

**Minutes of IT Curriculum Committee Meeting
Sept. 17, 2007 IT**

Present: Terry Jones (Astro), John Nieber (BBE), Timothy LaPara (CivE), David Shores (ChEn), Alon McCormick (ChEn), Gopalan Nadathur (CSci), Jim Stout (Geol), Will Durfee (ME), Ann Pineles (ITLD), Will Kuduk (ITSB), Susan Kubitschek (ITSS), Pamela Drake (UHP)

- 1) Minutes April 23, 2007 were APPROVED
- 2) Actions on courses were taken; see chart below

Agenda For September 17, 2007 IT Curriculum Committee Meeting

(shaded items for information only)

In red – comments from a previous meeting or provisional approval

CD = Catalog Description
 CP = Catalog Prerequisite
 EP = Enforced Prerequisite

Course	Title	Current	Proposed	Approved/ Comments
AEM 2301	Mechanics of Flight	Standard atmospheric properties, basic aerodynamics, generation of lift/drag. Airfoils and finite wings. Elements of aircraft performance, atmospheric flight mechanics, wind tunnel experiments. Experimental determination of lift/drag. Introduction to MatLab.	Standard atmospheric properties, basic aerodynamics, generation of lift/drag. Airfoils and finite wings. Elements of aircraft performance and atmospheric flight mechanics. Introduction to MatLab and simulations for aircraft design. Note: bringing description in line with current teaching	Approved
AEM 4230	Aerospace Propulsion	Basic one-dimensional flows: isentropic, area change, heat addition. Overall performance characteristics of propellers, ramjets, turbojets, turbofans, rockets. Performance analysis of inlets,	Basic one-dimensional flows: isentropic, area change, heat addition. Overall performance characteristics of propellers, ramjets, turbojets, turbofans, rockets. Performance analysis of inlets, exhaust nozzles, compressors, burners, and turbines. Rocket flight	Approved

Course	Title	Current	Proposed	Approved/ Comments
		exhaust nozzles, compressors, burners, and turbines. Rocket flight performance, single-/multi-stage chemical rockets, liquid/solid propellants. Design problems. Design project with technical report.	performance, single-/multi-stage chemical rockets, liquid/solid propellants. Note: bringing description in line with current teaching	
AST 1011	Exploring the Universe, Honors	Active; Faculty Sponsor: [none named]	Inactive; Faculty Sponsor: Staff	Withdrawn by TJ
AST 4299	Senior Honors Astrophysics Research Seminar	Active; Course Rep: Repetition not allowed CP: upper div honors student in IT or CLA, instr. consent Faculty Sponsor: [none named]	Inactive; Course Rep: Max. completions of course: 1 Max. Combined Credits of Course: 1.0 CP: upper div honors student in IT or CLA. # Faculty Sponsor: Staff	Withdrawn by TJ
AST 4994	Directed Research	Active;	Inactive;	Withdrawn by TJ
BMEN 5910	Special Topics in Biomedical Engineering	Department: Biomedical Engineering Inst. Grading Basis: Stdnt Opt	Department: Department of Biomedical Engineering Grading Basis: A-F only	Tabled 9/17/07
BMEN 5920	Special Topics in Biomedical Engineering	Department: Biomedical Engineering Inst. Instructor Contact Hours: 0.0	Department: Department of Biomedical Engineering Instructor Contact Hours: 3.0	Tabled 9/17/07
CE 5180	Special Topics		9/14/07 e-mail from Tim LaPara stating that the request is withdrawn; claims he did not submit.	Withdrawn by Tim LaPara
CE 5581	Water Resources: Individual and Institutions	Career: UGRD CP: [none]	Career: GRAD CP: #	Tabled 9/17/07
Chem 3501	Introduction to Thermodynamics, Kinetics, and Statistical Mechanics	CP: [1022 or 1032H], [MATH 2263 or MATH 2374], [PHYS 1302 or PHYS 1402V]	CP: [1022 or 1032H], [&MATH 2263 or MATH 2374], [PHYS 1302 or PHYS 1402V] Proposal Changes (for entry staff): 5/10/07: change to make MATH 2263 or MATH 2374 both co-req courses, instead of pre-req. This was approved by CHEM DUGS Chris Cramer at an ASSA meeting.	Tabled 9/17/07
Chem 3502	Introduction to Quantum Mechanics and Spectroscopy	CP: : [1022 or 1032H], [MATH 2263 or MATH 2374], [PHYS 1302 or PHYS 1402V]	CP: [1022 or 1032H], [&MATH 2263 or MATH 2374], [PHYS 1302 or PHYS 1402V] Proposal Changes:(5/10/07: change to make MATH 2263 or MATH 2374 both co-req courses, instead of pre-req.	Tabled 9/17/07

