# Operations Management (OPMG)

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Operations Management Program website (http://operations-management.uark.edu/)

**Degree Conferred:**
M.S.O.M. (OPMG)

**Graduate Certificates Offered (non-degree):**
Homeland Security (OMHS)
Lean Six Sigma (OMLS)
Operations Management (OPMG)
Project Management (OMPM)

Also offered through Graduate Resident Centers

**Program Description:** The Operations Management program, part of the Department of Industrial Engineering, teaches the processes for improving operational decisions such as design of goods and services, management of quality, consideration of process and capacity design issues, and determination of location and layout strategy.

## Master of Science in Operations Management

The Master of Science program in Operations Management is directed toward the acquisition of practical knowledge in the management of work processes, projects, and people. Areas covered include project management, quality management, economic decision-making, supply chain management, operations research, safety management, lean production and inventory control techniques, and human behavior analysis.

Online and evening classes are offered in eight-week terms with five terms scheduled during an academic year. Selected courses are available online and via independent study. The operations management curriculum is aimed at the needs of working managers of technical and logistics operations, as well as managers of production, service delivery and support functions in a wide spectrum of organizations, ranging from business/industry to military, government and non-profit. The program is open to students regardless of the major they selected as an undergraduate. The subject matter is patterned after the industrial engineering curriculum but is less technical and does not require a calculus mathematics background.

**Admission**

Admission to the program generally follows U of A Graduate School admission policy with the following exceptions:

1. Students with a GPA of 2.5 to 2.99 on the first undergraduate degree will be evaluated by the program for admission.
2. Before taking any graduate classes in the program, non-native speakers of English must demonstrate minimum English Language proficiency as defined by the Graduate School. The M.S.O.M. English Language Proficiency Policy requires non-native speakers of English who are required by the Graduate School to complete English Language and Cultural Studies (ELAC) courses to complete them no later than the first semester of graduate level courses.
   Some courses in the program require undergraduate pre-requisites or a transfer equivalent listed below:

| | | |
|---|---|---|
| OMGT 43103 | Law and Ethics | 3 |
| OMGT 43203 | Industrial Cost Analysis | 3 |
| OMGT 43303 | Applied Statistics | 3 |
| OMGT 48503 | Introduction to Decision Support Tools in Operations Management | 3 |

These courses are offered at the undergraduate level and cannot be applied toward the requirements for a Master of Science in Operations Management degree.

**Requirements for the M.S.O.M. Degree**

To fulfill requirements for the M.S.O.M. degree, a student must earn a total of 30 semester hours credit.

Required courses are:

| | | |
|---|---|---|
| OMGT 50003 | Introduction to Operations Management | 3 |
| OMGT 57803 | Project Management for Operations Managers | 3 |
| OMGT 56203 | Strategic Management | 3 |
| OMGT 51203 | Finance for Operations Managers | 3 |
| or OMGT 5460: | Economic Decision Making | |
| **Electives** | | **18** |
| **Total Hours** | | **30** |

If a core course requirement offers a choice between two options, only one can be counted as the core course. Core courses must be completed with a grade of “B” or better. A student who fails to earn a “B” or higher on a required course may repeat the course only once. ~~OMGT 5003 should be taken the first 6 hours of graduate coursework.~~

While a thesis is not required, upon approval of the program director students may take up to six thesis hours to be applied toward the 30 semester hours required for degree completion. The six hours of thesis must be completed on the Fayetteville campus.

Students should also be aware of Graduate School requirements with regard to master's degrees (http://catalog.uark.edu/graduatecatalog/degreerequirements/#mastersdegreestext).

## Graduate Certificate in Homeland Security

Program admission requires 3.0 GPA on the last 60 hours of undergraduate coursework. Students must complete coursework with at least a 3.0 GPA. Four courses totaling 12 credit hours must be completed, including 6 hours of required core courses.

