


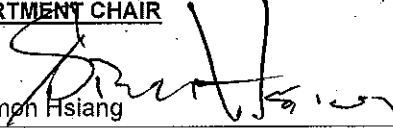
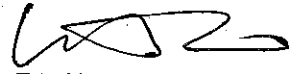

2015 Degree Works Updates Only
 SIGNATURE SHEET: COLLEGE OF ENGINEERING  UNC CHARLOTTE

Date: Feb 9th, 2016

Subject: **Editorial Change of MSEM Degree Requirements for Degree Works**

Originating Department: Systems Engineering and Engineering Management

TYPE OF PROPOSAL: Degree Works Updates (due to the Graduate School Dec. 1st)

DATE RECEIVED	DATE FORWARDED	COMMENTS: APPROVED, APPROVED WITH REVISIONS, ETC.	SIGNATURES
			<u>PERSON ORIGINATING PROPOSAL</u>  Dr. Tao Hong 2/18/2016
		Approved	<u>DEPARTMENT CHAIR</u>  Dr. Simon Hsiang 02/19
		Approved	<u>COLLEGE CURRICULUM COMMITTEE CHAIR</u>  Dr. Tao Hong 2/19/2016
		Approved	<u>COLLEGE DEAN or DESIGNATED ASSOCIATE DEAN</u>  Dr. Ron Smelser 2016 Feb 24
		Approved	<u>GRADUATE SCHOOL REVIEW</u>
		Approved	<u>GRADUATE COUNCIL CHAIR</u> (for graduate courses only)
		Approved	<u>FACULTY GOVERNANCE ASSISTANT</u> (received and processed in Academic Affairs)
		Approved	



UNC CHARLOTTE

COURSE AND CURRICULUM UPDATES DEGREE WORKS

*To: Chair, Graduate Council

From: Dr. Tao Hong, Graduate Program Director, SEEM

Date: Feb, 9th, 2016

Re: Editorial Change of MSEM Degree Requirements for DEGREE WORKS

The Short Form is used for minor curriculum changes. Minor changes may include:

Graduate: Minor changes include course numbering (note: must follow Course Numbering Policy), change in pre-requisites, editorial changes to course description, and/or minor program changes, including those needed to reflect approved program practices.

Submission of this Short Form indicates review and assessment of the proposed curriculum changes at the department and collegiate level either separately or as part of ongoing assessment efforts.

SUMMARY: State clearly and concisely the proposed changes. Please give a brief statement as to why the change is being proposed.

SEEM proposes to make minor editorial changes of the current Catalog to provide specific information on MSEM graduate requirements for DEGREE WORKS:

- Replacing the course-only w/o comprehensive exam option by the project option to complete the capstone requirement.
- Editorial change to the course description for EMGT 6980 - Industrial and Technology Management Seminars
- Editorial change to the prerequisite and course description for EMGT 6985 - Engineering Management Project

RESOURCES:

1. For a new course or revisions to an existing course, check all the statements that apply:
 - This course will be cross listed with another course.
 - There are prerequisites for this course.
 - There are co-requisites for this course.
 - This course is repeatable for credit.
 - This course will affect the number of credits hours for its program.
 - This proposal results in the deletion of an existing course(s) from the degree program and/or catalog.
 - This proposal will alter an agreement with a North Carolina community college.

For all items checked above, applicable statements and content must be reflected in the proposed catalog copy.

2. Indicate the additional resources required, if any, to implement and maintain the proposed change.
NA.

CREDIT HOUR (Mandatory if new and/or revised course in proposal):

Review statement and check box once completed.

- The appropriate faculty committee has reviewed the course outline/syllabus and has determined that the assignments are sufficient to meet the University definition of a credit hour.

SEEM faculty discussed and approved the change via an email thread in Jan, 2016.

PROPOSED CATALOG COPY: For existing courses copy and paste the current catalog copy and use the Microsoft Word “track changes” feature (or use red text with “~~strikethrough~~” formatting for text to be deleted, and adding blue text with “underline” formatting for text to be added). For new courses, draft comprehensive catalog copy. Attach separate page if needed.

STUDENT LEARNING OUTCOMES (GRADUATE): Does this course or curricular change require a change in SLOs or assessment for the degree program?

