

Minutes of the I.T. Curriculum Committee  
 April 23, 2007

Present: P. Barry (CSci), C. Cramer (Chem), D. Frank (Math&Chair), T. Higman (ECE), P. Hudleston (IT Dean's Office), T.J. Jones (Astro), J. Kakalios (Phys), William Kuduk(ITSB), J. Labuz (CE), J. Nieber (BBE), D. Odde (BMen), A. Pineles (ITLD), S. Ramaswamy (BBE), T. Shield (AEM), D. Shores(CEMS), J. Stout (Geo)

- 1) Minutes of January 29, 2007 APPROVED.
- 2) Actions on courses were taken; see chart below.
- 3) Program changes were discussed and approved (see below and attachments)

**Agenda For April 23, 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 4301	Long: Orbital Mechanics Short: Orbital Mechanics	Old Title: Spaceflight Dynamics Grade Base: A-F or Audit CD: Two-body problem, Earth-satellite operations, rocket performance, reentry dynamics, space environments, restricted three-body problem, interplanetary trajectories, numerical simulations, elementary spacecraft attitude control. Design project.	New Title: Orbital Mechanics Grade Base: A-F only CD: Two-body problem, Earth-satellite operations, rocket performance, reentry dynamics, space environments, restricted three-body problem, interplanetary trajectories, numerical simulations. Design project. EP: AEM 2012, [Math 2373, or Math 2243, or Math 2574H], [IT upper div or grad student]	Approved.
AEM 4302	Long: Spacecraft Attitude Dynamics and Control Short: Spacecraft Dynamics		New Course: 3 cr, Lect. Grade Base: A-F only CD: Kinematics and dynamics for six-degree of freedom rigid body motions. Euler's angles and Euler's equations. Satellite Attitude Dynamics including torque free motion, spin stabilization, dual-spin spacecraft, nutation damping,	Approved.

Course	Title	Current	Proposed	Approved/ Comments
			gyroscopic attitude control, and gravity gradient stabilization. Linear systems analysis, Laplace transforms and transfer functions. Introduction to linear control theory. PID controllers. Applications to space craft attitude control. MATLAB/Simulink simulations. Design project. CP: AEM 4301, IT upper division or graduate student EP: AEM 4301 Offered every spring	
AEM 4321	Long: Automatic Control Systems Short: Feedback Control		New Course: 3 cr, Lect. Grade Base: A-F only CD: Modeling, characteristics, and performance of feedback control systems. Stability, root locus, and frequency response methods. Nyquist and Bode diagrams, lead-lag and PID compensators. Digital implementation, hardware considerations. CP: IT upper division or graduate students, [[AEM 4303 OR equiv] OR ME 3281 OR EE 3015] EP: None Equivalency: EE 4231 and ME 5281 Offered every fall	Approved.
AEM 4303W	Flight Dynamics	Old Number: AEM 4303 3 cr, Grade Base: A-F or Audit CD: Reference frames, kinematics, equations of motion for a rigid body. Forces and moments, trim, linearization, dynamic response characteristics for aircraft and spacecraft. Aircraft stability derivatives, static longitudinal and lateral stability. Handling qualities. Phugoid, short period, spiral, roll subsidence, dutch roll modes, approximations, transfer functions. Use of MatLab for dynamic analysis. Design project. 3 contact hrs	New Number: AEM 4303W 4 cr, Grade Base: A-F only CD: Forces and moments, trim, linearization, transfer functions, dynamic response characteristics for aircraft and spacecraft. Aircraft stability and control derivatives, static longitudinal and lateral stability. Phugoid, short period, spiral, roll subsidence, and dutch roll modes. Handling qualities. Introduction to satellite attitude control. Use of MatLab for dynamic analysis. Design project. Extensive written reports. EP: AEM 2301, [IT upper div or grad student] 4 contact hrs	Approved.
AEM 4331	Aerospace Vehicle Design	Old Title: Aerospace Vehicle Design I: Aircraft 3 cr, Grade Base: A-F or Audit CD: Students teams/disciplines design atmospheric flight vehicle with realistic constraints and engineering standards. Design process, project environment,	New Title: Aerospace Vehicle Design 4 cr, Grade Base: A-F only CD: Students work in teams to develop conceptual design of an aerospace vehicle with realistic constraints and engineering standards. Design process, project environment, mission requirements, trade studies, vehicle sizing, CAD/vehicle integration, performance, propulsion,	Approved.  Note: Effective term is Fall 2008