**Graduate Certificate Requirements**

| | | |
|---|---|---|
| Core Courses (6 hours) | | |
| OMGT 50003 | Introduction to Operations Management | 3 |
| OMGT 59903 | Homeland Security for Operations Managers | 3 |
| Electives (select two) | | 6 |
| OMGT 59303 | Cybersecurity for Operations Managers | |
| OMGT 59403 | Resilient Design and Crisis Management for Operations Managers | |

| | | |
|---|---|---|
| | OMGT 50103 | Supply Chain Management for Operations Managers |
| | OMGT 53703 | Quality Management |
| | OMGT 54203 | Operations Management & Global Competition |
| | OMGT 57303 | Human Factors in Operations Management |
| | OMGT 57903 | Operations Risk Management |
| | OMGT 59003 | Operations Management of Unmanned Aircraft Systems |
| | OMGT 59103 | Advanced Air Mobility and Autonomous Operations |
| **Total Hours** | | **12** |

Graduate Certificate in Lean Six Sigma

**Requirements for the Graduate Certificate in Lean Six Sigma:**
Program admission requires 3.0 GPA on the last 60 hours of undergraduate coursework. Students must complete the following 12 hours of coursework with at least a 3.0 GPA.

| **Required Courses** | | |
|---|---|---|
| OMGT 53703 | Quality Management | 3 |
| OMGT 54703 | Lean Six Sigma | 3 |
| OMGT 54903 | Advanced Lean Six Sigma | 3 |
| OMGT 57803 | Project Management for Operations Managers | 3 |
| **Total Hours** | | **12** |

## Graduate Certificate in Operations Management

**Admissions requirements:**

1. Conferred bachelor of science recognized by the U.S. Department of Education.
2. Admitted by the graduate school as non-degree seeking student.
3. Applicants with a 3.0 or better not required to take the GRE; program director may evaluate admission based on evidence of potential success with a GPA of 2.5 or better.

**Requirements for the Operations Management Graduate Certificate:**

| Core Courses (9 hours) | | |
|---|---|---|
| OMGT 50003 | Introduction to Operations Management | 3 |
| OMGT 57803 | Project Management for Operations Managers | 3 |
| OMGT 54703 | Lean Six Sigma | 3 |
| Electives (select one) | | 3 |
| OMGT 52503 | Leadership Principles and Practices | |
| OMGT 58703 | Leading Change | |
| OMGT 50103 | Supply Chain Management for Operations Managers | |
| OMGT 53703 | Quality Management | |
| OMGT/INEG 54303 | Cost Estimation Models | |
| OMGT 56703 | Principles of Operations Research | |
| **Total Hours** | | **12** |

## Graduate Certificate in Project Management

Admission to the Graduate Certificate program generally follows U of A Graduate School admission policies with the following exceptions:

1. All applicants, including those with advanced degrees, will be evaluated for admission on the basis of their first baccalaureate degree.
2. Students may be eligible for admission by special consideration if the GPA is below 3.0 but above 2.5.
3. Before taking any graduate classes in the program, non-native speakers of English who do not have a conferred undergraduate degree from an accredited U.S. college or university must demonstrate minimum proficiency on one of the following tests of written English: TOEFL, IBT (26), ELPT (75) or GRE/GMAT Analytical Writing (4.5). The English Language Proficiency Policy for the Master of Science in Operations Management requires Level II non-native speakers of English to complete ELAC 50403 Research Writing in the STEM Fields no later than the first semester of graduate level courses.

Former students or alumni of the Master of Science in Operations Management program may use six credit hours (two courses) from the M.S.O.M. program toward equivalent Project Management Certificate courses. If an alumnus has completed all possible combination of courses for the Project Management Certificate, the student may petition to take one additional course chosen by the program to complete the Project Management Graduate Certificate.

Current M.S.O.M. students who are concurrently accepted into the Project Management Certificate program may use all applicable courses for both the M.S.O.M. degree and the Project Management Certificate.

