Date Submitted: 01/25/24 11:39 am

Viewing: OPANMS : Operations Analytics, Master of Science in Operations Analytics

Last approved: 01/25/24 8:06 am

Last edit: 01/31/24 8:47 am

Changes proposed by: ashlea

Catalog Pages Using this Program

Operations Analytics (OPAN)

Submitter: User ID: ashlea ~~lkulcza~~ Phone: 3702 ~~7456~~

Program Status Active

Academic Level Graduate

Type of proposal Major/Field of Study

Select a reason for this modification

Making Changes that Qualify for a Shortened Approval Process (including 15 or fewer hours within the college, total hours and admission/graduation requirements remain the same)

Are you adding a concentration?

No

Are you adding or modifying a track?

No

Are you adding or modifying a focused study?

No

Effective Catalog Year Fall 2024

College/School Code

College of Engineering (ENGR)

Department 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. **Graduate Council**
13. **Faculty Senate**
14. Provost Final
15. Registrar Final
16. Catalog Editor Final

Approval Path

1. 01/26/24 10:32 am Kevin Hall (kdhall): Approved for ENGR Dean Initial
2. 01/26/24 1:27 pm Ed Bengtson (egbengts): Approved for GRAD Dean Initial
3. 01/30/24 4:16 pm Lisa Kulczak (lkulcza): Approved for Director of Curriculum Review

Department of Industrial Engineering (INEG)

Program Code	OPANMS
Degree	Master of Science in Operations Analytics
CIP Code	

and Program Assessment

4. 01/31/24 8:47 am Gina Daugherty (gdaugher): Approved for Registrar Initial
5. 01/31/24 10:30 am Doug Miles (dmiles): Approved for Institutional Research
6. 01/31/24 10:45 am Chase Rainwater (cer): Approved for INEG Chair
7. 02/08/24 8:02 am Manuel Rossetti (rossetti): Approved for ENGR Curriculum Committee
8. 02/16/24 8:48 am Kevin Hall (kdhall): Approved for ENGR Faculty
9. 02/16/24 8:49 am Kevin Hall (kdhall): Approved for ENGR Dean
10. 02/16/24 9:26 am Suzanne Kenner (skenner): Approved for Global Campus
11. 02/16/24 6:03 pm Matthew Ganio (msganio): Approved for Provost Review
12. 03/28/24 7:09 pm Ed Bengtson

(egbengts): Approved for Graduate Council

History

1. May 14, 2020 by Manuel Rossetti (rossetti)
2. Jun 16, 2021 by Lisa Kulczak (lkulcza)
3. May 23, 2022 by Gina Daugherty (gdaugher)
4. Nov 8, 2023 by Gina Daugherty (gdaugher)
5. Jan 12, 2024 by Gina Daugherty (gdaugher)
6. Jan 25, 2024 by Gina Daugherty (gdaugher)

14.3701 - Operations Research.

Program Title

Operations Analytics, Master of Science in Operations Analytics

Program Delivery Method

On Campus

Online/Web-based

Is this program interdisciplinary?

No

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

No

What are the total hours needed to complete the program? 30

On-line/Web-based Information

Reason for offering Web-based Program

To reach working professionals who need the flexibility that on-line delivery permits.

Maximum Class Size for Web-based Courses: 20

Course delivery mode

Method(s)
Blended Delivery Methods

Describe Blended Delivery Methods

Online and course project based methods

Class interaction mode

Method(s):
Other

Specify Other Interaction Methods

Blackboard

Percent Online

50-99%

100% with No Required Campus Component

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

The only service outsourced is online proctoring service. The University of Arkansas partners with ProctorU for online test proctoring services for some online exams.

Estimate Costs of the Program over the First 3 Years: refer to the required proposal document attached

List Courses Taught by Adjunct Faculty

Upload
Memorandum of
Understanding Forms
(if required)

Program Requirements and Description

Requirements

Prerequisites to the M.S.O.A. Degree Program:

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

For students with a degree other than an ABET-accredited industrial engineering degree, a number of prerequisite courses may be required. Students are expected to have completed mathematics courses through differential and integral calculus of several variables and vector calculus and linear algebra. Students are expected to have completed a calculus-based probability and statistics course. In addition, students are expected to have completed a computer programming course. Specific University of Arkansas courses that meet these prerequisites are available on-line through the INEG departmental web-pages.

Requirements for the Master of Science in Operations Analytics

In addition to the requirements of the Graduate School and the College of Engineering, the following program requirements must be satisfied by candidates for the M.S.O.A. degree.

Candidates for the degree are required to complete 30 semester hours of course work.

All candidates must successfully complete a master's oral examination that is conducted by the candidate's faculty committee.

Accelerated Master of Science in Operations Analytics

High-achieving current undergraduate students seeking a BS degree at the University of Arkansas who choose to pursue graduate studies in Operations Analytics may participate in the accelerated M.S.O.A. program. Provided that 6 credit hours of 5000-level courses listed ~~OPAN course work can be taken~~ as required or electives for ~~in~~ the ~~student's current undergraduate program, students may also count those 6 hours towards their~~ M.S.O.A. degree can be applied towards the student's current undergraduate program, students may also count those 6 hours towards their M.S.O.A. degree. In addition, students may take another 6 credit hours of graduate degree credit as undergraduate students in order to apply them to their M.S.O.A. degree. These additional 6 hours of courses may not have been used towards the B.S. undergraduate degree and must meet M.S.O.A. degree requirements. The total of 12 credit hours of graduate courses taken as an undergraduate student must be taken during the final 12 month period of their undergraduate degree.