Course	Title	Current	Proposed	Approved/ Comments
Chem 5501	Introduction to Thermodynamics, Kinetics, and Statistical Mechanics	CP: [1022 or 1032H], [Math 2263 or Math 2374], [Phys 1302 or Phys 1402V]	CP: [1022 or 1032H], [&Math 2263 or Math 2374], [Phys 1302 or Phys 1402V] Proposal Changes: 5/10/07: change to make MATH 2263 or MATH 2374 both co-req courses, instead of pre-req. This was approved by CHEM DUGS Chris Cramer at an ASSA meeting.	Tabled 9/17/07
Chem 5502	Introduction to Quantum Mechanics and Spectroscopy	CP: : [1022 or 1032H], [MATH 2263 or MATH 2374], [PHYS 1302 or PHYS 1402V]	CP: [1022 or 1032H], [&MATH 2263 or MATH 2374], [PHYS 1302 or PHYS 1402V] Proposal Changes 5/10/07: change to make MATH 2263 or MATH 2374 both co-req courses, instead of pre-req.	Tabled 9/17/07
ChEn 3701	Introduction to Biomolecular Engineering	Allow up to 1 repetition(s) totalling up to 3.0 credit(s) EP: None	Allow up to 2 repetition(s) totalling up to 6.0 credit(s) EP: [4001 or equiv], [Chem 2302 or & Chem 2302], [Math 2373 or equiv]; high school biology recommended Note: "We have had a number of students who have been able to register for the courses without having the appropriate prerequisites. We do not want this to continue."	Withdrawn
ChEn	Proposed 4 – year Program change	See below and attached.	Alon McCormick: Proposed revision to ChEn 4-year plan, and associate changes in prerequisites and new course number.	9/12/07 memo plan-of-changes approved.
ChEn 4001	Material and Energy Balances	Term most frequently offered: Fall & Spring CP: [Chem 2302 or & Chem 2302], [Chem 3501 or & Chem 3501 or equiv], [Math 2273 or & Math 2373 or equiv], [Math 2374 or & Math 2374 or equiv], Phys 1302 EP: Predefined: 002336 – Chem 2302 or & 2302, C	Term most frequently offered: Fall CP: [Chem 2301 or & Chem 2301], [Math 2374 or & Math 2374 or equiv], Phys 1302 EP: [Chem 2301 or & Chem 2301], [Math 2374 or & Math 2374 or equiv], Phys 1302	Approved. Following committee's previous advice, ChEn is reforming the course number to ChEN 2001 starting Fall 08.
ChEn 4704	Advanced Undergraduate Physical Rate Processes I: Transport	CP: 4002, ChEn major upper division EP: 000815 – ChEn major upper division	CP: ChEn 4005, ChEn major upper division EP: ChEn 4005, ChEn major upper division	Approved
ChEn 4706	Advanced Undergraduate Physical and Chemical Thermodynamics	CP: Chem 3502, 4101, 4002, ChEn major upper division; recommend background in undergraduate engineering or chemistry courses in thermodynamics EP: 000815 – ChEn major upper division	CP: Chem 3502, ChEn 4101, 4005, ChEn major upper division; recommend background in undergraduate engineering or chemistry courses in thermodynamics EP: Chem 3502, ChEn 4101, 4005, ChEn major upper division;	Approved