Course	Title	Current	Proposed	Approved/ Comments
		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 and present an oral conceptual design review with written report.	systems/equipment, operating envelopes, stability/control, trajectory analysis, baseline specification, and certification. Professional ethics/responsibilities. Students keep design log and present an oral conceptual design review with written report. Note: adding space topics	
AEM 4371	Helicopter Aerodynamics	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. Prov Approv. 2/21/07 this was fully approved at Jan 29 mtg
AEM 4796	Professional Experience	1-3 cr, CD: Work experience with substantive engineering component. Written report. Number of credits awarded based on extent of experience. Acad. Prog Units: 12 Fin. Aid Prog Units: 12 Repetition: Up to 3 cr total	3 cr, CD: Work experience with substantive engineering component. Written report. Acad. Prog. Units: 3 Fin. Aid Prog. Units: 3 Repetition: Not allowed	Approved. Acad Prog Units & Fin Aid Units should be 12.
Ast 1001	Exploring the Universe	Offered: Fall, Spring Auto Enroll: Yes	Offered: Fall, Spring, Summer Auto Enroll: No	Approved. Only change is Offered Summer. No change to Auto Enroll.
Ast 1011	Exploring the Universe, Honors	Active Old Number: Ast 1011H	Inactive New Number: Ast 1011	Withdrawn
Ast 2001	Introduction to Astrophysics	CP: 1 yr calculus, Phys 2303 or #	CP: 1 yr calculus, Phys 1302 or #	Approved. Prov Approv. 2/15/07
Ast 4299		Active Old Number: Ast 4299H	Inactive New Number: Ast 4299	Withdrawn

Course	Title	Current	Proposed	Approved/ Comments
Ast 4994		Active Old Number: Ast 4994H	Inactive New Number: Ast 4994	Withdrawn
BME 4001W	Biomedical Engineering Design I	EP: None	EP: BMEN upper div	Approved. Tabled from 12/4/06 Provisional approval 4/9/07
BME 4002W	Biomedical Engineering Design II	EP: None	EP: BMEN upper div	Approved. Tabled from 12/4/06 Provisional approval 4/9/07
BME 5920	Special Topics in Biomedical Engineering		New Topic: Neural Engineering	
CE 4102	Capstone Design	3 cr CP: 3201, 3202, 3301, 3401, 3402, 3501, 3502 3 contact hrs	4 cr CP: 3201, 3202, 3301, 3401, 3402, 3501, 3502; co- requisites: 4301,4401,4501,4502 4 contact hrs	Approved. Decreases tech Elec from 17 to 16. See cross- listed course Geo 4102. Delete "3201, 3202, 3301, 3401, 3402, 3501, 3502" from CP.
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."	Tabled

Course	Title	Current	Proposed	Approved/ Comments
ChEn 4001, 4005, 4006, 4101, 4102, 4201, 4401W, 4402W, 4501W, 4502W, 4601	Various courses	EP: None	EP: 000815 - ChEn major upper division  Proposal actually to express all Catalog Prerequisites also as Enforced Prerequisites. Differs for different courses. 4001 does NOT have "ChEn major upper division" as prereq	Approved. Delete 4001 from list. Prov. Approv. 3/26/07
ChEn 5551	Long Title: Survey of Renewable Energy Technologies Short Title: Renewable Energy		New Course: 3 cr, Lect., Grade Base: A-F or Audit CD: A survey of technologies to generate renewable energy and chemicals. Includes biomass, solar, wind, and hydroelectric with emphasis on biomass processing using chemical and biological methods. Compares existing and proposed renewable technologies with existing fossil fuel technologies. Basic knowledge of chemistry and thermodynamics assumed. CP: Upper Division or consent of instructor Note: 2007 Offered as special topics Fall 2006 - Response was so good that we decided to make this a permanent course.	Approved. Add "Equiv to BBE 4733"
CSci 2011	Discrete Structures of Computer Science	CP: Math 1272 or Math 1372 or #	CP: Math 1271 or Math 1371 or #	Approved.
CSci 5221	Foundations of Advanced Networking	Old Title: Advanced Computer Networks	New Title: Foundations of Advanced Networking Note: Change course title because of confusion w/8211. Course being taught 1st time in Spr 07	Approved. Prov Approv. 2/8/07
EE 301	Introduction to Digital System Design: Discussion	Grade Base: S-N or Aud	Grade Base: No Grade	Approved.
EE 361	Introduction to Microcontrollers: Discussion	Grade Base: S-N or Aud	Grade Base: No Grade	Approved.
EE 3041	Industrial Assignment I	Consent: Department	Consent: No required consent	Approved.
EE 4043W	Industrial Assignment II	EP: EE or CompE major, upper division	EP: EE or CompE major, upper div, EE 3041	Approved. Prov Approv. 2/21/07

