

## New Program Proposal

Date Submitted: 08/04/21 12:18 pm

Viewing: **EMGAGC : Engineering Management**

## Analytics Graduate Certificate

Last edit: 11/30/21 10:41 am

Changes proposed by: richardh

Submitter:	User ID:	richardh	Phone:
4795755521			
Program Status	Active		
Academic Level	Graduate		
Type of proposal	Certificate		
Select a reason for this new program	Adding New Graduate Certificate (12-21 semester hours)--(LON)		
Effective Catalog Year	Fall 2022		
College/School Code	College of Engineering (ENGR)		
Department Code	Department of Industrial Engineering (INEG)		
Program Code	EMGAGC		
Degree	Graduate Certificate		
CIP Code			

### In Workflow

1. ENGR Dean Initial
2. GRAD Dean Initial
3. Provost Initial
4. Director of Curriculum Review and Program Assessment
5. Registrar Initial
6. Institutional Research
7. INEG Chair
8. ENGR Curriculum Committee
9. ENGR Faculty
10. ENGR Dean
11. Global Campus
12. Provost Review
13. University Course and Program Committee
14. Graduate Council
15. Faculty Senate
16. Provost Final
17. Provost's Office-- Documentation sent to System Office
18. Higher Learning Commission
19. Board of Trustees
20. ADHE Final
21. Provost's Office-- Notification of Approval
22. Registrar Final
23. Catalog Editor Final

## Approval Path

1. 12/04/20 3:32 pm  
Norman Dennis  
(ndennis): Approved  
for ENGR Dean  
Initial
2. 12/04/20 3:52 pm  
Pat Koski (pkoski):  
Approved for GRAD  
Dean Initial
3. 12/08/20 4:04 pm  
Terry Martin  
(tmartin): Approved  
for Provost Initial
4. 12/09/20 2:55 pm  
Alice Griffin  
(agriffin): Rollback  
to Initiator
5. 02/08/21 4:48 pm  
Norman Dennis  
(ndennis): Rollback  
to Initiator
6. 02/11/21 4:44 pm  
Norman Dennis  
(ndennis): Approved  
for ENGR Dean  
Initial
7. 02/11/21 4:50 pm  
Jim Gigantino  
(jgiganti): Approved  
for GRAD Dean  
Initial
8. 02/12/21 1:58 pm  
Terry Martin  
(tmartin): Approved  
for Provost Initial
9. 02/12/21 3:36 pm  
Alice Griffin  
(agriffin): Approved

- for Director of  
Program  
Assessment and  
Review
10. 02/15/21 5:35 pm  
Lisa Kulczak  
(lkulcza): Approved  
for Registrar Initial
  11. 02/16/21 1:05 pm  
Gary Gunderman  
(ggunderm):  
Approved for  
Institutional  
Research
  12. 02/16/21 1:48 pm  
Ed Pohl (epohl):  
Approved for INEG  
Chair
  13. 02/16/21 2:38 pm  
Manuel Rossetti  
(rossetti): Rollback  
to INEG Chair for  
ENGR Curriculum  
Committee
  14. 04/02/21 2:47 pm  
Ed Pohl (epohl):  
Rollback to Initiator
  15. 05/04/21 4:59 pm  
Norman Dennis  
(ndennis): Approved  
for ENGR Dean  
Initial
  16. 05/04/21 5:01 pm  
Jim Gigantino  
(jgiganti): Rollback  
to ENGR Dean Initial  
for GRAD Dean  
Initial
  17. 05/11/21 9:52 am  
Norman Dennis

- (ndennis): Rollback to Initiator
18. 06/08/21 11:27 am  
Norman Dennis  
(ndennis): Rollback to Initiator
19. 08/31/21 1:28 pm  
Kevin Hall (kdhall):  
Approved for ENGR  
Dean Initial
20. 08/31/21 1:59 pm  
Jim Gigantino  
(jgiganti): Approved  
for GRAD Dean  
Initial
21. 09/01/21 8:22 am  
Ketevan  
Mamiseishvili  
(kmamisei):  
Approved for  
Provost Initial
22. 09/01/21 4:21 pm  
Alice Griffin  
(agriffin): Approved  
for Director of  
Curriculum Review  
and Program  
Assessment
23. 09/13/21 11:59 am  
Lisa Kulczak  
(lkulcza): Approved  
for Registrar Initial
24. 09/13/21 12:01 pm  
Doug Miles  
(dmiles): Approved  
for Institutional  
Research
25. 09/13/21 12:41 pm  
Ed Pohl (epohl):

- Approved for INEG Chair
- 26. 10/07/21 1:49 pm  
Manuel Rossetti (rossetti): Approved for ENGR Curriculum Committee
- 27. 11/05/21 10:08 am  
Kevin Hall (kdhall): Approved for ENGR Faculty
- 28. 11/15/21 4:27 pm  
Kevin Hall (kdhall): Approved for ENGR Dean
- 29. 11/15/21 4:29 pm  
Suzanne Kenner (skenner): Approved for Global Campus
- 30. 11/22/21 8:18 am  
Ketevan Mamiseishvili (kmamisei): Approved for Provost Review

15.1501 - Engineering/Industrial Management.

