To: Subject: Murabito, Jeanne

RE: EE degree program changes

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On Tue, 28 Jan 2003, Jeffrey A. Fessler wrote:
> Jeanne and Armin,
> Today the ECE faculty approved two "program changes" for the EE degree
> that will affect footnotes in the bulletin:
> 1. We eliminated EECS 497 from the long list of MDE courses in
> footnote 6 since it has turned out to be just a software course.
> 2. We added the restriction:
      "At most 4 credits of undergraduate probability may be
>
      applied to the EE degree."
> We chose to go the latter route because trying to preclude EECS 401 /
> Math 425 / IOE 265 / etc. via the course approval form was too
> painful. So we just put it in the degree requirements.
> My understanding is that since these are both "details" in the
> footnotes, they don't need to be approved by the CoE CC. But if you
> feel otherwise, then consider this email my request to be on the next
> agenda. Otherwise, Jeanna will see this (if she looks) in the edited
> bulletin our staff are preparing.
> jf
> Jeff Fessler, Assoc. Prof.
> Jeff Fessler, Assoc. Prof. 734-763-1434
> 4240 EECS Bldg., 1301 Beal Ave. FAX: 734-763-8041
> University of Michigan
                                           fessler@umich.edu
> Ann Arbor, MI 48109-2122
http://www.eecs.umich.edu/~fessler/
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COURSE APPROVAL FORMS

February 11, 2003

AERO 285 Modification – Changing Course Title; Changing Description; Changing

Pre-Requisites; Changing Contact Hours

AERO 483 Modification – Changing Pre-Requisites

BIOMED E 548 (X-listed with EECS 548) Deletion

CHEM E 557 (X-listed with MSE 557) New Course

EECS 401 Modification – Changing Pre-Requisites

EECS 501 Modification – Changing Pre-Requisites

ENGR 4XX New Course

TECH COMM 400 Deletion

TECH COMM 450 Modification – Changing Course Description

TECH COMM 475 Modification – Changing Course Description

TECH COMM 486 Deletion

TECH COMM 490 Deletion

TECH COMM 497 Deletion

TECH COMM 499 Deletion

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Numbe 1018

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 1/22/2003 Effective Fall 2003

	A. CI	JRRENT LISTII		Bolotiono	A & O complete	_	EQUESTED LIS	STING		
	Home Depar	rtment		Div #	Course Number	Home Dep Aerospace	e Engineering		Div # 235	Course Number 285
	Cross Listed	Course information				Cross Listed	Course Information	,		
х	Course Title Introduct	ion to Solid Mech	anics and Desi	gn		Course Title	tion to Solid Mech	anics and Aeros	space Struc	ctures
	TITLE ABBRE-	Time Sched Max = 19 Spaces	Intro Solid Me	ch&Des		TITLE ABBRE-	Time Sched Max = 19 Spaces	Solid Mech&Al	E Struc	
	VIATION	Transcript Max = 20 Spaces	Solid Mech&E	Des		VIATION	Transcript Max = 20 Spaces	Solid Mech&A	E Struct	
х	structura	ription duction to the fund Il mechanics in Ad al simulation and e	erospace syste	ms. Inclu	des analysis,	An introd	ription for Official Publication duction to the fund al mechanics in Annerical methods of es.	lamental phenon erospace syster	ns. Include	es analysis
	PROG □a □	RAM OUTCOM	ES:]e □f □g	h	i □i □k	700000000000000000000000000000000000000	RAM OUTCOM b ⊠ c □ d ⊠	IES: ∐e □f □g	□h □i	□i⊠k
	Degree Req		Requirement O Tech I		•	Degree Re	quirements O Degree RO Core Cou	Requirement O Tech Ele		<u> </u>
х	Prerequisites			d or accompanie	d by Aero 245	Prerequisites		d MSE 220. Preceded o	r accompanied by	Aero 245
	Credit Restrictions					Credit Restrictions			-	
х	Level of Cre ☐ Undergrad ☐ Rackham ☐ Non-Rckhr ☐ Ugrad or F ☐ Ugrad or N	only ☐ All Cre Grad ☐ Rckhn m Grad	edit types n Grad w/add'l Work	Credit Hours Min Max	Contact Hrs/Wk 5.0 Number of Wks	Level of Cr ☑ Undergrad ☐ Rackham ☐ Non-Rckh ☐ Ugrad or I ☐ Ugrad or I	l only □ All Cre Grad □ Rckhr m Grad	edit types n Grad w/add'l Work	Credit Hours Min Max 4 4	Contact Hrs/Wk 4.5 Number of Wks term
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SUPPORTING STATEMENT

The present AE 285 curriculum was put into effect in Winter 1999 in connection with the CoE 2000 curriculum reform. Faculty members in the structural and solid mechanics (SSM) group revisited the contents of the advertised curriculum over the past severe semesters and felt that the course needed reorganizationlt was felt that the advertised curriculum is not focused and distracted students from the process of learning fundamental aspects of solid mechanics and structures as it relates to Aerospace structures. In particular, it was felt that the present offering (as it is currently being taught) was not reflective of what appears in the College bulletinThe faculty members of the SSM group therefore request that changes be made to remedy this situationThus, the present request to modify includes a more coherent and streamlined curriculum aimed at introducing the subject of solid and structural mechanics to "first timers" in a methodical manner. Since AE 285 is a prerequisite for AE 315, it was strongly felt that the students be properly equipped with fundamental knowledge to tackle the more advanced structures concepts that are delivered in AE 315. With the requested modification, students will be properly equipped to understand the resolve structural mechanics issues that are
relavant to Aerospace engineers
Are any special resources or facilities required for this course? □ Yes ☒ No Detail the Special requirements
Solaii ino openiai requirentento

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Numbe 1019

99

Action Requested

O 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 1/23/2003

Effective Fall 2003

A. CURRENT LISTING B. REQUESTED LISTING Home Department Course Number Home Department Course Number Div# Aerospace Engineering 235 483 Cross Listed Course Information Cross Listed Course Information Course Title Course Title Space System Design Time Sched Time Sched TITLE TITLE Space System Design Max = 19 Spaces Max = 19 Spaces ABBRE ABBRE-Transcript VIATION Transcript VIATION Space System Design Max = 20 Spaces Max = 20 Spaces Course Description Course Description for Official Publication (Max = 50 words) Introduction to the engineering design process for space systems. Includes a lecture phase that covers mission planning, launch vehicle integration, propulsion, power systems, communications, budgeting, and reliability. Subsequently, students experience the latest practices in space-systems engineering by forming into mission- component teams and collectively designing a space mission. Effective team and communication skills are emphasized. Report writing and presentations are required throughout, culminating in the final report and public presentation. PROGRAM OUTCOMES: PROGRAM OUTCOMES: □ a □ b □ c □ d □ e □ f □ g □ h □ i □ j □ k □ b \square d \boxtimes e \square f \square g \square h \square i \square j \boxtimes k O Degree Requirement O Tech Elective O Other Degree Requirements Degree Requirements O Degree Requirement O Tech Elective O Other O Free Elective O Free Elective Prerequisites Senior standing Prerequisites Preceded by Aero 345. Preceded or accompanied by Aero 315, 325, and 335 Х ○ Enforced ⊙ Advised ○ Enforced ② Advised Credit Restrictions Credit Restrictions Level of Credit Level of Credit Contact Credit Hours ☐ Undergrad only☐ Rackham Grad☐ Non-Rckhm Grad☐ Ugrad or Rckhm Grad☐ Ugrad or Rckhm Grad☐ Ugrad or Non-Rckhm Grad☐ Ugrad or Non-Rckhm Grad Credit Hours Contact ☐ Undergrad only
☐ Rackham Grad
☐ Non-Rckhm Grad
☑ Ugrad or Rckhm Grad
☐ Ugrad or Non-Rckhm Grad ☐ All Credit types ☐ Rckhm Grad w/add'l Work Hrs/Wk ☐ All Credit types ☐ Rckhm Grad w/add'l Work Min Max Hrs/Wk Max Min Number Number of Wks term of Wks Repeatability (Indi Research, Dir. Study, Dissertation: Printing Information ☐ Print the course in the Bulletin ☐ Print the course in the Time Schedule Is this course repeatable? O Yes O No (Optional) Maximum Hours? Maximum Times? Can it be repeated in the same term? O Yes O No O Lec
O Rec
O Sem
O Lab
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O Other Terms & □ I ■ II □ IIIa □ IIIb □ III Half term 1st ☐ Lec
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☑ Othe Grading Type(s) Location Freq. of Offering A-E
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 P/F
 Y ■ Yearly □ Alter Years □ Even Years □ Odd Years ☒ Ann Arbor
☐ Biological S
☐ Camp Dav
☐ Extension Biological Station Camp Davis Cognizant Faculty Member: Alec Gallimore Title Associate Professor Other Design 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 lain Boyd, Aerospace Engineering Home Dept. ☐ Faculty Cross-listed Dept(s). □ Rackham ☐ Cross listed Unit 1 ☐ Cross listed Unit 2

