

100% ONLINE

MS IN AVIATION AND AEROSPACE MANAGEMENT (ONLINE)

Purdue's MS in Aviation and Aerospace Management is designed for driven professionals who want to break into or advance within the challenging, specialized world of aviation. Purdue's program will help you develop essential management and leadership skills applicable to the aviation field. Taught by professors with distinguished educational backgrounds and extensive work experience in civilian aviation, military aviation, and government, our industry-specific courses will prepare you for numerous aviation management roles.

Economic forecasts suggest that a steady increase in traveling passenger and air cargo requirements will fuel a dramatic expansion of the aviation industry and require a complete restructure of the existing air transportation system architecture. This industry growth is generating a wide range of leadership opportunities for individuals who possess aviation and aerospace management skills in fields such as operational analysis, safety systems development, project management, systems integration, environmental sustainability, and related interdisciplinary skills.

The program curriculum is designed to develop analytic and problem-solving skills and give students mastery of technical and statistical tools for decision-making.



PLAN OF STUDY

This program is 100% online, so you can get your degree at your own pace and study from anywhere in the world. Students choose times for class work and study that fit their busy schedules. Courses are offered in a rolling format that allows program participants to complete the required 30 credit hours in as little as 12 months or as long as five years. All students have access to professionals online or by phone who can assist them.

The plan of study serves as a contract between you, your advisory committee, and Purdue University's Graduate School. Your POS is a blueprint for successful completion of your degree requirements.



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COURSE OVERVIEW

COURSES	CREDITS
<i>Core Courses</i>	6
<i>Electives</i>	50

CORE COURSES

AT 50500 - Research Methods in Aviation

Explores the practical approach to research as it applies to identifying and analyzing problems in aviation industry settings. Such problems and issues often require a diversity of research skills to effectively address dynamic problems in complex and often high-risk work environments. The course offers an overview of mixed research methods that lend themselves well to practical problem solving.

AT 50700 - Quantitative Evaluation in Transportation

Presents an introduction to measurement strategies in an industrial and human resource environment. The evaluation of measurement outcomes will be the primary focus. Using statistical concepts appropriate for industrial environments, the role of the manager in planning and conducting effective research will be presented.

ELECTIVE COURSES

AT 50800 - Quality & Productivity in Industry & Technology

Examines the contemporary issues of continuous improvement in quality and productivity in manufacturing and service industries. Includes a close examination of the evolving philosophies' bearing on the scope, improvement and costs of quality assurance programs in industry and technology.

AT 52000 - Operational Assessment & Improvement

This course focuses on developing the skills needed to analyze, formulate and apply pragmatic techniques for work task improvement. Concepts to be studied will include the enhancement of workflow structure, critical sequence element streamlining and value-added analysis development.

AT 52100 - Resource Analysis and Optimization

Develops the skills to analyze, formulate and apply techniques for work task improvement. Concepts include workflow enhancement, critical element streamlining, and value added analysis.

AT 52600 - Aviation Leadership

Using foundational readings, case studies, and critical analysis techniques, the contribution of past and contemporary aviation leaders will be reviewed.



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AT 52800 - Management and Design of Training Systems

Examines practical applications of managing the training process in industry and educational settings, including the development of instructional materials from an adult learner viewpoint. Students will design an instructional program using established management training models. Curriculum design using various forms of media and delivery strategies will be emphasized.

AT 53100 - International Civil Aviation Regulatory Systems

Provides extensive multi-modal transportation safety and regulatory oversight experience. Students will receive detailed information on air, maritime, rail, mass transit, trucking and oil pipeline safety regulatory programs, as well as applicable safety mitigation processes.

AT 53200 - Contemporary Issues in Transportation Security

Provides extensive multi-modal transportation security experience. Discussion will cover air, maritime, rail, mass transit, trucking and oil pipeline security programs as well as applicable threat mitigation.

AT 54600-Aviation Financial Instruments and Operations

The course concentrates on increasing the understanding of financial expertise in analyzing trading and hedging programs for application in reducing aviation operational risk exposure. The studies include research into the development and use of operational indexes and their possible relation to hedging with commodity and security instruments. Emphasis will be placed on the understanding of current operational measurements and correlations to trading and hedging financial instruments in providing improved risk management in operational environments.

AT 54700 - Airline Revenue Management

This course aims to provide students with experience in airline revenue management applications. Primarily focusing on the commercial operation of airlines, this course covers various contemporary topics such as the segmentation, inventory control, forecasting, budgeting and pricing. This course will use simulations to enhance the overall learning-teaching experience.

AT 54800-Aircraft Asset Management

This course provides the student with a detailed exploration of aircraft asset management programs in both airlines and business aviation organizations. Students analyze and study the critical components of an asset management program, the financial methods in aircraft asset management, acquisition proposals, and development plans of aircraft acquisitions in this course. An airline industry-relevant project is used to improve student reasoning and application of industry standard aircraft asset management analysis procedures to include forecasting techniques, present value calculations, and benefit-cost analyses. *This course serves as the foundational knowledge required for AT 54900.*

AT 54900-Aircraft Leasing

This course provides students with training and experience managing aircraft leases using financial and risk management methodologies specific to the airline and business aviation industries. Students conduct financial evaluations of leasing versus ownership programs of airlines, as well as analyze debt, equity and capital markets for aircraft financing. The course includes an examination of taxation issues related to aircraft leasing, maintenance reserves, and auditing of aircraft financial performance. The prerequisite for this course is AT 54800.



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AT 57200 - Human Error and Safety

Explores the definition and nature of human error, error chains and casual factors in error generation. Error taxonomies will provide a classification scheme for grouping errors and assessing error criticality. Methods for assessing risk and predicting error generation potentials will be investigated. Accident and incident case studies will be utilized throughout the course to illustrate course concepts.

AT 57300 - Managing the Risk of Organizational Accidents

Examines strategies various industries use to assess the risk of organizational accidents and to develop safety management programs to prevent, capture, and recover from conditions that lead to disastrous outcomes. Strategies such as High Reliability Organizations, Operational Risk Management, Behavioral Based Safety, Tripod Delta, and Safety Cultures are explored as successful methods for improving organizational safety in high-risk environments and endeavors.

AT 57400 - Concepts of Aviation Human Factors

Exploration of contemporary issues and research related to human factors theory and program strategies as they relate to the aviation industry. The course ventures beyond ergonomic issues into more diverse human factors considerations, while discussing an industry-wide and organizational perspective.

AT 58100 - Aviation Financial Management in a COVID World

This course provides an overview of aviation financial management and is intended for current and future aviation and aerospace leaders and managers. Taking a global view, the course opens with two sessions on the tremendous economic impact of the aviation sector. Supplementing the on-line content, the course will use relevant readings and case studies as well as statistical data in time series to demonstrate the way financial management has evolved to improve performance in both the airport and airline industries.

AT 67500 - Aviation Safety Program Development

The goals of this course are to create a working safety office that allows students to work as a safety officer reacting to real-life aviation safety problems. In so doing, students will achieve the following objectives and will be able to: (1) describe the regulatory and risk environment in which airline safety offices exist; (2) describe safety theories and models; (3) describe human factors and accident causation; (4) collect and analyze safety related data; (5) prepare documentations for references and trainings; (6) manage an airline safety office and implement safety precedents; (7) process and disseminate information related to accident prevention and risk minimization; (8) audit safety plans for air careers, airports, or FBOs.



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NOTE: All courses are subject to change and semester availability may vary.