

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

**Agenda
September 17, 2002
1:30-3:30 p.m.
Johnson Rooms B and C
Third Floor Lurie Engineering Center**

1. Approval of Minutes from April 30, 2002 Meeting
2. Course Approvals
3. Will Hansen Presentation on CEE Concentrations
4. Discussion Items
 - a. HU/SS Listings in LS&A Bulletin
5. Demonstration on new CoE Curriculum Committee Website

Wolfe, Judy

From: Murabito, Jeanne
Sent: Tuesday, September 10, 2002 8:52 AM
To: jrwolfe@umich.edu
Subject: FW: QR in LS&A and ECON 401

Judy-

These questions need to be discussed at the CC meeting. Please add and forward the new agenda to Armin with an attachment of Mark Brehob's message. Thanks.

Jeanne

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

From: Mark Brehob [mailto:brehob@eecs.umich.edu]
Sent: Monday, September 09, 2002 2:05 PM
To: murabito@umich.edu
Cc: Laura Cameron Curtis; Linda Popovic
Subject: QR in LS&A and ECON 401

Hello Jeanne,

This is a follow-up to our phone conversation. I'm CCing Laura and Linda in the EECS advising office.

Question #1 is what we do with classes where the LS&A bulletin listed them such that they would count as HU/SS but then changed that listing so that they no longer count. Specifically a number of students took ECON 401 this semester, because the old bulletin did not list it as a QR, but the 2002-2003 one does. Do the students get 1 semester of grace on this issue? Do they need to petition for an exception?

Question #2. LS&A now has the idea of QR/1 and QR/2 classes (page 11 2002-2003 LS&A bulletin). Are both QR/1 and QR/2 classes excluded as HU/SS classes?

Question #3. Could we just get a blanket exception to ECON 401 not counting as a SS? A lot of students use it for their series and this seems like a good and reasonable thing.

Mark Brehob

THE UNIVERSITY OF MICHIGAN – COLLEGE OF ENGINEERING
Course Approval Request

College Curriculum Committee, 1420 Lurie Engineering Center Building



Form Number

856

Action Requested

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

Complete the following sections:

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

Date 1/31/2002

Effective Winter 2003

A. CURRENT LISTING

B. REQUESTED LISTING

<input checked="" type="checkbox"/>	Home Department Mechanical Engineering	Div # 280	Course Number 512		Home Department Mechanical Engineering	Div # 280	Course Number 512	
	Cross Listed Course Information				Cross Listed Course Information Civil Engineering			
	Course Title				Course Title Theory of Elasticity			
	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces			TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces Transcript Max = 20 Spaces	Theory Elast Theory Elast	
	Course Description				Course Description for Official Publication (Max = 50 words) Stress, strain and displacement, equilibrium and compatibility. Use of airy stress function in rectangular and polar coordinates, asymptotic fields at discontinuities, forces and dislocations, contact and crack problems, rotating and accelerating bodies. Galerkin and Papkovitch-Neuber solutions, singular solutions, spherical harmonics. Thermoelasticity. Axisymmetric contact and crack problems. Axisymmetric torsion.			
	PROGRAM OUTCOMES:				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				<input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> e <input type="checkbox"/> f <input type="checkbox"/> g <input type="checkbox"/> h <input type="checkbox"/> i <input type="checkbox"/> j <input type="checkbox"/> k			
	Degree Requirements <input type="radio"/> Degree Requirement <input type="radio"/> Tech Elective <input type="radio"/> Core Course <input type="radio"/> Other <input type="radio"/> Free Elective				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 ME511 or ME412 <input type="radio"/> Enforced <input type="radio"/> Advised				Prerequisites ME 511 or ME 412, or ME311 or equivalent <input type="radio"/> Enforced <input checked="" type="radio"/> Advised			
	Credit Restrictions				Credit Restrictions			
	Level of Credit	<input type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad w/add'l Work	Credit Hours Min Max	Contact Hrs/Wk	Level of Credit	<input checked="" type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad w/add'l Work	Credit Hours Min Max	Contact Hrs/Wk
	<input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad				<input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad		3 3 3 3	3 14
	Repeatability (Indt 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 <input checked="" type="checkbox"/> Print the course in the Bulletin (Optional) <input checked="" type="checkbox"/> Print the course in the Time Schedule			
	Class Type(s)	Graded Section	Grading	Location	Terms & Freq. of Offering	Half term <input type="checkbox"/> 1st <input type="checkbox"/> 2nd		
	<input checked="" type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other _____	<input type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other _____	<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	<input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension	<input 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			
	Cognizant Faculty Member: _____			J. Barber	Title Professor			
	R. Michalowski			R. Michalowski	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. Mechanical Engineering JUN 11 2002
 Cross-listed Dept(s). Civil Engineering N. KATOPODES
R. MICHALOWSKI

