

Institute Graduate Curriculum Committee

Academic Faculty Senate
Tuesday, April 19, 2016
3:00-5:00 PM
Student Center Theatre

Action Items: March 10, 2016 Minutes

Schools of Computational Science and Engineering, Business, and Industrial and Systems Engineering

- **New Courses (cross-listed)**
 - CSE 6748: Applied Analytics Practicum (0-18-6)
 - MGT 6748: Applied Analytics Practicum (0-18-6)
 - ISYE 6748: Applied Analytics Practicum (0-18-6)

Schools of Chemical and Biomolecular Engineering, Mechanical Engineering, and Electrical and Computer Engineering

- **Certificate Modification**

The Microelectromechanical (MEMS) Certificate is adding two courses to the breadth electives:

- ME 6776: **Microsystem Packaging**
- ECE 6450: **Introduction to Microelectronic Technology**

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College of Computing

Degree Modification

Doctor of Philosophy with a major in Computer Science

- We are requesting **to add Programming Proficiency** to the current CS PhD requirements. This will become one of the requirements of the program in addition to the existing requirements: CS 7001, Breadth, Qualifying Exam, Proposal, and Dissertation.
- As a result of this addition, Systems will no longer be a required Breadth area. The Programming Proficiency course MAY be counted as a Breadth course if it appears on one of the Breadth lists.
- Students must complete a Programming Proficiency requirement. **A single class may satisfy both the Programming Proficiency requirement and a Breadth area requirement.** The Programming Proficiency requirement **must be fulfilled at Georgia Tech and may not be satisfied by transfer credit or advanced standing.**

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College of Computing

Degree Modification (PhD Computer Science, continued)

- Courses to satisfy the Programming Proficiency Requirement:
 - CS 6210 Advanced Operating Systems
 - CS 6241 Design and Implementation of Compilers
 - CS 6290 High-Performance Computer Architecture
 - CS 6476 Computer Vision
 - CS 7637 Knowledge-Based AI
 - CS 7646 Machine Learning for Trading
 - CS 7650 Natural Language

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College of Computing

Degree Modification (PhD Computer Science, continued)

- **PhD Breadth areas** (Graphics and Visualization) **updated with new course numbers for Computer Vision that were approved in Proposal 4797 last June:**
 - CS 6476 Computer Vision
 - CS 7476 Advanced Computer Vision

Degree Modification

Doctor of Philosophy with a major in Human-Centered Computing

- **Updating the HCC Specialization area** Artificial Intelligence **with new course numbers for Computer Vision that were approved in Proposal 4797 last June:**
 - CS 6476 Computer Vision
 - CS 7476 Advanced Computer Vision

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College of Computing

Degree Modification

Master of Science in Computer Science
(Computational Perception & Robotics concentration)

- Adding an elective course under the Perception subheading:
 - CS 7650: Natural Language

College of Computing

Degree Modification

Master of Science in Computer Science
(Computational Perception & Robotics and Computer Graphics concentrations)

- Updating the concentrations with new course number for Computer Vision that was approved in Proposal 4797 last June:
 - CS 6476 Computer Vision

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School of Building Construction

New Courses

- BCP 6700: Current Issues in Occupational Safety and Health (3-0-3)
- BCP 6800: Culture and Leadership Influences on Safety and Health (3-0-3)
- BCP 6900: Economic Analysis, Risk Management Financing and Insurance for Safety Professionals (3-0-3)
- BCP 6950: Occupational Safety and Health Capstone (3-0-3)

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School of Building Construction

New Degree

Professional Master's in Occupational Safety and Health

- The Professional Masters in Occupational Safety and Health Management (PMOSH) program is **a terminal degree for industry professionals with 3-5 years of work experience.**
- **It is designed to help students develop the skills and knowledge necessary to successfully define and manage complex safety and health programs.** As opposed to a Master of Science degree, which typically has a research focus and serves as a gateway to a PhD program, the PMOSH program will provide an applied, practical educational experience through projects, teamwork and industry-relevant case studies.

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School of Building Construction

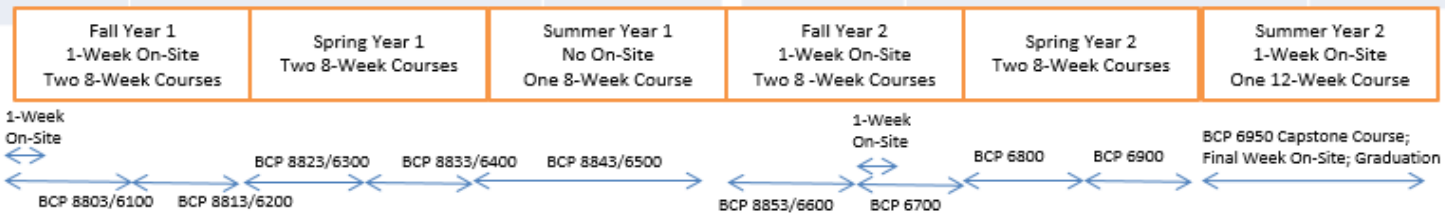
New Degree (PMOSH, continued)

- To earn the PMOSH degree, students must complete **ten courses**.
- Four courses are proposed as new courses with the permanent course numbers; six are proposed as Special Topics courses initially
- Content code BCP (Building Construction – Professional), has been approved for use in the PMOSH program.

