

**Institute Undergraduate Curriculum Committee  
Academic Matters and Appeals (Full Committee)  
Tuesday, August 11, 2015**

**Present:** Mayor (ME), Pikowsky (Registrar), Hollengreen (ARCH), Goodisman (BIOL), Zhou (ISyE), Parsons (CoB), Senf (LMC), Singleton (PSYC), Potts (Vice Provost), Sankar (AE), Scott (CEE), Yaszek (LMC)

**Visitors:** Laros (Registrar), Hodges (Registrar), Tucker (ARCH), Nair-Reichert (ECON), Coyle (ECE), Learnly (ME), Kim (ARCH), Rinehart (CoA)

**Note:** All action items in these minutes require approval by the Academic Senate. In some instances, items may require further approval by the Board of Regents or the University System of Georgia. If the Regents' approval is required, the change is not official until notification is received from the Board to that effect. Academic units should take no action on these items until USG and/or BOR 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. Notification or approval by the Southern Associate of Schools and Colleges, Commission on Colleges, may also be required.

**Note:** All votes are unanimous unless specifically noted otherwise.

**Academic Matters**

1. A motion was made to *approve* a request from the School of Economics for a new course and a prerequisite modification. The motion was seconded and approved and the prerequisite medication was acknowledged without concern.

**New Course – Approved**

ECON 4370: Law and Economics

3-0-3

Note: This course was approved with the condition that the sentence under “class policies” on the syllabus relating to “...subjective changes, up to one letter grade...” be removed. The School was asked to send a revised syllabus to the Registrar for the record.

**A motion was made to *deny* a request from the School of Economics for a new course.**

**New Course – Denied**

ECON 4520: Economics of Sports

3-0-3

\*This motion was denied in a 4-yes 7-no vote.

**Note:** Concerns were noted about the syllabus including the ADA statement, need for closer proofreading, and an explanation or clarification on the grading scale. The attendance policy also needs to be clarified.

**Prerequisite Modification - Acknowledged without concern**

ECON 3300: Economics of Energy Markets

Current: Econ 2100 or Econ 2101 or Econ 2105 or 2106

Proposed: Econ 2100 or Econ 2101 or Econ 2106

2. A motion was made to *approve* a request from the School of Materials Science and Engineering for course deactivations. The motion was seconded and approved.

**Deactivate Courses – Approved**

**PTFE Designated Courses To Deactivate:**

PTFE 1100 Intro-Polymer & Fiber Engr

PTFE 1XXX PTFE Electives

PTFE 2200 Struct & Prop-Fibers & Polym

PTFE 2698 Research Assistantship

PTFE 2699 Undergraduate Research

PTFE 2XXX PTFE Electives

PTFE 3200 Yarn & Fabric Formation

PTFE 3221 Textile Formation & Test

PTFE 3XXX PTFE Electives

PTFE 4020 Textile Mgt Internship

PTFE 4043 Safety and Ethics

PTFE 4101 Carpet Technology

PTFE 4102 Nonwovens Technology

PTFE 4103 Knitting Technology

PTFE 4104 Industrial Textiles

PTFE 4105 Survey-Apparel Industry

PTFE 4106 Science of Color

PTFE 4107 App of Mech-Text Struct

PTFE 4108 Tex Production Economics

PTFE 4110 Poly & Fiber Engr Design I

PTFE 4141 Polymer Characterization

PTFE 4210 Poly & Fiber Eng Design II

PTFE 4698 Research Assistantship

PTFE 4699 Undergraduate Research

PTFE 4720 Fiber Proc for Managers

PTFE 4721 Fabric-Color & Performance

PTFE 4723 Prop-Textile Material

PTFE 4777 Intro-Polymer Sci & Engr

PTFE 4801 Special Topics

PTFE 4802 Special Topics

PTFE 4803 Special Topics

PTFE 4804 Special Topics  
PTFE 4901 Special Problems  
PTFE 4902 Special Problems  
PTFE 4903 Special Problems  
PTFE 4XXX PTFE Electives

