I. SIGNIFICANT TRENDS:
The college of engineering passed its accreditation visit in November of 2012 and all programs were accredited. The department of Agricultural and Biosystems Engineering changed course designators from A E and BSE into a single designator (ABE). The college continues to introduce new courses and minors in areas that are relevant to the needs of the students and constituents of the college.

II. CURRICULA, MAJORS, MINORS ADDED OR DROPPED:
Majors Added:
Master of Engineering in Engineering Management

Minors Added: None

Certificates Added: None

Majors, Minors, Certificates Dropped: None

III. NEW COURSES:

Aerospace Engineering:
AER E 362 Aerospace Systems Integration (3-0) cr. 3

Civil Engineering:
C E 488 Sustainable Horizontal Civil Infrastructure Systems (3-0) cr. 3
C E 528 Solid and Hazardous Waste Management (3-0) cr. 3
C E 569 Ground Improvement (3-0) Cr. 3
C E 595A Research Methods Seminar in Construction Engineering and Management: Qualitative Methods (1-0) Cr 1
C E 595B Research Methods Seminar in Construction Engineering and Management: Quantitative Methods (1-0) Cr 1
C E 595C Research Methods Seminar in Construction Engineering and Management: Technical Reporting (1-0) Cr 1

Chemical Engineering:
CH E 698 Chemical engineering Teaching Practicum (1-0) Cr. 1

Electrical and Computer Engineering:
E E 509 Mixed-Signal IC Testing and Built In Self Test (3-0) Cr. 3

Industrial Engineering:
I E 502 M.S. Research Conduct Cr. R
I E 602 Ph. D. Research Conduct Cr. R

Mechanical Engineering:
M E 437 Introduction to Combustion Engineering (3-0) Cr. 3
M E 479 Sustainability Science for Engineering Design (3-0) Cr. 3
M E 531 Advanced Energy Systems and Analysis (3-0) Cr. 3
M E 556 Machine Vision (3-0) Cr. 3
M E 690T Advanced Topics: Biological and Nanoscale Sciences Cr. 8
M E 690U Advanced Topics: Complex Fluid Systems Cr. 8
M E 690V Advanced Topics: Clean Energy Technologies Cr. 8
M E 690W Advanced Topics: Design and Manufacturing Innovation Cr. 8
M E 690Z Advanced Topics: Simulation and Visualization Cr. 8

**Materials Science and Engineering:**
M S E 581 Computational Modeling of Materials (3-0) Cr. 3
Mat E 481 Computational Modeling of Materials (3-0) Cr. 3

**IV. COURSES DROPPED:**

**Agricultural Engineering**

A E 501 Fundamentals of Biorenewable Resources,
A E 524A Air Pollution: Air quality and effects of pollutants.
A E 524B Air Pollution: Climate change and causes.
A E 524D Air Pollution: Off-gas treatment technology.
A E 524E Air Pollution: Agricultural sources of pollution.
A E 610 Foundations of Sustainable Agriculture.

**Biological Systems Engineering**

BSE 110 Experiencing Biological Systems Engineering
BSE 201 Engineering Graphics and Introductory Design.
BSE 218 Project Management & Design in Agricultural and Biosystems Engineering.
BSE 298 Cooperative Education.
BSE 316 Applied Numerical Methods for Agricultural and Biosystems Engineering.
BSE 325 Biorenewable Systems.
BSE 396 Summer Internship
BSE 397 Engineering Internship.
BSE 398 Cooperative Education
BSE 403 Modeling and Controls for Agricultural Systems.
BSE 411 Bioprocessing and Bioproducts
BSE 415 Agricultural Engineering Design I.
BSE 416 Agricultural Engineering Design II.
BSE 469 Grain Processing and Handling.
BSE 490 Biological Systems Engineering Independent Study.
BSE 490B Biological Systems Engineering Independent Study: Biorenewable Resources.
BSE 490E Biological Systems Engineering Independent Study: Environmental Bioprocessing.
BSE 490F Biological Systems Engineering Independent Study: Food Engineering.
BSE 490G Biological Systems Engineering Independent Study: General Topics.
BSE 490H Biological Systems Engineering Independent Study: Honors.
BSE 496 Agricultural and Biosystems Engineering Travel Course.
BSE 496A Agricultural and Biosystems Engineering Travel Course: Pre-departure.
BSE 496B Agricultural and Biosystems Engineering Travel Course: Travel
BSE 496C Agricultural and Biosystems Engineering Travel Course: Post-travel
BSE 496D Agricultural and Biosystems Engineering Travel Course: Combination
BSE 498 Biological Systems Engineering Cooperative Education.