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PMOSH Curriculum Structure

YEAR 1			YEAR 2		
Semester	Content	Course	Semester	Content	Course
Fall	Fundamentals of Occupational Safety and Health Program Management	BCP8803/6100	Fall	Applied Ergonomics	BCP8853/6600
	Industrial Hygiene Principles and Health Hazards	BCP8813/6200		Current Issues in Occupational Health & Safety	BCP 6700
Spring	Hazardous Materials Management	BCP8823/6300	Spring	Culture & Leadership Influences on Health & Safety	BCP 6800
	Occupational Health & Safety Principles	BCP8833/6400		Economic Analysis, Risk Management, Risk Financing, & Insurance for Safety Professionals	BCP 6900
Summer	Advanced Safety Principles	BCP8843/6500	Summer	Occupational Safety & Health Capstone	BCP 6950



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School of Building Construction

New Degree (PMOSH, continued)

Admissions Criteria

- The program will have an Admissions Committee within the School of Building Construction in charge of all admission decisions. The Admissions Committee will be established by the Academic Program Director and will follow the guidelines set by the Institute.
- Students to be admitted to the program must satisfy the following:
 - **An earned bachelor's degree from an accredited school with a competitive GPA of at least 3.0.** The admission committee will have the final decision on rejecting the application, admitting the student, or conditionally admitting the student. In the case of conditional admission, the student is given the opportunity to take two courses and prove that he or she can do well in these two courses.

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School of Building Construction

New Degree (PMOSH, continued)

Admissions Criteria, continued

- Proof of English Proficiency (i.e., TOEFL). The minimum TOEFL score for graduate admission required by Georgia Tech is 550 paper-based, 213 computer-based, or 79 internet-based. TOEFL requirements will be exempted if the applicant earned his or her degree from a university where English is the language of instruction.
- At least one year of professional work experience (post-Bachelor's degree) in a safety and health general industry or construction related fields.
- Three descriptive letters of recommendation.
- A required essay/statement of purpose (no more than one page).
- A resume, including work and educational experience.
- An official transcript sent from each accredited school from which the candidate has received a degree.

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College of Architecture

College Name Change

- The College of Architecture is changing its name to the **College of Design** to encompass and better describe the full range of academic offerings by the Schools within the college.
- The name was selected after a thorough review of the options by a consulting firm and after broad discussions with its constituents.

School of Civil and Environmental Engineering

Change to the Title of a Specialization

Change the title of the “Construction Engineering” specialization to “Construction and Infrastructure Systems Engineering”

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School of Civil and Environmental Engineering

New Courses

- CEE 6215: Coastal Structures (3-0-3)
- CEE 6538: Introduction to Non-Destructive Testing and Forensic Evaluation in Structures (2-3-3)
- CEE 6650: Discrete Choice Modeling (3-0-3)
- CEE 8099: Seminars in Structural Engineering, Mechanics and Materials for PhD students (1-0-1)

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Department of Biomedical Engineering

Degree Modification

Doctor of Philosophy with a major in Biomedical Engineering
(GT/Emory and GT/Emory/Peking)

Changes to course requirements, including the following

- Decrease number of required hours of Integrative Core courses (BMED 7011, 7012, & 7013—3 hours each) from six to three.
- Increase the number of BME Engineering & Bioscience Fundamentals hours from 18 to 21.
- Changes are proposed based on feedback from BME faculty and the BME Graduate Committee, as well as input from graduate students via a student survey focused specifically on the Integrative Core courses. Changes are also proposed based on extensive discussions with each Integrative Core instructor.

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Department of Biomedical Engineering

Degree Modification

Master of Science in Biomedical Engineering

Changes to course requirements, including the following

- Decrease number of required hours of Integrative Core courses (BMED 7011, 7012, & 7013—3 hours each) from six to three.
- Increase the number of BME Engineering & Bioscience Fundamentals hours from 18 to 21.
- Changes are proposed based on feedback from BME faculty and the BME Graduate Committee, as well as input from graduate students via a student survey focused specifically on the Integrative Core courses. Changes are also proposed based on extensive discussions with each Integrative Core instructor.

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School of Materials Science and Engineering

Degree Modification

Doctor of Philosophy with a major in Materials Science and Engineering

- Decrease the number of required core courses to two core courses for all MSE students, instead of the current requirement of **five** required courses (*3 core + 2 MSE major courses for each concentration*).
- Remove concentrations from the MSE graduate degree program.
- The remaining MSE required approved courses will be elective courses. All other requirements for the PhD in MSE [total number of credit hours required (37 credit hours after BS and 25 credit hours after MS), format of the qualifier exam, requirements for the minor (9 credit hours), and the minimum overall GPA requirement of 3.0] will remain the same.