Once fully admitted to the M.S.O.A. program, students request that up to 12 hours of 5000-level or above courses taken in the final 12-month period of their undergraduate degree count toward their graduate degree, if these courses were taken on the University of Arkansas, Fayetteville campus. Students then take an additional 18 credit hours of approved OPAN graduate-level courses in order to meet the M.S.O.A. degree requirements.

Undergraduate students interested in the accelerated M.S.O.A. degree should apply to the program prior to starting the second-to-last semester of their undergraduate program. To be eligible students must have a 3.5 cumulative

GPA or higher and submit the normal application materials required by the graduate school for the M.S.O.A. degree program.

Required Courses		
OPAN 50003	Introduction to Operations Analytics	3
OPAN 50103	Applied Predictive Analytics	3
OPAN 50203	Applied Prescriptive Analytics	3
OPAN 59003	Operations Analytics Capstone	3
or OPAN 59103	Operations Analytics Industrial Practicum	
Electives		**18**
Students must select course electives from both of the following course topic areas for a total of 18 credit hours.		
Operations Analytics (choose 4 or 5 courses)		
INEG 51603	Introduction to Modern Statistical Techniques for Industrial Applications	
INEG 53103	Engineering Applications of Probability Theory	
INEG 53203	Engineering Applications of Stochastic Processes	
INEG 54403	Decision Models	
INEG 58303	Introduction to Database Concepts for Industrial Engineers	
INEG 56803	Nonlinear Programming	
INEG 56903	Heuristic Optimization	
OPAN 57103	Simulation Analytics	
Engineering and Operations Management (choose 1 or 2 courses)		
EMGT 50303	Introduction to Engineering Management	
EMGT 50503	Tradeoff Analytics for Engineering Management	
EMGT 56003	Systems Thinking and Systems Engineering	
OMGT 50103	Supply Chain Management for Operations Managers	
OMGT 53703	Quality Management	
OMGT 57803	Project Management for Operations Managers	
OMGT 59803	Advanced Project Management	
INEG 52603	Engineering Statistics	
INEG 53303	Design of Industrial Experiments	

INEG 54203	Advanced Engineering Economy
INEG 56203	Analysis of Inventory Systems
INEG 58003	Simulation
Total Hours	30

~~For students eligible for the acceleratedM.S.O.A.program that have a cumulative GPA of 3.5 or higher, the submission of GRE scores iswaived.~~

Are Similar Programs available in the area?

No

Estimated Student Demand for Program: 15-30 per year

Scheduled Program Review Date: 2028-2029

Program Goals and Objectives

Program Goals and Objectives
Successfully applying core operations analytics quantitative modeling skills to the management, control, and improvement of enterprise or public sector organizations.
Demonstrating professional and intellectual growth as managers and leaders in operations analytics and their organizations.
Pursuing life-long learning and continued professional development; and undertaking leadership roles in their profession, in their communities, and in the global society.

Learning Outcomes

Learning Outcomes
An ability to use information systems, statistics, and computing principles and apply state-of-the-art technologies for data representation, data retrieval, data manipulation, computational analytics, data analysis, visualization as they apply analytics within enterprise operations.
An ability to develop descriptive, predictive, and prescriptive mathematical and statistical models and to apply those models through computational methods to problems of controlling and improving enterprise operations.
An ability to use foundational knowledge and apply critical thinking skills to problem identification, problem solving, and decision making, within the context of controlling and improving enterprise operations.
An ability to adapt analytics concepts to interpret and communicate findings and implications to senior decision makers.

Description and justification of the request

Description of specific change	Justification for this change
There are two changes proposed: (1) In the first paragraph under the header Accelerated Master of Science in Operations Analytics, "OPAN course work can be taken as electives in" is changed to "courses listed as required or electives for the M.S.O.A. degree can be applied towards" (2) The sentence noting the waiver of GRE score submission for students with a CGPA of 3.5 or higher is deleted	Justifications for the two changes: (1) The wording "OPAN course work" is vague and leaves open to interpretation whether this only refers to courses with an OPAN number, or all courses listed in the OPANMS program. The new wording clarifies that it should be inclusive of all required and elective courses listed for the M.S.O.A. degree. Further, the new wording reflects ambivalence regarding whether the courses that are being doubly-applied to both an undergraduate and accelerated master's degree were taken as required or electives in the undergraduate program. (2) The submission of GRE scores is no longer required for applying to OPANMS, regardless of CGPA.

Upload attachments

Reviewer Comments

Lisa Kulczak (lkulcza) (01/30/24 4:15 pm): Updated submitter information and adjusted type of proposal back to Major/Field of Study.

Lisa Kulczak (lkulcza) (01/30/24 4:15 pm): ATTENTION REGISTRAR: Please remove Undergraduate Council from the workflow.

Gina Daugherty (gdaugher) (01/31/24 8:47 am): Removed Undergraduate Council from workflow.

Key: 723