Form Numbe	Form	Numbe
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SUPPORTING STATEMEN

Aero 483 is one of two capstone design courses that our students can choose from in which they apply the ideas learned in the required 200- and 300-level Aero courses. It, therefore, is logical to have the 300-level courses (315, 325, 335, 345) as prerequisites for this course. These are already required by the other capstone design course. Aero 481
Are any special resources or facilities required for this course?
Detail the Special requirements
The design facilities in Room 1008 FXB, the Lockheed Design Room.

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number 1012

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 1/22/2003

Effective Winter 2003

	A. CURRENT LISTING	B. REQUESTED LISTING
	Home Department Div # Course Number	Home Department Div # Course Number Biomedical Engineering 242 548
	Cross Listed Course Information	Cross Listed Course Information Electrical Engineering and Computer Science 252 548
	Course Title	Course Title Advanced Bioinstrumentation and Computation
	TITLE ABBRE- VIATION Time Sched Max = 19 Spaces Transcript Transcript	TITLE ABBRE- VIATION Time Sched Max = 19 Spaces Adv Bioin & Comp Adv Bioin Comp Adv Bioin Comp
	Max = 20 Spaces Course Description	Course Description for Official Publication (Max = 50 words) Application of computer hardware and software to acquisition, pattern recognition, analysis, and diagnosis of physiological signals. These include, but are not restricted to, the electrocardiogram, the electroencephalogram, the electromyogram, and blood pressure measurement. This course will teach skills required for computer-based analysis of clinical signals, and computer modelling of physiological systems. Lecture and laboratory.
	PROGRAM OUTCOMES: a b c d e f g h i j k Degree Requirements O Degree Requirement O Tech Elective	PROGRAM OUTCOMES:
7	Degree Requirements O Degree Requirement O Core Course O Other Prerequisites O Tech Elective O Other	Degree Requirements O Degree Requirement O Tech Elective O Other
╛	○ Enforced ○ Advised Credit Restrictions	Credit Restrictions
]	Level of Credit Undergrad only Rackham Grad Rockhm Grad w/add'l Work Non-Rockhm Grad Ugrad or Rockhm Grad Ugrad or Non-Rockhm Grad Ugrad or Non-Rockhm Grad	Level of Credit Undergrad only Rackham Grad Rockhm Grad w/add'l Work Non-Rockhm Grad Ugrad or Rockhm Grad Ugrad or Non-Rokhm Grad Ugrad or Non-Rokhm Grad O Wks 14
) .	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
	Class Type(s)	Terms & D
	Dis	Cognizant Faculty Daniel Green Title Professor Member: Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty
C	Approval Curriculum Comm.	Submitted By: Home Dept. Cross-listed Dept. Name, Signature & Department Home Dept. Biomedical Engineering
	Faculty	Cross-listed Dept(s). Electrical Engineering Suffice Tour 7003-1-28

SUPPORTING	STATEMENT
	supporting this course has retired, and there is no one identified currently to take it over
·······	
***************************************	AMOUNT L. FOR GUIL 2007-1-79
	Approved by ECE Fourth 2003-1-28

Are any special res	sources or facilities required for this course?
Detail the Special re	equirements

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form	Number
104	7

Action Requested

New Course
 Modification of Existing Course
 Deletion of Course

Complete the following sections:

New Courses - B & C completely

Modifications - A modified information, B & C completely

Deletions - A & C completely

Date 2/4/2003 Effective Fall 2003

	A. CI	JRRENT LISTING		O complete	,	EQUESTED LIS	STING		
	Home Depa	tment	Div# Cou	urse Number	Home Dep	partment Engineering		Div#	Course Number
	Cross Listed	Course Information			Cross Listed	Course Information Science Engineering			557 557
	Course Title				Course Title			.,	
					Computa	ational Nanoscienc	e of Soft Matte	r	
	TITLE ABBRE-	Time Sched Max = 19 Spaces			TITLE ABBRE-	Time Sched Max = 19 Spaces	Computational	Nano	
	VIATION	Transcript Max = 20 Spaces			VIATION	Transcript Max = 20 Spaces	Computational	Nano	
					Provides and limit and simu consists using res	ription for Official Publication an understanding ations of computer ulation of soft mate of lectures and ha search codes and o s, Monte Carlo and	of strategies, simulation as in including as in including at the nan indexention interaction and including another anoth	t pertains to oscale. The ctive simulati les. Ab initio	the modeling course tion labs
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	Prerequisites	○ Enforced ○ Advised			Prerequisites	Differential equations course O Enforced O Advised		nodynamics or sta	
	Credit Restrictions				Credit Restrictions	O Enlorced & Advised			Course
	Level of Cred		Credit Hours Conta	ct	Level of Cre	dit		Credit Hours	To
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C.	Is this course Maximum	reatability (Indi Research, Dir. Study, Dissertation repeatable? O Yes O No Hours? Maximum Times?			Printing In	formation Print the cou	urse in the Bulletin urse in the Time Schedu	ule	
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		Rec OSem MARE Sem Dab CR/N ab ODs Ds	Location C Ann Arbor Biological S Camp Davi Extension	is	Cognizant Facu Member:	- Grain	C. Glotzer	Title Assoc	ate Professor
Ĺ	Approval				Grad Course: A	ttach nomination if Cognizan	t Faculty is not a regula	r graduate faculty	
	Curriculur	m Comm.		N	Su lame, Signature Home Dep	1 4/	Cross-listed Dept.	KNO TAN	ald Larson
	Faculty Rackham Cross list				Cross-listed De	13/1/			n Halloran