**Civil Engineering:**

C E 420 Environmental Engineering Chemistry
C E 421 Environmental Biotechnology
C E 527    Solid Waste Management
C E 529    Hazardous Waste Management

Electrical and Computer Engineering:

E E 545 Artificial Neural Networks

Industrial Engineering:

I E 599  Creative Component.
I E 599A  Creative Component: Industrial Engineering.

Mechanical Engineering:

M E 690A. Advanced Topics: Experimental Gas Dynamics.
M E 690B. Advanced Topics: Fluid Mechanics.
M E 690C. Advanced Topics: Heat Transfer.
M E 690D. Advanced Topics: Thermodynamics and Energy Utilization.
M E 690E. Advanced Topics: Turbomachinery.
M E 690I. Advanced Topics: Automatic Controls.
M E 690J. Advanced Topics: Operating and Environmental Considerations in Design.
M E 690L. Advanced Topics: Manufacturing Processes.
M E 690M. Advanced Topics: Tribology.
M E 690Q. Advanced Topics: Independent Literature Investigation.
M E 690R. Advanced Topics: Nuclear Engineering.
M E 690S. Advanced Topics: CAD/CAM.

V. NUMBER, CREDIT, AND TITLE CHANGES:

Aerospace Engineering:

AER E 161    Numerical, Graphical and Laboratory Techniques for Aerospace Engineering. (4 to 3 cr)
AER E 261    Introduction to Performance and Design. (4 to 3 cr)
AER E 321L. Aerospace Structures Laboratory. Changed to AER E 321

VI. COURSES ADDED FOR NONMAJOR GRADUATE CREDIT

None

VII. COURSES DROPPED FOR NONMAJOR GRADUATE CREDIT

Mechanical Engineering:

M E 425    Optimization Methods for Complex Designs
VIII. SUMMARY OF CHANGES: Note: a cross-listed course should be counted only once - with the "primary" department or program. So in Section III New Courses and Section IV Courses Dropped, a cross-listed course should be listed only once.

<table>
<thead>
<tr>
<th>Department</th>
<th>New</th>
<th>Dropped</th>
<th>Number</th>
<th>Credit</th>
<th>Title</th>
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<td>Aerospace</td>
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<td>Agricultural and Biosystems</td>
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<td>1</td>
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<tr>
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<td>3</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>Industrial and Manufacturing Systems</td>
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<td></td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Material Science and Engineering</td>
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<td></td>
<td>2</td>
<td>3</td>
<td></td>
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IX. Changes since Proposed Change Summary
Include changes that were approved since the summary was published in August, if applicable.

X. JUSTIFICATION FOR NEW COURSES

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Designator and Course Number</th>
<th>Nonmajor graduate credit</th>
<th>Required in Program</th>
<th>Offered Experimentally</th>
<th>Justification (If not required in program or offered experimentally)</th>
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<td>Aerospace Engineering</td>
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<td>I E 602</td>
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## Summary Table

<table>
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<tr>
<th>Program Name</th>
<th>Designator and Course Number</th>
<th>Nonmajor graduate credit</th>
<th>Required in Program</th>
<th>Offered Experimentally</th>
<th>Justification (If not required in program or offered experimentally)</th>
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### Process:

**September-November:** FSCC begins review and approval of college reports.

**December:** Final approval by the Faculty Senate.