

Minutes of the I.T. Curriculum Committee
September 20, 2004

Present: J. Carlis (CSci), P. Cushman (Phys), D. Frank (Math/Chair), P. Hudleston (ITSA), T.J. Jones (Astro), L. Kinney (ECE), M. Marasteanu (CE), T. Shield (AEM), D. Shores (CEMS), J. Stout (Geo), P. Strykowski (ME), B. Tomich (ITSB), K. Yin (BioBased Products)

1. Minutes of April 26, 2004 meeting were APPROVED
2. Actions on courses were taken – see chart below
3. Mechanical Engineering – change in core sequence in thermal science ME 3321, 3322 (8 credits) to ME 3331, 3332, 3333 (9 credits), and total credits for degree from 127 to 128. APPROVED

(shaded items for information only)

In red – comments

SP = Semester Prerequisite

Course	Title	Current	Proposed	Approved/ Comments
AEM 3031	Deformable Body Mechanics	SP: [2011 or 2021], [Math 2374 or equiv], [concurrent enrollment Math 2373 or equiv], IT	SP: [2011 or 2021], [Math 2374 or equiv], [concurrent enrollment Math 2373 or equiv], IT, [BMEN 3001, (BMEN majors only)].	APPROVED
AEM 4331	Aerospace Vehicle Design I-Aircraft	Old Title: Aerospace Vehicle Design I Students work in teams/disciplines to design aerospace vehicle. Design process, project environment, mission requirements, trade studies, vehicle sizing, performance, stability/control, propulsion, trajectory analysis, CAD/vehicle integration, systems/equipment, operating envelopes, baseline specification, certification. Professional ethics/responsibilities. Students keep design log. Oral presentation, written report.	New Title: Aerospace Vehicle Design I-Aircraft Students work in teams/disciplines to design an atmospheric flight vehicle with realistic constraints and engineering standards: Design process, project environment, mission requirements, trade studies, vehicle sizing, performance, stability/control, propulsion, trajectory analysis, CAD/vehicle integration, systems/equipment, operating envelopes, baseline specification, certification. Professional ethics/responsibilities. Students keep a design log or notebook and present a Conceptual Design Review (oral presentation) with written report.	APPROVED

Course	Title	Current	Proposed	Approved/ Comments
AEM 4332W	Aerospace Vehicle Design II-Space Vehicles, missions and systems <i>(title incomplete in agenda)</i>	Old Title: Aerospace Vehicle Design II Students work in project groups to design/build/test model of vehicle designed in 4331. Design, proposals, schedules/milestones/critical-path, CAD/CAM, drawings/specifications, control systems, weight/balance envelopes, test matrix, structural analysis/testing, wind tunnel/water channel testing, flight testing, certification. Professional ethics. Design log, status reports, written report, oral presentation. SP: [5329 or #], [EngC 1011 or equiv]	New Title: Aerospace Vehicle Design II-Space Vehicles, missions and s Students work in teams to design space vehicle, system or mission with realistic design constraints, detailed design proposals, schedule's/milestones, CAD/CAM, space environments, atmosphere entry, attitude determination and control, configuration and structure, thermal environment, power propulsion and telecommunications. Students keep a design log/notebook and prepare status reports, a written report and oral presentation. SP: [4331 or #], [EngC 1011 or equiv]	APPROVED
AEM 4333	Aerospace Design III-Special Projects		New Course: 3 cr, Opt Grade Base, Disc, Lect, Repeatable for credit once. Students work in project groups to design, build, adn test major aerospace projects. Projects can include designs from AEM 4331/4332 or other projects, such as microgravity experiments, etc. Completion and testing of project is required for credit. Students are required to keep design log/notebook, prepare status reports, and give a final oral presentation. SP: AEM 4331 or instructor consent (hard prereq)	<i>Provisional Approval 8/24/04</i> APPROVED
Ast 1001	Exploring the Universe			<i>No substantive change</i>
Ast 1011H	Exploring the Universe, Honors	Active	Inactive	<i>Removed, entered in error</i>
Ast 4299	Senior Honors Astrophysics Research Seminar	Active	Inactive	<i>Removed, entered in error</i>
Ast 4994	Directed Research	Active	Inactive	<i>Removed, entered in error</i>
Ast 5201	Methods of Experimental Astrophysics	Lab only	This course was set up improperly as a LAB ONLY course. It should have been established as a LECTURE course (which meets 3 days/week) with a lab component; the lab component is arranged with the instructor.	4/28/04