Course	Title	Current	Proposed	Approved/ Comments
ChEn 4707	Advanced Undergraduate Statistical Thermodynamics and Kinetics	Years most freq.offered: no text Terms most freq.Offered: no text CP: 4002, 4101, Chem 3501, Chem 3502, ChEn major upper division EP: 000815 – ChEn major upper division	Years most freq.offered: Every Terms most freq.offered: Fall CP: ChEn 4005, 4101, Chem 3501, Chem 3502, ChEn major upper division EP: ChEn 4005, 4101, Chem 3501, Chem 3502, ChEn major upper division	Approved
ChEn 5771	Colloids and Dispersions	CE: no text EP:	Course Equiv: MatS 5771 EP: no text	Approved
CSci 4011	Formal Languages and Automata Theory	CD: Logical and mathematical foundations of Computer Science. Theoretical models and their applications. Formal languages, models of computation, computability, undecidability, computational complexity. Emphasizes grammars, parsing, interpreters, and compilers. Faculty Sponsor: no text	CD: Logical and mathematical foundations of Computer Science. Formal languages and their correspondence to machine models. Relevance to practical issues such as lexical Hist.Info: 6/07-Course description updated to reflect the way it is now taught Faculty Sponsor: Staff	Approved
EE 4043W	Industrial Assignment II	EP: EE or CompE major, upper division	EP: EE or CompE major, upper div, EE 3041	Prov Approv. 2/21/07; Approved 9/17/07
EE 5333	Analog Integrated Circuit Design	Instructor	No required consent.	Tabled 9/17/07
EE 5970	Special Topics in Electrical Engineering IV		New Course: 1 – 4 cr, Grade Base: Stdnt Opt, CD: Special topics in electrical and computer engineering. Topics vary. CP: EE or CompE grad student or #; only available for Rochester Campus, EP: 000910 – EE grad or CompE grad major, Offered most freq: Fall, Spr.	Tabled 9/17/07
EE 5561	Image Processing and Applications	Consent: Department	Consent: No required consent	Tabled 4/23/07
EE 5627	Optical Fiber Communication	Years most freq.offered: Every academic year Terms most freq.offered: Spring	Years most freq.offered: Other Terms most freq.offered: Fall, Spring	Tabled 9/17/07
EE 5629	Optical System Design	Years most freq.offered: Every academic year Terms most freq.offered: Fall	Years most freq.offered: Other Terms most freq.offered: Fall, Spring	Tabled 9/17/07

Course	Title	Current	Proposed	Approved/ Comments
FM 5001	Preparation for Financial Mathematics I	CD: Mthematics needed for MFM program. CP: no text	CD: Mathematics needed for MFM program. CP: Grad MFM major or MFM program director approval <u>Proposal changes:</u> Only change is in prerequisite listing for catalog. Correct spelling error in description	Tabled 9/17/07
FM 5002	Preparation for Financial Mathematics II	5001	CP: 5001 and program director approval	Tabled 9/17/07
FM 5011	Mathematical Background for Finance I	CP: [5001, 5002] with grade of at least B or MFM program director approval	CP: [5001, 5002] with grade of at least B or MFM program director approval; Grad MFM major	Tabled 9/17/07
FM 5012	Mathematical Background for Finance II	CP: 5011	CP: 5011; Grad MFM major and program director approval	Tabled 9/17/07
FM 5021	Mathematical Theory Applied to Finance I	CP: 5011 or &5011	CP: 5011 or &5011; Grad MFM major and program director approval	Tabled 9/17/07
FM 5022	Mathematical Theory Applied to Finance II	CP: 5021, [5012 or &5012]	CP: 5021, [5012 or &5012]; Grad MFM major and program director approval	Tabled 9/17/07
FM 5031	A Practitioner's Course in Finance I	CP: 5021 or &5021	CP: 5021 or &5021; Grad MFM major and program director approval	Tabled 9/17/07
FM 5032	A Practitioner's Course in Finance II	CP: 5031, [5022 or &5022]	CP: 5031, [5022 or &5022]; Grad MFM major and program director approval	Tabled 9/17/07
FM 5091	Programming and Presentation in Finance I	CP: no text	CP: Grad MFM major and program director approval	Tabled 9/17/07
FM 5092	Programming and Presentation in Finance II	CP: 5091	CP: 5091; Grad MFM major and program director approval	Tabled 9/17/07
Geo 1002	Earth History	Years most freq. offered: Other frequency Terms most freq. offered: Fall, Spring	Years most freq. offered: Other Terms most freq. offered: Fall <u>Proposal Changes:</u> Correction in semester course is most likely to be taught	Approved
Geo 1005	Geology and Cinema	Course Equivalency: Predefined 00053-Geo 1001/1101/1105	Course Equivalency: Geo 1001/1101/1105	Approved

