

Georgia Institute of Technology
Graduate Curriculum Committee
Minutes
October 3, 2013

Present: Jagoda, (AE), Pikowsky (REG), Flowers (ARCH), Sharp (Grad Studies), Kvam (ISyE), Jayaraman (MSE), Storici (BIOL), Cozzens (VPGEFA)

Visitors: Laros (REG), Merkousko (REG), Hodges (REG), Greene (CPSM), Sokol (ISyE), Bucknall (MSE), Rahnema (NRE), Fujimoto (CSE), Slaughter (CoB)

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.

Academic Matters

1. Deborah Greene, Assistant Director, Space Planning was a guest speaker at this meeting to discuss the Resource Learning in the 21st Century initiative. She asked Committee members to share with her any thoughts or suggestions they have about classroom and other instructional needs that might help inform future planning. There was concern expressed about how scheduling is done, particularly when classes have to be moved to a larger room. The Registrar's Office will coordinate another time to discuss this specific issue with the Committee.
2. A motion was made to *approve* a request from the School of Materials Science and Engineering for a new course and a course deactivation. The motion was seconded and approved.

New Courses – Approved

MSE 6750: Preparation & Reactions of Polymers 3-0-3

Course Deactivation - Approved

PTFE 6750: Preparation & Reactions of Polymers

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

New Courses – Tabled

NRE 6100: Management of the Nuclear Enterprise

Note: Course has not been taught as Special Topics and the committee requested that it be taught twice and then can be brought back to request a number. Although this is not a requirement, and occasionally when a program is being implemented a course may be approved without having been

tried out as a special topics course, it is the strong preference of the Committee that the content be tested, evaluated, and adjusted as needed before a permanent number is requested.

4. A motion was made to *approve* a request from the School of Mechanical Engineering for degree modifications. The motion was seconded and approved.

Degree Modification: Approved

Master of Science in Nuclear Engineering

Adding Nuclear Enterprise Management (NEM) Concentration

Members of the faculties at the Georgia Institute of Technology (Georgia Tech) propose to establish a new concentration called “Nuclear Enterprise Management” in the Nuclear and Radiological Engineering (NRE) Program of the Woodruff School of Mechanical Engineering at Georgia Tech. The NRE Program of the Woodruff School will administer the new concentration.

The proposed concentration requires 12 credit hours of coursework. The concentration is designed to fit within the 30 credit hour M.S. curriculum in a seamless manner for the non-thesis option. Thesis M.S. students must take an additional 6 credit hours of course work from the NEM identified courses. It is expected that 30%-40% of the graduate students will choose this concentration. The new concentration will only require the creation of one new 3-credit hour NRE course; this course can be taught by at least three NRE faculty, or adjunct faculty in the Atlanta region.

Current MSNE Curriculum

The Master of Science degree in Nuclear Engineering (M.S.N.E.) has the following minimum course credit-hour requirements. No more than six semester hours at the 4000 level can be counted toward the degree requirement.

	With Thesis	Without Thesis
Major Area	12	15
Mathematics	3	3
Electives	6	12
Thesis (NRE 7000)	9	0
Total for Degree	30	30

The required courses for MSNE degree are:

- NRE 6101 Transport Fundamentals
- NRE 6102 Plasma Physics
- NRE 6201 Reactor Physics
- NRE 6401 Advanced Nuclear Engineering Design (required for the nonthesis option)
- NRE 6756 Radiation Physics

Courses from the School of Mathematics as well as ISyE 6401, ISyE 6739, and NRE 6103 fulfill the mathematics requirement. Any course in which you don't receive a C or higher, or any course taken for a non-letter grade (except the thesis, transfer credit, or advanced standing) **do not** meet these course requirements. All courses must be at the 4000 level and above. No more than six semester hours at the 4000 level can be counted toward the degree requirements.

The items listed below cannot be used to meet the course requirements for the MSNE degree:

- Any course in which you do not receive a grade of C or higher;
- Any course taken for a non-letter grade (except thesis, transfer credit, or advanced standing); and
- Any course required for the B.S.M.E. degree;
- CETL course work

Proposed curriculum for MSNE with NEM concentration

The proposed curriculum for the NEM Concentration in the MSNE degree program is easily adoptable within the current curriculum, and should enhance the reputation of Georgia Tech graduates in the employment market, thus positively impacting future enrollments and interest in the NRE program.

