

**Georgia Institute of Technology**  
**Institute Graduate Curriculum Committee**  
**Minutes**  
**April 9, 2015**

**Present:** Baabak (BC), Breedveld (CHBE), Ceccagnoli (CoB), Cozzens (VP-Faculty Affs./Graduate Education), Dickson (CHEM), Flowers (ARCH), Jagoda (AE), Macrakis (HTS), Pikowsky (REG), Schmidt-Krey (BIOL)

**Visitors:** Laros (Registrar), Mark (GTPE), Jacobs (CoE), Bamburowski (Graduate Studies), Wooley (GTPE), Scott (CoB), Marsolan (CHBE), Wheaton (APPH), Luettgen (RGI-CHBE), Usselman (HTS), Realff (CHBE), Erera (ISyE)

**Note:** All action items in these minutes require approval by the Academic Senate. In some instances, items may require further approval by the University System of Georgia, the Board of Regents, and SACSCOC. If the further approval is required, the change is not official until notification is received from the to that effect by the last relevant body. Academic units should take no action on these items until USG, BOR, and SACSCOC approval is secured. In addition, units should take no action on any of the items below until these minutes have been approved by the Academic Senate or the Executive Board.

20 voting members, 10 needed for a quorum.

**Academic Matters**

1. A motion was made to *approve* a request from the History, Technology, and Society for a renaming of the school. The motion was seconded and approved.

**Renaming of School – Approved**

**Current name:** School of History, Technology, and Society

**Proposed name:** School of History and Sociology

Under this proposal, our degree names would remain unchanged, so as to reflect their specialized nature.

The proposed change seeks to accomplish three primary objectives:

**Bring greater visibility to the discipline of Sociology.** As emphasized in our recent Academic Program Review, our unit is distinguished by its genuinely cross-disciplinary perspective, grounded in both History and Sociology. Our commitment to the discipline is already reflected in the name of our graduate degree programs. We offer both the MS and PhD in the History and Sociology of Technology and Science (HSTS). The school also offers an undergraduate minor in Sociology.

The current school name masks this essential feature of our culture and our endeavors. The absence of the word "Sociology" has hindered our ability to recruit faculty in the field and limited our ability to attract students and place graduates. These factors loom especially large at this moment, as we pursue a cluster of faculty hires in Sociology and seek to capitalize on growing student interest in the field among both undergraduate and graduate students.

**Provide greater clarity and appeal to all constituents.** Our current name is a continual source of confusion. It sounds esoteric, and begs for further explanation. As often as not, the acronym is mistaken as History of Technology and Science. With remarkable frequency, people transpose our acronym into HST, for History of Science and Technology. Such titles further obscure our broader mission.

By identifying ourselves with our two readily recognizable core disciplines, we will raise our visibility and capture the full range of what we have to offer to prospective applicants, current students, faculty collaborators across campus, and other constituents. Meanwhile, our established degree names will convey the distinctiveness of programs we offer to majors and graduate students.

**Reduce redundancy and bring us into alignment with other IAC schools.** Currently, the names of our degree programs, our school, and the Institute all include the word "technology." The repeated usage is clumsy. Our proposed revision lessens the receptiveness, while bringing us in line with other schools in the college: Economics; International Affairs; Literature, Media, and Communication; Modern Languages; and Public Policy. All but one is a standard academic discipline, and the recently renamed LMC is an amalgam of three recognized disciplines. HTS, with the words "technology" and "society" is a complete outlier. History and Sociology, like the others, offers a clear disciplinary umbrella under which a variety of activities can occur.

2. A motion was made to *approve* a request from the School of Applied Physiology for new course. The motion was seconded and approved.

**New Course – Approved**

APPH 6500: Classics in Neuroscience 1-0-1

**Note:** the School was asked to correct the syllabus to reflect the proper grade modes as listed on the NCP.

3. A motion was made to *approve* a request from the School of Aerospace Engineering for new courses. The motion was seconded and approved.

**New Courses – Approved**

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

- A motion was made to *table* a request from the School of Biology for new courses. The motion was seconded and approved.

**New Courses – Tabled**

BIOL 6607: Molecular Biology of Microbes: Disease, Nature, and Biotechnology	3-0-3
BIOL 6428: Population Dynamics	3-0-3

- A motion was made to *approve* a request from the College of Engineering for a new subject code. The motion was seconded and approved.

**New Subject Code - Approved**

MLDR - Manufacturing Leadership

**Note:** Three Special Topics courses will be created for MLDR - MLDR 8803, MLDR 8813, and MLDR 8823.

**Note:** This new subject code belongs to and is administered by the College of Engineering.

- A motion was made to *approve* a request from the School of Industrial and Systems Engineering for new courses. The motion was seconded and approved.