Course	Title	Current	Proposed	Approved/ Comments
Geo 1006	Oceanography	Course Equivalency: 00057 – Geo 1006/5006 Faculty Sponsor Name(s): Chris Paola, William Seyfried, Kent Kirby	Course Equivalence: Geo 1106 Faculty Sponsor Name(s): Katsumi Matsumto, William Seyfried	Line Approved Line Tabled 9/17/07 and “Staff” entered.
Geo 1081	Conspiracies, Fraud, and Deception in Earth History	Faculty Sponsor: [none named]	Faculty Sponsor: Olaf Pfannkuch	Tabled 9/17/07
Geo 1102	Introduction to Earth History	Terms most freq. offered: Fall, Spring, Summer Faculty Sponsor Name: [none named]	Terms most freq. offered: Fall Faculty Sponsor Name: David Fox	Line Approved Line Tabled 9/17/07 and “Staff” entered.
Geo 1105	Geology and Cinema	Course Equivalency: 01201 – Geo 1005/Geo 1105	Course Equivalency: Geo 1001/1005/1101	Approved
Geo 1901	Freshman Seminar: Environment	Fall 2006 topics courses set up.	Fall 2007 Topics course entry- interim step	Approved
Geo 4103W	Fossil Record of Mammals	Max. Cr: 4.0 , Min. Cr: 4.0 Years most freq. offered: no text Terms most freq. offered; no text Comp. 1: DIS (no final exam) ; Comp. 2: LEC (with final exam) Graded Component: DIS; Instr. Contact Hrs: 4.0 APU: Bypass: no, Units/Cr: 4.0 FPU: Bypass: no, Units/Cr: 4.0 Repetitions: repetitions not allowed.	Max. Cr: 3.0, Min. Cr: 3.0 Years most freq. offered: Even only Terms most freq. offered: Spr Comp. 1: Lecture; Comp. 2: None Graded Component: Lecture; Instr. Contact Hrs: 3.0 APU: Bypass: No, Units/Cr: 3.0 FPU: Bypass: No, Units/Cr: 3.0 Reps: Max Course Completion: 1; Max Comb. Cr: 3.0 Proposal changes: Removal of discussion section and reduction to 3 credits.	Approved