The required courses for this degree are:

Program of Study:

	Current MSNE		Proposed MSNE w/NEM Conc.	
	Non-Thesis	Thesis	Non-Thesis	Thesis ²
Required	15	12	15	12
Math ¹	3	3	3	3
Electives	12	6	0	0
Thesis	0	9	0	9
Core courses - NEM				
NRE 6100			3	3
MGT/ISYE			9	9
Minor	0	0	0	0
Total (min)	30	30	30	36

¹ Math substitute – NRE 6103 or NRE/ME 6758

² NEM Conc. – must take NRE 6103 Or 6758 as math requirement

- NRE 6101 Transport Fundamentals
- NRE 6102 Plasma Physics
- NRE 6201 Reactor Physics
- NRE 6401 Advanced Nuclear Engineering Design (required for the nonthesis option)
- NRE 6756 Radiation Physics

Courses from the School of Mathematics as well as ISyE 6401, ISyE 6739, and NRE 6103 fulfill the mathematics requirement. Any course in which you don't receive a C or higher, or any course taken for a non-letter grade (except the thesis, transfer credit, or advanced standing) **do not** meet these course requirements. All courses must be at the 4000 level and above. No more than six semester hours at the 4000 level can be counted toward the degree requirements.

Concentration Requirements:

The NEM Concentration has the following requirements:

Core 1	NRE	8803	3	Special Topics (Management of the Nuclear Enterprise)
Core 2	ME/MGT	6753	3	Principles of Management for Engineers
Core 3	MGT	6000	3	Financial Management and Accounting
Elective	ISYE	6673	3	Financial Optimization
(choose 1	ISYE	6230	3	Economic Decision Analysis
from)	MGT	6100	3	Leadership and Organizational Behavior
	ISYE	6101	3	Organizational Behavior
	ISYE	6229	3	Productivity Analysis
	ISYE	6773	3	High-Tech Ventures
	ISYE	6774	3	MOT Project
	ISYE	6777	3	Analysis-Emerging Technology
	ISYE	6772	3	Management Resources-Tech Firms

The items listed below cannot be used to meet the course requirements for the MSNE degree:

- Any course in which you do not receive a grade of C or higher;
- Any course taken for a non-letter grade (except thesis, transfer credit, or advanced standing); and
- Any course required for the B.S.M.E. degree;
- CETL course work

Degree Modification: Approved

Doctor of Philosophy with a major in Nuclear and Radiological Engineering

Adding Nuclear Enterprise Management (NEM) Specialization – **The Committee voted to approve this addition as a “specialization” rather than a “concentration” as was originally proposed.**

Specializations allow the academic unit to keep track of a student’s research interest. They do not appear on the transcript or on the diploma. “Concentrations” do appear on the transcript. At the doctoral level, all that currently appears on the diploma is the title of the degree “Doctor of Philosophy”. The Committee concluded that it would not be appropriate, and might, in fact, be

confusing to attach a “concentration” onto a doctoral program that already requires completion of a minor.

Members of the faculties at the Georgia Institute of Technology (Georgia Tech) propose to establish a new specialization called “Nuclear Enterprise Management” in the Nuclear and Radiological Engineering (NRE) Program of the Woodruff School of Mechanical Engineering at Georgia Tech. The NRE Program of the Woodruff School will administer the new specialization.

The proposed specialization requires 12 credit hours of coursework. There is no NEM course credit impact to the Ph.D. curriculum. It is expected that 30%-40% of the graduate students will choose this specialization. The new specialization will only require the creation of one new 3-credit hour NRE course; this course can be taught by at least three NRE faculty, or adjunct faculty in the Atlanta region.

Current PHD-NRE curriculum:

The doctoral degree requires 42 semester hours of course work (on a letter-grade basis) beyond the bachelor's degree or its equivalent. A total of 36 semester hours must be at the 6000 level or above. Up to six semester hours may be at the 4000 level. Any courses required for the B.S.M.E. or the B.S.N.R.E **do not** meet these respective course requirements. Course grades must be C or higher to satisfy PhD degree requirements. Also, CETL classes **do not** meet these respective course requirements.