Course	Title	Current	Proposed	Approved/ Comments
BME 2501	Cellular and Molecular Biology for Biomedical Engineers		BMEN 2501 & BMEN 3701 are together being proposed for the Biol/L core	TABLED
BME 3701	Physiology Lab		See above	TABLED
CE 4231	Pavement Engineering	SP: Upper div IT, CE 3201, CE 3301, CE 3402 or # Enforced: IT upper division	SP: Upper div IT or grad, CE 3201, CE 3301, CE 3402 or # Enforced: 000370 - IT upper div or grad student	APPROVED
CSci 1001	An Overview of Computer Science		New Course: 4 cr, Opt Grade Base, Lect, Lab, A broad introduction to the great ideas of Computer Science designed to help you understand the foundations and limits of today's computing and information technology, to help them reason about possible future applications and technological advances, and to help them be informed contributors to the public dialog on policy issues related to technology. This is not an introductory programming or "computing skills" class, rather it is an overview of many areas of computer science including: algorithms for automating the solutions to problems; abstraction in design and problem solving; the fundamental concepts of computer databases, networks, and expert systems; foundations of human-computer interaction; and the core concepts behind the Internet, web, desktop software, and personal computers. SP: None Proposed for CLE: Mathematical Thinking Core Citizenship and Public Ethics Theme	APPROVED CLE approval given 10/04
EE 3091 Should be 3019	Signals and Systems Review	Active	Inactive - delete	Provisional Approval 5/24/04 APPROVED
EE 3165	Introduction to Microelectronic Devices With Applications	Active	Inactive - delete	Provisional Approval 5/24/04 APPROVED
EE 4609	Digital Signal Integrity		New Course: 3 cr, Opt Grade Base, Lect, Introduction to high speed interconnect design. Transmission line theory, coupled line theory, elements of	Provisional Approval 5/24/04

Course	Title	Current	Proposed	Approved/ Comments
			microwave circuit theory, parasitic calculations & measurement, techniques for good interconnect design. Cross-listed: EE 5609 SP: Phys 1301, 1302, EE 2011; sr EE or CompE major; No EE or CompE grad cr; cannot receive credit for EE 4609 if 5609 previously completed	APPROVED
EE 5601	Introduction to RF/Microwave Engineering	SP: 4601, [IT sr or grad]	SP: 3601, [IT sr or grad]	Provisional Approval 5/24/04 APPROVED
EE 5609	Digital Signal Integrity		New Course: 3 cr, Opt Grade Base,Lect, Introduction to high speed interconnect design. Transmission line theory, coupled line theory, elements of microwave circuit theory, parasitic calculations & measurement, techniques for good interconnect design. Term paper. Cross-listed: EE 4609 SP: Phys 1301, 1302, EE 2011; EE or CompE grad student; cannot receive credit for EE 5609 if 4609 previously completed	Provisional Approval 5/24/04 APPROVED
EE 5632	Photonic Communication Devices and Systems	Active	Inactive	Provisional Approval 5/24/04 APPROVED
EE 5653	Physical Principles of Magnetic Materials	Career: UGRAD	Career: GRAD	Change not needed
EE 5657	Physical Principles of Thin Film Technology	SP: IT sr or grad student or #	SP: IT grad student or #	Provisional Approval 5/24/04 APPROVED
Geo 1019	Our Changing Planet	Active	Inactive	APPROVED
Geo 1019	Freshman Seminar: International Perspective	Active	Inactive	APPROVED