Course	Title	Current	Proposed	Approved/ Comments
EE 4044	Industrial Assignment III	Equivalency: ME 3044/ME 4044 Consent: Department	Equivalency: None Consent: No required consent	Approved.
EE 4607	Long Title: Wireless Hardware System Design Short Title: Wireless Hardware Sys Des		New Course: 3 cr, Lect., Grade Base: Stdnt Opt CD: Review of random processes, noise, modulation, and error probabilities. Basis antenna operation, power transfer between antennas, rf propagation phenomena, transmitters/receivers, transmission lines, effect of antenna performance on system performance, rf/microwave device technologies, small-signal amplifiers, mixers, power amplifiers, rf oscillators. CP: [EE 3015, 3115, 3601, IT student] or % EP: IT upper division Equivalency: cannot obtain credit for EE 4607 if credit already earned for EE 5607 Offered Fall Odd Years Note: "We are changing EE 5607 to EE 4607. EE 5607 will be cancelled after Fall 2007"	Approved. Note that EE5607 (see below) is now inactive. Net effect is to change number from 5607 to 4607.
EE 4930	Long Title: Special Topics in Electrical & Computer Engineering Laboratory Short Title: Special Topics in ECE Lab		New Course: 1-2 cr, Lab, Grade Base: A-F only Delivery Mode: Classroom, Conference/Workshop, Independent Study, Computer-Based, Internet-Delivered CD: Laboratory work not available in regular courses. Topics will vary. 3 contact hrs	Approved.
EE 5181	Long Title: Introduction to Nanotechnology Short Title: Intro to Nanotechnology		New Course: 4 cr, Lect., Lab, Grade Base: Stdnt Opt CD: Nanoscale Imaging; Patterning using Scanning Probes, Soft-Lithography, Stamping & Molding; Nanomaterials - Properties, Synthesis, Applications; Nanomanufacturing/Component Integration using Engineered Self-Assembly and Nanotransfer. Labs on AFM, Microcontact Printing, Nanoparticles/Nanowire Synthesis. CP: {EE 3161, 3601, IT grad student] or % EP: IT grad student Offered in Fall	Approved.
EE 5561	Image Processing and Applications	Consent: Department	Consent: No required consent	Tabled.