Course	Title	Current	Proposed	Approved/ Comments
MatS 5771	Colloids and Dispersions	New Course	New Course: 3.0 cr, Lect., Grade Base A-F or Aud Years most freq.offered: Every Terms most freq.offered: Fall CD: Preparation, stability, coagulation kinetics or colloidal solutions. DLVO theory, electrokinetic phenomena. Properties of micelles, other microstructures. CP: Physical chemistry EP: No prerequisite Equivalency: ChEn 5771 Rep: no Editor Comment: This course is to be cross listed with ChEn 5771. (Sept. 7, 2007)	Approved.
Math 1001	Excursions in Mathematics	Max.Cr: 3.0, Min.Cr: 3.0, Instr. Contact Hrs: 4.0 APU: Bypass: No, Cr: 3.0 FPU: Bypass: No, Cr: 3.0 Rep: Repetition now allowed Faculty Sponsor: no text	Max.Cr: 4.0, Min.Cr: 4.0, Instr. Contact Hrs: 5.0 APU: Bypass: No, Cr:4.0 FPU: Bypass: No, Cr:4.0 Repetitions: Max Course Completion: 1; Max Comb.Cr: 4.0 Faculty Sponsor: Staff	Tabled 9/17/07
Math 1031	College Algebra and Probability	Max.Cr: 3.0, Min.Cr: 3.0, Instr. Contact Hrs: 4.0 APU: Bypass: No, Cr:3.0 FPU: Bypass: No, Cr:3.0 Repetitions: Repetitions now allowed.	Max.Cr: 4.0, Min.Cr: 4.0, Instr. Contact Hrs: 5.0 APU: Bypass: No, Cr:4.0 FPU: Bypass: No, Cr:4.0 Repetitions: Max Course Completion: 1; Max Comb.Cr: 4.0	Tabled 9/17/07
Math 1051	Precalculus I	Max.Cr: 3.0, Min.Cr: 3.0, Instr. Contact Hrs: 4.0 APU: Bypass: No, Cr:3.0 FPU: Bypass: No, Cr:3.0 Repetitions: Repetitions now allowed	Max.Cr: 4.0, Min.Cr: 4.0, Instr. Contact Hrs: 5.0 APU: Bypass: No, Units/Cr:4.0 FPU: Bypass: No, Units/Cr:4.0 Repetitions: Max Course Completion: 1; Max Comb.Cr: 4.0	Tabled 9/17/07
Math 1151	Precalculus II	Max.Cr: 3.0, Min.Cr: 3.0, Instr. Contact Hrs: 4.0 APU: Bypass: No, Cr:3.0 FPU: Bypass: No, Cr:3.0 Repetitions: Repetitions now allowed	Max.Cr: 4.0, Min.Cr: 4.0, Instr. Contact Hrs: 5.0 APU: Bypass: No, Units/Cr:4.0 FPU: Bypass: No, Units/Cr:4.0 Repetitions: Max Course Completion: 1; Max Comb.Cr: 4.0	Tabled 9/17/07
ME 2011	Introduction to Engineering	CP: IT lower div, honors	CP: IT lower div or IT lower division honors	Approved

Course	Title	Current	Proposed	Approved/ Comments
ME 5090	Advanced Engineering Problems	CD: Special investigations in various fields of mechanical engineering and related areas including an independent study project.	CD: Independent research project with a faculty adviser in various fields of mechanical engineering, typically related to the faculty adviser's research interests. Students must contact a faculty advisor to develop a project description well in advance of the project start date. Proposal Changes: Change description to be more specific.	Approved
ME 5666	Modern Thermodynamics		New course; 4.0 cr., Grade Base: A-F only CD: This course focuses on the applications of thermodynamic principles to natural phenomena. It is designed as a two-instructor course to re-introduce the science of Thermodynamics and combined it with the art of engineering modeling at molecular and continuum levels in a unified multiscale approach. The students will be divided into groups of 4-5. Each group will be assigned a project, which required application of the thermodynamic modeling skills taught in the course. There will be undergraduate and graduate students in the same group. This will help develop group working skills for the students at all levels as well as project administration and planning skills for the graduate students. The course will include 3 hour/week classroom instruction and 1 hour/week project discussion. The Project Presentations at weeks 8 and 14 will be webcast. Select groups of national high school students will be participating via web at week 14. They will interact with the presenting groups and their evaluations of each presentation will be part of the course grade. CP: ME 3331 or equivalent. EP: No prereqs, Offered: Every year: Fall, Spring	Approved
MOT 4001	Leadership, Professionalism and Business Basics for Engineers	MOT 4000 Fall	MOT 4001 Fall, Spring Note: change in number to comply with numbering convention	Provisional approval 4/10/07 Tabled 9/17/07

Course	Title	Current	Proposed	Approved/ Comments
--------	-------	---------	----------	-----------------------

Attachments:

CDTL, SENG or FM (Professional Masters) Courses

Course	Title	Current	Proposed	Approved/ Comments
--------	-------	---------	----------	-----------------------

September 12, 2007

To: IT Curriculum Committee

From: Alon McCormick, ChEn DUS, for ChEn faculty

Re: Proposed revision to ChEn 4-year-plan, and associate changes in prerequisites and new course number

Our constituencies have suggested in multiple ways, and the faculty agree, that we should begin the Chemical Engineering Laboratory sequence in the Junior year (as we did on the quarter system). In this way, students can develop teamwork and project skills earlier, taking advantage of this development in their Junior Summer internship, their Senior design projects, and in their Senior Fall interviews.

