INSTITUTE GRADUATE CURRICULUM COMMITTEE

Academic Faculty Senate

Tuesday, April 21, 2015

3:00-5:00 PM

Student Center Theatre

ACTION ITEMS AND MINUTES

Presented by:

- Dr. Victor Breedveld, CHBE, IGCC Chair

ACTION ITEMS

From the March 5, 2015 Minutes

School of Chemical and Biomolecular Engineering

- **New Course** - CHBE 6050: The Science and Engineering of Microelectronic Fabrication 3-0-3

School of Building Construction

- **New Course** – BC 6050: Building Information Modeling for Multi-disciplinary Integration 2-3-3

School of Electrical and Computer Engineering

- **New subject code:** ECEP (ECE-Professional)

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Courses –**
  - ECEP 6301: Power System Control and Operation 3-0-3
  - ECEP 6304: Power System Economics 3-0-3
    ECEP 6305: Power System Planning & Reliability 3-0-3
  - ECEP 6310: Capstone Project 1-6-3
    ECEP 6351: Power System Protection 3-0-3

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

Overview

The electric power industry in Georgia and the U.S. is undergoing two simultaneous transformations. The basic technology of the electric grid is being modernized to incorporate modern sensing and data processing technology…

Program Description and Delivery Method

A Professional Master's in Sustainable Electrical Energy (PMSEE) would be targeted to working engineers in the electrical energy and power industry. The PMSEE program would be structured to bring in students in specific cohorts.

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

Program Description and Delivery Method

- Administration of the PMSEE program will be based on Georgia Tech's main campus in Atlanta.
- Instructional delivery will be coordinated with Georgia Tech Professional Education and will occur both online and onsite at participating companies.

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

    Curriculum

    To earn the PMSEE degree, students must complete ten courses. The PMSEE curriculum consists of six core (i.e., required) courses: five at the beginning of the program and one capstone course at the end. There are four elective courses selected out of a pool of elective courses.

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

    Curriculum (Note: Not all these courses have been approved. See details below.)

    Required/Core Courses:

    - ECEP 6301: Power System Control and Operation 3-0-3
    - ECEP 6302: Conventional Generation 3-0-3 (not yet approved)
    - ECEP 6303: Renewable Energy Sources 3-0-3 (not yet approved)
    - ECEP 6304: Power Systems Economics 3-0-3
    - ECEP 6305: Power System Planning and Reliability 3-0-3
    - ECEP 6310: Capstone Project 1-6-3

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

    Curriculum

    Four elective courses selected from:
    - ECEP 6351: Power System Protection 3-0-3
    - ECEP 6352: Advanced Power Electronics 3-0-3 (not yet approved)
    - ECEP 6353: Smart Grids 3-0-3 (not yet approved)
    - ECEP 6354: Computational Intelligence in Power 3-0-3 (not yet approved)
    - ECEP 6355: Solar Energy 3-0-3 (not yet approved)
    - ECEP 6356: Energy Engineering Economics and Risk Management 3-0-3 (not yet approved)
    - ECEP 6357: Demand Response 3-0-3 (not yet approved)

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

    Curriculum – Special Note
    - Some of the courses that are not yet approved will be taught in Special Topics format first and then brought back to the IGCC for approval as regular courses with the proposed course numbers as listed in the degree proposal.
    - Some of the content for the other courses has been taught; those courses may be re-proposed once all the information about course content and syllabi has been gathered. This content has been taught through GTPE certificates, for example, but not in Special Topics format.

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

    Admission Criteria
    - Earned BS in Engineering or Physical Sciences with GPA of at least 3.0
    - Proof of English proficiency
    - At least 3 years of professional work experience in an engineering field with a letter of support from a current supervisor
    - Three descriptive letters of recommendation
    - A required essay/statement of purpose
    - A resume, including work experience and education
    - Official college transcripts

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

    Administration and Assessment
    - The PMSEE program will have an academic home within the School of Electrical and Computer Engineering (ECE) and will receive administrative and technological support from Georgia Tech Professional Education (GTPE).
    - Review of the PMSEE program will be incorporated into the School of Electrical and Computer Engineering's well-established assessment and evaluation process.
    - A framework for the assessment of each of the School of ECE's bachelor's, master's, and doctoral degree programs provides on-going review and procedures that ensure the inclusion of the School's faculty to implement those processes.

ACTION ITEMS

From the March 5, 2015 Minutes

School of Electrical and Computer Engineering

- **New Degree,** with Distance Learning
  - Professional Master's in Sustainable Electrical Energy

    Administration and Assessment
    - The PMSEE program will be reviewed during the next Academic Program Review (APR) for the School of ECE. Every school at Georgia is subject to the Institute's APR process every five years. ECE was last reviewed during the 2013-14 academic year, so the next review will be 2018-19.