Course	Title	Current	Proposed	Approved/ Comments
EE 5607	Wireless Hardware System Design	Active:	Inactive:	Approved. See EE 4607 above.
EE 5990	Curricular Practical Training	Acad Prog. Units: 2 Fin. Aid Prog. Units: 2 CP: #	Acad Prog. Units: 1 Fin. Aid Prog. Units: 1 CP: #, graduate student	Approved.
Geo 1005	Geology and Cinema	Equivalency: Geo 1001/Geo 1101/Geo 5001	Equivalency: Geo 1001/1012/1101/1105 Note: This is 4cr, Lect, Lab.	Tabled.
Geo 1012	Long Title: Living on the Edge: Geology in Action Short Title: Geology in Action		New Course: 4 cr, Lect., Lab, Grade Base: Stdnt Opt CD: Physical processes that shape the Earth: volcanoes, earthquakes, plate tectonics, glaciers, rivers. Current environmental issues/global change. Lecture/lab. Optional field experience. CP: None Equivalency: Geo 1001/1005/1101/1105 Being submitted for CLE Phys. Sci w Lab and Environ. Theme Offered in Fall	Tabled. [Later learned that this proposal had been withdrawn]
Geo 1101	Introduction to Geology	Equivalency: Geo 1001/Geo 1101/Geo 5001	Equivalency: Geo 1001/1005/1012/1105	Tabled.
Geo 1105	Geology and Cinema	Equivalency: Geo 1005/Geo 1105	Equivalency: Geo 1001/1005/1012/1101 Note: This is 3cr, Lect only	Tabled.
Geo 5205	Fluid Mechanics in Earth and Environmental Sciences		New Course: 3 cr, Lect. Grade Base: Stdnt Opt CD: Flow equations in conservation of mass, energy, and momentum. Fluid flow in oceans, lakes, rivers, and atmosphere. Flow of Earth's mantle or outer core. Wave propagation. Porous medium flow in soils/fractures. Diffusive, advective, and dispersive transfer of heat and certain tracers, chemicals, contaminants, and microbes with subsurface fluids. Offered: Fall, Odd Years CP: Math 2263 or #	Approved Prov Approval 3/2/07

Course	Title	Current	Proposed	Approved/ Comments
Geo 5971	Field Hydrogeology		New Course: 2 cr, Fwk. Grade Base: Stdnt Opt CD: Aquifer, vadoze zone, and surface water hydrology field techniques. Shallow soil boring and sampling. Well installation. Single and multiple well aquifer testing. Ground water sampling for chemical analysis. Weather data collection, hydrogeologic mapping, water balance calculation. CP: # EP: None Equivalency: Geo 4971 Offered in Summer	Approved
GeoE 4102	Capstone Design	3 cr CP: CE, GeoE, or Geo upper division or graduate student or # 3 contact hrs	4 cr CP: Co-Requisites: CE 4301, 4401, 4501, 4502 4 contact hrs	Approved See CE 4102 above.
Math 5348	Heat Transfer in Electronic Equipment	Inactive; CP: IT upper Div or grad student, 3322 or 3324 Offered every academic yr, S;	Active; CP: IT upper Div or grad student, 3333 or 3324 Offered on "other frequency" – F;	Delete this entry. Prov. Approved 3/15/07
ME 5348	Heat Transfer in Electronic Equipment	Inactive CP: IT upper div or grad student, 3322 or 3324 Offered Spring	Active (Fall 2007) CP: [3333 or 3324], IT upper div or grad student Offered Fall	Tabled. Prov. Approved 3/15/07
MOT 4000	Leadership, Professionalism and Business Basics for Engineers		New Course: 2 cr, Lect. Grade Base: A-F only CD: The course is designed to provide engineers with a broad exposure of basic elements of business and the environment in which technology and business operate. Will be offered to small classes of 15 to 20 and may serve as an intro to CSOM's management minor CP: none	Tabled. Provisional approval 4/10/07
Phys 1107	Long Title: Introductory Physics Online I Short Title: Intro Phys On Line	Old Title: Introductory Physics Online Delivery Mode: Independent Study Offered: Fall, Spring, Summer	New Title: Introductory Physics Online I Delivery Mode: Internet-Delivered Offered: Fall, Spring	Approved



Course	Title	Current	Proposed	Approved/ Comments
Phys 1108	Long Title: Introductory Physics Online II Short Title: Intro Phys On Line II		New Course: 4 cr, Ind, Lab. Grade Base: Stdnt Opt Internet-delivered CD: Fundamental principles of physics in context of everyday world. Use of conservation principles and quantitative/qualitative problem solving techniques to understand natural phenomena. Lecture content, recitation, lab. A continuation of Phys 1107. Primarily for students interested in technical areas. CP: 1101W or 1107 EP: None Offered: Fall, Spring Submitted to CLE for Phys Sci w Lab Note: Authorized for Distance Education, only. Course content equal to Phys 1102W, Introductory Physics II, without Writing Intensive designation	Approved
Phys 5001	Quantum Mechanics I	Lect Auto Enroll: No	Lect plus Disc Auto Enroll: Yes	Approved
Phys 5002	Quantum Mechanics II	Lect Auto Enroll: No	Lect plus Disc Auto Enroll: Yes	Approved
Phys 5041	Mathematical Methods for Physics	Inactive Title: Analytical and Numerical Methods of Physics I CD: Survey of mathematical techniques, both analytic and numerical, needed for physics. Application to physical problems. CP: 2601 or grad student EP: None	Active Title: Mathematical Methods for Physics CD: 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	Approved Tabled 12/4//06