**New Courses – Approved (with conditions)**

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

**Note:** This proposal was approved with the condition that learning outcomes be added to the syllabus for each course. The School was asked to send the revised syllabi to the Registrar’s Office. It was noted that the proposals will not be moved along to the Academic Faculty Senate without the learning outcomes being addressed.

**Note:** Course equivalents and cross-lists need to be checked and revised on the NCPs.

- A motion was made to *approve* a request from the School of Chemical and Biomolecular Engineering for new courses. The motion was seconded and approved.

### **New Courses – Approved (with conditions)**

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

**Note:** This proposal was approved with the condition that learning outcomes be added to the syllabus for each course. The School was asked to send the revised syllabi to the Registrar's Office. It was noted that the proposals will not be moved along to the Academic Faculty Senate without the learning outcomes being addressed.

**Note:** Course equivalents and cross-lists need to be checked and revised on the NCPs.

8. A motion was made to *approve* a request from the College of Business for online delivery of courses currently taught as face-to face delivery. The motion was seconded and approved.

### **New Online Delivery of Existing Courses – Approved**

MGT 6107: Leadership and Organizational Change  
MGT 6114: Leadership Development  
MGT 6753: Principles of Management for Engineers  
(**Note:** Syllabus needs learning outcomes added.)

**Note:** With this approval, it is the understanding of the Committee that there is no change in content, no change in grading policy, and no change in learning outcomes for these courses as they are reformatted for online delivery. Given the different format, the content may be shifted in the order in which it is presented, but the content itself remains the same.

9. A motion was made to *approve* a request from the College of Business, School of Industrial and Systems Engineering, and School of Chemical and Biomolecular Engineering for a new degree. The motion was seconded and approved.

### **New Degree – Approved**

Professional Master's in Manufacturing Leadership

#### **Start date for the Program, August 2016.**

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. The concept is to combine the advanced technical knowledge beneficial to contemporary manufacturing-industry executives with leadership concepts and methods, as well as the relevant business and financial

content tailored to our industry. The degree would equip promising young professionals to assume positions of business and technical leadership at a manufacturing site or corporate level.

The PMML will be a terminal degree for industry professionals who possess a bachelor's degree in science or engineering, have at least one year of working experience and seek advancement to leadership positions in manufacturing. As opposed to a Master of Science degree, which typically has a research focus and serves as a gateway to a PhD program, the PMML program will provide an applied, practical educational experience through projects, teamwork and industry-relevant case studies.

The PMML program is designed to build manufacturing technical, decision-making and leadership competencies through courses and capstone experiences in financial, business, leadership and manufacturing best-practices. Targeted students are those with interest in developing their capabilities as manufacturing leaders as opposed to research- or C-suite leadership positions. Elective concentrations provide an alignment with industries in which the students are employed. Initially, the program is proposed to have two elective concentrations; both in continuous-process industries. These single-track concentrations will be aligned with the forest bioproducts industry and the chemical-process industry. Additional elective concentrations (elective-course tracks) may be offered in the future. Those under consideration include manufacturing in pharmaceuticals, discrete manufacturing, automotive, aerospace, robotics, etc.

To earn the PMML degree, students must complete ten courses. The PMML curriculum consists of eight core (i.e., required) courses. There are two elective courses selected out of a pool of elective concentration-tracks.

<u>Core/Required Courses:</u>	<u>Credit hours</u>
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

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

Two elective courses will be selected from the following:

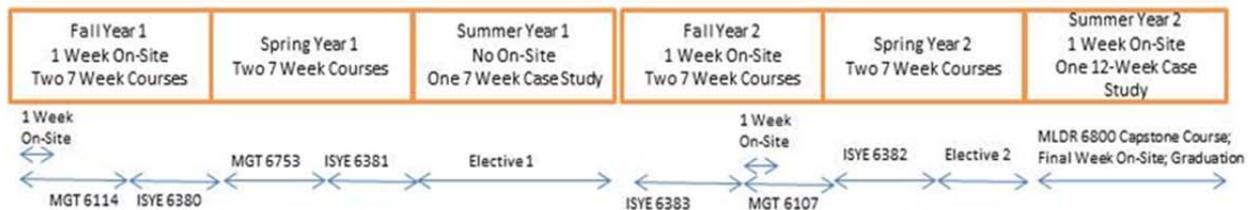
- MLDR 6701 - Foundational Topics in the Manufacturing of Forest Bioproducts
- MLDR 8803 - Emerging Markets for Forest Bioproducts
- MLDR 8813 - Foundational Topics in the Chemical Manufacturing Industry
- MLDR 8823 - Emerging Markets for the Chemical Manufacturing Industry

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.

