

M.S. in Aviation (MSAV)

Degree Requirements

Air Traffic Management Specialization

(For students with NO ATC experience)

MSAV Core Requirements

Required Courses		12
MSA 540	The Air Transportation System	3
MSA 545	Human Factors in the Aviation/Aerospace Industry	3
or MSA 554	Project Management in Aviation Aerospace	
MSA 662	Statistical Analysis for Aviation/Aerospace	3
MSA 670	Research Methods in Aviation/Aerospace	3

Specialization Requirements

Required Courses		9
MSA 520	Introduction to Air Traffic Control Tower	3
MSA 617	En route Radar Operations	3
MSA 623	Advanced Air Traffic Control Tower	3

Electives

MSA 508	Advanced Airport Modeling	3
MSA 515	Aviation/Aerospace Simulation Systems	3
MSA 547	Leadership and Critical Decision Making in the Aviation Industry	3
MSA 608	Aviation/Aerospace Accident Investigation and Analysis	3
MSA 636	Advanced Aviation/Aerospace Planning Systems	3

Select one of the following options: 12

Option I: Capstone

MSA 691	Graduate Capstone Research Project	3
MSA Electives from the above list of electives or any MSA electives (500-600)*		9

Option II: Thesis

MSA Electives from the above list of electives or any MSA Electives (500-600 Level).*		6
MSA 700	Thesis	6

Total Credits 33

• For students with no ATC experience or education and for AT-CTI students, the following undergraduate foundation prerequisite courses are required:

Required Undergraduate Foundation

AT 202	Introduction to Air Traffic Management	3
AT 305	Introduction to Terminal Radar Operations	3
AT 401	Advanced Terminal Radar Operations	3

Aviation/Aerospace Management and Sustainability Specialization

MSAV Core Requirements

Required Courses		12
MSA 540	The Air Transportation System	3
MSA 545	Human Factors in the Aviation/Aerospace Industry	3
or MSA 554	Project Management in Aviation Aerospace	
MSA 662	Statistical Analysis for Aviation/Aerospace	3
MSA 670	Research Methods in Aviation/Aerospace	3

Specialization Requirements

Select three of the following: 9

MSA 508	Advanced Airport Modeling	3
MSA 547	Leadership and Critical Decision Making in the Aviation Industry	3
MSA 573	Agent-based Modeling (ABM) for Aerospace and Aviation Systems	3
MSA 600	Sustainable Aviation and Aerospace Perspectives	3
MSA 609	Aircraft Maintenance Management	3
MSA 636	Advanced Aviation/Aerospace Planning Systems	3
MSA 641	Production and Procurement Management in the Aviation/Aerospace Industry	3
MSA 642	International Aviation Policy	3
MSA 644	Integrated Logistics Support in Aviation/Aerospace	3

Note: Only one BA/MGMT courses may be selected with permission of the Program Coordinator.

Select one of the following options: 12

Option I: Capstone

MSA 691	Graduate Capstone Research Project	3
MSA Electives (500-600 Level)*		9

Option II: Thesis

MSA Electives (500-600 Level)*		6
MSA 700	Thesis	6

Total Credits 33

Aviation/Aerospace Operations Specialization

MSAV Core Requirements

Required Courses		12
MSA 540	The Air Transportation System	3
MSA 545	Human Factors in the Aviation/Aerospace Industry	3
or MSA 554	Project Management in Aviation Aerospace	
MSA 662	Statistical Analysis for Aviation/Aerospace	3
MSA 670	Research Methods in Aviation/Aerospace	3

Specialization Requirements

Select three of the following: 9

MSA 508	Advanced Airport Modeling	3
MSA 515	Aviation/Aerospace Simulation Systems	3
MSA 516	Applications in Crew Resource Management	3
MSA 547	Leadership and Critical Decision Making in the Aviation Industry	3
MSA 562	Situation Awareness and Performance in Aviation/Aerospace	3
MSA 573	Agent-based Modeling (ABM) for Aerospace and Aviation Systems	3
MSA 619	Airport Certification and Operations Safety	3
MSA 620	Air Carrier Operations	3
MSA 622	Corporate Aviation Operations	3

Note: One BA/MGMT Courses may be selected with permission of the Program Coordinator.

Select one of the following options: 12

Option I: Capstone

MSA 691	Graduate Capstone Research Project	3
MSA Electives (500-600 Level)*		9

Option II: Thesis

MSA Electives (500-600 Level)*		6
MSA 700	Thesis	6

Total Credits 33

Aviation/Aerospace Safety Systems Specialization

MSAV Core Requirements		
Required Courses 12		
MSA 540	The Air Transportation System	3
MSA 545	Human Factors in the Aviation/Aerospace Industry	3
or MSA 554	Project Management in Aviation Aerospace	
MSA 662	Statistical Analysis for Aviation/Aerospace	3
MSA 670	Research Methods in Aviation/Aerospace	3
Specialization Requirements		
Select three of the following: 9		
MSA 516	Applications in Crew Resource Management	3
MSA 562	Situation Awareness and Performance in Aviation/Aerospace	3
MSA 608	Aviation/Aerospace Accident Investigation and Analysis	3
MSA 611	Aviation/Aerospace System Safety	3
MSA 619	Airport Certification and Operations Safety	3
MSA 621	Aviation/Aerospace Safety Program Management	3
Select one of the following options: 12		
Option I: Capstone		
MSA 691	Graduate Capstone Research Project	3
MSA Electives (500-600 Level)*		9
Option II: Thesis		
MSA Electives (500-600 Level)*		6
MSA 700	Thesis	6
Total Credit		33

Space Operations Specialization

MSAV Core Requirements		
Required Courses 12		
MSA 540	The Air Transportation System	3
MSA 545	Human Factors in the Aviation/Aerospace Industry	3
or MSA 554	Project Management in Aviation Aerospace	
MSA 662	Statistical Analysis for Aviation/Aerospace	3
MSA 670	Research Methods in Aviation/Aerospace	3
Specialization Requirements 9		
Select three of the following:		
MSA 511	Earth Observation and Remote Sensing	3
MSA 512	Space Mission and Launch Operations	3
MSA 513	Space Habitation and Life Support Systems	3
MSA 601	Applications in Space: Commerce, Defense, and Exploration	3
Select one of the following options: 12		
Option I: Capstone		
MSA 691	Graduate Capstone Research Project	3
MSA Electives (500-600 Level)*		9
Option II: Thesis		
MSA Electives (500-600 Level)*		6
MSA 700	Thesis	6
Total Credits		33

Uncrewed Systems Specialization

MSAV Core Requirements		
Required Courses 12		
MSA 540	The Air Transportation System	3

MSA 545	Human Factors in the Aviation/Aerospace Industry	3
or MSA 554	Project Management in Aviation Aerospace	
MSA 662	Statistical Analysis for Aviation/Aerospace	3
MSA 670	Research Methods in Aviation/Aerospace	3
Specialization Requirements		
Select three of the following: 9		
MSA 534	Application of Uncrewed Systems	3
MSA 535	Current Issues in Uncrewed Systems	3
MSA 538	Legal and Regulatory Issues in Uncrewed Systems	3
MSA 624	sUAS Operational Planning and Safety Management	3
MSA 625	Uncrewed Systems Interoperability and Control	3
MSA 635	Uncrewed Systems Operational Configuration	3
Select one of the following options: 12		
Option I: Capstone		
MSA 691	Graduate Capstone Research Project	3
MSA Electives (500-600 Level)*		9
Option II: Thesis		
MSA Electives (500-600 Level)*		6
MSA 700	Thesis	6
Total Credits		33