**Requirements for Graduate Certificate in Project Management**

| **Required Courses** | | |
|---|---|---|
| OMGT 52503 | Leadership Principles and Practices | 3 |
| OMGT 57803 | Project Management for Operations Managers | 3 |
| OMGT 59803 | Advanced Project Management | 3 |
| Choose one elective: | | 3 |
| OMGT 53703 | Quality Management | |
| OMGT 54303 | Cost Estimation Models | |
| OMGT 54603 | Economic Decision Making | |
| OMGT 58703 | Leading Change | |
| **Total Hours** | | **12** |

## Graduate Faculty

**Bateh, Justin,** Ph.D. (University of Suderland-London), Instructor, Operations Management Program, 2020.
**Bean, Jeffrey,** M.B.A. (University of Arkansas), B.A. (Rhodes College), Instructor, Operations Management Program, 2008.
**Bresnick, Terry A.,** M.S. (Stanford University), M.B.A. (George Mason University), B.S. (United States Military Academy), Instructor, Operations Management Program, 2014.
**Burgin, James,** M.B.A. (Golden Gate University), B.S. (University of Arkansas), Instructor, Operations Management Program, 2012.
**Caballero, William,** Ph.D. (Air Force Institute of Technology), Instructor, Operations Management Program, 2023.
**Cavitt, Maurice,** Ph.D. (University of Texas at Arlington), M.S. (University of Nebraska-Lincoln), B.S. (Prairie View A&M University), Instructor, Operations Management Program, 2021.
**DeGrange, Walter,** M.S. (Naval Postgraduate School), B.E. (Vanderbilt University), Assistant Professor, Operations Management Program, 2014.