**Deactivate Courses – Approved**

PTFE 3210 Transport-Polymers & Fiber  
PTFE 3220 Text Operations & Mgt  
PTFE 3230 Polymer & Fiber Processing  
PTFE 3720 Intro-Fiber Enterprise  
PTFE 4100 Chem Proc-Text Materials  
PTFE 4122 Textile Chemistry Lab  
PTFE 4140 Poly Solutions & Surfaces  
PTFE 4740 Bio Inspired Design  
PTFE 4761 Industrial Ctrl's & Mfg  
PTFE 4775 Polymer Science & Engr I  
PTFE 4776 Polymer Science & Engr II  
PTFE 4791 Mech Behavior-Composites  
PTFE 4793 Composite Mater& Process  
PTFE 4794 Composite Materials& Mfg

**Note: The courses above are cross-listed with MSE. The PTFE courses will be deactivated on these, but the MSE versions of these courses will remain active.**

3. A motion was made to *approve* a request from the School of Mechanical Engineering to add a new course. The motion was seconded and approved.

**New Course - Approved**

ME 4013: Hybrid Vehicle Powertrains 3-0-3

4. A motion was made to *approve* a request from the School of Architecture for new courses and new certificates. The motion was seconded and approved.

**Note:** All graduate-level versions of these courses have to specify the difference between the requirements for graduate students and undergraduate students. The Graduate Committee requires that this distinction be clear on the syllabus. The School is instructed to make sure that all the syllabi are revised to reflect this information.

**New Courses – Approved**

ARCH 4503: BIM Applications 3-0-3  
The committee requested to note that questions were raised to ensure there was a distinction between this undergraduate course and the graduate version of the course.

ARCH 4505: Geometric Constructs 3-0-3  
This course was approved on the condition that the learning outcomes will be edited for clarification and to remove the pre-requisites on the NCP. The pre-requisites on the NCP and syllabus don't match. This needs to be corrected.

ARCH 4507: Parametric Design 3-0-3  
This course was approved on the condition that the correct instructor names will be added to the NCP, that #18 on NCP will be marked YES, and the BANNER title and long title should match.

ARCH 4508: Shape Grammars 3-0-3  
This course was approved on the condition that the learning outcomes will be edited for clarification and the nature of work for the course be specified.

ARCH 4701: Analog-Digital Design Computation 3-0-3  
This course was approved on the condition that the learning outcomes will be edited for clarification and the nature of work for the course be specified.

ARCH 4702: Design Scripting 3-0-3

**New Certificate – Approved**  
Certificate in Computational Design

The purpose of this proposal is to establish a new certificate in Computational Design within the School of Architecture for undergraduate students. The certificate prepares students to develop a skill set in computer-aided design and fabrication built upon an integrated application of design research, architectural geometry, digital theory and digital design technologies in contemporary architectural practice and research. It links currently offered electives, which provide knowledge in parametric modeling, scripting, algorithmic design thinking, building information modeling, shape grammars, architectural geometry, digital theory and additive manufacturing techniques.

The required classes Media and Modeling 2 + 3 introduce intermediate and advanced approaches to two and three dimensional modeling and representation in architecture using both manual and digital media and techniques. After successful completion students can select four elective classes [twelve hours of courses] in the following advanced topics of computational design theories and methods:

ARCH 4803	Architectonics
ARCH 4505	Geometric Constructs
ARCH 4507	Parametric Design
ARCH 4508	Shape Grammars
ARCH 4503	BIM Applications
ARCH 4833	Parametric Modeling with BIM
ARCH 4701	Analogue - Digital Design Computation
ARCH 4702	Design Scripting

ARCH 4803 Embodiment + Digital Realm

Note: ARCH 2472 and ARCH 2474, Modeling and Media II and III are existing required classes. Both classes are pre-requisites for the certificate in Computational Design.

**New Courses – Approved**

ARCH 4226: Green Construction 3-0-3

This course was approved on the condition that BC 4710 (cross-listed version of ARCH 6226) will be added to NCP. Also, that the grading paragraph in the syllabus will be edited (the 20% will be moved under the Graduate course column).

ARCH 4240: Building Simulation 3-0-3

This course was approved on the condition that the learning outcomes will be edited for clarification.

ARCH 4320: Retrofitting Suburbia 3-0-3

ARCH 4447: Urban Ecological Design 3-0-3

This course was approved on the condition that the learning outcomes will be edited for clarification.