<u></u>	se offered under the complex fluids and soft at graduate students who either use simulate and the literature in their field and/or collabors of computer simulation in modern research ation studies reported in the literature: (iii) just ascertain the relevance of different simulate workings and limitations of commercial 02, with an enrollment of 37 graduate students are01:4.67, 02:4.84. Lenvision this course
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themical Engineering and Materials Science Engineering. It is also an elective course offered under the contact and softenings in the Department of Chemical Engineering. This course is aimed at graduate students wortheir research or who require an appreciation and understanding of simulation to read the literature in the ith simulationists. Students completing the course will learn to (i) appreciate the role of computer simulation evelopment; (ii) assess the relevance and quality of molecular and mesoscale simulation studies reported the applicability of simulation models and methods to problems of different scales; (iv) ascertain the relevance things to their research and learn how to find and use codes, and (v) understand the workings and limitation elecular and mesoscale simulation software. The course was first offered in Fall 2002, with an enrollment orm nine departments within the Colleges of Engineering and LSA. Evaluation scores are:—Q1:4.67, Q2:4, since of a series of courses on nanotechnology that could be offered as a cluster within the College. The course of a series of courses on nanotechnology that could be offered as a cluster within the College. The course of a series of courses on nanotechnology that could be offered as a cluster within the College. The course of a series of courses on facilities required for this course? **Note of the course of	se offered under the complex fluids and soft at graduate students who either use simulate and the literature in their field and/or collabors of computer simulation in modern research ation studies reported in the literature: (iii) just ascertain the relevance of different simulate workings and limitations of commercial 02, with an enrollment of 37 graduate students are01:4.67, 02:4.84. Lenvision this course
Detail the Special requirements	
o conduct interactive simulation labs, we require use of the Advanced Graphic Mac Lab in the Media Union	
wind in the manufacture statement and the media union	Lab in the Modin Union on a similar factor
	Law in the internal union, or a similar facility.

SYLLABUS (AS OF 09/02/02: SUBJECT TO CHANGE)

Week 1	Dates 9/3-9/5	Topic Introduction and overview of computer simulation of soft materials, including: role of simulation; applications of soft materials simulations; examples from computational nanoscience; simulation models and methods for soft matter; spanning the scales from molecular processes to macroscopic phenomena. Ab initio methods. Force fields.
2	9/10-9/12	Force fields and molecular dynamics (MD) methods
		Examples: Structure and dynamics of polymeric, molecular and atomic liquids; dynamics of supercooled liquids and glasses; phase separation in polymer melts and blends; assembly of nanostructured organic/inorganic materials, viscosity of lubricants in nanoscale gaps, glass transition of nanoparticle-filled polymers; etc.
3	9/17-9/19	MD methods for soft materials
4	9/24-9/26	Advanced MD methods (continued)
5	10/1-10/3	Collision dynamics and models for hard spheres
		Examples: Structure and dynamics of colloidal liquids, glasses, and granular materials
		Brownian dynamics
		Examples: Diffusion in colloidal suspensions, DNA-mediated assembly of nanoparticle arrays; DNA flow in microfluidic devices, etc.
6	10/8-10/10	10/8 – NO CLASS.
		10/10: Monte Carlo methods Off-lattice models.
		Examples: Phase separation in polymer melts and blends, nanoscale assembly of hybrid organic/inorganic materials, etc.
7	10/15-10/17	10/15: No class – Fall study break
		10/17: Monte Carlo methods Lattice models

Examples: Phase behavior of polymer solutions, melts and blends. Structure and dynamics of

polymer/nanoparticle systems. Physical and chemical gelation. Assembly processes in soft materials: surfactants, micelles, nanostructured hybrid materials.

	10/22-10/24	Advanced MC methods for macromolecular materials. Acceleration algorithms and smart MC moves.
9	10/29-10/31	Overview of mesoscale methods in soft matter: cellular automata, lattice Boltzmann, dissipative particle dynamics, etc.
		Examples: Diffusion in colloids and nanoparticle suspensions, pattern formation in nanostructured polymer materials; predicting structure of blends under shear.
10	11/5 = 11/7	11/5 – No class (AIChE meeting) 11/7 – No class (AIChE meeting)
11	11/12-11/14	Field theoretic/continuum methods for multicomponent soft materials: Time-dependent Ginzburg Landau: Cahn-Hilliard and Cahn-Allen. Conserved and non-conserved order parameters.
		Examples: Spinodal decomposition in polymer blends, block copolymers and reactive mixtures, nanofilled blends, and on nanopatterned surfaces; phase ordering in liquid crystals.
12	11/19-11/21	Field theoretic/continuum methods (cont.) Dynamic density functional theory/OCTA
13	11/26-11/28	11/26 - No class. Lab open for homework and project work. 11/28 - No class - Thanksgiving
14	12/3-12/5	12/3 – Field theoretic/continuum methods (cont.) 12/5 – Field theoretic/continuum methods (cont.)
15	12/10	Last day of class. Multiscale simulation; bridging methods. The future of computational nanoscale and mesocale science. Projects due electronically; no late projects will be accepted. Take-home exam handed out.

COMPUTATIONAL NANOSCIENCE OF SOFT MATTER

Course number: ChE 696-008 Fall 2002

Instructor: Professor S. C. Glotzer

3014 H.H. Dow, 615-6296 sglotzer@umich.edu

Office hours: M 3:00 - 5:00 and by appointment

Meeting time: Tuesday 4:30 - 6:00/6:30 Thursday 4:30 - 6:00/6:30

Location: Mac Advanced Graphics Room, Media Union

Course objectives: The aim of this course is to provide the student with an understanding of the strategies, methods, capabilities, and limitations of computer simulation as it pertains to the modeling and simulation of soft materials at the nanoscale. Students completing the course will learn to (i) appreciate the role of computer simulation in modern research and development, and understand the relationship between theory, simulation and experiment; (ii) assess the relevance and quality of molecular and mesoscale simulation studies reported in the literature; (iii) judge which simulation models and methods are useful for describing processes and phenomena on different length and time scales; (iv) ascertain which, if any, simulation methods are relevant to their research, and if so, how to develop or find codes and how to use them; and (v) understand the workings and limitations of commercial molecular and mesoscale simulation software. As simulation methods will be taught in the context of physical phenomena of soft matter, in particular as applied to current problems in nanoscience and engineering, it is expected that students will gain a deeper understanding of the behavior of soft materials and their potential application to nanotechnology.

Course structure: The course will consist of lectures and hands-on, interactive simulation labs using both research codes and commercial codes. During class, students will run simulation codes interactively in both individual and group modes using state-of-the-art Mac G4s in a fully networked, theater-style classroom. Grades will be assessed as follows: homeworks (10%), one exam (40%), and two projects (40% and 10%). Programming of simulation code will NOT be required. Homeworks will involve running class codes and performing data analysis, reading articles critically, etc. Homeworks will not be graded, but full credit will be assigned for turning in completed homeworks.

The first term project (40% of final grade) will involve the writing of a 10-page proposal to a fictitious group leader, project manager, agency program director, etc. to perform a detailed simulation study of a problem important to nanoscience and nanotechnology. Each student will choose a problem of interest to them, describe its important and relevance, and discuss the open questions they wish to address with simulation. He/she will then describe which simulation methods they propose to use to address the problem and why, how they will be implemented, and what the limitations, challenges, and possibilities, pros and cons are to using these methods to address the problem(s) of interest. An estimate of what computational resources and time will be required should also be included. The student will describe what will be learned from such a simulation study, and what the importance of that knowledge or understanding is in the context of the problem. The student will be graded on the depth of their understanding of the problem and the simulation approach, the appropriateness of the proposed method for the problem described, the thoroughness of the project description, and how convincing their proposal is.

