 111 University Course 495 111			<input checked="" type="checkbox"/>	Cross Listed Course Information Geol Science 377 172 Sociology 482 111 SNRE 711 111 AOSS 241 172			
<input checked="" type="checkbox"/>	Course Title Introduction to Global Change II			<input checked="" type="checkbox"/>	Course Title Introduction to Global Change II: Human Impacts			
	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Transcript Max = 20 Spaces		TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Transcript Max = 20 Spaces	Global Change II Glob Chng II
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	Cognizant Faculty Member: Mary Anne Carroll 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. AOSS/Perry Samson

Cross-listed Dept(s). Environ/John Knott
 .SNRE/David Allen
 .Geology/Joel Blum
 .Biology/Deborah Goldberg



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 10/8/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<p>Home Department _____ Div # _____ Course Number _____</p> <p>Cross Listed Course Information _____</p> <p><input checked="" type="checkbox"/> Course Title Thermodynamics</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%;">Thermodynamics</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td>Thermodynamics</td> </tr> </table> <p>Course Description _____</p> <p>PROGRAM OUTCOMES: <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="checkbox"/> Degree Requirement <input type="checkbox"/> Tech Elective <input type="checkbox"/> Core Course <input type="checkbox"/> Other <input type="checkbox"/> Free Elective</p> <p>Prerequisites _____ <input type="radio"/> Enforced <input type="radio"/> Advised</p> <p>Credit Restrictions _____</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Level of Credit</td> <td style="width: 15%;">All Credit types</td> <td style="width: 15%;">Credit Hours</td> <td style="width: 15%;">Contact Hrs/Wk</td> </tr> <tr> <td><input type="checkbox"/> Undergrad only</td> <td><input type="checkbox"/> Rackhm Grad w/add'l Work</td> <td>Min _____ Max _____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Non-Rackhm Grad</td> <td></td> <td></td> <td>Number of Wks _____</td> </tr> <tr> <td><input type="checkbox"/> Ugrad or Rackhm Grad</td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Ugrad or Non-Rackhm Grad</td> <td></td> <td></td> <td></td> </tr> </table> <p>Repeatability (Indi Research, Dir. 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Prediction and correlation of physical/chemical properties of various states and aggregates.</p> <p>PROGRAM OUTCOMES: <input checked="" type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input checked="" type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input checked="" type="checkbox"/> k</p> <p>Degree Requirements <input type="checkbox"/> Degree Requirement <input type="checkbox"/> Tech Elective <input type="checkbox"/> Core Course <input type="checkbox"/> Other <input type="checkbox"/> Free Elective</p> <p>Prerequisites _____ <input type="radio"/> Enforced <input checked="" type="radio"/> Advised <i>Chem E 235 is a pre req on</i></p> <p>Credit Restrictions _____</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Level of Credit</td> <td style="width: 15%;">All Credit types</td> <td style="width: 15%;">Credit Hours</td> <td style="width: 15%;">Contact Hrs/Wk</td> </tr> <tr> <td><input checked="" type="checkbox"/> Undergrad only</td> <td><input type="checkbox"/> Rackhm Grad w/add'l Work</td> <td>Min _____ Max _____</td> <td>_____ 4</td> </tr> <tr> <td><input type="checkbox"/> Non-Rackhm Grad</td> <td></td> <td></td> <td>Number of Wks _____ 14</td> </tr> <tr> <td><input type="checkbox"/> Ugrad or Rackhm Grad</td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Ugrad or Non-Rackhm Grad</td> <td></td> <td></td> <td></td> </tr> </table> <p>Printing Information (Optional) <input checked="" type="checkbox"/> Print the course in the Bulletin <input type="checkbox"/> Print the course in the Time Schedule</p> <p>Terms & Freq. of Offering <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> IIIa <input type="checkbox"/> IIIb <input type="checkbox"/> III Half term <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input checked="" type="checkbox"/> Yearly <input type="checkbox"/> Alter Years <input type="checkbox"/> Even Years <input type="checkbox"/> Odd Years</p> <p>Cognizant Faculty Member: <u>Robert Ziff</u> Title <u>Professor</u></p> <p>Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty</p>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Chem & Eng Thermo		Transcript Max = 20 Spaces	Chem & Eng Thermo	Level of Credit	All Credit types	Credit Hours	Contact Hrs/Wk	<input checked="" type="checkbox"/> Undergrad only	<input type="checkbox"/> Rackhm Grad w/add'l Work	Min _____ Max _____	_____ 4	<input type="checkbox"/> Non-Rackhm Grad			Number of Wks _____ 14	<input type="checkbox"/> Ugrad or Rackhm Grad				<input type="checkbox"/> Ugrad or Non-Rackhm Grad			
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- Approval
- Curriculum Comm.
 - Faculty
 - Rackham
 - Cross listed Unit 1