Course	Title	Current	Proposed	Approved/ Comments
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Attachments:

**CDTL, SENG or FM (Professional Masters) Courses**

FM 5001	Preparation for Financial Mathematics I	Preparation for Financial Mathematics I	<p>New Course: 3 cr; Lect, Grade Base: Stdnt Opt,  <u>As Submitted:</u> This course sequence covers the prerequisite undergraduate level mathematics needed for the MFM program. While this course sequence is not required of all MFM students, some MFM students may be requested to include it in their plan. This course sequence may be taken at any time.  <u>As Edited:</u> "Mthematics [sic] needed for MFM program."            CP: none            EP: none            No repeats: offered F</p>	Prov. Approv. 2/14/07
FM 5002	Preparation for Financial Mathematics II	Preparation for Financial Mathematics II	<p>New Course: 3 cr; Lect, Grade Base: Stdnt Opt,  <u>As Submitted:</u> This course sequence covers the prerequisite undergraduate level mathematics needed for the MFM program. While this course sequence is not required of all MFM students, some MFM students may be requested to include it in their plan. This course sequence may be taken at any time.  <u>As Edited:</u> Mathematics needed for MFM program.            CP: FM 5001            EP: none            No repeats: offered S</p>	Prov. Approv. 2/14/07

Course	Title	Current	Proposed	Approved/ Comments
FM 5011	Mathematical Background for Finance I	Mathematical Background for Finance I	<p>New Course: 4 cr; Lect, Grade Base: Stdnt Opt,  <u>As Submitted:</u> This is the most theoretical of the course sequences, focusing on the graduate level mathematics needed for the program, and taught specifically with an eye toward finance. For MFM students who are not asked to take FM 5001/5002, this can be taken at any time. Those who are asked to take FM 5001/5002 must finish FM 5001/5002 with grades of "B" or better (in both courses) before beginning FM 5011/5012. Any exceptions must be approved by the Director of the MFM Program.  <u>As Edited:</u> Mathematics needed for MFM program. Focuses on finance.            CP: None            EP: None            No repeats: offered F</p>	Prov. Approv. 2/14/07
FM 5012	Mathematical Background for Finance II	Mathematical Background for Finance II	<p>New Course: 4 cr; Lect, Grade Base: Stdnt Opt,  <u>As Submitted:</u> This is the most theoretical of the course sequences, focusing on the graduate level mathematics needed for the program, and taught specifically with an eye toward finance. For MFM students who are not asked to take FM 5001/5002, this can be taken at any time. Those who are asked to take FM 5001/5002 must finish FM 5001/5002 with grades of "B" or better (in both courses) before beginning FM 5011/5012. Any exceptions must be approved by the Director of the MFM Program.  <u>As Edited:</u> Mathematics needed for MFM program. Focuses on finance.            CP: FM 5011            EP: None            No repeats: offered S</p>	Prov. Approv. 2/14/07