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 3/5/2002

Effective Winter 03

A. CURRENT LISTING

B. REQUESTED LISTING

<input checked="" type="checkbox"/>	Home Department Aerospace Engineering	Div # 235	Course Number 532		Home Department Aerospace Engineering	Div # 235	Course Number 532	
	Cross Listed Course Information AOSS	241	596		Cross Listed Course Information			
<input checked="" type="checkbox"/>	Course Title Gaskinetic Theory							
	TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Gaskinetic Theory		TITLE ABBRE- VIATION	Time Sched Max = 19 Spaces	Molecular Gas Dyn	
		Transcript Max = 20 Spaces	Gaskinetic Theory			Transcript Max = 20 Spaces	Molecular Gas Dyn	
<input checked="" type="checkbox"/>	Course Description Maxwell-Boltzmann distribution, kinetic determination of equation of state, specific heats of gases. Dynamics of two-particle collisions. Elementary transport theory, molecular effusion, hydrodynamic transport coefficients, mean free path method. Advanced transport theory, the Boltzmann equation, collision terms, Chapman-Enskog transport theory. Aerodynamics of free-molecular flow. Shock waves.				Course Description for Official Publication (Max = 50 words) Analysis of basic gas properties at the molecular level. Kinetic theory: molecular collisions, the Boltzmann equation, Maxwellian distribution function. Quantum mechanics: the Schrodinger equation, quantum energy states for translation, rotation, vibration, and electronic modes of atoms and molecules. Statistical mechanics: the Boltzmann relation, the Boltzmann energy distribution, partition functions. These ideas are combined for the analysis of a chemically reacting gas at the molecular level.			
	PROGRAM OUTCOMES:				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				<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			
	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			
<input checked="" type="checkbox"/>	Prerequisites Graduate Standing <input type="radio"/> Enforced <input type="radio"/> Advised				Prerequisites Permission of Instructor <input type="radio"/> Enforced <input type="radio"/> Advised			
	Credit Restrictions				Credit Restrictions			
	Level of Credit	All Credit types	Credit Hours	Contact	Level of Credit	All Credit types	Credit Hours	Contact
	<input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad	<input type="checkbox"/> Rackham Grad w/add'l Work	Min Max	Hrs/Wk	<input type="checkbox"/> Undergrad only <input type="checkbox"/> Rackham Grad <input checked="" type="checkbox"/> Non-Rackham Grad <input checked="" type="checkbox"/> Ugrad or Rackham Grad <input checked="" type="checkbox"/> Ugrad or Non-Rackham Grad	<input type="checkbox"/> Rackham Grad w/add'l Work	Min Max	Hrs/Wk <u>3</u>
				Number of Wks			<u>3</u> <u>3</u>	Number of Wks <u>term</u>
<input checked="" type="checkbox"/>	Repeatability (Indl 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 type="checkbox"/> Print the course in the Bulletin <input type="checkbox"/> Print the course in the Time Schedule			
<input checked="" type="checkbox"/>	Class Type(s) <input checked="" type="checkbox"/> Lec <input type="checkbox"/> Rec <input type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other	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	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 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: _____ Title Associate Professor				Cognizant Faculty Member: <u>Iain Byd</u> Title <u>Associate 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. K.G. Powell, Aero Eng
 Cross-listed Dept(s) P. Samson, AOSS

SUPPORTING STATEMENT

The existing Aero 532 is called "Gaskinetic Theory." This course has a very theoretical nature and has been taught by AOSS faculty for several years. When the course was taught in F2000/F2001, only 2 of the 43 enrolled students were from AOSS. The comments received for the course from the student evaluations indicated that they wanted a more practical, engineering analysis course. This is one of the primary goals of the new course. While the old curriculum was focused on the study of rarefied gas conditions, the new course covers the same material in part, but also considers additional molecular scale phenomena related to quantum mechanics and statistical mechanics. Thus, the course material is relevant to a wide range of aerospace systems including spacecraft, aerodynamics, propulsion systems, combustion, and micro-scale flows.

Are any special resources or facilities required for this course?

Yes No

Detail the Special requirements

.....

.....

.....

.....

.....