**New Certificate – Approved**

Certificate in Sustainable Architecture

The proposed Certificate in Sustainable Architecture provides undergraduate students who major in Architecture the opportunity to specialize in design and technical innovations that will increase building energy performance, reduce emissions, use eco-friendly materials, and thereby increase the durable societal value of the built environment. The design and retrofit of energy efficient buildings, better material choices and improved occupant comfort are the primary skills acquired at the intermediate level through this certificate.

Required courses (3)

ARCH 4227 Architecture and Ecology

ARCH 4226 Green Construction (new)

ARCH 4231 Environmental Systems II

Elective courses (1)

ARCH 4240 Building Simulation in Design Practice (new)

ARCH 4151 History of Urban Form

ARCH 4320 Retrofitting Suburbia (new)

ARCH 4447 Urban Ecological Design (new)

ARCH 4805 Special Topics (Design Build South Africa I

Prerequisites:

ARCH 4231 requires ARCH 3231 Environmental Systems I

ARCH 4240 requires ARCH 4226 Green Construction

5. The School of Industrial and Systems Engineering made a presentation on a possible future proposal asking for feedback on the general concept of a 5-year BSIE-MSSCE degree program.

Pre-proposal: A 5-year BSIE/MSSCE Degree Program

### ***Rationale***

Many Georgia Tech students in the B.S. in Industrial Engineering (BSIE) program are interested in a 5-year BS/MS program. Such a program will enable our undergraduate students to develop the depth of expertise required to make significant impact in industrial engineering practice, while maintaining momentum from undergraduate study.

One option would be to couple the BSIE program with our M.S. in Industrial Engineering (MSIE) graduate program. While there are some merits for doing so, there is a better approach for targeting students who wish to make impact in practice. About half of the ISyE undergraduate student population goes on to careers in the supply chain engineering domain, an important sub-field of industrial engineering. In 2011, Georgia Tech began offering a specialized M.S. degree program in Supply Chain Engineering (MSSCE) designed to produce graduates with graduate-level expertise in the methodologies of industrial engineering, operations research and statistics, deep understanding of the critical industrial and business challenges in the supply chain domain, and ability to apply engineering methods to address these critical challenges. We believe that a 5-year BSIE/MSSCE degree program provides the most added value to our BSIE student population.

Currently, ISyE has 1460 undergraduate students, 271 MS students and 130 PhD students. There are 45 Tenure Track faculty members and 3 administrative faculty members. The student faculty ratio for undergraduate alone is above 30, and when combined with the graduate student numbers, it is above 40. For these reasons, our goal is not to attract more students into ISyE programs but rather to improve the program offerings available to our undergraduates, many of whom go on into leadership roles in the supply chain area. A significant number of the ISyE faculty, 27, affiliate with the supply chain engineering research area, which allows us to offer the specialized MSSCE degree. Indeed, our programs in this area are recognized worldwide: for our undergraduate track in supply chain engineering, for the MSSCE, for the professional M.S. in International Logistics for senior managers, and for our Ph.D. in Industrial Engineering-Supply Chain Engineering track.

The MSSCE program currently is quite healthy. We attract between 125-150 applications annually, and build a class of 45-50 students. Relatively few of these incoming students to date study at U.S. undergraduate institutions, and our mix

of international to domestic students is a bit high. By adding a BSIE/MSSCE option to our undergraduate curriculum, we will continue to target a total annual MSSCE graduating class of 50 students and will not increase the size of that program, but rather improve the overall quality of enrollees and thus provide greater value to the many industry partners from Georgia and nationwide that recruit our student graduates.

### ***Benefits to BSIE Students for Completing 5-year Program***

Currently, BSIE students who come back to Georgia Tech to complete the MSSCE degree are responsible for 2.5 semesters of premium tuition. Under this program, they would complete the degree with 1.5 semesters of premium tuition, and in two additional semesters rather than three.

### ***Challenges***

Since the MSSCE is a lock-step cohort program, we only offer the courses 6336-40 in Spring semesters and 6341-42 (Capstone Project) in Summer or Fall semesters. We can only admit BSIE students who graduate in Fall semesters into the program under this structure, and will need to advise students carefully.

The consensus of the Committee was that it would encourage the School to come back with an official proposal.

Adjourned,

Reta Pikowsky  
Registrar