

# Program Change Request

## New Program Proposal

Date Submitted: 11/16/21 9:20 am

### Viewing: **EMSEGM : Systems Engineering and Engineering Management Graduate MicroCertificate**

Last edit: 11/16/21 9:20 am

Changes proposed by: richardh

Submitter: 4795755521      User ID: richardh      Phone:

Program Status      Active

Academic Level      Graduate

Type of proposal      MicroCertificate

Select a reason for this new program      Adding a New Graduate MicroCertificate

Effective Catalog Year      Summer 2022

College/School Code  
College of Engineering (ENGR)

Department Code  
Department of Industrial Engineering (INEG)

Program Code      EMSEGM

Degree      Graduate MicroCertificate

CIP Code

#### In Workflow

1. ENGR Dean Initial
2. GRAD Dean Initial
3. Director of Curriculum Review and Program Assessment
4. Registrar Initial
5. Institutional Research
6. INEG Chair
7. ENGR Curriculum Committee
8. ENGR Faculty
9. ENGR Dean
10. Global Campus
11. Provost Review
12. University Course and Program Committee
13. Graduate Council
14. Faculty Senate
15. Provost Final
16. Registrar Final
17. Catalog Editor Final

#### Approval Path

1. 11/03/21 2:33 pm  
Kevin Hall (kdhall):  
Approved for ENGR Dean Initial
2. 11/03/21 2:44 pm  
Pat Koski (pkoski):  
Approved for GRAD Dean Initial

3. 11/03/21 3:55 pm  
Alice Griffin  
(agriffin): Approved  
for Director of  
Curriculum Review  
and Program  
Assessment
4. 11/09/21 1:07 pm  
Gina Daugherty  
(gdaugher):  
Approved for  
Registrar Initial
5. 11/10/21 10:38 am  
Doug Miles  
(dmiles): Approved  
for Institutional  
Research
6. 11/10/21 10:41 am  
Ed Pohl (epohl):  
Rollback to Initiator
7. 11/15/21 3:36 pm  
Kevin Hall (kdhall):  
Rollback to Initiator
8. 12/01/21 10:18 am  
Kevin Hall (kdhall):  
Approved for ENGR  
Dean Initial
9. 12/02/21 5:48 am  
Pat Koski (pkoski):  
Approved for GRAD  
Dean Initial
10. 12/02/21 9:19 am  
Alice Griffin  
(agriffin): Approved  
for Director of  
Curriculum Review  
and Program  
Assessment
11. 12/06/21 9:31 am  
Gina Daugherty

- (gdaughter):  
Approved for  
Registrar Initial
12. 12/06/21 9:43 am  
Doug Miles  
(dmiles): Approved  
for Institutional  
Research
13. 12/06/21 9:46 am  
Ed Pohl (epohl):  
Approved for INEG  
Chair
14. 01/11/22 9:31 am  
Manuel Rossetti  
(rossetti): Approved  
for ENGR  
Curriculum  
Committee
15. 01/14/22 2:52 pm  
Kevin Hall (kdhall):  
Approved for ENGR  
Faculty
16. 01/14/22 3:06 pm  
Kevin Hall (kdhall):  
Approved for ENGR  
Dean
17. 01/14/22 3:07 pm  
Suzanne Kenner  
(skenner): Approved  
for Global Campus
18. 01/14/22 3:32 pm  
Ketevan  
Mamiseishvili  
(kmamisei):  
Approved for  
Provost Review
19. 01/28/22 4:36 pm  
Alice Griffin  
(agriffin): Approved  
for University

Course and Program  
Committee  
20.02/17/22 2:11 pm  
Jim Gigantino  
(jgiganti): Approved  
for Graduate  
Council

15.1501 - Engineering/Industrial Management.

Program Title

Systems Engineering and Engineering Management Graduate MicroCertificate

Program Delivery

Method

Online/Web-based

Is this program interdisciplinary?

No

Does this proposal impact any courses from another College/School?

No

What are the total 6  
hours needed to  
complete the  
program?

## On-line/Web-based Information

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Reason for offering

Web-based Program

Students are working professionals who need flexible course offerings.

Maximum Class Size 35

for Web-based

Courses

Course delivery  
mode

Method(s)
Blended Delivery Methods

Describe Blended  
Delivery Methods

Hybrid, lecture, video synchronous, asynchronous delivery methods.

Class interaction  
mode

<b>Method(s):</b>
Other

Specify Other

Interaction Methods

All synchronous and asynchronous tools are available in current classes. Includes, but is not limited to video, discussion boards, email, synchronous video, and self-paced materials.

