# Minutes of the I.T. Curriculum Committee
September 23, 2002

**Present: Aleksa Babic (ITSB), D. Boley (CSci),G. Beavers (AEM), Santhi Elayaperumal (ITSB), D. Frank (Math/Chair), L. Gray (Math), Lily Guimond (ITSB), K. Heller (Phys), P. Hudleston (ITSA), T.J. Jones (Astro), L.Kinney (ECE),Cynthia Rostollon (ITSB), D. Shores (CEMS), K. Smith (CE), J. Stout (Geol) B. Wilson (BAE)**

1. Minutes of April 29 meeting APPROVED
2. Actions on courses were taken; see chart below:
3. Program/Curriculum Changes - Geology and Geophysics; APPROVED with one minor change. See below

| Course | Title | Current | Proposed | Approved/ Comments |
|---|---|---|---|---|
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| BMEn 5444 | Muscle | | New Course: 3 cr, Opt Grade Base, Lect; Muscle structure/function: molecular mechanism by which force is generated.<br>SP: None | Tabled again. Title more specific? no prerequisite? |
| CE 5351 | Advanced Mathematics for Civil Engineers | | New Course: 3 cr, A-F grade base, Lect; To teach mathematical skills required by senior and graduate civil engineering students, emphasizing skills not readily acquired elsewhere at the University, yet relevant for many civil engineers. The mathematical principles are explained in an engineering setting; applications will be taken from a variety of areas in civil engineering.<br>SP: Sr or Grad in CE, or instructor approval; Math 2263 or Math 2374 or equivalent | Tabled again; still must clarify how this course relates to similar Math courses; also prereqs need to be determined |
| Chem 5245 | Introduction to Drug Design | | New Course: 3 cr, A-F Grade Base, Lect.<br>Concepts that govern design/discovery of drugs. Physical, bioorganic, medicinal chemical principles applied to explain rational design, mechanism of action drugs.<br>Cross listed: MedC 5245<br>SP: Chem 2302 or equiv | Tabled (Prov. Approv. 5/16/02) |
| Chem 5541 | Dynamics | | New Course: 3 cr, A-F or S-N, Lect; Course on dynamics in the broad sense, covering topics such as Hamilton's and Lagrange's equations of motion, normal modes and molecular rotation, Langevin equation and Brownian motion, time correlation functions, collision theory, cross-sections, energy transfer, molecular forces and potential energy surfaces, classical electrostatics.<br>SP: Undergrad phys chem course and instructor approval.<br>Comment: same as 8541. Chem 5541 will be only 3 credits, vs. 8541 which is 4 credits. Course requirements for students in 5541 will be reduced accordingly | Tabled. Note: Cross listing not appropriate here |

| Course | Title | Current | Proposed | |
|---|---|---|---|---|
| Chem 5551 | Quantum Mechanics I | | New Course: 3 cr, A-F or S-N, Lect; Topics include: review of classical mechanics; postulates of quantum mechanics, with applications to the determination of single particle bound state energies and scattering cross-sections in central field potentials; density operator formalism with applications to the description of two level systems, two particle systems, entanglement and the Bell inequality.<br>SP: Undergrad phys chem course and instructor permission<br>Comment: Same as Chem 8551 | Tabled. Note: Cross listing not appropriate here |
| CSci 3970 | Industrial Student Co-op Assignment | SP: CSci, in coop program | SP: #, CSci, in coop program<br><br>Note: Adding instructor consent | Approved. Change appears to have been made in ECAS |
| CSci 5980 | Special Topics in Computer Science | | New Topic Title: Advanced Language Design and Analysis<br>3 cr., SP: CSci 5106 or # (for S03) | Approved 9/20/02 |
| Geo 4102W | Vertebrate Paleontology: Evolutionary History and Fossil Records of Vertebrates | | New Course: 4 cr, A-F, Lect, Disc; Examination of vertebrate evolution (exclusive of mammals) in phylogenetic, temporal, functional, and paleoecological contexts; with a review of vertebrate anatomy and methods in reconstructing phylogenetic relationships and the origin and history of major vertebrate groups from the Cambrian Explosion to the modern diversity of vertebrate animals.<br>SP: Geo 1001 or 1002 or Bio 1001, 1002, or 1009, or instructor's permission | Approved |
| Math 1281, 1282 | Calculus With Biological Emphasis I, II | Grade Base: A-F | Grade Base: Optional | Approved (Prov. Approv. 9/13/02) |
| Math 2066 | Elementary Differential Equations | This course will not be taught; for info only. | This course will not be taught; it is used to provide credit for transfer students who have taken a sophomore-level differential equations class that does not contain enough linear algebra to qualify for credit for our Math 2243. | Approved (credits variable) |
| Math 2142 | Elementary Linear Algebra | | New Course: 1-4 cr, A-F, Lect; This course will not be taught. Its purpose is to provide credit for transfer students who have taken a sophomore-level linear algebra course that does not contain enough differential equations to qualify for credit for our Math 2243.<br>Comment: New "dummy" course to accommodate transfer credits. | Approved |
| Math 2582H | Honors Calculus II (Advanced Placement) | | New Course: 5 cr, A-F Grade Base, Lect, Disc.<br>First semester of an integrated three semester sequence covering infinite series, multivariable calculus (including vector analysis with Gauss, Green and Stokes theorems, linear algebra (with vector spaces), ODE and an introduction to complex analysis. The material is covered at a faster pace and at a somewhat deeper level than the regular honors sequence.<br>SP: Departmental permission<br>Note: New numbering to distinguish from regular honors sequence | Approved (Prov. Approv.) 7/22/02 |
| Math 3592H | Honors Mathematics I | | New Course: 5 cr, A-F Grade Base, Lect, Disc.<br>First semester of a three-semester sequence focussing on multivariable calculus for students with mathematical talent and an inclination to pursue it more seriously than in our other calculus offerings. The first semester starts with a rigorous introduction to sequences and series, and then moves on to a theoretical treatment of multivariable calculus. A strong introduction to linear algebra forms a part of this treatment.<br>SP: Departmental permission | Approved (Prov. Approv. 7/22/02) "More than Math 1572"; for students starting with 2nd Sem Math |