For the second term project (10% of final grade), each student will be given another student's proposal to review. The review will be anonymous, in that the reviewers will not know whose proposal they're reviewing nor will the reviewee's know who reviewed their proposal. The student will be graded on the thoroughness and correctness of their review.

Who should take this class: Graduate and advanced undergraduate students from any department or discipline doing research involving materials simulation; students interested in or doing materials research who'd like to understand what simulations can teach them about the materials and processes they study; students who'd like to learn more about molecular processes in soft materials.

Course content:

- Ab initio methods.
- Classical molecular dynamics (MD) methods for soft materials.
- MD of hard spheres; Brownian dynamics method for suspensions.
- Off-lattice and on-lattice Monte Carlo (MC) methods for macromolecular materials.
- Lattice Boltzmann and cellular automata methods for soft materials.
- Dissipative particle dynamics method for complex fluids and soft materials.
- Field-theoretic methods for multicomponent and anisotropic complex fluids and soft materials.
- Multiscale simulation strategies for bridging molecular processes to macroscopic phenomena.

Simulation methods will be taught in the context of soft materials problems such as nanopatterning of polymer melts, blends, and block copolymers; structure and dynamics of polymeric, molecular and atomic liquids, including supercooled liquids and glasses; directed self-assembly of nanostructured organic/inorganic materials, surfactants, and micelles; DNA-mediated assembly of nanoscale building blocks; viscosity of lubricants in nanoscale gaps; structure and dynamics of polymer/nanoparticle systems; glass transition of nanoparticle-filled polymers; structure and dynamics of colloids and nanoparticle suspensions; pattern formation in nanostructured polymer materials; physical and chemical gelation; and phase behavior of soft materials.

Texts:

Frenkel and Smit, Understanding Molecular Simulation: From Algorithms to Applications, 2nd Edition, Academic Press, 2002.

Leach, Molecular Modeling: Principles and Applications, 2nd Ed., Prentice Hall, 2001.

Additional reading:

Allen and Tildesley, Computer Simulation of Liquids, Clarendon Press, Oxford, 1987.

Landau and Binder, A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge University Press, 2000.

Gershenfeld, *The Nature of Mathematical Modeling*, Cambridge University Press, 1999. Larson, *The Structure and Rheology of Complex Fluids*, Oxford University Press, 1999. CACHE Molecular Modeling Web Book: temporarily unavailable.

Additional reading material to be supplied by instructor.

DETAILED OUTLINE OF COURSE CONTENT

- Overview of ab initio methods for soft materials: Schrodinger's equation. Born-Oppenheimer approximation. Molecular orbital theory and density functional theory. VASP, CASTEP, Gaussian98, SIESTA.
- Force fields for classical molecular and mesoscale simulations. Explicit atom, united atom, and coarse-grained force fields for hard and soft matter, including molecular and polymeric materials.

- Molecular dynamics (MD) methods for soft materials. Basic method: initialization, force calculation, integration of equations of motion. Boundary conditions. Equilibration issues. Interrogating molecular simulation data: correlation functions; probing structure and dynamics. Data averaging.
- Advanced MD methods: Statistical mechanics review. MD in different ensembles. Tricks
 of the trade. Neighbor lists. Long-range interactions. Integration schemes. Multiple
 time-stepping vs. constraints. Parallel MD. Acceleration algorithms. Non-equilibrium
 MD. LAMMPS, DPOLY, Cerius2.
- Hard sphere models and collision dynamics.
- Brownian dynamics for colloidal suspensions.
- Monte Carlo (MC) methods for soft materials. Basic method for off-lattice MC: Metropolis method. Detailed balance. Trial moves. Acceptance ratios. Ensembles. Parallel MC. Cluster moves. Advanced Metropolis methods.
- Lattice MC and coarse-grained lattice models. Smart and biased MC for macromolecular systems. Cluster moves. Parallel tempering. Histogram reweighting techniques.
- Dissipative particle dynamics and other mesoscale methods for soft materials.
 Implementation and application. DPD for fluids, colloids, polymers and polymer/particle systems. Comparison with MD. Parallel DPD. Cerius2.
- Field-theoretic methods for multicomponent soft materials. Time-dependent Ginzburg Landau methods. Parallel TDGL. Dynamic density functional theory: OCTA and Mesodyn. Application to polymer blends and liquid crystals.
- Scale bridging methods: off-line vs integrated multiscale methods for soft materials.
 From molecular processes to macroscopic properties.



College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number 1024

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 1/29/2003 Effective FA03

	A. CURRENT LISTING	B. REQUESTED LISTING			
	Home Department Div # Course Number EECS 252 401	Home Department Div # Course Number EECS 252 401			
	Cross Listed Course Information	Cross Listed Course Information			
	Course Title	Course Title			
	TITLE ABBRE- VIATION Transcript Time Sched Max = 19 Spaces Probabilistic Methods in Engineering Prob Methods Engr	TITLE Time Sched Max = 19 Spaces Probabilistic Methods in Engineering Transcript Probabilistic Methods in Engineering			
	VIATION Iranscript Max = 20 Spaces Prob Methods Engr	VIATION I ranscript 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.			
	PROGRAM OUTCOMES:	PROGRAM OUTCOMES: a b c d e f g h i j k Degree Requirements O Degree Requirement O Tech Elective			
	O Core Course O Other O Free Elective Prerequisites EECS 306 or 212/316 or graduate standing.	O Core Course O Free Elective Prerequisites EECS 306 or 212/316 or graduate standing.			
	© Enforced O Advised Credit credit for only one of EECS 401 and EECS 501	⊙ Enforced ○ Advised Credit			
Х	Restrictions	Restrictions			
	Level of Credit Undergrad only Rackham Grad Rokham Grad Ugrad or Rokhm Grad Ugrad or Non-Rckhm Grad Ugrad or Non-Rckhm Grad	Level of Credit Undergrad only Richam Grad Richm Grad w/add'l Work Non-Richm Grad Ugrad or Richm Grad Ugrad or Non-Richm Grad Ugrad or Non-Richm Grad			
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			
	Class Graded ⊙ Lec Grading Type(s) ⊠ Lec Section ○ Rec Location □ Rec ○ Sem ☒ A-E □ Sem ○ Lab □ CR/NC ☒ Ann Arbor	Terms & ■ I ■ II □ IIIa □ IIIIb □ III			
	Sem	Cognizant Faculty W.E. Stark Title Professor Member: D. Teneketzis Professor D.J. Anderson Professor 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. Jeff Fessler EECS W/FM 2003 - (-30)			
	Faculty Rackham Cross listed Unit 1 Cross listed Unit 2	Cross-listed Dept(s).			