Percent Online

100% with No Required Campus Component

50-99%

Provide a List of  
Services Supplied by  
Consortia Partners or  
Outsourced  
Organization

Normal university-supported services; LinkedIn Learning, Blackboard.

Estimate Costs of the     1000  
Program over the  
First 3 Years

List Courses Taught  
by Adjunct Faculty

Upload  
Memorandum of  
Understanding Forms  
(if required)

## **Program Requirements and Description**

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Requirements

Admission Requirements: The Systems Engineering and Engineering Management Graduate MicroCertificate credential is open to students with a STEM undergraduate degree. Course pre-requisites or departmental consent for some courses may be required.

Students must apply for the Systems Engineering and Engineering Management Graduate MicroCertificate credential and be admitted to the Graduate School; the GRE requirement is waived for the Systems Engineering and Engineering Management Graduate MicroCertificate credential.

Students with an ABET-accredited engineering undergraduate degree after completion of the Graduate MicroCertificate may apply to the Master of Science in Engineering Management. Students who have a STEM degree may apply to Graduate Certificates in Engineering Management, Project Management, Operations Management, Lean Six Sigma, Homeland Security, and the Master of Science in Operations Management.

Requirements for the Systems Engineering and Engineering Management Graduate MicroCertificate (6 hours):

<a href="#"><u>EMGT 5033</u></a>	Introduction to Engineering Management	3
<a href="#"><u>EMGT 5603</u></a>	Systems Thinking and Systems Engineering	3
Total Hours		6

#### Program Costs

Cost less than \$1000 for miscellaneous costs such as instructor materials, ASEM professional membership provided for students. No new course development is required. The MicroCertificate uses existing courses.

#### Library Resources

No additional library resources required.

#### Instructional

#### Facilities

No additional instructional facilities are required.

#### Faculty Resources

Additional faculty not required.

List Existing Certificate or Degree Programs that Support the Proposed Program

Program(s)
EMGTMS - Engineering Management, Master of Science in Engineering Management

#### Are Similar Programs available in the area?

No

Estimated Student Demand for Program      25

Scheduled Program Review Date      na

Program Goals and Objectives

**Program Goals and Objectives**

Program Objectives:

- 1. Apply and evaluate systems thinking and systems engineering to inform the engineered system development process.
- 2. Apply engineering management concepts to support the development of products and services for customers and stakeholders.

Program Goals:

- 1. Apply systems thinking and systems engineering concepts to the acquisition and/or development of systems with a focus on life cycle models, development of system architectures and architecture frameworks, system configurations, system requirements, requirements allocation, interface analysis, testing, verification, and validation, and post-development activities.
- 2. Apply engineering management topics including leadership, innovation, finance, project management, legal and ethical issues, systems thinking, systems engineering, research & development, production, and quality management.

Learning Outcomes

**Learning Outcomes**

Expected Student Learning Outcomes:

- 1. Create the life cycle phases of an engineered system, perform system engineering assessments, and make systems engineering decisions.
- 2. Analyze and evaluate the organizational and user context for engineered systems to support engineering decisions.
- 3. Apply leadership, legal, ethical, data governance, quality, financial, planning concepts in engineering management to support the development of products and services.

Description and Justification for this request

<b>Description of request</b>	<b>Justification for request</b>
Adding new Graduate MicroCertificate to meet demand; based on industry/student feedback and market research.	Market research and student feedback point toward a growing need for flexibility in program offerings based on working professionals, travel schedules, and family requirements.

Upload attachments

## Reviewer Comments

**Alice Griffin (agriffin) (11/03/21 3:52 pm):** Changed effective date from spring to summer 2022. This request is too late to complete approval before the start of the spring semester.

**Alice Griffin (agriffin) (11/03/21 3:54 pm):** Inserted Graduate before MicroCertificate in introductory paragraph.

**Gina Daugherty (gdaugher) (11/09/21 1:07 pm):** There is a repeat of Program Objective #1. Is there an additional objective that should be added?

**Ed Pohl (epohl) (11/10/21 10:41 am):** Rollback: Rich Objective 1 is listed twice, are we missing a second objective?

**Kevin Hall (kdhall) (11/15/21 3:35 pm):** One of your program Objectives exactly matches one of your program Goals. Please revise.

**Kevin Hall (kdhall) (11/15/21 3:36 pm):** Rollback: program goals and objectives must be revised, to eliminate duplication.