Program Title

Engineering Management Analytics Graduate Certificate

Program Delivery

Method

On Campus

Off Campus

Online/Web-based

Is this program interdisciplinary?

No

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

No

What are the total 12  
hours needed to  
complete the  
program?

## Off Campus Information

Off Campus

Location(s)

Location Name	Address	Distance from Main Site
Walton College at 2nd and Main	119 S. Main St Little Rock, AR 72291	186
North Central Florida - Hurlburt AFB	221 Lukaski Ave., Hurlburt Field, FL 32644	729
Naval Air Station Millington	5750 Millintgon, TN 38504	335

Reason for Offering

Program Off Campus

During marketing surveys, current and potential students have indicated a desire for graduate certificates focusing on specific disciplines within operations management. This initiative led to MSOM certificates in Project Management, Lean Six Sigma and Homeland Security Operations which has resulted in more than 198 certificates awarded since 2018. A new need emerged from student interest; students with an undergraduate STEM degree or an MS in another discipline (e.g., M.S. in Engineering or M.S. in Operations Management) seeking a broad understanding of engineering analytics to upgrade skills or prepare for engineering management positions. May be used as an entry to the Master of Science in Engineering Management, but cannot be awarded concurrently with the degree.

Fifty percent of the  
credits required will  
be offered

Both - off-campus location and distance technology

Will Students complete all Program Requirements at this Location?

No

Where will the  
Program be  
completed?

Online

Upload  
 Memorandum of  
 Understanding Forms  
 (if required)

## On-line/Web-based Information

Reason for offering

Web-based Program

Market research and needs assessment indicate working professionals prefer the flexibility of online instruction. Additionally, needs expressed by students in the MSOM, MSEM and MSE programs prefer the flexibility of 5 8-week terms. The attached survey shows decision-makers in Arkansas companies believe an option for mixed methods including web-based/online instruction is an important part of any program.

Maximum Class Size     35  
 for Web-based  
 Courses

Course delivery  
 mode

<b>Method(s)</b>
Blended Delivery Methods

Describe Blended  
 Delivery Methods

Student has the option of taking classes in several different modes depending on their timeline for program completion. Face-to-face instruction will be offered on-site. However, If a student prefers, they can receive on-line instruction via synchronous or pre-recorded video. Both methods of course completion will be available to the student

Class interaction  
 mode

<b>Method(s):</b>
Electronic Bulletin Boards

Percent Online

100% with No Required Campus Component  
 50-99%

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

None

Estimate Costs of the Program over the First 3 Years

Absorbed in current program.

List Courses Taught by Adjunct Faculty

Upload Memorandum of Understanding Forms (if required)

## Program Requirements and Description

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### Requirements

#### Admissions requirements:

Meet all graduate school admission requirements.

Conferred bachelor of science degree in engineering from an engineering program accredited by the Engineering Accreditation Commission of ABET (or equivalent accreditation) or a STEM degree from a regionally accredited program..

Applicants with a 3.0/4.0 or better undergraduate GPA are not required to take the GRE.

There are no prerequisites for students with an undergraduate degree from an ABET-accredited engineering program.

For students with a degree other than an ABET-accredited engineering degree, prerequisite courses may be required.

Only students with an ABET- accredited engineering degree may apply the graduate certificate courses to the Master of Science in Engineering Management Degree.

#### Required Courses:

Core Courses (9 hours)		9
<a href="#"><u>EMGT 5703</u></a>	Probability and Statistics for Engineering Management	
<a href="#"><u>EMGT 5053</u></a>	Tradeoff Analytics for Engineering Management	
<a href="#"><u>INEG 5443</u></a>	Decision Models	
Electives (select one)		3
<a href="#"><u>OPAN 5003</u></a>	Introduction to Operations Analytics	
<a href="#"><u>OMGT 5653</u></a>	Introduction to Data Analytics for Operations Managers	
<a href="#"><u>INEG 5433</u></a>	Cost Estimation Models	
<a href="#"><u>EMGT 5793</u></a>	Risk Management	
Total Hours		12



Program Costs

No additional cost. See spreadsheet.

Library Resources

No additional cost.

Instructional

Facilities

No additional cost.

Faculty Resources

No additional cost.

List Existing Certificate or Degree Programs that Support the Proposed Program

<b>Program(s)</b>
EMGTMS - Engineering Management, Master of Science in Engineering Management
ENGRME - Engineering, Master of Science in Engineering
OPMGMS - Operations Management, Master of Science in Operations Management

Are Similar Programs available in the area?

No

Estimated Student Demand for Program      20

Scheduled Program Review Date      2028-2029

Program Goals and Objectives

**Program Goals and Objectives**

### Program Goals and Objectives

#### Program Goals:

1. Provide internationally competitive and industry recognized education to meet emerging needs of engineering, engineering management, and operations management professionals.
2. Prepare students to assume engineering management technical and leadership roles in industry and government employing engineering management analytics principles and practices.