Action Requested

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

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

Date 9/18/2001

Effective Fall 2002

A. CURRENT LISTING

B. REQUESTED LISTING

<p>Home Department _____ Div # _____ Course Number _____</p> <p>Cross Listed Course Information _____</p> <p>Course Title _____</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">TITLE ABBREVIATION</td> <td style="width: 35%;">Time Sched Max = 19 Spaces</td> <td style="width: 50%;"></td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td></td> </tr> </table> <p>Course Description _____</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="radio"/> Degree Requirement <input type="radio"/> Tech Elective <input type="radio"/> Core Course <input type="radio"/> Other <input type="radio"/> Free Elective</p> <p>Prerequisites <input 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: 30%;"> Level of Credit <input type="checkbox"/> Undergrad only <input checked="" type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackham Grad w/add'l Work <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad </td> <td style="width: 10%;"> Credit Hours Min Max 1 1 </td> <td style="width: 10%;"> Contact Hrs/Wk 1 Number of Wks 14 </td> </tr> </table>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces			Transcript Max = 20 Spaces		Level of Credit <input type="checkbox"/> Undergrad only <input checked="" type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackham Grad w/add'l Work <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad	Credit Hours Min Max 1 1	Contact Hrs/Wk 1 Number of Wks 14	<p>Home Department Pharmacy Div # _____ Course Number 597</p> <p>Cross Listed Course Information Chemical Engineering 597</p> <p>Course Title Regulatory Issues for Scientists, Engineers, and Managers</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">TITLE ABBREVIATION</td> <td style="width: 35%;">Time Sched Max = 19 Spaces</td> <td style="width: 50%;">Regulatory Issues</td> </tr> <tr> <td></td> <td>Transcript Max = 20 Spaces</td> <td>Regulatory Issues</td> </tr> </table> <p>Course Description for Official Publication (Max = 50 words) Science- and technology-based rationale behind various regulatory issues involved in pharmaceutical and related industries.</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="radio"/> Degree Requirement <input type="radio"/> Tech Elective <input type="radio"/> Core Course <input type="radio"/> Other <input checked="" type="radio"/> Free Elective</p> <p>Prerequisites Permission of Instructor <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: 30%;"> Level of Credit <input type="checkbox"/> Undergrad only <input checked="" type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackham Grad w/add'l Work <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad </td> <td style="width: 10%;"> Credit Hours Min Max 2 2 </td> <td style="width: 10%;"> Contact Hrs/Wk 2 Number of Wks 14 </td> </tr> </table>	TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Regulatory Issues		Transcript Max = 20 Spaces	Regulatory Issues	Level of Credit <input type="checkbox"/> Undergrad only <input checked="" type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackham Grad w/add'l Work <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad	Credit Hours Min Max 2 2	Contact Hrs/Wk 2 Number of Wks 14
TITLE ABBREVIATION	Time Sched Max = 19 Spaces																		
	Transcript Max = 20 Spaces																		
Level of Credit <input type="checkbox"/> Undergrad only <input checked="" type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackham Grad w/add'l Work <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad	Credit Hours Min Max 1 1	Contact Hrs/Wk 1 Number of Wks 14																	
TITLE ABBREVIATION	Time Sched Max = 19 Spaces	Regulatory Issues																	
	Transcript Max = 20 Spaces	Regulatory Issues																	
Level of Credit <input type="checkbox"/> Undergrad only <input checked="" type="checkbox"/> All Credit types <input type="checkbox"/> Rackham Grad <input type="checkbox"/> Rackham Grad w/add'l Work <input type="checkbox"/> Non-Rackham Grad <input type="checkbox"/> Ugrad or Rackham Grad <input type="checkbox"/> Ugrad or Non-Rackham Grad	Credit Hours Min Max 2 2	Contact Hrs/Wk 2 Number of Wks 14																	
<p>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</p>	<p>Printing Information (Optional) <input checked="" type="checkbox"/> Print the course in the Bulletin <input checked="" type="checkbox"/> Print the course in the Time Schedule</p>																		
<p>Class Type(s) <input type="checkbox"/> Lec <input type="checkbox"/> Rec <input checked="" type="checkbox"/> Sem <input type="checkbox"/> Lab <input type="checkbox"/> Dis <input type="checkbox"/> Ind <input type="checkbox"/> Other _____</p> <p>Graded Section <input type="radio"/> Lec <input type="radio"/> Rec <input type="radio"/> Sem <input type="radio"/> Lab <input type="radio"/> Dis <input type="radio"/> Ind <input type="radio"/> Other _____</p> <p>Grading <input checked="" type="checkbox"/> A-E <input type="checkbox"/> CR/NC <input type="checkbox"/> S/U <input type="checkbox"/> P/F <input type="checkbox"/> Y</p> <p>Location <input checked="" type="checkbox"/> Ann Arbor <input type="checkbox"/> Biological Station <input type="checkbox"/> Camp Davis <input type="checkbox"/> Extension</p>	<p>Terms & 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 type="checkbox"/> Yearly <input type="checkbox"/> Alter Years <input type="checkbox"/> Even Years <input type="checkbox"/> Odd Years</p> <p>Half term <input type="checkbox"/> 1st <input type="checkbox"/> 2nd</p> <p>Cognizant Faculty Member: _____ Henry Wang (ChE) _____ Title Professor _____</p> <p>Grad Course: Attach nomination if Cognizant Faculty is not a regular graduate faculty</p>																		