Form	Nur	nber
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1	024	

SUPPORTING STATEMENT

This restriction was added erroneously by la areas of BME) need to take 401 for their BS	and 501 for their	MS. so th	e.existina.rest	riction is illogical. The appropri	ate place for this
restriction is in graduate degree requirement 401 for their MS degree. Other graduate de graduate degree requirements. This change	its. The EE Syste grees that allow 4 e was approved 2	ms MS de 01 or 501 003-1-28	egree already should also p by the ECE fa	has a policy that precludes stured to the comment of the country and previously also the culty. We had previously also the culty. We had previously also the culty.	dents from taking " restriction in thei ried to impose
credit restrictions between EECS 401 and I have chosen to make that exclusion in the I	Math 425 and IOE E degree require	265, but I ments.	his seemed to	be too complicated logistically	Instead, we
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	Approved by	ECE	Failit	2003-1-28	·····
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Are any special resources or facilities re	quired for this co	ourse?	□ Yes □ No	v D	
Detail the Special requirements					
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College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number 1023

#### 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 1/29/2003

	A. CURRENT LISTING	B. REQUESTED LISTING			
П	Home Department         Div #         Course Number           EECS         252         501	Home Department			
LJ	Cross Listed Course Information	Cross Listed Course Information			
	Course Title Probability and Random Processes	Course Title			
	TITLE ABBRE- ABB	Probability and Random Processes  TITLE ABBRE- ABBRE- ABBRE- TITLE ABBRE- ABBRE			
	VIATION Transcript Max = 20 Spaces Prob Ran Proc	VIATION Transcript Ax = 20 Spaces Prob Ran Proc			
	Course Description Introduction to probablility and random processes. Topics include probability axioms, sigma algebras, random vectors, expectation, probability distributions and densities, Poisson and Wiener processes, stationary processes, autocorrelation. spectral density, effects of filtering, linear least-squares estimation, and convergence of random sequences.	Course Description for Official Publication (Max = 50 words) Introduction to probability and random processes. Topics include probability axioms, sigma algebras, random vectors, expectation, probability distributions and densities, Poisson and Wiener processes, stationary processes, autocorrelation. spectral density, effects of filtering, linear least-squares estimation, and convergence of random sequences.			
	PROGRAM OUTCOMES:	PROGRAM OUTCOMES:			
	Degree Requirements  O Degree Requirement O Tech Elective O Core Course O Other	Degree Requirements O Degree Requirement O Tech Elective			
Γ	O Free Elective Prerequisites Graduate Standing	O Core Course O Free Elective  Prerequisites Graduate Standing			
х	© Enforced O Advised  Credit credit for only one EECS 401 and EECS 501 Restrictions	© Enforced © Advised  Credit Restrictions			
	Level of Credit  Undergrad only Rackham Grad Rockham Grad Ugrad or Rockhm Grad Ugrad or Non-Rickhm Grad Ugrad or Non-Rickhm Grad	Level of Credit  Undergrad only Rackham Grad Rokhrm Grad w/add'l Work Non-Rickhrm Grad Ugrad or Rokhrm Grad Ugrad or Non-Rokhrm Grad Ugrad or Non-Rokhrm Grad Ugrad or Non-Rokhrm Grad			
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			
	Class Type(s)    Lec   Section   Rec   Location	Terms & ■			
Lab		Cognizant Faculty A. Yagle Title Professor Member: A. Hero Professor			
	Approval	Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty			
	Curriculum Comm.	Submitted By: ■ Home Dept. □ Cross-listed Dept.  Name, Signature & Department  Home Dept. Jeff Fessler EECS 7003-1-30			
<u> </u>	Faculty Rackham Cross listed Unit 1 Cross listed Unit 2	Home Dept.  Cross-listed Dept(s).			

Form	Number
1023	3

# SUPPORTING STATEMENT

This restriction was added erroneous	ly by last year's curricult	ım committee. Stud	ients who do bot	h a BS and an MS	in EE (or in some
areas of BME) need to take 401 for the	heir BS and 501 for their	MS, so the existin	g restriction is illo	gical. The appror	riate place for this
restriction is in graduate degree requ	rements. The EE Syste	ems MS degree air	eady has a policy	that precludes s	udents from taking
401 for their MS degree. Other gradu					
graduate degree requirements. This	change was approved a	.003-1-50 DX MB E			****************
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Are any special resources or facili	ities required for this c	ourse? □ _{□ Ye}	es □ No		
Detail the Special requirements					
Detail the Special requirements					
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College Curriculum Committee, 1420 Lurie Engineering Center Building



Form	Number
1046	

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 <u>2/4/2003</u>

Effective Fall 2003

	A. CU	IRRENT LISTING				B. RE	QUESTED LIST	ING		
\neg	Home Depar	tment		Div #	Course Number	Home Dep	artment		Div #	Course Number
	Cross Listed (Course Information				Cross Listed	Course Information			
	Course Title					Course Title	undamentals for E	Engineers		
	TITLE ABBRE-	Time Sched Max = 19 Spaces				TITLE ABBRE-	Time Sched Max = 19 Spaces	Patent Fund Er	ng	
	VIATION	Transcript Max = 20 Spaces				VIATION	Transcript Max = 20 Spaces	Patent Fund Er	ng	
	Course Desc	ription				This cou course for prosecut	ocuses on the rule ion, and claim dra	on (Max = 50 words) ndamentals of pates and codes that afting and amendinics and licensing	govern pate ment writing	ent
	PROGRAM OUTCOMES:				PRO	PROGRAM OUTCOMES: ☐ a ☐ b ☐ c ☒ d ☐ e ☒ f ☒ g ☒ h ☐ i ☒ j ☐ k				
	Degree Requirements O Degree Requirement O Free Elective O Other O Tech Elective			Degree Requirements O Degree Requirement O Core Course O Tech Elective O Other						
	Prerequisites	Enforced Advised				Prerequisites	○ Enforced ○ Advi	sed		
	Credit Restrictions					Credit Restrictions				
	Level of Cred Undergrad Rackharn Non-Rckh	d only ☐ Ugrad or N Grad ☐ All Credit t m Grad ☐ Rckhm Gi	lon-Rckhm Grad ypes ad w/add'l Work	Credit Hours Min Max	Contact Hrs/Wk Number of Wks	Level of Cre Undergrad Rackham Non-Rckh	d only \(\sum \) Ugrad or Grad \(\sum \) All Credi m Grad \(\sum \) Rckhm	r Non-Rckhm Grad t types Grad w/add'l Work	Credit Hours Min Max 4 4	Contact Hrs/Wk 4 Number of Wks 14
C.	Is this cours Maximur	epeatability (Indi Research, I se repeatable? Yes (n Hours? Maxin se repeated in the same term	No No Mum Times?	-		Printing (nformation Print the (Optional) Print the	e course in the Bulletin e course in the Time Sched	dule	
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		Rec Sem	Sem 🗵 A-E			Offering Yearly Alter Years Even Years Odd Years				
		Dis O	Dis S/U Ind P/F Other Y		amp Davis xtension	Cognizant Far Member: Grad Course:		hammed Islam izant Faculty is not a regul	Title Profes	
	Approval Gurriculi	um Comm.						Dept. Cross-listed Dep		
] Faculty] Rackhar] Cross lis	 m sted Unit 1 —				Home De Cross-listed D		Ace _		
Ē		sted Unit 2								114

Form	Number
1046	

SUPPORTING STATEMENT

This course was piloted in Fall 2002 as an EEGS 498 special topics course. The course had 19 students, and it went quite well. The students were somewhat overwhelmed by the amount of material, but this will be trimmed in the future. Patent Fundamentals are a significant part of any well-rounded engineering curriculum, and we should offer such a course here at the UM. In addition to being a full professor in EEGS, I am also a Refistered Patent Agent in the USPTO and have authored over 97 patents. Hence, I feel that I have the credentials to teach the course. I have developed a full set of notes for the course as well as problems, (materials were provided to Professor Herrin). Whereas the first half of the course is more lecture plus problems oriented, the second half is more workshop oriented, with the students working in teams to do claim drafting or amendment writing. This course does not describe why the law is what it is (that is left for Law School), but just takes the law as a given and applies it to patents. The first part of the course focuses on the rules and regulations by which a patent is judged by the USPTO. The second half of the course gives guidelines for claim drafting and amendment writing, and then the students work in teams on various patent exercises. Finally, other topics are covered such as litigation, liscensing and ethics.
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
1034	