**Eaton, Joshua,** Ph.D. (Rensselaer Polytechnic Institute), M.E.M. (Massachusetts Institute of Technology), Instructor, Operations Management Program, 2023.
**Enos, James,** Ph.D. (Stevens Institute of Technology), Instructor, Operations Management Program, 2022.
**Essary, Michael L.,** D.B.A. (Northcentral University), M.B.A. (Florida Institute of Technology), M.B.A. (University of South Carolina), B.S. (University of Tennessee), Instructor, Operations Management Program, 2019.
**Fahey, Mikaela,** M.S. (Arkansas Tech University), Instructor, Operations Management Program, 2022.
**Friscoe, Louis F.,** M.S., B.S. (Embry Riddle Aeronautical University), Instructor, Operations Management Program, 2014.
**Gallagher, Brian P.,** Ph.D. (Colorado State University), M.S. (Florida Institute of Technology), B.Tech. (Peru State College), Instructor, Operations Management Program, 2019.
**Galli, Brian,** Ph.D. (Old Dominion University), Instructor, Operations Management Program, 2023.
**Gay, Rocky,** Ph.D. (Texas A&M University), M.S. (U.S. Army War College & Texas A&M University), B.S. (U.S. Military Academy), Assistant Professor, Operations Management Program, 2019.
**Ham, Garret Richard,** M.Div. (Yale University), J.D. (University of Arkansas), B.A.C.S. (Ouachita Baptist University), Instructor, Operations Management Program, 2019.
**Ham, Richard,** Ed.D. (University of Arkansas at Little Rock), M.A.S. (Embry-Riddle Aeronautical University), B.S. (Park University), Instructor, Operations Management Program, 2014.
**Hampton, Shannon,** M.B.A. (John Brown University), Instructor, Operations Management Program, 2023.
**Hutto, Gregory T.,** M.S. (Stanford University), B.S. (U.S. Naval Academy), Instructor, Operations Management Program, 2014.
**Jenkins, Phillip,** Ph.D., M.S. (Air Force Institute of Technology), Instructor, Operations Management Program, 2022.
**Jones, Amanda L.,** M.A.T. (Hastings College), M.Ed. (Western Governors University), Instructor, Operations Management Program, 2022.
**Jones, Phillip,** M.B.A., B.S. (University of Arkansas), Instructor, Operations Management Program, 2013.
**Keethler, Gregory A.,** M.S.O.R. (Air Force Institute of Technology), B.S. (University of Texas at El Paso), Instructor, Operations Management Program, 2019.
**Mahaffey, Jacob,** M.S. (University of Arkansas), B.S. (University of Arkansas, Little Rock), Instructor, Operations Management Program, 2021.
**McDonald, Candice,** D.B.A. (Walden University), M.A. (Malone University), B.A. (Malone College), Instructor, Operations Management Program, 2022.
**McGlynn, Moira,** Ph.D., M.B.A. (Union College of Union University), Instructor, Operations Management Program, 2013.
**McNeal, Travis G.,** M.A. (University of Nevada), B.S. (Utah State University), Instructor, Operations Management Program, 2014.
**Melton, Kerry D.,** Ph.D. (Oklahoma State University), M.S.I.E., B.S.I.E. (University of Arkansas), Teaching Associate Professor, Department of Industrial Engineering, 2013, 2023.
**Morris, Adam,** Ed.D. (University of Arkansas), M.S., B.S. (Friends University), B.S. (Newman University), Instructor, Operations Management Program, 2011.
**Nethercutt, Leonard,** M.B.A., B.S (University of Arkansas), Instructor, Operations Management Program, 1996.
**Peters, Megan,** Ph.D. (George Washington University), Instructor, Operations Management Program, 2023.
**Peterson, David,** Ph.D. (University of North Carolina), M.S. (Air Force Institute of Technology), B.S. (Iowa State University), Instructor, Operations Management Program, 2018.
**Phillips, Julia,** Ph.D. (Colorado School of Mines), Instructor, Operations Management Program, 2022.
**Richardson, Tracey,** Ed.D. (Argosy University), M.S., B.A.Sc. (Troy University), Instructor, Operations Management Program, 2009.
**Rieske, David,** M.S., B.S. (University of Arkansas), Instructor, Operations Management Program, 2007.
**Robinson, Eddie,** PhD. (Northcentral University), M.A.S. (Embry Riddle Aeronautical University), M.S. (University of Arkansas), B.S. (United States Air Force Academy), Instructor, Operations Management Program, 2007.
**Shallcross, Nicholas,** Ph.D. (University of Arkansas), M.S. (Air Force Institute of Technology), B.S. (Virginia Military Institute), Instuctor, Operations Management Program, 2020.
**Sloat, Dan,** J.D., M.B.A. (University of Oklahoma), Instructor, Operations Management Program, 2024.
**Specking, Eric A.,** M.S.I.E., B.S. (University of Arkansas), Lecturer, Operations Management Program, 2014.
**Squires, Alice F.,** Ph.D. (Stevens Institute of Technology), M.B.A. (George Mason University), B.S.E.E. (University of Maryland), Teaching Professor, Department of Industrial Engineering, 2023.
**Sutton, James M.,** M.S. (Southern Methodist University), B.S. (University of West Florida), B.M. (University of Southern Mississippi), Instructor, Operations Management Program, 2017.
**Talafuse, Thomas,** Ph.D. (University of Arkansas), M.S. (Air Force Institute of Technology), B.S. (United States Air Force Academy), Instructor, Operations Management Program, 2018.
**Tate, Rashone,** M.S. (Army War College), M.S.O.M. (University of Arkansas), B.S. (Park University), Instructor, Operations Management Program, 2022.
**Ward, Ryane,** J.D. (University of Arkansas), Instructor, Operations Management Program, 2020.
**Wells, Michael,** M.S. (Florida State University), B.S. (East Stroudsburg University), Instructor, Operations Management Program, 2011.
**Williams, Darron,** Ph.D. (Northcentral University), M.S., M.B.A., B.S. (University of Memphis), Instructor, Operations Management Program, 2015.
**Wolf, Martha,** M.S.I.E. (University of Arkansas), B.S. (University of Arkansas), Instructor, Operations Management Program, 2022.
**Woudenberg, Michael,** M.S.E. (Johns Hopkins University), Instructor, Operations Management Program, 2023.
**Wright, Nia,** M.B.A. (Tulane University), B.S. (University of Arkansas), Instructor, Operations Management Program, 2009.
**Zollinger, Richard,** M.B.A., B.S. (Brigham Young University), Instructor, Operations Management Program, 2016.