We intend to maintain the same curriculum content, but we'll change the timing. Thus, we are not calling this a curricular revision, but rather just a 4-year-plan revision (with adjustments to prerequisites and one course number).

To make room to begin Chem Eng Lab in the Junior year, we are proposing the following changes (illustrated with the attached plans):

- 1) Remove the lighter, 2 credit ChEn lab (currently ChEn 4402) from the Senior Spring to the Junior Spring; and add a new Junior Spring 2 credit lab (christened ChEn 3401, the new number reflecting its position relative to the Senior lab, ChEn 4401). We will select experiments that work well with the material already covered in the Junior Fall. Moreover, the lighter technical content will allow the students to focus more on group skills, communication, and the transition to open-ended lab and design work.
- 2) Move Analytical Chemistry (currently ChEn 4121) to the Sophomore Spring. We have discussed this with staff and faculty in Chemistry who will be handling prerequisite adjustments and enrollment – Phil Buhlmann in particular.
- 3) Move Material & Energy Balances (currently ChEn 4001) to the Sophomore Fall. We will adjust the prerequisites to accommodate this shift. Quantum Chem (Chem 3502) will have to move later to make room; it is not prerequisite to any particular ChEn course, but will still be required for our degree.
- 4) We will also take the opportunity to move Process Dynamics and Control (ChEn 4601) forward to the Senior Fall so that students will be able to take advantage of it in their design projects and while interviewing.
- 5) Take advantage of the opportunity to reform our course numbering to better reflect the level of the coursework. Thus,
 - ChEn 4001 will become ChEn 2001,
 - Chem 4121 will become Chem 2121,
 - ChEn 4005, 4101, 4006, 4102, and 4201 will become 3005, 3101, 3006, 3102, and 3201.

(In the past, these changes had been postponed to avoid confusion with other curriculum changes.)

Course	Title	Current	Proposed	Approved/ Comments
--------	-------	---------	----------	-----------------------

We would like to begin this new sequence with students who are Freshmen this semester (the Class of 2011). They will first encounter the newly-placed ChEn 4001 next Fall (08). Upon your approval, I will immediately contact all IT freshmen to furnish them with an updated ChEn 4-year-plan, and I will also send updated information to advisors of prospective transfer students.

As always happens when a course is moved forward one year in the curriculum, there will be a surge. We are moving Chem 4121 from the Junior to the Sophomore year; NOMINALLY, in Spring 09, that course will need to serve both Juniors of the Class of 2010 AND Sophomores of the Class of 2011. Chemistry does not have the capacity for such a high Chem 4121 enrollment in Spring 09, but Phil Buhlmann and I agree that this surge can be handled by encouraging some ChEn students to substitute Chem 2101/2111 (offered in Fall and in Summer), particularly if they are ahead-of-schedule in the Chemistry sequence (as many ChEn's are). In the worst case, if a Spring 09 Sophomore cannot take 4121 and also cannot take 2101/2111 the following Summer or Fall, s/he can still take it concurrent with ChEn 3401 as a Junior in Spring 10.

After the surge, though, I plan to remove the "concurrent" allowance in the ChEn 3401 prerequisites AND to reform our course numbering to 2xxx, 3xxx, and 4xxx.

Laura Ericksen and I have begun to explore classroom space and times that will be required in the new plan, and Frank Bates and Jeff Roberts are both considering the implications on their teaching schedules – we've encountered no insurmountable difficulties.

Note: Added by IT Student Services. Please see 2 attachments – Current and Proposed.