## PMML Curriculum Structure

YEAR 1			YEAR 2		
Semester	Content	Course	Semester	Content	Course
Fall	Leadership Development	MGT 6114	Fall	Manufacturing Supply Chain Operations	ISYE 6383
	Production Planning & Control	ISYE 6380		Leadership & Organizational Change	MGT 6107
Spring	Principles of Management for Engineers	MGT 6753	Spring	Quality Control & Lean Manufacturing	ISYE 6382
	Manufacturing Reliability	ISYE 6381		Elective No. 2 - Emerging Markets for Forest Bioproducts - Emerging Markets for the Chemical Manufacturing Industry	MLDR 8803 MLDR 8823
Summer	Elective No. 1 - Foundational Topics in the Manufacturing of Forest Bioproducts - Foundational Topics in the Chemical Manufacturing Industry	MLDR 6701 MLDR 8813	Summer	Manufacturing Leadership Capstone Design Challenge	MLDR 6800



April 7, 2015

The program is cohort-based. All students in a cohort go through the same ordered sequence of core courses at the same time. One new cohort starts each year. In steady state, each core course will, therefore, be offered once a year.

Students to be admitted to the program must satisfy the following conditions:

- An earned bachelor's degree in engineering or physical sciences 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 he or she can do well in the two courses, so that he or she can continue in the degree program.

- **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 of Science) in an engineering- or science-related field.**
- **Three descriptive letters of recommendation.** Letters are expected from the applicant's past and current supervisors, who can evaluate the applicant's skills and capabilities and describe why the individual should be considered for admission.
- **A required essay/statement of purpose (no more than one page).** The essay/statement of purpose should include: why the applicant should be considered, what experience the applicant can bring to the program and what the applicant expects to take away from the program to enhance his or her professional career.
- **A resume, including work and educational experience.**
- **An official transcript sent from each accredited school from which the candidate has received a degree.**

In some cases, the committee might request to interview an applicant.

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).

The PMML degree will be awarded by the CoE. The Academic Program Director will be an academic faculty member in the College Engineering. A PMML Graduate Curriculum Committee will consist of: the PMML Academic Program Director, the CoE Associate Dean of Graduate Programs, one academic faculty member from ISyE, one academic faculty member from ChBE and one graduate student from each cohort. The major functions of the PMML Graduate Curriculum Committee are to: assemble and evaluate information relevant to its charge as a graduate curriculum committee, propose formulations of policy or procedures for consideration by and propose recommendations for action by the academic faculty of ISyE and ChBE. After approval of a policy or procedure by the academic faculty of ISyE and ChBE, the function of the committee is to assure that all components of the Institute act in accord with the policy so long as it is in effect. PMML Graduate Curriculum Committee may be empowered to act for the academic faculty of ISyE and ChBE to translate approved policy or procedure into specific actions or judgments. Such

actions and judgments remain subject to the approval or disapproval of the academic faculty of ISyE and ChBE. Any change to any course, any change to admissions criteria, and any change to degree requirements must be approved by the academic faculty of ISyE and ChBE.

**Note:** Space and budget issues for this program are being reviewed (this is not the concern of the Committee, but is so noted). The learning outcomes listed for this program are adequate for approval, but it is expected that the School will continue working with the College of Engineering and the Assessment Office (as needed) to fine tune the assessment process. The program review schedule for this program will be on the standard College of Engineering schedule and will be conducted in a way similar to that of the PMASE program.

**Note:** This program will be delivered in a “hybrid” format with classes in online format and some modules on campus. Approval of this proposal is approval of this delivery mode.

**Note:** Although this proposal mentions “concentrations,” it is the understanding of the Committee that this is more akin to “specializations” that will *not* be part of the record and will not appear on the transcript as an addendum to the degree information. In other words, these students will not earn official “concentrations” but will “specialize” within certain designated areas.

## **Student Petitions**

1. A motion was made to approve subcommittee and administrative actions on petitions in the areas listed below. The motion was seconded and approved.

The following petitions were reviewed by the Graduate Curriculum Committee Petition Subcommittee. (All approved except where noted) Petitions reviewed from 02/05/14 to 04/08/15.

- 4- Term withdrawal (**3 Denied**)
- 2- Selective withdrawal
- 2- Grade mode change (**1 Denied**)
- 1- Use transfer credit toward degree

The following petitions were reviewed administratively by the Registrar’s office. (All approved except where noted) Petitions reviewed from 11/7/14 to 02/05/15

- 1- Late registration for current term
- 1- Waiver of the two-term, full-time enrollment requirement
- 1- Graduate without GPA (doctoral student)
- 3- Count 9000-level course hours as 7000-level course hours for MS degree
- 2- Use excess pass-fail courses hours toward degree
- 1- Cancel registration for current term
- 3- Three-hour rule waiver

- 3- Seven-year rule waiver
- 5- Change grade mode in current term
- 14- Full Graduate Standing
- 3- Registration adjustment
- 1- One-hour rule waiver
- 1- Use two 4000-level courses toward degree
- 1- Use transfer credit toward degree
- 1- Allow course substitution

Adjourned,

Reta Pikowsky  
Registrar