

Master of Science in Aeronautics (MSAV)

MSAV 508 Advanced Airport Modeling 3 Credits (3,0)

Use of software to model airport and airspace operations for problem-solving. Creation of airport simulations for operational improvement.

Course Offered at: Daytona Beach

MSAV 513 Space Habitation and Life Support Systems 3 Credits (3,0)

Physiological changes in space, radiation hazards, and life support systems for long-duration space missions. Countermeasures for crew health.

Course Offered at: Daytona Beach

MSAV 515 Aviation/Aerospace Simulation Systems 3 Credits (3,0)

Examination of aviation simulation systems, their design, application, and impact on training, safety, and operational costs.

Course Offered at: Daytona Beach

MSAV 520 Introduction to Air Traffic Control Tower 3 Credits (1,2)

Control tower equipment; operating positions; airport traffic area; navigation aids; VFR traffic patterns; phraseology; taxi instructions; coordination; federal aviation regulations; emergency handling; strip marking; aircraft recognition; weather observations; lighting systems; wake turbulence; VFR and IFR procedures; runway incursions; ATIS; visibility determination; NOTAMS; runway selection criteria.

Course Offered at: Daytona Beach

MSAV 521 Professional Pilot Operations I 1 Credit (1,0)

FAA private pilot certification with single engine land ratings.

Professionalism as a private pilot. Completion of project demonstrating understanding of professionalism.

Course Offered at: Daytona Beach

MSAV 532 Professional Pilot Operations II 1 Credit (1,0)

FAA instrument rating on private pilot single engine or multi-engine certificate. Professionalism as an instrument-rated pilot. Completion of project demonstrating understanding of professionalism.

Prerequisites: MSAV 521

Course Offered at: Daytona Beach

MSAV 543 Professional Pilot Operations III 1 Credit (1,0)

FAA commercial pilot certification with multi-engine land ratings.

Professionalism as a commercial multi-engine pilot. Completion of project demonstrating understanding of professionalism.

Course Offered at: Daytona Beach

MSAV 547 Leadership and Critical Decision Making in the Aviation Industry 3 Credits (3,0)

Practical leadership and decision-making skills for aviation leaders. Case studies in air traffic management, aviation logistics, maintenance, and production.

Course Offered at: Daytona Beach

MSAV 552 Introduction to Research Methods and Statistical Analysis 3 Credits (3,0)

Overview of quantitative and qualitative research methods. Research design, data collection, statistical analysis, and report presentation using APA style.

Course Offered at: Daytona Beach

MSAV 554 Project Management in Aviation/Aerospace 3 Credits (3,0)

Project management in aviation/aerospace. Focus on integration, scope, time, cost, quality, human resources, risk, procurement, and stakeholder management. Use of project management software.

Course Offered at: Daytona Beach

MSAV 562 Situation Awareness and Performance in Aviation/Aerospace 3 Credits (3,0)

Theories and applications of situation awareness in dynamic environments. Measurement, human factors, and performance improvement techniques.

Course Offered at: Daytona Beach

MSAV 573 Agent-based Modeling (ABM) for Aerospace and Aviation Systems 3 Credits (3,0)

Fundamental concepts of agent-based modeling (ABM). Simulation of complex aviation and aerospace systems using AnyLogic software.

Course Offered at: Daytona Beach

MSAV 599 Special Topics in Aviation 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in aviation.

Course Offered at: Daytona Beach, Prescott, Worldwide

MSAV 601 Applications in Space: Commerce, Defense, and Exploration 3 Credits (3,0)

Commercial, defense, and scientific interests in space. Development, justification, and cost analysis of space missions.

Course Offered at: Daytona Beach

MSAV 605 Research Methods and Statistics 3 Credits (3,0)

Aviation research methods, problem identification, hypotheses, research design, data collection, and analysis. Statistical methods and research proposal development.

Course Offered at: Daytona Beach

MSAV 608 Aviation/Aerospace Accident Investigation and Analysis 3 Credits (3,0)

Process of aircraft accident and incident investigation. Accident causation, human factors, investigation techniques, and analysis of selected accidents.

Course Offered at: Daytona Beach, Worldwide, Asia

MSAV 617 En route Radar Operations 3 Credits (3,0)

Radar operations in air traffic control. Simulated traffic scenarios and problem-solving exercises. Research and analysis of National Airspace System issues.