ACTION ITEMS

From the April 9, 2015 Minutes

School of History, Technology, and Society

- **Renaming of School**
  - Current Name – History, Technology, Society
  - Proposed Name – History and Sociology
- <u>Rationale</u>
  - Bring greater visibility to the discipline of Sociology
  - Provide greater clarity and appeal to all constituents
  - Reduce redundancy and bring School into alignment with other IAC Schools

ACTION ITEMS

From the April 9, 2015 Minutes

School of Applied Physiology

- **New Course** – APPH 6500: Classics in Neuroscience 1-0-1

School of Aerospace Engineering

- **New Courses** –

  AE 6015: Advanced Aerodynamics 3-0-3
  AE 6120: Fundamentals of Solid Mechanics 3-0-3
  AE 6121: Fundamentals of Aerospace Structural Analysis 3-0-3
  AE 6370: Optimization for the Design of Engineered Systems 3-0-3
  AE 6530: Multivariable Linear Systems and Control 3-0-3

ACTION ITEMS

From the April 9, 2015 Minutes

College of Engineering

- **New Subject Code**
  - MLDR – Manufacturing Leadership

School of Industrial and Systems Engineering

- **New Courses –**

  ISYE 6380: Production Planning and Control 3-0-3
  ISYE 6381: Manufacturing Reliability3-0-3
  ISYE 6382: Quality Control and Six Sigma 3-0-3
  ISYE 6383: Manufacturing Supply Chain Operations 3-0-3

ACTION ITEMS

From the April 9, 2015 Minutes

School of Chemical and Biomolecular Engineering

- **New Courses –**

  CHBE 6701: Foundational Topics in the Manufacturing of Forest Bioproducts 3-0-3

  MLDR 6701: Foundational Topics in the Manufacturing of Forest Bioproducts 3-0-3
  MLDR 6800: Manufacturing Leadership Capstone Project 1-6-3

Scheller College of Business

- **New Online Delivery of Existing Courses –**

  MGT 6107: Leadership and Organizational Change
  MGT 6114: Leadership Development
  MGT 6753: Principles of Management for Engineers

ACTION ITEMS

From the April 9, 2015 Minutes

Scheller College of Business, School of Industrial and Systems Engineering, School of Chemical and Biomolecular Engineering

- **New Degree**
  - **Professional Master's in Manufacturing Leadership**
    - The objective of the Professional Master's in Manufacturing Leadership (PMML) is to prepare leaders for companies and organizations in the manufacturing industry of the 21st century.

ACTION ITEMS

From the April 9, 2015 Minutes

Scheller College of Business, School of Industrial and Systems Engineering, School of Chemical and Biomolecular Engineering

- **New Degree**
  - **Professional Master's in Manufacturing Leadership**

Core/Required Courses:	Credit hours
ISYE 6380 – Production Planning and Control	3
ISYE 6381 - Manufacturing Reliability	3
ISYE 6382 – Quality Control and Six Sigma	3
ISYE 6383 – Manufacturing Supply Chain Operations	3
MGT 6753 – Principles of Management for Engineers	3
MGT 6114 – Leadership Development	3
MGT 6107 - Leadership and Organizational Change	3
MLDR 6800 – Manufacturing Leadership Capstone Project	3

ACTION ITEMS

From the April 9, 2015 Minutes

Scheller College of Business, School of Industrial and Systems Engineering, School of Chemical and Biomolecular Engineering

- **New Degree**
  - **Professional Master's in Manufacturing Leadership**

    Elective Courses: Each course below is a 3 credit hour course

    - Two elective courses will be selected from the following:
      - MLDR 6701 - Foundational Topics in the Manufacturing of Forest Bioproducts
      - MLDR 8803 - Emerging Markets for Forest Bioproducts
      - MLDR 8813 - Foundational Topics in the Chemical Manufacturing Industry
      - MLDR 8823 - Emerging Markets for the Chemical Manufacturing Industry

Total 30 hours required for the degree.

This schedule assumes classes are offered sequentially, one at a time, at the rate of two courses per semester. That is, none of the courses would overlap in time and each would take about 8 weeks to complete.

ACTION ITEMS

From the April 9, 2015 Minutes

Scheller College of Business, School of Industrial and Systems Engineering, School of Chemical and Biomolecular Engineering

- **New Degree**
  - **Professional Master's in Manufacturing Leadership**

    Admissions Criteria
    - Earned BS degree in engineering or physical sciences with at least a 3.0 GPA
    - Proof of English proficiency
    - At least one year of professional work experience (post-BS) in an engineering or science related field.
    - Three descriptive letters of recommendation
    - Required essay/statement of purpose
    - Resume, including work experience and education
    - Official college transcripts

ACTION ITEMS

From the April 9, 2015 Minutes

Scheller College of Business, School of Industrial and Systems Engineering, School of Chemical and Biomolecular Engineering

- **New Degree**
  - **Professional Master's in Manufacturing Leadership**

    Administration of Program
    - Students will be admitted in cohorts, and all members of a cohort will take the same eight required courses and two elective courses in a concentration area leading to the PMML degree.
    - The PMML program will have an academic home within the College of Engineering (CoE) and will receive administrative and technological support from Georgia Tech Professional Education (GTPE).
    - This program will be delivered in a "hybrid" format. All courses will either be hybrid or fully online.

ACTION ITEMS AND MINUTES

- Move to approve all action items.

- Move to approve Minutes from:
  - March 5, 2015
  - April 9, 2015