

Minutes of the I.T. Curriculum Committee
January 29, 2007

Present: J. Carlis (CSCI), C. Cramer (Chem), P. Drake (Honors), D. Frank (Math&Chair), P. Hudleston (ITSA), T.J. Jones (Astro), William Kuduk(ITSB),A. Pineles (ITLD), S. Rudaz (Phys), T. Shield (AEM), D. Shores(CEMS), J. Stout (Geo), U. Tschirner (BBE)

- 1) Minutes December 4, 2006 were APPROVED.
- 2) Actions on courses were taken; see chart below.

Agenda For Jan.29, 2007 IT Curriculum Committee Meeting
(shaded items for information only)

In red – comments from a previous meeting or provisional approval

CP = Catalog Prerequisite

EP = Enforced Prerequisite

Course	Title	Current	Proposed	Approved/ Comments
AEM 4331	Aerospace Vehicle Design I: Aircraft	CP: [2301, AEM sr] or # EP: AEM 2301, [IT upper div or grad student]	CP: [2301,4202, AEM sr] or # EP: AEM 2301, AEM 4202	Approved
AEM 4371		CP: 2301, 4202, [IT upper div or grad student] EP: AEM 2301, AEM 4202	CP: 2301, 4202, 4303, [IT upper div or grad student] EP: AEM 2301, AEM 4202, AEM 4303 [IT upper div or grad student]	Approved. Delete "IT upper div or grad student"
BME n 4001W	Biomedical Engineering Design I	EP: None	EP: BMEN upper div	Tabled again. Tabled from 12/4/06
BME n 4002W	Biomedical Engineering Design II	EP: None	EP: BMEN upper div	Tabled again. Tabled from 12/4/06
Chemistry		Various items – see end of these minutes.		Approved.

Course	Title	Current	Proposed	Approved/ Comments
CSci 1901	Structure of Computer Programming I	Principles of programming. Different programming paradigms (message-passing, data-driven, event-driven). Students develop algorithms/data types using language such as Scheme and techniques such as abstraction, procedures, recursion, iteration.	Recursion as an algorithm development technique. Use of abstractions to hide program details and modularity to manage complexity. Objects and data structures. The programming language Scheme is used as an implementation vehicle; Python is introduced to ease the transition to other programming languages. Note: 1/2007-Update course desc & include Python	Approved
CSci 5143	Real-Time and Embedded Systems	How to control robots and video game consoles. Lecture, informal lab.	Real-time systems require timely response by a computer to external stimuli. Embedded systems include the computer as part of the machine. As commercial products get “smarter” and more capable, knowledge of these fields grows in importance. Learn how to control robots and video game consoles. Lecture, informal lab. Note: Jan 07-fix course description which somehow got edited out.	Approved
CSci 5451	Introduction to Parallel Computing: Architectures, Algorithms and Programming	Parallel architectures design, embeddings, routing, examples of parallel computers, fundamental communication operations, performance metrics, parallel algorithms for sorting, matrix problems, graph problems, dynamic load balancing, types of parallelisms, parallel programming paradigms, message passing programming in MPI, data parallel programming in HPF, shared-address space programming in threads. Offered: Fall, Spring	Parallel architectures design, embeddings, routing, examples of parallel computers, fundamental communication operations, performance metrics, parallel algorithms for sorting, matrix problems, graph problems, dynamic load balancing, types of parallelisms, parallel programming paradigms, message passing programming in MPI, shared-address space programming in openMP and/or threads. Remove CCE course description Offered: Spring Note: Jan 07-small change to description which was outdated. Corrected offering pattern info.	Approved

Course	Title	Current	Proposed	Approved/ Comments
Geo 5205	Fluid Mechanics in Earth and Environmental Sciences		<p>New Course: 3 cr, Lect. Grade Base: Stdnt Opt</p> <p>This introductory course to fluid mechanics covers the physics of fluid flow in geological, geophysical, and environmental processes. We will derive the governing flow equations from conservation of mass, energy, and momentum. These equations describe flow in many Earth and Environmental Science processes including fluid flow in oceans, lakes, rivers, and the atmosphere; flow of the Earth,s mantle or outer core; wave propagation; porous medium flow in soils and fractures; and diffusive, advective, and dispersive transfer of heat and certain tracers, chemicals, contaminants, and microbes in fluids. However, exact solutions can often only be found for a few special cases. Thus, justifiable assumptions must often be made to solve real problems. Hence, the course will emphasize 1) critical analysis of assumptions that enter derivations or modifications of equations, 2) dimensional analysis and similitude, and 3) solving of specific problems in the Earth and Environmental Sciences. Other topics may include fluid rheology, convection, turbulent flow, porous flow, and poroelasticity.</p> <p>Offered: Fall, Odd Years</p> <p>CP: Math 2263 or #</p>	Tabled. Need discussion on how this course relates to the various courses on fluid mechanics offered by CE
Geo 4971W	Field Hydrogeology	CP: 5701, #	<p>CP: #</p> <p>Adding writing intensive designation for the course.</p>	Approved.
Math 1001	Excursions in Mathematics	3 cr, 4 contact hrs / week	4 cr, 5 contact hrs / week	Tabled again. Tabled from 12/4/06
Math 1031	College Algebra and Probability	3 cr, 4 contact hrs / week	4 cr, 5 contact hrs / week	Tabled again. Tabled from 12/4/06
Math 1051	Precalculus I	3 cr, 4 contact hrs / week	4 cr, 5 contact hrs / week	Tabled again. Tabled from 12/4/06
Math 1151	Precalculus II	3 cr, 4 contact hrs / week	4 cr, 5 contact hrs / week	Tabled again. Tabled from 12/4/06