- Yes. If yes, please provide updated SLOs in template format.
- No.

IMPORTANT NOTE: A Microsoft Word version of the final course and curriculum proposal should be sent to facultygovernance@uncc.edu upon approval by the Undergraduate Course and Curriculum Committee and/or Graduate Council chair.

EMGT 6980 - Industrial and Technology Management Seminars

Credit Hours: (1)

A series of seminars covering current management issues, challenges and practices in industrial, government, and business sectors of industry. (All students in the M.S. in Engineering Management program are required to take this course for three semesters.) *May be repeated for credit.*

Prerequisite(s): Permission of instructor.

EMGT 6985 - Engineering Management Project

Credit Hours: (3)

A hands-on real world industrial/business project. Emphasizes the design and implementation of effective methods on the development and/or improvement of products, processes, procedures, or systems. A 3-member project committee includes a faculty project advisor, the industrial project advisor, and a faculty member in the technical area has to be established before taking this project course. This project is a capstone project for the students in the M.S. in Engineering Management program.

Prerequisite(s): EMGT 6901 and two other program required EMGT courses.

EMGT 6980 - Industrial and Technology Management Seminars

Credit Hours: (1)

A series of seminars covering current management issues, challenges and practices in industrial, government, and business sectors of industry. (All students in the M.S. in Engineering Management program are required to take this course ~~for three semesters~~ within the first or second semester of the program.) *May be repeated for credit.*

Prerequisite(s): Permission of instructor.

EMGT 6985 - Engineering Management Project

Credit Hours: (3)

A hands-on real world industrial/business project. Emphasizes the design and implementation of effective methods on the development and/or improvement of products, processes, procedures, or systems. A 3-member project committee includes ~~a faculty project advisor, the industrial project advisor, and a faculty member in the technical area~~ at least two faculty members from Systems Engineering and Engineering Management Department has to be established before taking this project course. This project is a capstone project for the students in the M.S. in Engineering Management program.

Prerequisite(s): ~~EMGT 6901~~ EMGT6980 and two other program required EMGT courses.

Degree Requirements

Thirty credit hours of approved graduate work within one of two options:

Option 1

Successful completion of 30 semester hours of graduate-level coursework.

Option 2

Successful completion of 24 credit hours of graduate-level coursework and 6 credit hours of thesis research.

The curriculum consists of six core courses and four additional courses (or two courses with the thesis option) selected from an approved list of electives. Students are expected to complete a Plan of Study that identifies a concentration such as Energy Systems, Systems Engineering, Lean Six Sigma, or Logistics and Supply Chains.

Students who do not have the required background in fundamental concepts in engineering economics and/or statistics are required to take the following course on top of the 30 credits required for an MSEM degree:

- EMGT 6101 - Engineering Management Fundamentals (3) (*Note: course credit does not count towards degree requirement*)

Required Core Courses (12 credit hours)

- EMGT 6980 - Industrial and Technology Management Seminars (1) (*Note: EMGT students must earn three credits in this course; on-campus students must register for 091, 092, and 093 sections sequentially; online students must register 081, 082, and 083 sections sequentially*)

Core A - Systems Management

One to two courses from the following:

- EMGT 6142 - Quality and Manufacturing Management (3)
- EMGT 6901 - Advanced Project Management (3)
- EMGT 6904 - Product and Process Design (3)
- EMGT 6920 - Logistics Engineering and Management (3)
- EMGT 6924 - Lean Six Sigma Practice and Management (3)

- EMGT 6930 - Capital Cost Estimating (3)
- EMGT 6950 - Engineering Systems Integration (3)

Core B - Systems Analytics

One to two courses from the following:

- EMGT 6905 - Designed Experimentation (3)
- EMGT 6906 - Processing Systems Simulation (3)
- EMGT 6910 - Technological Forecasting and Decision-Making (3)
- EMGT 6912 - Techniques and Intelligent Tools for Engineering Decision Support (3)
- EMGT 6915 - Engineering Decision and Risk Analysis (3)
- EMGT 6952 - Engineering Systems Optimization (3)
- EMGT 6955 - Systems Reliability Engineering (3)
- EMGT 6965 - Energy Analytics (3)

Concentrations (12 credit hours)

Energy Systems Concentration

- EMGT 5961 - Introduction to Energy Systems (3)