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School of Materials Science and Engineering

Degree Modification (PhD Materials Science and Engineering, continued)

- The faculties of the Schools of Materials Science and Engineering and Polymer, Textile and Fiber Engineering merged in 2010 to form the current School of Materials Science and Engineering (MSE).
- At that time, to accommodate students from the two schools, the graduate curriculum was developed with two separate concentrations; hard materials concentration, and macromolecular concentration.
- Different core course requirements existed for the two sets of MSE students, which also made the current MSE graduate curriculum very rigid (with a total of five required courses).
- **The main goal for the revised curriculum is to provide a set of fundamental core courses common to all MSE graduate students**, and provide flexibility in our curriculum for students with different research interests, so that the students are able to take the elective courses important to their research topics.

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School of Materials Science and Engineering

New Courses

- MSE 6411: Thermodynamics of Materials (3-0-3)
- MSE 6412: Structure of Materials (3-0-3)
- MSE 7757: Teaching Practicum (3-0-3)

College of Engineering

New Course

- ASE 6131: Analysis and Synthesis: Human Systems Integration (3-0-3)

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College of Engineering

Degree Modification

Professional Master's in Applied Systems Engineering

- Formally add ASE 6131 (Analysis and Synthesis: Human Systems Integration) to the Professional Master's Degree in Applied Systems Engineering (PMASE).
- This course was included in the original PMASE program proposal and was taught as special topics course (ASE 8803) in Fall 2013/2014/2015.
- This course is the domain elective in Human Systems Integration and serves as an introduction, along with the other domain electives, to the four course complex systems sequence in the second year of the PMASE program.

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College of Computing

Degree Modification

Doctor of Philosophy with a major in Computer Science

- Removal of a few courses that have not been taught in quite some time from the Networking and Communications breadth list.
- Addition of a new course.

Networking and Communications	CS 6250 Computer Networks CS 6280 Performance Evaluation and Communication Networks CS 7250 Broadband Networking Systems CS 7260 Internetworking Architectures and Protocols CS 7270 Networked Applications and Services CS 7280 Network Science
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School of Public Policy

New Courses

- PUBP 6725: Info Security Policies (3-0-3; crosslisted with CS/MGT 6725)
- PHIL 6710: Ethics of Biotechnology and Bioengineering Research (3-0-3)

Deactivate Course

- PHIL 6010: Biotechnology and Research Ethics (replaced by PHIL 6710)

School of Applied Physiology

New Course

- APPH 6710: Ethics of Biotechnology and Bioengineering Research (3-0-3)
(crosslisted with PHIL 6710)

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School of Electrical and Computer Engineering

New Courses

- ECE 6254: Statistical Machine Learning (3-0-3)
- ECE 6337: Electricity Markets (3-0-3)
- ECE 6445: Power IC Design (3-0-3)

Schools of Interactive Computing, Industrial Design, Psychology, and Literature, Communication, and Media

Degree Modification

Master of Science in Human-Computer Interaction

- We propose editing the course electives in some of the picks, updating LCC to LMC, and changing the grade requirement.

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Schools of Interactive Computing, Industrial Design, Psychology, and Literature, Communication, and Media

Degree Modification (MS Human-Computer Interaction, continued)

We propose editing/updating the course electives, updating LCC to LMC, and changing the grade requirement.

<i>Specializations</i>	<i>Fixed Core Credit Hours</i>	<u><i>Specialization Credit Hours</i></u>	<i>Elective Credit Hours</i>	<i>Project Credit Hours</i>
Interactive Computing	9	9	12	6
Digital Media	9	12	9	6
Industrial Design	9	12	9	6
Psychology	9	11 10	10 11	6

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Schools of Interactive Computing, Industrial Design, Psychology, and Literature, Communication, and Media

Degree Modification (MS Human-Computer Interaction, continued)

Each student is required to maintain a 3.0 grade point average across credit hours used to fulfill degree requirements, a minimum grade of “B” in Fixed Core, Specialization, and Project credit hours, and a minimum grade of “C” in Elective credit hours.

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Example of elective changes proposed:

PSYCHOLOGY SPECIALIZATION (~~11~~ 10 credit hours)

Required (~~8~~ 7 credit hours):

PSYC 6022, Psychological Statistics for HCI (4 credit hours including lab, Fall or Spring)

PSYC 7101, Engineering Psychology I (3 credits)

~~PSYC 6032, Engineering Psychology Stressors (1 credit hour minicourse, Fall)~~

~~PSYC 6033, Engineering Psychology Cognitive Ergonomics (1 credit hour minicourse, Spring)~~

~~PSYC 6034, Engineering Psychology Displays (1 credit hour minicourse, Spring)~~

~~PSYC 6035, Engineering Psychology Controls & Workspaces (1 credit hour minicourse, Spring)~~

One of the following courses (3 credit hours):

PSYC 6011, Cognitive Psychology (3 credit hours)

PSYC 6012, Social Psychology (3 credit hours)

PSYC 6014, Sensation and Perception (3 credit hours)

PSYC 6041, Topics in Cognitive Aging (3 credit hours)

A minimum grade of "B" is required in each of the Psychology Specialization classes.

Action Items and minutes

- Move to approve all action items.
- Move to approve Minutes from:
 - March 10, 2016
 - April 14, 2016