Submitted By: Home Dept. Cross-listed Dept.
 Name, Signature & Department
 Home Dept. Ronald Larson, Chairman
 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 11/15/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Home Department Chemical Engineering</td> <td style="width: 15%;">Div # 245</td> <td style="width: 55%;">Course Number 583</td> </tr> <tr> <td colspan="3">Cross Listed Course Information Materials Science & Engineering 583 Biomedical Engineering 583</td> </tr> <tr> <td colspan="3">Course Title Biocompatibility of Materials</td> </tr> <tr> <td style="width: 15%;">TITLE ABBRE- VIATION</td> <td style="width: 15%;">Time Sched Max = 19 Spaces</td> <td>Biocompat of Mat</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td>Biocomp Mat</td> </tr> <tr> <td colspan="3">Course Description This course describes the interactions between tissue and materials, and the biologic/pathologic processes involved. 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Approval

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

Submitted By: Home Dept. Cross-listed Dept.
 Name, Signature & Department
 Home Dept. Ronald Larson Ronald Larson, ChE Chair
 Cross-listed Dept(s). John Halloran John Halloran, MSE Chair
Matthew O'Donnell Matthew O'Donnell, BME Chair

Cross listed Unit 2

Form Number

1002

SUPPORTING STATEMENT

The course is no longer offered.

Lined area for supporting statement.

Are any special resources or facilities required for this course?

Yes No

Detail the Special requirements

Lined area 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 11/21/2002

Effective Fall 2003

A. CURRENT LISTING

B. REQUESTED LISTING

Home Department EECS	Div # 252	Course Number 401	Home Department EECS	Div # 252	Course Number 401
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Cross Listed Course Information	Cross Listed Course Information
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Course Title Probabilistic Methods in Engineering	Course Title Probabilistic Methods in Engineering
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TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Prob Methods Engr	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Prob Methods Engr
	Transcript Max = 20 Spaces	Prob Methods Engr		Transcript Max = 20 Spaces	Prob Methods Engr

Course Description Basic concepts of probability theory. Random variables: discrete, continuous and conditional probability distributions; averages; independence. Introduction to discrete and continuous random processes; wide sense stationarity; correlation, spectral density.	Course Description for Official Publication (Max = 50 words) Basic concepts of probability theory. Random variables: discrete, continuous and conditional probability distributions; averages; independence. Introduction to discrete and continuous random processes; wide sense stationarity; correlation, spectral density.
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PROGRAM OUTCOMES: <input checked="" type="checkbox"/> a <input checked="" 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 checked="" type="checkbox"/> k	PROGRAM OUTCOMES: <input checked="" type="checkbox"/> a <input checked="" 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 checked="" type="checkbox"/> k
Degree Requirements <input checked="" type="radio"/> Degree Requirement <input type="radio"/> Free Elective <input type="radio"/> Other <input checked="" type="radio"/> Core Course <input type="radio"/> Tech Elective	Degree Requirements <input checked="" type="radio"/> Degree Requirement <input type="radio"/> Free Elective <input type="radio"/> Other <input checked="" type="radio"/> Core Course <input type="radio"/> Tech Elective

Prerequisites EECS 306 or EECS 212/316 and Junior standing, or Graduate standing <input checked="" type="radio"/> Enforced <input type="radio"/> Advised	Prerequisites EECS 306 or 212/316 or graduate standing. Students who are EE, CE, or CS majors may <input checked="" type="radio"/> Enforced <input type="radio"/> Advised
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Credit Restrictions credit for only one of EECS 401 and EECS 501 Level of Credit <input type="checkbox"/> Undergrad only <input type="checkbox"/> Ugrad or Non-Rckhm Grad <input type="checkbox"/> Rackham Grad <input checked="" 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	Credit Hours Min Max 4 4	Contact Hrs/Wk 4 Number of Wks 14	Credit Restrictions Students who are EE, CE, or CS majors may receive credit for at most one of EECS 401 or Math/Stat 425 or IOE/Stat 265 (or transfer credits considered equivalent to Math 425). Level of Credit <input type="checkbox"/> Undergrad only <input type="checkbox"/> Ugrad or Non-Rckhm Grad <input type="checkbox"/> Rackham Grad <input checked="" 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	Credit Hours Min Max 4 4	Contact Hrs/Wk 4 Number of Wks 14
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Repeatability (Indi Research, Dir. Study, Dissertation): Is this course repeatable? <input type="radio"/> Yes <input checked="" type="radio"/> No Maximum Hours? _____ Maximum Times? _____ Can it be repeated in the same term? <input type="radio"/> Yes <input type="radio"/> No	Printing Information <input checked="" type="checkbox"/> Print the course in the Bulletin (Optional) <input checked="" type="checkbox"/> Print the course in the Time Schedule
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Class Type(s) <input checked="" type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other _____	Graded Section <input checked="" 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 _____	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	Location <input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension	Terms & Freq. of Offering <input checked="" type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> IIIa <input type="checkbox"/> IIIb <input type="checkbox"/> III <input checked="" type="checkbox"/> Yearly <input type="checkbox"/> Alter Years <input type="checkbox"/> Even Years <input type="checkbox"/> Odd Years	Half term <input type="checkbox"/> 1st <input type="checkbox"/> 2nd
Cognizant Faculty Member: <u>W.E. Stark</u> Title <u>Professor</u> <u>D. Teneketzis</u> Professor <u>D.J. Anderson</u> Professor		Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty			