#### Program Objectives:

1. Select and apply the appropriate engineering management analytics method to improve engineering management processes to achieve the organizational mission
2. Be able to plan and lead projects to improve engineering management analytics tools for dealing with market, technology, and competition uncertainties in the design and development of new products and services
3. Concisely communicate to decision-makers.

#### Learning Outcomes

### Learning Outcomes

#### Expected student learning outcomes

1. Develop broad competencies in engineering management analytics principles and practices.
2. Demonstrate skills to lead engineering management analytics projects and provide new or improved visualization of data
3. Apply problem-solving using engineering management analytics techniques for dealing with market, technology, and competition uncertainties

#### Description and Justification for this request

Description of request	Justification for request
Continuing strategic pursuit of graduate certificates based on enrollment data and interest as well as evidence of enrollments for the first three certificates exceeding estimates; NOTE: EMGT 5793 is in work flow and will be completed before this proposal gets to UCPC.	Allowing intermediate certificate for students interested in graduate degrees; allows engineers and STEM majors to add skills required to lead and manage engineering management and analytics functions.

#### Upload attachments

[Cost for Engineering Analytics GC.xlsx](#)

[EMEAGC - Grad Certificate - Supporting documentation.docx](#)

[EMGAGC - Graduate Certificate - Supporting Documentation.docx](#)

[EMGAGC - New Graduate Certificate - Ltr of Notification.pdf](#)

#### Reviewer Comments

**Norman Dennis (ndennis) (12/04/20 3:32 pm):** Corrected typos

**Alice Griffin (agriffin) (12/09/20 2:55 pm):** Rollback: Please update LON, program requirements, and scheduled program review date based on the email correspondence from 12/9/2020.

**Norman Dennis (ndennis) (02/08/21 4:48 pm):** Rollback: I discussed this certificate with Ed and he says you, Greg and he need to have a meeting before you send this forward again.

**Norman Dennis (ndennis) (02/11/21 4:21 pm):** corrected the address for the Walton Facility

**Norman Dennis (ndennis) (02/11/21 4:43 pm):** Added EMGT 5793 in lieu of OMGT 5793.

**Alice Griffin (agriffin) (02/12/21 3:06 pm):** Reformatted program requirements so that all 12 hours would be in one course list. College is encouraged to review for accuracy.

**Alice Griffin (agriffin) (02/12/21 3:16 pm):** Inserted OMGT 5793 as a cross-referenced course in program requirements. In order to match the curriculum submitted on the LON supporting documentation. College is encouraged to review for accuracy.

**Alice Griffin (agriffin) (02/12/21 3:31 pm):** Reformatted supporting documentation and LON to match BOT format and naming convention.

**Alice Griffin (agriffin) (02/12/21 3:36 pm):** Changed program code in consultation with Registrar in order to more closely match related programs.

**Lisa Kulczak (lkulcza) (02/15/21 5:35 pm):** Is EMGT 5793 supposed to be cross-listed with OMGT 5793? The current proposal in workflow for EMGT 5793 doesn't indicate this; nor has a proposal been submitted for OMGT 5793 to cross-list them.

**Manuel Rossetti (rossetti) (02/16/21 2:38 pm):** Rollback: Please run this through the OMGT committee before proceeding.

**Ed Pohl (epohl) (04/02/21 2:47 pm):** Rollback: Need to make sure that only EMGT 5793 is allowed. OMGT and EMGT 5793 are not cross-listed.

**Jim Gigantino (jgiganti) (05/04/21 5:01 pm):** Rollback: All the other ENGR grad certs have admission requirements in the CIM block---can you add those?

**Norman Dennis (ndennis) (05/11/21 9:52 am):** Rollback: Per your request

**Norman Dennis (ndennis) (06/08/21 11:27 am):** Rollback: Please modify this document (EMGAGC - Graduate Certificate - Supporting Documentation.docx) to remove the OMGT version of Risk Management. The OMGT and EMGT versions of this course are not cross listed.

**Alice Griffin (agriffin) (09/01/21 3:05 pm):** Changed effective date from fall 2021 to fall 2022. It is too late to complete the off-campus approval process for this academic year.

**Alice Griffin (agriffin) (09/01/21 3:38 pm):** Added OMGT 5793 as a cross-referenced course for EMGT 5793 as noted in the supporting documentation for the LON. College is encouraged to review for accuracy.

**Alice Griffin (agriffin) (09/01/21 3:45 pm):** Revised LON to include new campus leaders and update approval dates.

**Alice Griffin (agriffin) (09/01/21 3:47 pm):** CORRECTION: Removed cross-listing of OMGT 5793. It has not been cross-listed with EMGT 5793 yet.

**Alice Griffin (agriffin) (09/01/21 4:21 pm):** Removed cross-listed OGMT 5793 course from supporting documentation. Uploaded revised copy.

**Alice Griffin (agriffin) (11/30/21 10:41 am):** Revised anticipated approval dates in the LON.

Key: 819