Course Offered at: Daytona Beach

MSAV 618 En route Non-Radar Operations 3 Credits (3,0)

Non-radar procedures for aircraft separation in en route, departure, and arrival phases. Simulation of air traffic control scenarios and research on NAS improvements.

Course Offered at: Daytona Beach

MSAV 619 Airport Certification and Operations Safety 3 Credits (3,0)

Planning and management of airport safety programs. Principles of risk management and safety management systems.

Course Offered at: Daytona Beach

MSAV 620 Air Carrier Operations 3 Credits (3,0)

Overview of air carrier operations. Topics include airline history, training programs, dispatch, airworthiness, flight operations, and international challenges.

Course Offered at: Daytona Beach

MSAV 621 Aviation/Aerospace Safety Program Management 3 Credits (3,0)

Planning and managing effective aviation safety programs. Safety policy, safety risk management, safety assurance, and safety promotion.

Course Offered at: Daytona Beach, Worldwide, Asia

MSAV 622 Corporate Aviation Operations 3 Credits (3,0)

Operations and management of corporate flight departments. Procedures and techniques for corporate aviation missions and resources.

Course Offered at: Daytona Beach

MSAV 623 Advanced Air Traffic Control Tower 3 Credits (3,0)

Advanced tower operations. Control tower equipment, VFR traffic patterns, sequencing, emergency handling, and standard operating procedures.

Prerequisites: MSAV 520

Course Offered at: Daytona Beach

MSAV 628 Data Analytics for Aviation Safety 3 Credits (3,0)

Use of data analytics to identify aviation hazards and risks. Analyzing flight safety databases, flight data, and predictive safety data.

Course Offered at: Daytona Beach

MSAV 636 Advanced Aviation/Aerospace Planning Systems 3 Credits (3,0)

Planning and decision-making strategies in aviation. Sustainability issues related to economic, social, technological, and ecological influences.

Course Offered at: Daytona Beach

MSAV 641 Production and Procurement Management in the Aviation/Aerospace Industry 3 Credits (3,0)

Air carrier aircraft evolution from design to delivery. Demand analysis, manufacturing, certification, and pre-delivery activities.

Course Offered at: Daytona Beach

MSAV 642 International Aviation Policy 3 Credits (3,0)

Management of workforce diversity, cultural values, and control systems in international aviation. Policy issues and sustainability in global operations.

Course Offered at: Daytona Beach

MSAV 644 Integrated Logistics Support in Aviation/Aerospace 3 Credits (3,0)

Modern logistics systems, inventory management, warehousing, and traffic management. Design for reliability, maintainability, and supportability.

Course Offered at: Daytona Beach

MSAV 662 Statistical Analysis for Aviation/Aerospace 3 Credits (3,0)

Descriptive and inferential statistics for aviation/aerospace. Application of statistical tests and data analysis.

Course Offered at: Daytona Beach

MSAV 670 Research Methods in Aviation/Aerospace 3 Credits (3,0)

Qualitative and quantitative research techniques for aviation/aerospace. Data sampling, methodology, and significance analysis.

Prerequisites: MSAV 662

Course Offered at: Daytona Beach

MSAV 672 Systems Integration in Aviation/Aerospace 3 Credits (3,0)

Integration of complex systems in aviation/aerospace. System architecture, risk assessment, resilience, and verification.

Course Offered at: Daytona Beach

MSAV 691 Capstone Research Project 3 Credits (3,0)

Capstone research project in aviation/aerospace. Students collaborate with faculty to complete a substantive project demonstrating program learning outcomes.

Prerequisites: MSAV 662 and MSAV 670

Course Offered at: Daytona Beach

MSAV 699 Special Topics in Aviation 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in aviation.

Course Offered at: Daytona Beach, Prescott, Worldwide

MSAV 700 Graduate Thesis 1-9 Credit (1-9,0)

A master-level research project in aviation conducted under the supervision of the student's advisor and thesis committee. Submission of a final report, approved by the thesis committee, and an oral defense of the research work are required for thesis credits to be earned.

Prerequisites: MSAV 662 and MSAV 670

Course Offered at: Daytona Beach