Plus three of the following:

- EMGT 5962 - Energy Markets (3)
- EMGT 5963 - Energy Systems Planning (3)
- EMGT 5964 - Case Studies in the Energy Industry (3)
- EMGT 6965 - Energy Analytics (3)

Lean Six Sigma Concentration

- EMGT 6905 - Designed Experimentation (3)
- EMGT 6924 - Lean Six Sigma Practice and Management (3)
- EMGT 6926 - Lean Supply Networks (3)

Plus one of the following:

-
- EMGT 6901 - Advanced Project Management (3)
 - EMGT 6904 - Product and Process Design (3)
 - EMGT 6142 - Quality and Manufacturing Management (3)

Logistics and Supply Chains Concentration

-
- EMGT 6920 - Logistics Engineering and Management (3)
 - EMGT 6926 - Lean Supply Networks (3)

Plus two of the following:

-
- EMGT 5963 - Energy Systems Planning (3)
 - EMGT 6142 - Quality and Manufacturing Management (3)
 - MBAD 6193 - Global Business Environment (3)
 - MBAD 6208 - Supply Chain Management (3)

Note:

Based on department approval, students may request to take other graduate courses related to their selected concentration. Students are responsible for fulfilling the prerequisites of the courses they plan to take from other graduate programs.

Systems Analytics Concentration

Four courses from the following:

- EMGT 6905 - Designed Experimentation (3)
- EMGT 6906 - Processing Systems Simulation (3)
- EMGT 6910 - Technological Forecasting and Decision-Making (3)
- EMGT 6912 - Techniques and Intelligent Tools for Engineering Decision Support (3)
- EMGT 6915 - Engineering Decision and Risk Analysis (3)
- EMGT 6952 - Engineering Systems Optimization (3)

- EMGT 6955 - Systems Reliability Engineering (3)
- EMGT 6965 - Energy Analytics (3)

Interdisciplinary Elective Courses

Depending on the degree and concentration options selected, remaining credit hours may be filled by taking elective courses. Any course from the Engineering Management Program, including the ones below, may be taken as an elective course.

- EMGT 5090 - Special Topics (1-6)
 - EMGT 5150 - Leadership Skills for Engineers (3)
 - EMGT 5961 - Introduction to Energy Systems (3)
 - EMGT 5962 - Energy Markets (3)
 - EMGT 5963 - Energy Systems Planning (3)
 - EMGT 5964 - Case Studies in the Energy Industry (3)
 - EMGT 6090
- Financial Management for Global Engineering Operations (3)
- EMGT 6090 - Special Topics (1-6)
 - EMGT 6142 - Quality and Manufacturing Management (3)
 - EMGT 6901 - Advanced Project Management (3)
 - EMGT 6902 - Legal Issues in Engineering Management (3)
 - EMGT 6904 - Product and Process Design (3)
 - EMGT 6905 - Designed Experimentation (3)
 - EMGT 6906 - Processing Systems Simulation (3)
 - EMGT 6910 - Technological Forecasting and Decision-Making (3)
 - EMGT 6912 - Techniques and Intelligent Tools for Engineering Decision Support (3)
 - EMGT 6915 - Engineering Decision and Risk Analysis (3)
 - EMGT 6920 - Logistics Engineering and Management (3)
 - EMGT 6924 - Lean Six Sigma Practice and Management (3)
 - EMGT 6926 - Lean Supply Networks (3)
 - EMGT 6930 - Capital Cost Estimating (3)

- EMGT 6950 - Engineering Systems Integration (3)
- EMGT 6952 - Engineering Systems Optimization (3)
- EMGT 6955 - Systems Reliability Engineering (3)
- EMGT 6965 - Energy Analytics (3)
- EMGT 6985 - Engineering Management Project (3)

Note:

Two relevant graduate courses from other programs may be taken as elective courses for the engineering management degree with approval of the SEEM program. Courses completed from other departments as part of the M.S. concentrations count towards the two allowed electives. Students are responsible for fulfilling the prerequisites of the courses they plan to take from other graduate programs.