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 1/31/2003 Effective Fall 2003

	A. CL	JRRENT LISTIN	IG			B. R	EQUESTED LISTING		
	Home Depar	rtment Communication		Div # 291	Course Number	Home Dep	partment	Div#	Course Number
	Cross Listed	Course Information				Cross Listed	Course Information		
	Course Title Technica	al Information ar	nd Communication	n Resource	es	Course Title	3		
	TITLE ABBRE-	Time Sched Max = 19 Spaces	Tech Info Con	nm		TITLE ABBRE-	Time Sched Max = 19 Spaces		
	VIATION	Transcript Max = 20 Spaces	Tec Info Com			VIATION	Transcript Max = 20 Spaces		
	printed e	rse provides an lectronic and ve to explore com	overview of inforerbal form and use munication among	es the info	rmation research		ription for Official Publication (Max = 50 words)		
		GRAM OUTCOI b	MES:	h i		☐ a ☐	GRAM OUTCOMES: b	h i	j
	Prerequisite		Course O Tech	Elective		Prerequisites	O Core Course O Tech Ele	ective	
一	Credit	○ Enforced ○ Advi	sed			Credit	○ Enforced ○ Advised		
	Restrictions Level of Cre Undergrad Rackham Non-Rckh Ugrad or	d only ☐ Ugrad Grad ☐ All Cre	or Non-Rokhm Grad dit types n Grad w/add'l Work	Credit Hours Min Max 1 1	Contact Hrs/Wk 1 Number of Wks 14	Restrictions Level of Cr. Undergra Rackham Non-Rckt Ugrad or	d only Ugrad or Non-Rckhm Grad Grad All Credit types	Credit Hours Min Max	Contact Hrs/Wk Number of Wks
C.	Is this cours	se repeatable? O Ye	Maximum Times?	n:		Printing	Information Print the course in the Bulletin (Optional) Print the course in the Time Scheo	dule	
	'ype(3)	Rec Section Sem	○ Lec Gradin ○ Rec ○ A-E ○ Lab ○ CR/N ○ Dis ○ S/U ○ Ind ○ P/F ○ Other ○ Y	C A B	cation nn Arbor iological Station amp Davis xtension	Freq. of Offering I Cognizant Fa Member:	Yearly Alter Years Even Years Odd Maurita Holland Attach nomination if Cognizant Faculty is not a regu	Years Title	alf term 1st 2nd
	Approval Curricul Faculty	um Comm.					•		Liedh
	Rackhai Cross lis	m sted Unit 1 - sted Unit 2 ₋							

Form Number

SUPPORTING STATEMENT This class is no longer offered. It has been replaced by other Communication Across the Curriculum courses		
Are any special resources or facilities required for this course?		
Detail the Special requirements		

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number

1039

Action Requested

☐ Cross listed Unit 1☐ Cross listed Unit 2☐

	New Course Modification of Existing Course	New Course	ne tollowing se es - B & C comp	letely			Date <u>1/3</u>	1/2003
	O Deletion of Course		is - A modified in A & C complete		, B & C compl	etely Effe	ctive Fall	2003
	A. CURRENT LISTING			B. RE	QUESTED LI	STING		
	Home Department	Div#	Course Number	Home Dep Technical	^{artment} Communication		Div # 291	Course Number 450
	Cross Listed Course Information			Cross Listed	Course Information			
	Course Title			Course Title	e and Site De	sign		
	TITLE Time Sched Max = 19 Spaces		***************************************	TITLE	Time Sched Max = 19 Spaces	WWW Page D	esign	
	ABBRE- VIATION Transcript Max = 20 Spaces			ABBRE- VIATION	Transcript Max = 20 Spaces	WWW Design		
XĮ.	Course Description Students will learn both practical skills necessary to design effective WWW princlude HTML, tools for creating Web princlude animation, & multi-media. Theory includesign, & theoretical principles. Stude websites.	ages & Sites. pages, graphicudes informati	Practical skills es, scripting, on design, visua	Practical effective Web pag skills) an	skills and the WWW pages jes, graphics, id information	dication (Max = 50 words) oretical principles n and sites, including scripting, animation design, visual desig sign and analysis o) HTML, to i, and multi in, and the	ols for creating imedia (practica oretical
	PROGRAM OUTCOMES:			PROC	GRAM OUTCO	MES:		
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	Degree Requirements O Degree Requirement O F O Core Course	ree Elective O Otl	ner	Degree Re		gree Requirement O Free E re Course O Tech B		er
	Prerequisites © Enforced © Advised			Prerequisites	Junior or Senior Star			
	Credit Restrictions			Credit Restrictions				
	Level of Credit	Credit Hours	Contact	Level of Cro			Credit Hour	s Contact
	☐ Undergrad only ☐ Ugrad or Non-Rckhm Grad ☐ All Credit types ☐ Rckhm Grad Wadd'l Work	Min Max	Hrs/Wk	☑ Undergrad☐ Rackham☐ Non-Rckh	Grad ☐ All C ım Grad ☐ Rckl	ad or Non-Rckhm Grad Credit types nm Grad w/add'l Work	Min Ma	i
C.	Ugrad or Rckhm Grad Repeatability (Indi Research, Dir. Study, Disser Is this course repeatable? Yes No Maximum Hours? Maximum Times? Can it be repeated in the same term? Yes No	tation:	of Wks	Ugrad or Printing I	nformation 🗵 Prin	t the course in the Bulletin t the course in the Time Scho	edule	of Wks15
\neg	Class Graded Lec Gr	ading	41	Terms & Freq. of	I I II I III II III I] IIIb 🔲 III		Half term ☐ 1st ☐ 2nd
	Rec Sem 🗵 A	A-E CR/NC ⊠ A 6/U □ B 6/F □ C	cation nn Arbor iological Station amp Davis xtension	Offering Cognizant Fa Member:	culty Lesli	ears Deven Years Odd	Title	
	Approval					ne Dept. Cross-listed De		D//
	Curriculum Comm. Faculty Rackham				•	Disen, Technical Comr	nunication	Idelel

Form Number

SUPPORTING STATEMENT Updating of wording to be more in keeping with the adopted style of no subjects or verbs.			
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	<i>-</i>		
Are any special resources or facilities required for this course?			
Detail the Special requirements			
	-		