Course	Title	Current	Proposed	Approved/ Comments
Math 5447	Theoretical Neuroscience		<p>New Course: 4 cr; Lect, Grade Base: Stdnt Opt, Nonlinear dynamical system models of neurons and neuronal networks. Computation by excitatory and inhibitory networks. Neural oscillations, adaptation, bursting, and synchrony. Memory systems. CP: 2243 or 2373 or 2574 3 contact hrs, Offered every fall Comment by Instructor: "There is hardly any overlap with 5201. It's so different, that I forgot that it looks similar in name. 5201 is deals with modeling the detailed physical structure of neurons at the cellular and subcellular level. As these equations are extremely complicated to prohibit analysis, they explore the consequences of the structure with simulation packages. We will not cover those areas in the mathematical neuroscience course.</p>	<p>Approved. Should name be changed to Mathematical Neuroscience.? Tabled 12/4//06</p>
Phys 2201	Introductory Thermodynamics and Statistical Physics	<p>Old Title: Introductory Thermal and Statistical Physics 2 cr, Lec, 2 hrs/wk Thermodynamics and its underlying statistical nature. CP: [1302 or 1402], [& Math 2243 or Math 2373 or Math 2573] Equiv: None</p>	<p>New Title: Introductory Thermodynamics and Statistical Physics 3 cr, Lec, 3 hrs/wk An introduction to Thermodynamics and its underlying statistical nature. Offered: Fall CP: [1302W or 1402V], [& Math 1272 or Math 1372 or Math 1572H] None: Phys 4201/5201 Note: This course material is covered in the honors physics series and as of fall, 2001, was incorporated into Phys 2503, the new 4-credit course for physics majors which takes the place of Phys 2303. As of fall, 2008, the material covered in this class will no longer be covered in Phys 2503.</p>	<p>Approved</p>
Phys 5041	Mathematical Methods for Physics	<p>Inactive Title: Analytical and Numerical Methods of Physics I Survey of mathematical techniques, both analytic and numerical, needed for physics. Application to physical problems. CP: 2601 or grad student EP: None</p>	<p>Active Title: Mathematical Methods for Physics Survey of mathematical techniques needed in the analysis of physical problems, with an emphasis on analytical methods. CP: 2601 or grad student EP: Exclude fr or soph 5000 level courses</p>	<p>Withdrawn. Note: The current course is Active, not Inactive. Tabled 12/4//06</p>

Course	Title	Current	Proposed	Approved/ Comments
These changes to Chemistry courses were approved with these comments:				
			i) in item 7), should the multivariable math course be a prereq or coreq?	
			ii) in item 8b), the prereq should be rewritten since CHEN 5221 and MATS 5221 are the same course	
1)	CHEM 1022:	add pre-requisite for a grade of C- or better in CHEM 1021		
2)	CHEM 2302:	add pre-requisite for a grade of C- or better in CHEM 2301		
3)	CHEM 2311:	add pre-requisite for a grade of C- or better in CHEM 2302, or else concurrent enrollment		
4)	Add CHEM 3501 as a pre-requisite for the following courses:			
	CHEM 4011	Mechanisms of Chemical Reactions		
	CHEM 4321	Organic Synthesis		
	CHEM 4322	Adv. Org. Syn.		
	CHEM 4352	Physical Organic Chemistry		
	CHEM 4361	Interpretation of Organic Spectra		
	CHEM 4411	Bioorganic Chemistry / Chemical Biology		
	CHEM 4412	Enzyme Mechanisms		
	CHEM 4413	Nucleic Acids		
5)	CHEM 4735:	change frequency to "other."		
6)	CHEM 4413:	change frequency to "other"		
7)	CHEM 3502 and CHEM 5502:	change prereq language to match CHEM 3501/5501, and read " prereq [1022 or 1032H], [MATH 2263 or MATH 2374], [PHYS 1302 or PHYS 1402V]"		
8)	CHEM 4223W prereqs:	a) correct CHEM 5221 to be 4221 and b) add CHEN 5221 and MATS 5221 as prereqs		
9)	CHEM 4352:	a) correct CHEM 5011 to be 4011 and b) remove "or 2302 or equiv"		