## Courses

**OMGT 50003. Introduction to Operations Management. 3 Hours.**
Provides an overview of the functional activities necessary for the creation/delivery of goods and services. Topics covered include: productivity; strategy in a global business environment; project management; quality management; location and layout strategies; human resources management; supply chain and inventory management; material requirements planning; JIT; maintenance and reliability; and other subjects relevant to the field. Required course. Pre- or Corequisite: OMGT 48503. Prerequisite: OMGT 43303, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. MSE or MSEM students may take the course with advisor consent. (Typically offered: Fall and Spring)

**OMGT 50103. Supply Chain Management for Operations Managers. 3 Hours.**
Focuses on the development and application of decision models in supply chains with emphasis on supply chain performance, cost, and metrics; demand forecasting; aggregate planning; inventory management; supply chain design and distribution; transportation modeling and analysis; supply chain coordination; the role of information technology; and sourcing decisions. Spreadsheet tools and techniques will be used to analyze supply chain performance. Prerequisite: OMGT 43303, OMGT 48503 and admitted to OPMGMS, EMGTMS, ENGRME or OMPMGC Graduate Certificate Program, or departmental consent. (Typically offered: Fall, Spring and Summer)

**OMGT 51103. Human Resource Management. 3 Hours.**
A review of Human Resources Management functions as they apply in today's business setting with specific emphasis on regulatory compliance, total rewards systems, recruitment, training, and employment practices. The course is designed both for HRM professionals and for line managers/professionals who need to understand the roles and responsibilities of HR as a business partner. Prerequisite: OMGT 43103, OMGT 50003 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Fall, Spring and Summer)

**OMGT 51203. Finance for Operations Managers. 3 Hours.**
Examines the scope and environment of finance for operations managers. Topics include financial markets, interest rates, financial statements, cash flows, and performance evaluation. Valuation of financial assets, using time value of money; the meaning and measurement of risk/return; capital-budgeting, cost of capital, capital structure, dividend policy, and working capital management are also covered. Required course (may substitute OMGT 54603). Pre- or Corequisite: OMGT 50003. Prerequisite: OMGT 43203, OMGT 48503 and admitted to OPMGMS, EMGTMS, ENGRME, or OMPMGC Graduate Certificate Program, or departmental consent. (Typically offered: Fall, Spring and Summer)

**OMGT 51303. Operations Management in the Service Sector. 3 Hours.**
Review of the role of the operations management in the service sector, e.g., health care systems, banking, municipal services, utilities, and postal service and others. Emphasizes the principles and methodologies applicable to the solution of problems within the service industries. Pre- or Corequisite: OMGT 50003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 51403. Strategic Issues in Human Resource Management. 3 Hours.**
Explores the concept of Strategic Human Resource Management with emphasis on effective partnering by various HR functions with all levels of management to support the large-scale, long-range goals of achieving success in the organization's chosen markets. Internal and external impacts on and of HR in all areas will be examined. Students will analyze case studies to build on basic concepts acquired in OMGT 51103. Prerequisite: OMGT 50003, OMGT 43103, OMGT 51103 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 52503. Leadership Principles and Practices. 3 Hours.**
The course is designed to expose students to multiple approaches to leadership in a wide variety of settings. Leadership styles, the knowledge areas and competencies expected of today's leaders, the challenges leaders face, the historical and philosophical foundations of leadership, the relationships among leadership theory, leadership practice, and the moral-ethical aspects of leadership are among the topics covered in the course. A number of respected regional, national, and international leaders share "lessons learned" in their leadership journeys. Plus, a number of highly regarded leadership books and case studies on leadership are read and discussed. Students may not receive credit for INEG 42503 and INEG 52503/OMGT 52503. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with INEG 52503.