Course	Title	Current	Proposed	Approved/ Comments
FM 5021	Mathematical Theory Applied to Finance I	Mathematical Theory Applied to Finance I	<p>New Course: 4 cr; Lect, Grade Base: Stdnt Opt,  <u>As Submitted:</u> This course sequence forms the bridge between theory and application. This sequence cannot be started before FM 5011/5012 is started, though it can be taken at the same time as 5011/5012.  As Edited: Bridge between theory and application.  CP: 5011 or &amp;5011  EP: none  No repeats: offered F</p>	Prov. Approv. 2/14/07
FM 5022	Mathematical Theory Applied to Finance II	Mathematical Theory Applied to Finance II	<p>New Course: 4 cr; Lect, Grade Base: Stdnt Opt,  <u>As Submitted:</u> This course sequence forms the bridge between theory and application. This sequence cannot be started before FM 5011/5012 is started, though it can be taken at the same time as 5011/5012.  As Edited: Bridge between theory and application.  CP: 5021, [5012 or &amp;5012]  EP: none  No repeats: offered S</p>	Prov. Approv. 2/14/07
FM 5031	A Practitioner's Course in Finance I	A Practitioner's Course in Finance I	<p>New Course: 4 cr; Lect, Grade Base: Stdnt Opt  <u>As Submitted:</u> This course sequence is highly practical, taught by industry professional and will be taught with an eye toward hands-on-real-world problem-solving. This sequence cannot be started before FM 5021/5022 is started, though it can be taken at the same times as FM 5021/5022.  <u>As Edited:</u> Practical course taught by industry professionals. Focuses on hands-on real-world problem solving.  CP: 5021 or &amp;5021  EP: None  No repeats: offered F</p>	Prov. Approv. 2/14/07

Course	Title	Current	Proposed	Approved/ Comments
FM 5032	A Practitioner's Course in Finance II	A Practitioner's Course in Finance II	<p>New Course: 4 cr; Lect, Grade Base: Stdnt Opt</p> <p><u>As Submitted:</u> This course sequence is highly practical, taught by industry professional and will be taught with an eye toward hands-on-real-world problem-solving. This sequence cannot be started before FM 5021/5022 is started, though it can be taken at the same times as FM 5021/5022.</p> <p><u>As Edited:</u> Practical course taught by industry professionals. Focuses on hands-on real-world problem solving.</p> <p>CP: 5031, [5022 or &amp;5022]</p> <p>EP: None</p> <p>No repeats: offered S</p>	Prov. Approv. 2/14/07
FM 5091	Programming and Presentation in Finance I	Programming and Presentation in Finance I	<p>New Course: 3 cr; Lect, Grade Base: Stdnt Opt</p> <p><u>As Submitted:</u> Covers the most common computer software tools used by financial professional in a hands-on way. It is a programming course. The course sequence may be taken at any time.</p> <p><u>As Edited:</u> Most common computer software tools used by financial professionals. Hands-on programming course.</p> <p>CP: None</p> <p>EP: None</p> <p>No repeats: offered F</p>	Prov. Approv. 2/14/07
FM 5092	Programming and Presentation in Finance II		<p>New Course: 3 cr; Lect, Grade Base: Stdnt Opt</p> <p><u>As Submitted:</u> Continues to develop software tools from FM 5091, but also teaches students to use computer applications to prepare presentation materials that will be geared toward explaining their ideas toward [sic] those with less training in mathematics. This course sequence can be taken at any time.</p> <p><u>As Edited:</u> Continues to develop software tools from 5091. How to use computer applications to prepare presentation materials geared toward explaining ideas to those with less training in mathematics.</p> <p>CP: 5091</p> <p>EP: None</p> <p>No repeats: offered S</p>	Prov. Approv. 2/14/07

**Program Changes:**

Course	Title	Current	Proposed	Approved/ Comments
				BAEM: Drop 4332W (4 cr) as required course; Reduce degree requirements from 126 to 124 credits (AEM 4331 and 4303 each proposed to go from 3 to 4 credits, giving net drop of 2 credits). 4303 to become Writing Intensive. (Handout to come).
				BBE: Making the electives for the Bioprocessing and Food similar to what it was before (the merger) and now similar to the Environment and Ecology sub-plan (see Attachment I)
				BCE: Change technical electives from 17 to 16 credits; Required course: Change from AEM 2012 (Dynamics) to either AEM 2012 or Chem 2301 (Organic Chemistry I)
				BGeoE: Change technical electives from 12 to 11 credits; Required course: Change from AEM 2012 (Dynamics) to either AEM 2012 or Chem 2301 (Organic Chemistry I)
				BEE: Added breadth requirement to Technical Electives (see Attachment II)

**New Program:**

Combined BE/MS degree in CE and GeoE (see Attachment III)