Approval

<input type="checkbox"/> Curriculum Comm. <input type="checkbox"/> Faculty <input type="checkbox"/> Rackham <input type="checkbox"/> Cross listed Unit 1 <input type="checkbox"/> Cross listed Unit 2	Submitted By: <input checked="" type="checkbox"/> Home Dept. <input type="checkbox"/> Cross-listed Dept. Name, Signature & Department Home Dept. <u>EECS Jeff Fessler 11/27/02</u> <i>(Signature on File)</i> Cross-listed Dept(s): _____ _____ _____ _____
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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 11/27/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Home Department EECS</td> <td style="width: 10%;">Div # 252</td> <td style="width: 20%;">Course Number 425</td> <td style="width: 30%;"></td> </tr> <tr> <td colspan="4">Cross Listed Course Information</td> </tr> <tr> <td colspan="4">Course Title Integrated Microsystems Laboratory</td> </tr> <tr> <td style="width: 15%;">TITLE ABBRE- VIATION</td> <td style="width: 15%;">Time Sched Max = 19 Spaces</td> <td colspan="2">Integ Microsys Lab</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td colspan="2">Integ Microsys Lab</td> </tr> <tr> <td colspan="4">Course Description Development of a complete integrated microsystem, from functional definition to final test. MEMS-based transducer design and electrical, mechanical and thermal limits. Design of MOS interface circuits. MEMS and MOS chip fabrication. Mask making, pattern transfer, oxidation, ion implantation and metallization. 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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. EECS Jeff Fessler *JF Fessler* 2002-11-29
 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 10/23/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

Home Department _____ Div # _____ Course Number _____		Home Department EECS Div # 252 Course Number 546	
Cross Listed Course Information		Cross Listed Course Information Applied Physics 320 546	
Course Title		Course Title Ultrafast Optics	
TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces
Course Description		Course Description for Official Publication (Max = 50 words) Propagation of ultrashort optical pulses in linear and nonlinear media, and through dispersive optical elements. Laser mode-locking and ultrashort pulse generation. Chirped-pulse amplification. Experimental techniques for high time resolution. Ultrafast Optoelectronics. Survey of ultrafast high field interactions.	
PROGRAM OUTCOMES: <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		PROGRAM OUTCOMES: <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	
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Credit Hours Min _____ Max _____		Credit Hours Min <u>3</u> Max <u>3</u>	
Contact Hrs/Wk _____ Number of Wks _____		Contact Hrs/Wk <u>3</u> Number of Wks <u>14</u>	
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Cognizant Faculty Member: <u>Ted Norris</u> Title <u>Prof.</u>		Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty	

Approval

Submitted By: Home Dept. Cross-listed Dept.

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

Name, Signature & Department
 Home Dept. **EECS Jeff Fessler** *Jeff Fessler* 2002-10-24
 Cross-listed Dept(s). **Applied Physics: Powell**



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 10/30/2002
 Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<input type="checkbox"/> Home Department Industrial and Operations Engineering Div # 272 Course Number 633	Home Department Div # Course Number												
<input type="checkbox"/> Cross Listed Course Information Manufacturing 275 634	Cross Listed Course Information												
<input type="checkbox"/> Course Title MAN-MACHINE SYSTEMS	Course Title												
<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%;">MAN-MACHINE SYSTEMS</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td>MAN-MACHINE SYSTEMS</td> </tr> </table>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces	MAN-MACHINE SYSTEMS		Transcript Max = 20 Spaces	MAN-MACHINE SYSTEMS	<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>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces			Transcript Max = 20 Spaces	
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<input type="checkbox"/> Course Description Introduction to advanced concepts in the identification, design, analysis, development and implementation of human operated systems; existing and emerging systems identified from industrial and service organizations. Students handle case examples. Relevant theories of communication, decision and control augmented by readings and laboratory demonstrations when appropriate.	Course Description for Official Publication (Max = 50 words)												
<p>PROGRAM OUTCOMES:</p> <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>PROGRAM OUTCOMES:</p> <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												
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Credit Restrictions	Credit Restrictions												
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Repeatability (Indi Research, Dir. Study, Dissertation): Is this course repeatable? <input type="radio"/> Yes <input checked="" type="radio"/> No Maximum Hours? _____ Maximum Times? _____ Can it be repeated in the same term? <input type="radio"/> Yes <input type="radio"/> No	Printing Information <input type="checkbox"/> Print the course in the Bulletin (Optional) <input type="checkbox"/> Print the course in the Time Schedule												
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Approval <input type="checkbox"/> Curriculum Comm. <input type="checkbox"/> Faculty <input type="checkbox"/> Rackham <input type="checkbox"/> Cross listed Unit 1 <input type="checkbox"/> Cross listed Unit 2	Submitted By: <input checked="" type="checkbox"/> Home Dept. <input type="checkbox"/> Cross-listed Dept. Name, Signature & Department Home Dept. <u>Yili Liu (IOE)</u> Cross-listed Dept(s). <u>(PIM)</u>												