**OMGT 53003. Health Care Policies and Issues. 3 Hours.**
The course provides an overview of healthcare policy and issues for management in all industries. Topics include hospital administration, personnel management, healthcare operations management roles, and logistics within a healthcare system. The course explores health insurance, Medicare, Medicaid, managed care, and employee health and other benefits. Students will be able define issues in delivering health care benefits and how to develop policy covering employment law, ethics, and current healthcare issues. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Operations Management Sponsored Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 53703. Quality Management. 3 Hours.**
Introduces students to quality management concepts and their use in enhancing organizational performance and profitability. History of the quality movement, its broad application in key economic sectors, and philosophical perspectives of major quality leaders will be discussed. Focus is on continuous process improvement, using data and information to guide organizational decision-making. The Six Sigma approach and associated statistical tools, supporting process improvement, are also covered. Pre- or Corequisite: OMGT 50003. Prerequisite: OMGT 43303 and OMGT 48503, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 54003. Industrial Safety and Health Administration. 3 Hours.**
Based on Federal Regulations for Occupational Safety and Health, the course examines current regulations, as well as their commonsense application. Covers various standards, such as those for material handling, personal protective equipment, toxic substances, and machine guarding. Uses case studies and real world scenarios to present topics and demonstrate their application. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 54203. Operations Management & Global Competition. 3 Hours.**
Studies of principles and cases in business/industrial administration in global competition. Survey of markets, technologies, multi-national corporations, cultures, and customs. Discussion of ethics, professionalism, difference valuing, human relations skills, and other topics relevant to global practice. Pre- or Corequisite: OMGT 50003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Spring)

**OMGT 54303. Cost Estimation Models. 3 Hours.**
Overview of cost estimation techniques and methodologies applied to manufacturing and service organizations. Accomplished through detailed analysis of the cost estimation development process and various cost estimation models. Topics include data collection and management, learning curves, activity based costing, detailed and parametric estimation models, and handling risk and uncertainty. Prerequisite: OMGT 48503 and OMGT 43303, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with INEG 54303.

**OMGT 54403. Decision Models. 3 Hours.**
Focus on quantitative decision models for technical and managerial problems for private and public organizations. Topics include shareholder value, stakeholder value, Value-Focused Thinking, axioms of decision analysis, decision making challenges, decision traps, cognitive biases, decision processes, decision framing, influence diagrams, value hierarchy structuring, designing creative alternatives, single objective models, multiobjective additive value model, swing weights, sensitivity analysis, portfolio decision models with binary linear programming, probability elicitation, Bayes Theorem, decision trees, Monte Carlo simulation, expected value, dominance (deterministic and stochastic), tornado diagrams, value of information, risk preference, utility models, expected utility, and communicating analysis insights. Prerequisite: (OMGT 50003, OMGT 43303, and OMGT 48503) or INEG 23104, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with EMGT 54403, INEG 54403.

**OMGT 54603. Economic Decision Making. 3 Hours.**
Principles of economic analysis with emphasis upon discounted cash flow criteria for decision-making. Comparison of criteria such as rate of return, annual cost, and present worth for the evaluation of investment alternatives. Required course (may be substituted by OMGT 51203). Prerequisite: OMGT 50003, OMGT 43203 and OMGT 48503, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with EMGT 54603.

**OMGT 54703. Lean Six Sigma. 3 Hours.**
This course covers the application of lean principles to manufacturing, service and government processes in order to improve productivity, increase value and eliminate waste as well as the use of the Six Sigma problem solving methodology to reduce variation and improve quality. Students will gain experience with the tools and analysis methods used in both approaches. The topics covered include: methods for creating Lean processes, proven lean problem-solving methodologies, managing a lean transformation, implementing a Six Sigma initiative, and executing the five phases of the Six Sigma DMAIC process, and communicating results to stakeholders and decision-makers. Prerequisite: (OMGT 50003 or departmental consent), and admitted to the (Master of Science in Operations Management Program, or theProject Management Graduate Certificate Program, or be a non-degree seeking graduate student with departmental consent). (Typically offered: Fall, Spring and Summer)

**OMGT 54903. Advanced Lean Six Sigma. 3 Hours.**
With an emphasis on application, this course builds upon the Lean Six Sigma and Quality Management courses and covers analysis techniques for Lean Six Sigma problem solving in the Analyze, Improve, and Control phases of the DMAIC process. The topics covered include descriptive versus inferential statistics, sampling, Hypothesis Testing with Normal and Non-Normal Data, regression analysis, design of experiments, and control charts. Prerequisite: OMGT 54703 and OMGT 53703. (Typically offered: Fall, Spring and Summer)