Major Area	24	Must be in a coherent subject area appropriate to NE/RE. If you completed a master's thesis in this area, it may count for nine semester hours toward this requirement.
Minor Area	9	Must be distinctly different from the major area. The minor is intended to provide depth in an area not directly needed for Ph.D. research or related to the principal area of expertise.
Electives/Other	9	May be different than the major or minor, or could be applied to the major or minor area.
Total	42	

Proposed curriculum for PHD-NRE with NEM specialization

The proposed curriculum for the NEM Specialization in the PHD-NRE degree program is easily adoptable within the current curriculum, and should enhance the reputation of Georgia Tech graduates in the employment market, thus positively impacting future enrollments and interest in the NRE program.

The required courses for this degree are:

NRE 6101 Transport Fundamentals
 NRE 6102 Plasma Physics
 NRE 6201 Reactor Physics
 NRE 6756 Radiation Physics

Prerequisites:

None, other than admission in the NRE/MP graduate program.

Specialization Requirements:

The NEM Specialization has the following requirements:

Core 1	NRE	8803	3	Special Topics (Management of the Nuclear Enterprise)
Core 2	ME/MGT	6753	3	Principles of Management for Engineers
Core 3	MGT	6000	3	Financial Management and Accounting
Elective	ISYE	6673	3	Financial Optimization
(choose 1	ISYE	6230	3	Economic Decision Analysis
from)	MGT	6100	3	Leadership and Organizational Behavior
	ISYE	6101	3	Organizational Behavior
	ISYE	6229	3	Productivity Analysis
	ISYE	6773	3	High-Tech Ventures
	ISYE	6774	3	MOT Project
	ISYE	6777	3	Analysis-Emerging Technology
	ISYE	6772	3	Management Resources-Tech Firms

Program of Study:

	Current PhD curriculum	PhD curriculum w/NEM
Required	24	21
Minor	9	9
Electives/other	9	See the 2 rows below
NRE -NEM (New) ¹		3
MGT/ISYE ¹		9
Total (min)	42	42

¹ Required course per the NEM specialization

- A motion was made to *approve* a request from the School of Industrial and Systems Engineering, the School of Computational Science and Engineering, and the College of Business for a new degree prospectus. The motion was seconded and approved.

New Program Prospectus: Approved

Master of Science in Analytics

This proposal is for a new interdisciplinary Master of Science in Analytics degree at Georgia Tech between the College of Engineering, College of Computing, and Scheller College of Business. The objective of this proposal is to create a nationally elite analytics degree program by leveraging the combined strengths of Georgia Tech's College of Engineering, College of Computing, and Scheller College of Business in statistics, operations research, computing, and business. The program will be designed as a terminal Master's degree to provide sufficient training for graduates to move directly into business and industry positions where they can apply the practical knowledge they have gained to immediately benefit their employers. Such a program would help provide for the growing needs of companies in Georgia, throughout the Southeast, and nationally.

The Master of Science in Analytics will be an interdisciplinary degree program between the Stewart School of Industrial and Systems Engineering (ISYE) within the College of Engineering, the School of Computational Science and Engineering (CSE) within the College of Computing, and the area of Information Technology Management (ITM) within the Scheller College of Business. The purpose of the program is to train students broadly in analytics, while allowing them to also get deeper training within some area of the field that they choose. In this way, the program's graduates will help fulfill the quickly-growing demand for analytics both in Georgia and nationally.

6. A motion was made to *acknowledge* a request from the College of Business for a prerequisite modification. The motion was seconded and approved with no concern.

Prerequisite Modification – Acknowledged with no concern

MGT 6057 - Business Process Analysis

MGT 6780 - Knowledge Management

The Scheller College faculty has voted to deactivate MGT 6050 Information Technology Management. As part of this deactivation, we would like to eliminate MGT 6050 Information Technology Management as a prerequisite for MGT 6057 Business Process Analysis and Design and for MGT 6780 Knowledge Management. These courses have evolved and no longer require a prerequisite course.

Adjourned,

Reta Pikowsky
Registrar