College Curriculum Committee, 1420 Lurie Engineering Center Building



F	orm	Number
1	038	

1.20

Action Requested

□ Rackham

☐ Cross listed Unit 1☐ Cross listed Unit 2☐

O New Course Complete the following sections: Modification of Existing Course New Courses - B & C completely **Date** 1/31/2003 O Deletion of Course Modifications - A modified information, B & C completely Effective Fall 2003 Deletions - A & C completely **REQUESTED LISTING** A. CURRENT LISTING Course Number Course Number Home Department Div # Home Department Div# 291 475 **Technical Communication** Cross Listed Course Information Cross Listed Course Information Course Title Course Title Directed Study Time Sched Time Sched TITLE TITLE Max = 19 Spaces Max = 19 Spaces ABBRE-ABBRE-Transcript Transcript VIATION VIATION Max = 20 Spaces Max = 20 Spaces Course Description for Official Publication (Max = 50 words) Course Description Conferences and tutorial sessions for students with special interests Conferences and tutorial sessions that provide opportunities for May be taken for 1-4 credit hours as arranged by the instructor. students with special interests to work on a tutorial basis with a member of the Technical Communication faculty. Not intended as substitutes for regularly scheduled courses. Conferences and signed contract required with an instructor about the proposed sutdy before enrollment possible. (Directed study contract froms and additional information available from the Technical Communication Office.) PROGRAM OUTCOMES: **PROGRAM OUTCOMES:** a Db Cc d e fg h i j k O Degree Requirement O Free Elective O Other O Degree Requirement O Free Elective O Other Degree Requirements Degree Requirements Prerequisites Permission of Technical Communication Faculty Prerequisites ○ Enforced ○ Advised ○ Enforced ○ Advised Credit elective credit only Credit Restrictions Level of Credit Level of Credit Contact Credit Hours Credit Hours Contact Undergrad only Ugrad or Non-Rokhm Grad Hrs/Wk Undergrad only Ugrad or Non-Rckhm Grad Hrs/Wk Max Min Rackham Grad All Credit types Rackham Grad ☐ All Credit types Non-Rckhm Grad Rckhm Grad w/add'l Work Number Non-Rckhm Grad Rckhm Grad w/add'l Work Number Ugrad or Rckhm Grad of Wks Ugrad or Rckhm Grad of Wks Repeatability (Indi Research, Dir. Study, Dissertation: Printing Information Is this course repeatable? O Yes O No Maximum Hours? Maximum Times? Can it be repeated in the same term? Yes O No Half term 🔲 1st Terms & Class Graded ○ Lec Grading C Rec Location Type(s) Section Rec A-E ☐ Yearly ☐ Alter Years ☐ Even Years ☐ Odd Years Sem CR/NC
S/U
P/F Sem Ann Arbor 000 Lab Biological Station Lab Cognizant Faculty Dis Dis Ind Camp Davis Extension Ind Other Other Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty Submitted By: Me Home Dept. Cross-listed Dept. Curriculum Comm. Name, Signature & Department Home Dept. Leslie A. Olsen, Technical Communication ☐ Faculty Cross-listed Dept(s).

Form Number

SUPPORTING STATEMENT
Are any special resources or facilities required for this course?
Are any special resources of facilities required for this course?
Detail the Special requirements

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form	Number
1032	

122

Action Requested

☐ Faculty

□ Rackham

☐ Cross listed Unit 1☐ Cross listed Unit 2☐

O New Course Complete the following sections: Modification of Existing Course Date 1/31/2003 New Courses - B & C completely Deletion of Course Modifications - A modified information, B & C completely Effective Fall 2003 Deletions - A & C completely A. CURRENT LISTING REQUESTED LISTING Home Department Div# Course Number Home Department Div# Course Number 291 486 Technical Communication Cross Listed Course Information Cross Listed Course Information Course Title Course Title Design of Computer Documentation Time Sched Time Sched Design Computer Doc TITLE TITLE Max = 19 Spaces Max = 19 Spaces ABBRE-ABBRE-Transcript Transcript VIATION Computer Doc VIATION Max = 20 Spaces Max = 20 Spaces Course Description for Official Publication (Max = 50 words) Application of theories of documentation to actual development and testing of computer documentation. Brief review of documentation theory and current industry guidelines for producing documentation, audience analysis, task analysis, writing, and testing of an actual piece of documentation. PROGRAM OUTCOMES: **PROGRAM OUTCOMES:** □b □c □d □e □f □g □h □i □j □k \Box b e O Degree Requirement O Free Elective O Other **Degree Requirements** Degree Requirements O Degree Requirement O Free Elective O Other O Core Course O Tech Elective O Core Course O Tech Elective Prerequisites Senior or Graduate Standing Prerequisites Enforced
 Advised Enforced
 Advised Credit Credit Restrictions Level of Credit Level of Credit Contact Credit Hours Credit Hours Contact Undergrad only Ugrad or Non-Rckhm Grad Hrs/Wk Undergrad only Ugrad or Non-Rckhm Grad Hrs/Wk Min Max Min Max All Credit types
Rckhm Grad w/add'l Work Rackham Grad All Credit types Rackham Grad Rckhm Grad w/add'l Work Non-Rckhm Grad Number Non-Rckhm Grad Number Ugrad or Rckhm Grad of Wks Ugrad or Rckhm Grad of Wks Repeatability (Indi Research, Dir. Study, Dissertation: Print the course in the Bulletin Printing Information Print the course in the Time Schedule (Optional) Is this course repeatable? O Yes O No Maximum Hours? Maximum Times? Can it be repeated in the same term? Yes O No Half term ☐ 1st ☐ 2nd Class Terms & ■ | □ || □ |||a □ ||||b □ |||| Graded ⊙ Lec Grading Type(s) Location Freq. of ⊠ A-E □ CR/NC Rec O Sem
O Lab
O Dis
O Ind Yearly ☐ Alter Years ☐ Even Years ☐ Odd Years Man Arbor Lab Biological Station S/U Cognizant Faculty Leslie A. Olsen Title Director, Technical Dis P/F Camp Davis Member: Extension Ind Other Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty Submitted By: Home Dept. Cross-listed Dept. Curriculum Comm. Name, Signature & Department Home Dept. Leslie A. Olsen, Technical Communication

Cross-listed Dept(s).

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SUPPORTING STATEMENT This course will no longer be offerd. It has been replaced by other Communication	n Across the Curriculum courses.
Are any special resources or facilities required for this course?	s 🗇 No
Detail the Special requirements	
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College Curriculum Committee, 1420 Lurie Engineering Center Building



Form	Number
1033	

Action Requested

New CourseModification 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 1/31/2003 Effective Fall 2003

	A. CU	RRENT LISTING	3			В. 1	REQUE	ESTED LISTIN	NG		
				Course Number	Home D	Departmen	t		Div#	Course Number	
	i '	Communication		291	490		·				
	Cross Listed Course Information				Cross Listed Course Information						
	Course Title				1 - 1 - 1 - 12 - 12 - 12 - 12 - 12 - 12	Course T	ïtle				
		I Information Res	sources and Res	search							
	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Tech Info Res			TITLE ABBRE-	Max	e Sched = 19 Spaces			
		Transcript Max = 20 Spaces	Tec Info Res			VIATION		script = 20 Spaces			
	Course Description This course describes and demonstrates all forms of technical information resources now available to engineers. It provides access to a wide variety of resources and systems, with primary emphasis on online networks, and uses conferencing, and database system. PROGRAM OUTCOMES:			Course Description for Official Publication (Max = 50 words)							
	Degree Requirements O Degree Requirement O Free Elective O Other			Degree Requirements O Degree Requirement O Free Elective O Other							
	O Core Course O Tech Elective				O Core Course O Tech Elective Prerequisites						
Ш		○ Enforced ○ Advise	d			0	0	Enforced O Advised	d		
	Credit Restrictions					Restriction	Credit Restrictions				
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C.	Is this cours Maximur	peatability (Indi Research se repeatable? Yes n Hours? Ma: e repeated in the same te	O No ximum Times?	n:		Printir		print the co	ourse in the Bulletin ourse in the Time Schei	dule	
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·1	Type(s)				Freq. of Offering ■ Yearly □ Alter Years □ Even Years □ Odd Years					□ 2110	
					Cognizant Faculty Maurita Holland Title Member:						
	Other			Grad Cours	Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty				ILY /		
Approval								t. Cross-listed Dept	t.	LY 1 /// /	
				Name, Signa Home		•	Technical Comm	nunication	ald III		
☐ Faculty ————————————————————————————————————					Cross-liste	d Dept(s).			<u> </u>		
Cross listed Unit 1									··		
☐ Cross listed Unit 2								······	· · · · · · · · · · · · · · · · · · ·	124	