**OMGT 55003. Maintenance Management. 3 Hours.**
Principles and practices of maintenance department organization, prevention procedures, and typical equipment problems. Includes related topics such as plant protection, preventative and plant maintenance. Pre- or Corequisite: OMGT 50003. Prerequisite: OMGT 43303 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 56203. Strategic Management. 3 Hours.**
Examines strategic management, which is defined as the art and science of formulating, implementing, and evaluating cross-functional decisions that enable an organization to achieve its long-term objectives. Principles of strategic management will be covered in conjunction with case studies to provide opportunity for analysis and experience in applying these principles in an operations management environment. Required course. Prerequisite: OMGT 50003 and OMGT 43103, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 56503. Introduction to Data Analytics for Operations Managers. 3 Hours.**
Introduces data science and data analytics. Provides basic skill instruction in the statistical data analysis programming language R. Provides experience building and interpreting descriptive and predictive data analytics models. Provides operations managers with the skill and tools to use and understand advanced data analytics methods. Provides practice communicating those results to senior stakeholders and decision makers. Prerequisite: OMGT 50003 or EMGT 50303, must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 56703. Principles of Operations Research. 3 Hours.**
Surveys the mathematical models used to design and analyze operational systems. Includes linear programming models, waiting line models, computer simulation models, and management science. Students will be introduced to applications of operations research and solution methods, using spreadsheet software. Pre- or Corequisite: OMGT 50003 and OMGT 48503. Prerequisite: OMGT 43303 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 56903. Advanced Analytics and Visualizations for Operations Managers. 3 Hours.**
Extends the skills taught in OMGT 56503 to provide experience building and interpreting descriptive and predictive data analytics models that incorporate text, network, and categorical data along with visualization approaches. Provides operations managers with the skill and tools to use and understand advanced data analytics methods. Provides practice communicating those results to senior stakeholders and decision-makers. Prerequisite: OMGT 56503. (Typically offered: Fall, Spring and Summer)

**OMGT 57303. Human Factors in Operations Management. 3 Hours.**
Introduces the interaction of humans with systems, attempting to apply the same rigor of purpose and understanding to these systems and interactions as with production planning, supply chain design, or other elements of operations management. Emphasizes identifying, diagnosing and finding solutions for perceptual, cognitive and organizational errors. The scientific method and various quantitative and qualitative research techniques will be used to both evaluate and solve problems as well as determine and frame outcomes.Pre- or Corequisite: OMGT 50003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 5770V. Special Problems. 1-3 Hour.**
Application of previous course work knowledge to problems encountered in military base and civilian operations. Problems are proposed by students according to individual interests and needs. Used for courses in specific concentration, certificate or focus areas with parenthetical titles. Maybe used for courses in development. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

**OMGT 57803. Project Management for Operations Managers. 3 Hours.**
An introduction to the Critical Path Method and Program Evaluation and Review Technique. Covers project planning and control methods; activity sequencing; time-cost trade-offs; allocation of manpower and equipment resources; scheduling activities and computer systems for PERT/CPM with emphasis on MS project. Case studies include topical issues combining methodologies and project management soft skills, such as conflict management, negotiation, presentations to stakeholders, and team building. Required course. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with EMGT 57803.