Course	Title	Current	Proposed	Approved/ Comments
Geo 1909W	Freshman Seminar: Environment, WI	Active	Inactive	APPROVED
Geo 1910W	Freshman Seminar Writing Intensive	Active	Inactive	APPROVED
Geo 2111H	Honors Earth Science	Active	Inactive	APPROVED
Geo 4601	Limnology	Active	Inactive	APPROVED But cross listing issue
Geo 4605	Limnology Laboratory	Active	Inactive	APPROVED But cross listing issue
Geo 5002	Earth History for Teachers	Active	Inactive	APPROVED
Geo 5003	Dinosaur Evolution for Teachers	Active	Inactive	APPROVED
Geo 5202	Geological Thermomechanical Modeling	Active	Inactive	APPROVED
Geo 5703	Regional Geomorphology	Active	Inactive	APPROVED
Geo 5704	Glaciology	Active	Inactive	APPROVED
IE 5080	Topics in Industrial Engineering		New topic: Foundations for decision support system For Fall 2004. C. Hayes instructor	Approved 7/28/04
Math 1461H	Honors Calculus IA for Secondary students		"New Course:" 2 cr, Opt Grade Base, Lect, Accelerated honors sequence for selected mathematically talented high school students. Functions, parametric equations and polar coordinates, and vectors are presented using a geometric approach. Limits and continuity are studied and derivatives are introduced. CLE: "Math Thinking"	For UMTYMP students Provisional Approval 9/14/04 APPROVED

Course	Title	Current	Proposed	Approved/ Comments
			SP: High school student, #	
Math 1462H	Honors Calculus IB for Secondary Students		"New Course:" 3 cr, Opt Grade Base,Lect, Accelerated honors sequence for selected mathematically talented high school students. Differentiation and the foundations of integration are studied. Proofs and formal reasoning are introduced. CLE: "Math Thinking" SP: High school student, #	For UMTYMP students Provisional Approval 9/14/04 APPROVED
ME 0001	Refresher Course for Mechanical Engineers		New Course: 0 cr, (2 cr Units Acad Program; 2 cr Units Finaid Program), S-N Grade Base,Lect. Review of mechanical engineering fundamentals in preparation for the Minnesota Professional Engineering Examination. Designed to assist the mechanical engineer to prepare for the examination by presenting an organized review of topics in the mechanical engineering program. Emphasis is on problem solving, organization of information and notes, and trial examinations SP: none	Provisional Approval 5/25/04 APPROVED
ME 3331	Thermal Sciences I		New Course: 3 cr, A-F Grade Base, Lect, Disc. Properties, equations of state, processes, cycles for reversible and irreversible thermodynamic systems. Modes of work/heat transfer. Equations for conservation of mass, linear momentum, energy, entropy. SP: Chem1021, Phys1301, IT student Enforced: IT student	APPROVED Prereqs changed as noted
ME 3332	Thermal Sciences II		New Course: 3 cr, A-F Grade Base, Lect, Disc. Mass, momentum conservation principles. Fluid statics, Bernoulli eq. Control volume analysis, dimensional analysis, internal and external viscous flow; momentum and energy considerations. Introduction to the hydrodynamic and thermal boundary layers. SP: ME Upper div, Math2243, ME3331 Enforced: Upper div	APPROVED Prereqs changed as noted
ME 3333	Thermal Sciences III		New Course: 3 cr, A-F Grade Base, Lect, Disc. Mechanisms of heat transfer: conduction, convection, radiation. Differential analysis of momentum and energy equations. Forced and natural convection, heat exchangers. SP: ME Upper div, 3332	APPROVED Prereqs changed as noted

Course	Title	Current	Proposed	Approved/ Comments
			Enforced: Upper div	
Phys 4993	Directed Studies		New Course: 1-5 cr, Opt Grade Base, Direct Stud. Repeatable up to 10 cr total. Directed study in Physics in areas arranged by the student and faculty member. SP: # Note: This course could be appropriate for use as a technical elective.	Provisional Approval 5/21/04 APPROVED
Phys 4994	Directed Research		New Course: 1-5 cr, Opt Grade Base, Direct Res. Repeatable up to 10 cr total. Independent, directed study in physics in areas arranged by the student and a faculty member. SP: # Note: This course could be appropriate for acceptance as a technical elective	Provisional Approval 5/21/04 APPROVED

CDTL (Professional Masters) Courses

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Program Changes: ME core sequence change in thermal science and length of degree