Form Number

SUPPORTING STATEMENT					
This class is no longer offered. It has been replaced by other Communication Across the Curriculum courses.					
Are any special resources or facilities required for this course?	∏Yes ∏No				
Detail the Special requirements					
., 9., 0., 9., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0					

College Curriculum Committee, 1420 Lurie Engineering Center Building



	Number
1030	

Date 1/31/2003

Action Requested

O 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

Effective Fall 2003

A. CURRENT LISTING REQUESTED LISTING Home Department Div# Course Number Home Department Div# Course Number 291 497 Technical Communication Cross Listed Course Information Cross Listed Course Information Course Title Course Title Argument and Persuasion Time Sched Time Sched TITLE Argument An Pers. TITLE Max = 19 Spaces Max = 19 Spaces ABBRE-ABBRE-VIATION Transcript Transcript Argumnt & Prs. VIATION Max = 20 Spaces Max = 20 Spaces Course Description for Official Publication (Max = 50 words) A course in logical argument and its role in persuasive discourse, especially writing. The course focuses on the nature of a reasoned argument, the formulation and analysis of problems, and methods of selecting, arranging, writing, and editing information on the basis of the intended effect on a particular audience. **PROGRAM OUTCOMES:** PROGRAM OUTCOMES: □b □c □d □e □f □g □h □i □j □k d e f g h i j k O Degree Requirement O Free Elective O Other Degree Requirements O Degree Requirement O Free Elective O Other Degree Requirements O Core Course O Tech Elective O Core Course O Tech Elective Prerequisites Prerequisites Senior Standing Enforced Advised ○ Enforced ○ Advised Credit Credit Restrictions Restrictions Level of Credit Level of Credit Contact Credit Hours Credit Hours Contact Undergrad only Ugrad or Non-Rokhm Grad Hrs/Wk Undergrad only Ugrad or Non-Rckhm Grad Hrs/Wk Min Max Min Max Rackham Grad All Credit types All Credit types Rckhm Grad w/add'l Work Rackham Grad Non-Rckhm Grad Rckhm Grad w/add'l Work Number Non-Rckhm Grad Number Ugrad or Rckhm Grad of Wks Ugrad or Rckhm Grad of Wks Repeatability (Indi Research, Dir. Study, Dissertation: ☐ Print the course in the Bulletin ☐ Print the course in the Time Schedule Printing Information (Optional) Is this course repeatable? \bigcirc Yes \bigcirc No Maximum Hours? Maximum Times? Can it be repeated in the same term? Yes O No Terms & MI III IIII IIII IIII IIII Half term

1st Class ● Lec Grading Freq. of Offering Type(s) Õ Location ⊠ A-E □ CR/NC Rec ■ Yearly □ Alter Years □ Even Years □ Odd Years Sem 0000 Sem Ann Arbor Lab Lab S/U **Biological Station** Dis Cognizant Faculty Leslie A. Olsen / Peter Klaver Title Director, Technical Dis P/F Camp Davis Member: Ind Extension Other Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate facult Approval Submitted By: Home Dept. Cross-listed Dept. □ Curriculum Comm. Name, Signature & Department Home Dept. Leslie A. Olsen, Technical Communication ☐ Faculty Cross-listed Dept(s). □ Rackham ☐ Cross listed Unit 1 ☐ Cross listed Unit 2 126

Form Number

This course will no longer be offered. It has been replaced by other Communication Across the Curriculum courses.				

Are any special resources or facilities required for this course? □ Yes ☒ No				
Detail the Special requirements				
(1) \$11 \$11 \$11 \$11 \$11 \$11 \$11 \$11 \$11 \$				

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form	Number
1035	

Action Requested

☐ Cross listed Unit 2

O New Course Complete the following sections: Modification of Existing Course Date 1/31/2003 New Courses - B & C completely Deletion of Course Modifications - A modified information, B & C completely Effective Fall 2003 Deletions - A & C completely REQUESTED LISTING A. CURRENT LISTING Course Number Course Number Home Department Div# Home Department Div# **Technical Communication** 291 499 Cross Listed Course Information Cross Listed Course Information Course Title Course Title Scientific and Technical Communication Time Sched Time Sched TITLE Sctfc & Tech Comm TITLE Max = 19 Spaces Max = 19 Spaces ABBRE-ABBRE-VIATION Transcript Transcript Sci/Tech Comm VIATION Max = 20 Spaces Max = 20 Spaces Course Description for Official Publication (Max = 50 words) Course Description Conferences and tutorial sessions that provide opportunities for students with special interest to work on a tutorial basis with a member of the Technical Communication faculty. These courses are not intended as substitutes for regularly scheduled courses. Students who wish to select Directed Study must confer with an instructor about the proposed study. If the instructor agrees to accept the student for this study, the two prepare a contract and submit it for approval. (Directed study contract forms and additional information are available from the Technical Communication Office.) **PROGRAM OUTCOMES:** PROGRAM OUTCOMES: a b c d e f g h i j k d d e f g h i j k b С O Degree Requirement O Free Elective O Other O Core Course O Tech Elective Degree Requirements O Degree Requirement O Free Elective O Other Degree Requirements O Core Course O Core Course O Tech Elective Prerequisites Prerequisites Permission of Technical Communication Faculty ○ Enforced ○ Advised ○ Enforced ○ Advised Credit elective credit only Credit Restrictions Restrictions Level of Credit Level of Credit Contact Credit Hours Credit Hours Contact Undergrad only Ugrad or Non-Rokhm Grad Hrs/Wk Undergrad only Ugrad or Non-Rckhm Grad Max Hrs/Wk Min Max Rackham Grad All Credit types Rackham Grad ☐ All Credit types Non-Rckhm Grad Rckhm Grad w/add'l Work Number Non-Rckhm Grad Rckhm Grad w/add'l Work Number Ugrad or Rickhm Grad of Wks Ugrad or Rckhm Grad of Wks Repeatability (Indi Research, Dir. Study, Dissertation: ☐ Print the course in the Bulletin☐ Print the course in the Time Schedule Printing Information (Optional) Is this course repeatable? O Yes O No Maximum Hours? Maximum Times? Can it be repeated in the same term? Yes O No Graded Half term 1st Class Terms & \circ Lec Grading Lec Rec Type(s) Section Rec Location Freq. of Sem
Lab
Dis
Ind Yearly ☐ Alter Years ☐ Even Years ☐ Odd Years Sem Biological Station Lab Coonizant Faculty ∐ Dis ⊠ Ind P/F Camp Davis Member: Extension Other Other Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty Submitted By: Home Dept. Cross-listed Dept. Curriculum Comm. Name, Signature & Department Home Dept. Leslie A. Olsen, Technical Communicator ☐ Faculty Cross-listed Dept(s). □ Rackham Cross listed Unit 1

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We would like to delete the 499 course and offer it as TechCom 475 Directed and confusing to the student to offer both courses.	
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Are any special resources or facilities required for this course?	☐ Yes ☐ No
Detail the Special requirements	
Detail the Opecial requirements	