

# M.S. in Aviation

The Master of Science in Aviation, housed in the College of Aviation, includes coursework in behavioral sciences, data analysis, modeling and simulation, project management, systems integration, applied research, statistics, technology and a selected area of specialization.

At the **Daytona Beach Campus**, the Master of Science in Aviation includes coursework related to aviation operations, airport management, and aviation safety. The program includes access to laboratory and facility-based instruction. Students may complete either a thesis or a capstone research project. Specializations include Aviation/Aerospace Management and Sustainability, Aviation/Aerospace Operations, Aviation/Aerospace Safety Systems, Space Operations and Uncrewed Systems.

## Program-Level Student Learning Outcomes

### Students will:

- Apply mathematics, science, and applied sciences at a level appropriate to aviation-related disciplines at the master's level, including an adequate foundation in statistics.
- Assess the national and international aviation environment.
- Analyze and interpret data at the master's level.
- Make professional and ethical decisions.
- Engage in and recognize the need for life-long learning.
- Apply pertinent knowledge in identifying and solving problems.
- Apply advanced qualitative and quantitative problem-solving skills.
- Use the techniques, skills, and modern technology necessary for professional practice.
- Work effectively on multi-disciplinary and diverse teams.
- Apply knowledge of business sustainability to aviation issues.
- Communicate effectively, using both written and oral communication skills.
- Assess contemporary issues.

## Daytona Beach Program Requirements

|                      |           |
|----------------------|-----------|
| Core Requirements    | 12        |
| Specialization       | 9         |
| Option               | 12        |
| <b>Total Credits</b> | <b>33</b> |

### Core Requirements

|                      |                                                  |           |
|----------------------|--------------------------------------------------|-----------|
| ASCI 602             | The Air Transportation System                    | 3         |
| ASCI 604             | Human Factors in the Aviation/Aerospace Industry | 3         |
| or MSAV 554          | Project Management in Aviation/Aerospace         |           |
| MSAV 662             | Statistical Analysis for Aviation/Aerospace      | 3         |
| MSAV 670             | Research Methods in Aviation/Aerospace           | 3         |
| <b>Total Credits</b> |                                                  | <b>12</b> |

### Specializations

#### Aviation/Aerospace Management and Sustainability

|                                |                                                                  |   |
|--------------------------------|------------------------------------------------------------------|---|
| Choose Three of the Following: |                                                                  | 9 |
| AASI 600                       | Sustainable Aviation and Aerospace Perspectives                  |   |
| AMNT 609                       | Aircraft Maintenance Management                                  |   |
| MSAV 508                       | Advanced Airport Modeling                                        |   |
| MSAV 547                       | Leadership and Critical Decision Making in the Aviation Industry |   |

|          |                                                                          |
|----------|--------------------------------------------------------------------------|
| MSAV 573 | Agent-based Modeling (ABM) for Aerospace and Aviation Systems            |
| MSAV 636 | Advanced Aviation/Aerospace Planning Systems                             |
| MSAV 641 | Production and Procurement Management in the Aviation/Aerospace Industry |
| MSAV 642 | International Aviation Policy                                            |
| MSAV 644 | Integrated Logistics Support in Aviation/Aerospace                       |

One AVMG, MGMT, or SCLM course may be selected with permission of the Program Coordinator

**Total Credits** 9

#### Aviation/Aerospace Operations

Choose Three of the Following: 9

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

One AVMG, MGMT, or SCLM course may be selected with permission of the Program Coordinator

**Total Credits** 9

#### Aviation/Aerospace Safety Systems

Choose Three of the Following: 9

|          |                                                           |
|----------|-----------------------------------------------------------|
| ASCI 516 | Applications in Crew Resource Management                  |
| AVSF 611 | Aviation/Aerospace System Safety                          |
| MSAV 562 | Situation Awareness and Performance in Aviation/Aerospace |
| MSAV 608 | Aviation/Aerospace Accident Investigation and Analysis    |
| MSAV 619 | Airport Certification and Operations Safety               |
| MSAV 621 | Aviation/Aerospace Safety Program Management              |

**Total Credits** 9

#### Space Operations

Choose Three of the Following: 9

|          |                                                           |
|----------|-----------------------------------------------------------|
| MSAV 513 | Space Habitation and Life Support Systems                 |
| MSAV 601 | Applications in Space: Commerce, Defense, and Exploration |
| SPAC 505 | The Launch Industry                                       |
| SPAC 510 | The Satellite Communications Industry                     |
| SPAC 511 | Geospatial Analytics                                      |
| SPAC 512 | Human Spaceflight Industry                                |
| SPAC 515 | Cybersecurity Applications in Space                       |
| SPAC 520 | Principles of Space Systems                               |