**OMGT 57903. Operations Risk Management. 3 Hours.**
This course focuses on the skills needed by operations managers to identify risk, apply risk management techniques, and communicate management strategies to stakeholders and senior leaders. The course covers widely used risk models; the relationship of threat, likelihood, vulnerabilities, and consequence to assess risk, and selecting appropriate mitigation strategies to incorporate into a risk management plan. Prerequisite: OMGT 50003 or EMGT 50303, must be admitted to the Master of Science in Operations Management Program, Operations Management Graduate Certificate Programs, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 58203. Information Technology for Operations Managers. 3 Hours.**
Information Technology for the management and control of information systems and processes used in operations management. Topics covered include e-Business and e-Commerce Systems, Management Information Systems (MIS), Data Resource Management, Networking, Decision Support, Information Security, Enterprise and Global IT, and IT Strategies and Solutions for Operations Managers. Pre- or Corequisite: OMGT 50003. Prerequisite: OMGT 48503 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 58303. Advanced Decision Support Tools and Visualization for Operations Managers. 3 Hours.**
This course covers advanced decision support tools and visualization used in engineering and operations management including functions and techniques for data manipulation and error testing, charts and chart templates, data query and pivot tables, templates and forms, probability, "What If" sensitivity analysis, and dashboards. The decision support tools covered are Microsoft Excel and Tableau. Provides practice communicating to senior stakeholders and decision-makers. Pre- or Corequisite: OMGT 50003. Prerequisite: OMGT 48503 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 58703. Leading Change. 3 Hours.**
Provides a framework for managing organizational change within an enterprise. Strategies are examined for transitioning organizations from current state operations to desired future state operations. Topics include linking strategic goals to organizational structure, the impact of culture on change success, gaining executive commitment and stakeholder engagement, developing organizational readiness and implementing and sustaining organizational change. Pre- or Corequisite: OMGT 50003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 59003. Operations Management of Unmanned Aircraft Systems. 3 Hours.**
Course focuses on the fundamentals of UAS operations and the applications of UAS systems in research, government and business applications. Modules covers government compliance, licensing/certification requirements, University Policy and current events in the UAS field. Prepares students to participate in research or UAS operational roles. Discusses policy and process issues in society and considerations for ethical UAS use. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 59103. Advanced Air Mobility and Autonomous Operations. 3 Hours.**
Provides advanced knowledge of autonomous vehicles and new eVTOL aircraft implications on the National Airspace System, Advanced Air Mobility and Universal Traffic Management, and airports. Teaches advanced autonomous compliance systems for operations managers. Covers knowledge for industry standard certifications including government and industry compliance standards. Focuses on system integration to improve operations efficiency, risk management, and safety. Prerequisite: OMGT 59003. (Typically offered: Irregular)

**OMGT 59303. Cybersecurity for Operations Managers. 3 Hours.**
The cybersecurity for operations managers course introduces strategic and tactical processes to implement the National Institute of Standards and Technology (NIST) Risk Management Framework (RMF). Additionally, the Body of Knowledge for the American Society of Industrial Security is applied to each process and procedure. Managers and Leaders responsible for cybersecurity, with or without an IT background, are provided a logical RMF to establish an effective cybersecurity program in their organization. (Typically offered: Fall, Spring and Summer)

**OMGT 59403. Resilient Design and Crisis Management for Operations Managers. 3 Hours.**
This course expands the knowledge of managing and responding to a crisis including preparation through resilient design. Using foundational knowledge from the Department of Homeland Security Federal Emergency Management Administration and industry standards, the course guides operations managers in the preparation, prevention and response to emergency incidents and the techniques used to add resilience to operations. Human resources, supply chain, organizational structure, authorities, legal frameworks and emergency operations centers and private/public partnerships including critical infrastructure protection are explored throughout the course. (Typically offered: Irregular)

**OMGT 59803. Advanced Project Management. 3 Hours.**
This course builds upon the project management for operations managers' course and offers students an opportunity to apply advanced project management tools to manage troubled projects. Topics include determining the project status using the schedule baseline, cost estimations, and earned value management techniques. Students will learn how to perform a project assessment/audit and will create a troubled project recovery plan. The course includes presentations of case study assignments to gain experience in communicating the status and recovery of failed and troubled projects. Prerequisite: OMGT 57803 or EMGT 57803 and must be admitted to the Master of Science in Operations Management Program, Master of Science in Engineering Management, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Fall, Spring and Summer)

**OMGT 59903. Homeland Security for Operations Managers. 3 Hours.**
Introduces concepts of Homeland Security in industry and government settings. Covers basic legal and compliance programs and risk management processes. Explains the continuity between critical infrastructure, government and private sector roles. Focuses on system design and understanding of the National Incident Management System protecting the homeland. Introduces cybersecurity and intelligence analysis concepts. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

**OMGT 6000V. Master's Thesis. 1-6 Hour.**
Master's thesis option for OMGT students. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.