| Course | Title | Current | Proposed | |
|---|---|---|---|---|
| Math 4995 | Senior Project for CLA | SP: 2 sem of upper div math | SP: 2 sem of upper div math and departmental consent | Approved |
| Math 4997W | Senior project (Writing Intensive) | SP: [2 sem upper div math, CLA math major] or # | SP: 2 sem upper div math and departmental consent | Approved |
| ME 3281 | System Dynamics and Control | SP: ME upper div, AEM 2021, CSci 1113 | SP: ME upper div, AEM 2021, Math 2373 or Math 2243 | Tabled |
| ME 4131W | Thermal Environmental Engineering Laboratory | SP: ME upper div or grad student, 3322 or 3233 | SP: ME upper div or grad student, 3031 and 3322<br>Comment: The original prereq was entered wrong. There is no ME 3233. It may have been a typo. | Tabled |
| ME 5105 | HVAC System Design | SP: IT upper div or grad student, 3322 or 3323 | SP: IT upper div or grad student, 5103 | Tabled |
| Phys 1301, 1302W | Introductory Physics for Science and Engineering I,II | 4 cr | 5 cr | Both Tabled again reviewed issues from last spring, with emphasis that 128 credit cap is firm (PH will verify this with Swan) and effect this change would have on Engineering programs |
| Phys 1401, 1402V | Honors Physics I, II | 4 cr | 5 cr | |
| Phys 4101 | Quantum Mechanics | | Discussion added | Approved (Prov. Approv. 5/30/02) |
| Phys 5201 | Thermal and Statistical Physics | | 3 cr, A-F, Lecture. Principles of thermodynamics and statistical mechanics. Selected applications such as kinetic theory, transport theory, phase transitions. Designed primarily for graduate students.<br>SP: 2601 or equivalent<br>Note: A graduate version of 4201 | Approved (Prov. Approv. 5/30/02) |

**CDTL (Professional Masters) Courses**

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|---|---|---|---|---|
| MOT 5991 | MOT Independent Study Course | | New Course: 1-3 cr, S-N, Independent Study; repeatable once;<br>MOT grad student only. Independent study in MOT-related topic<br>Comment: Optional course, for returning students to complete their degree | |
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Program Changes:

Geology:

This change is credit neutral (no change in the total credits – 120 - needed for the degree).

1) Change Additional cognate science credits from 16 to 12 cr

2) Within this requirement change:

"Math 2373 (4 cr) plus 12 additional science credits..."
to
"Math 2373 (4 cr) or Math 2374 plus 8 additional science credits..."

3) Change the number of Geology and Geophysics electives from 15 to 12 credits.

4) Change the number for free electives from 5 to 11 credits.

Geophysics:

1) 9 cr of 4xxx elective geophysics courses
to
9 cr of 4xxx and 5xxx geophysics courses

APPROVED with "11 credits" changed to "12 credits" in section 4.