Approval

Submitted By: Home Dept. Cross-listed Dept.

Name, Signature & Department

Home Dept. Frank Ascione, Pharmacy

Cross-listed Dept(s). Ronald Larson, Chemical Engineering

Curriculum Comm.

Faculty

Rackham

Cross listed Unit 1

[Handwritten Signature]

Pharmaceutical Engineering**Pharmacy / Chemical Engineering 597****Mission**

Pharmacy/Chemical Engineering 597

Students

Regulatory Issues for Scientists, Engineers and Managers

Courses

(2 credit hours)

Internships**Recruiters**

Time and Location: Fall Semester, Thursdays, 4-6 pm, 1180 Media Union

Research**News/Events**

Course Description

Contact**Links**

Given that pharmaceutical and related life sciences industries rely heavily on federal and international regulatory guidelines, students should have some exposure to basic knowledge about the Food and Drug Administration (FDA) and other regulatory agencies, their functions and their impact on drug and biologic development and manufacturing. This course shall primarily focus on the scientific and technical rationale behind various regulatory issues involved in pharmaceutical and related industries. Speakers from academia, the Food and Drug Administration (FDA), and the pharmaceutical and related industries will be invited to participate in teaching this course.

The course will be limited to 30 students. Preference will be given to students enrolled in Pharmaceutical Engineering, Chemical Engineering or the College of Pharmacy Student (third year or higher PharmD students or graduate students) are eligible to enroll. Other students will need the permission of the instructors.

Course co-coordinators are Dr. Frank Ascione, Professor of Social and Administrative Sciences at the College of Pharmacy, and Dr. Henry Wang, Professor of Chemical and Biomedical Engineering, College of Engineering.

Course Outline (tentative)

Date	Topic
September 5	Introduction and Assignments (Ascione and Wang, UM)
September 12	Federal Drug Regulations and FDA (Yu, FDA)
September 19	The Drug Approval Process (Ascione, UM)
September 26	The Economics and Use of Generic Drugs (Kirking, UM)
October 3	Patents and Regulations in Pharmaceutical Industry (Eisenberg, UM)
October 10	The Role of Science in International Pharmaceutical Product Standards: Evolution of Drug Bioequivalence (Amidon, UM)
October 17	Toxicological Issues for Regulatory Submission (Radulovic, Pfizer)
October 24	Drug and Biopharmaceutical Development and Manufacturing Processes (Wang, UM)

October 31	Equipment IQ & OQ, and Process Validation (Callihan, Pharma-Con Services)
November 7	Post-Approval Manufacturing Changes and Related cGMP Issues (Mannebach, Pharmacia)
November 14	FDA Enforcement: Procedures and Regulations (Kaszubski, FDA)
November 21	Regulatory Hurdles in Drug Development and Manufacturing (Lepore, Merck)
December 5	The Unique Circumstances for Biologic/Biotech Regulation (Bird, Lilly)

List of the lecturers for Fall, 2002:

Frank Ascione	The University of Michigan	Email: fascione@umich.edu
Henry Wang	The University of Michigan	Email: hywang@umich.edu
Lawrence Yu	FDA	Email: YUL@cder.fda.gov
Duane Kirking	The University of Michigan	Email: dkirking@umich.edu
Rebecca Eisenberg	The University of Michigan	Email: rse@umich.edu
Gordon Amidon	The University of Michigan	Email: glamidon@umich.edu
Louis Rad	Pfizer Global R & D, Ann Arbor	Email: Louis.Radulovic@pfizer.com
Don Callihan	Pharma-Con Services	Email: callihd@comcast.net
Mark Mannebach	Pharmacia	Email: mark.a.mannebach@pharmacia.com
David Kaszubski	FDA	Email: DKASZUBS@ORA.FDA.GOV
John Lepore	Merck & Co.	Email: john_lepore@merck.com
Gary Bird	Eli Lilly & Co.	Email: BIRD_THOMAS_G@Lilly.com

Top