The following are recommended MBAD courses for electives:

- MBAD 6141 - Operations Management (3)
- MBAD 6161 - Human Behavior in Organizations (3)
- MBAD 6164 - Executive Communication (3)
- MBAD 6165 - Negotiation and Conflict Management (3)

Note:

Students are required to have adequate preparation prior to taking the required MBAD (Master of Business Administration) courses. Traditionally, this consists of at least completing courses in engineering economics, foundations of economics, and mathematics through differential and integral calculus. Students are advantaged by having completed courses in foundations of accounting and statistics.

Degree Requirements

Thirty-31 credit hours of approved graduate work within one of two options:

Option 1 (Project Option)

1. Successful completion of ~~30~~28 semester-credit hours of graduate-level coursework and 3 credit hours of engineering management project work.
2. The 28 credit hours of graduate-level coursework must include four core courses (10 credits) and six additional courses (18 credits) from an approved list of electives.
3. Plan of study - students must meet with their advisor to formulate a plan of study and get the committee's approval. The plan of study must be submitted after completing at least 9 but no more than 18 credit hours. Students may declare up to two concentrations such as Energy Systems, Systems Engineering, Lean Six Sigma, or Logistics and Supply Chains.
4. Admission to Candidacy - the admission to candidacy form must be completed prior to the oral exam. Students should consult the schedule of classes for deadlines on submitting this form for graduation.
5. Students must pass an oral exam during the presentation of the project that is administered by the project committee.

Students who do not have the required background in fundamental concepts in engineering economics and/or statistics are required to take the following course on top of the 30 credits required for an MSEM degree:

- EMGT 6101 - Engineering Management Fundamentals (3) (*Note: course credit does not count towards degree requirement*)

Option 2 (Thesis Option)

Successful completion of ~~24~~25 credit hours of graduate-level coursework and 6 credit hours of thesis research.

1. The 25 credit hours of graduate-level coursework must include four core courses (10 credits) and five additional courses (15 credits) from an approved list of electives.
2. Plan of study - students must meet with their advisor to formulate a plan of study and get the committee's approval. The plan of study must be submitted after completing at least 9 but no more than 18 credit hours. Students may declare up to two concentrations such as Energy Systems, Systems Engineering, Lean Six Sigma, or Logistics and Supply Chains.

3. Admission to Candidacy - the admission to candidacy form must be completed prior to the thesis defense. Students should consult the schedule of classes for deadlines on submitting this form for graduation.
4. Thesis Defense - a copy of the thesis should be distributed to each member of the program committee at least two weeks prior to the defense. Students should make a public announcement of the defense within the department to allow attendance by interested faculty members and students.

~~The curriculum consists of six core courses and four additional courses (or two courses with the thesis option) selected from an approved list of electives. Students are expected to complete a Plan of Study that identifies a concentration such as Energy Systems, Systems Engineering, Lean Six Sigma, or Logistics and Supply Chains.~~

Students who do not have the required background in fundamental concepts in engineering economics and/or statistics are required to take the following course on top of the 30 credits required for an MSEM degree:

- EMGT 6101 - Engineering Management Fundamentals (3) (*Note: course credit does not count towards degree requirement*)

Required Core Courses (12-10 credit hours)

- EMGT 6980 - Industrial and Technology Management Seminars (1) (*Note: EMGT students must earn three credits in this course; on-campus students must register for 091, 092, and 093 sections sequentially; online students must register 081, 082, and 083 sections sequentially; should complete this course within the first or second semester of the MSEM program*)

Core A - Systems Management

One to two courses from the following:

- EMGT 6142 - Quality and Manufacturing Management (3)
- EMGT 6901 - Advanced Project Management (3)
- EMGT 6904 - Product and Process Design (3)
- EMGT 6920 - Logistics Engineering and Management (3)
- EMGT 6924 - Lean Six Sigma Practice and Management (3)
- EMGT 6930 - Capital Cost Estimating (3)
- EMGT 6950 - Engineering Systems Integration (3)

Core B - Systems Analytics

One to two courses from the following:

- EMGT 6905 - Designed Experimentation (3)
- EMGT 6906 - Processing Systems Simulation (3)
- EMGT 6910 - Technological Forecasting and Decision-Making (3)
- EMGT 6912 - Techniques and Intelligent Tools for Engineering Decision Support (3)
- EMGT 6915 - Engineering Decision and Risk Analysis (3)
- EMGT 6952 - Engineering Systems Optimization (3)
- EMGT 6955 - Systems Reliability Engineering (3)
- EMGT 6965 - Energy Analytics (3)

Concentrations (12 credit hours)

Energy Systems Concentration

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Plus three of the following:

- EMGT 5962 - Energy Markets (3)
- EMGT 5963 - Energy Systems Planning (3)
- EMGT 5964 - Case Studies in the Energy Industry (3)
- EMGT 6965 - Energy Analytics (3)

Lean Six Sigma Concentration

- EMGT 6905 - Designed Experimentation (3)
- EMGT 6924 - Lean Six Sigma Practice and Management (3)
- EMGT 6926 - Lean Supply Networks (3)

Plus one of the following:

- EMGT 6901 - Advanced Project Management (3)
- EMGT 6904 - Product and Process Design (3)
- EMGT 6142 - Quality and Manufacturing Management (3)

Logistics and Supply Chains Concentration

- EMGT 6920 - Logistics Engineering and Management (3)
- EMGT 6926 - Lean Supply Networks (3)

Plus two of the following:

- EMGT 5963 - Energy Systems Planning (3)
- EMGT 6142 - Quality and Manufacturing Management (3)
- MBAD 6193 - Global Business Environment (3)
- MBAD 6208 - Supply Chain Management (3)

Note:

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Systems Analytics Concentration

Four courses from the following:

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- EMGT 5963 - Energy Systems Planning (3)
- EMGT 5964 - Case Studies in the Energy Industry (3)
- EMGT 6090 - Financial Management for Global Engineering Operations (3)
- EMGT 6090 - Special Topics (1-6)
- EMGT 6142 - Quality and Manufacturing Management (3)
- EMGT 6901 - Advanced Project Management (3)
- EMGT 6902 - Legal Issues in Engineering Management (3)
- EMGT 6904 - Product and Process Design (3)
- EMGT 6905 - Designed Experimentation (3)
- EMGT 6906 - Processing Systems Simulation (3)
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- EMGT 6926 - Lean Supply Networks (3)
- EMGT 6930 - Capital Cost Estimating (3)
- EMGT 6950 - Engineering Systems Integration (3)
- EMGT 6952 - Engineering Systems Optimization (3)
- EMGT 6955 - Systems Reliability Engineering (3)
- EMGT 6965 - Energy Analytics (3)
- EMGT 6985 - Engineering Management Project (3)

Note:

Two relevant graduate courses from other programs may be taken as elective courses for the engineering management degree with approval of the SEEM program. Courses completed from other departments as part of the M.S. concentrations count towards the two allowed electives. Students are responsible for fulfilling the prerequisites of the courses they plan to take from other graduate programs.

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- MBAD 6165 - Negotiation and Conflict Management (3)

Note:

Students are required to have adequate preparation prior to taking the required MBAD (Master of Business Administration) courses. Traditionally, this consists of at least completing courses in engineering economics, foundations of economics, and mathematics through differential and integral calculus. Students are advantaged by having completed courses in foundations of accounting and statistics.

PROGRAM CONSULTATION

DATE: OCTOBER 27, 2015

DEGREE PROGRAM: MS-EMGT – ENGINEERING MANAGEMENT

ASSOC. DEAN: RON SMELSER

CATALOG YEARS SCRIBED: 2013-9999

The following were considered in relation to the program's clarity and ability to be audited.

PROGRAM REQUIREMENTS

Program requirements must be well defined to provide a functional degree audit.

CONCENTRATIONS: ENSY: ENERGY SYSTEMS
 LSCH: LOGISTICS AND SUPPLY CHAINS
 LSSI: LEAN SIX SIGMA
 SYAN: SYSTEMS ANALYTICS

ISSUES:

1. 2015-2016 catalog indicates two capstone options thesis and coursework only.
 - a. Is there a project option? If so, is there a course associated with it?
 - b. If the student chooses coursework only is there a comprehensive exam? Or what is the capstone?

DEGREE MILESTONES

Verify the degree milestones for the program.

THESIS:

- Proposal Defense
- Apply to Graduate
- Final Defense
- Final Submission

PROJECT:

- Apply to Graduate
- Final Submission

COMPREHENSIVE EXAMINATION:

- Apply to Graduate
- Comprehensive Examination