**Total Credits** 9

#### Uncrewed Systems

Choose Three of the Following: 9

|          |                                                   |
|----------|---------------------------------------------------|
| UNSY 502 | Current Issues in Uncrewed and Autonomous Systems |
|----------|---------------------------------------------------|

|               |                                                                |   |
|---------------|----------------------------------------------------------------|---|
| UNSY 503      | Legal and Regulatory Issues in Uncrewed and Autonomous Systems |   |
| UNSY 504      | Application of Uncrewed and Autonomous Systems                 |   |
| UNSY 603      | Uncrewed and Autonomous Systems Operational Configuration      |   |
| UNSY 606      | Uncrewed and Autonomous Systems Interoperability and Control   |   |
| UNSY 620      | sUAS Operational Planning and Safety Management                |   |
| Total Credits |                                                                | 9 |

Options

Capstone Option

|                  |                           |    |
|------------------|---------------------------|----|
| MSAV 691         | Capstone Research Project | 3  |
| Open Electives * |                           | 9  |
| Total Credits    |                           | 12 |

\* Open Electives: 500-600 level course (AASI, AMNT, ASCI, AVSF, MSAV, SPAC, UNSY)

Thesis Option

|                  |                 |    |
|------------------|-----------------|----|
| MSAV 700         | Graduate Thesis | 6  |
| Open Electives * |                 | 6  |
| Total Credits    |                 | 12 |

\* Open Electives: 500-600 level course (AASI, AMNT, ASCI, AVSF, MSAV, SPAC, UNSY)

Suggested Plans of Study

Note: If MSAV 552 prerequisite is required, can substitute for Open Elective; with dual specialization MSAV 552 will become excess credits.

Capstone Option (Single Specialization)

Year One

| Requirements                                                | Credits |
|-------------------------------------------------------------|---------|
| ASCI 602 - The Air Transportation System                    | 3       |
| ASCI 604 - Human Factors in the Aviation/Aerospace Industry | 3       |
| MSAV 662 - Statistical Analysis for Aviation/Aerospace      | 3       |
| Semester Hours                                              | 9       |

| Requirements                                      | Credits |
|---------------------------------------------------|---------|
| MSAV 670 - Research Methods in Aviation/Aerospace | 3       |
| Specialization Course 1                           | 3       |
| Specialization Course 2                           | 3       |
| Semester Hours                                    | 9       |

Total Credits

Total Hours for All Requirements: 18

Year Two

| Requirements            | Credits |
|-------------------------|---------|
| Specialization Course 3 | 3       |
| Open Elective 1         | 3       |

|                 |   |
|-----------------|---|
| Open Elective 2 | 3 |
| Semester Hours  | 9 |

| Requirements                         | Credits |
|--------------------------------------|---------|
| Open Elective 3                      | 3       |
| MSAV 691 - Capstone Research Project | 3       |
| Semester Hours                       | 6       |

Total Credits

Total Hours for All Requirements: 15

Capstone Option (Dual Specialization)

Year One

| Requirements                                                | Credits |
|-------------------------------------------------------------|---------|
| ASCI 602 - The Air Transportation System                    | 3       |
| ASCI 604 - Human Factors in the Aviation/Aerospace Industry | 3       |
| MSAV 662 - Statistical Analysis for Aviation/Aerospace      | 3       |
| Semester Hours                                              | 9       |

| Requirements                                      | Credits |
|---------------------------------------------------|---------|
| MSAV 670 - Research Methods in Aviation/Aerospace | 3       |
| Specialization 1 Course 1                         | 3       |
| Specialization 1 Course 2                         | 3       |
| Semester Hours                                    | 9       |

Total Credits

Total Hours for All Requirements: 18

Year Two

| Requirements              | Credits |
|---------------------------|---------|
| Specialization 1 Course 3 | 3       |
| Specialization 2 Course 1 | 3       |
| Specialization 2 Course 2 | 3       |
| Semester Hours            | 9       |

| Requirements                         | Credits |
|--------------------------------------|---------|
| Specialization 2 Course 3            | 3       |
| MSAV 691 - Capstone Research Project | 3       |
| Semester Hours                       | 6       |

Total Credits

Total Hours for All Requirements: 15

Thesis Option (Single Specialization)

Year One

| Requirements                                                | Credits |
|-------------------------------------------------------------|---------|
| ASCI 602 - The Air Transportation System                    | 3       |
| ASCI 604 - Human Factors in the Aviation/Aerospace Industry | 3       |
| MSAV 662 - Statistical Analysis for Aviation/Aerospace      | 3       |
| Semester Hours                                              | 9       |

| Requirements                                      | Credits  |
|---------------------------------------------------|----------|
| MSAV 670 - Research Methods in Aviation/Aerospace | 3        |
| Specialization Course 1                           | 3        |
| Specialization Course 2                           | 3        |
| <b>Semester Hours</b>                             | <b>9</b> |

### Total Credits

Total Hours for All Requirements: 18

### Year Two

| Requirements               | Credits  |
|----------------------------|----------|
| Specialization Course 3    | 3        |
| Open Elective 1            | 3        |
| MSAV 700 - Graduate Thesis | 3        |
| <b>Semester Hours</b>      | <b>9</b> |

| Requirements               | Credits  |
|----------------------------|----------|
| Open Elective 2            | 3        |
| MSAV 700 - Graduate Thesis | 3        |
| <b>Semester Hours</b>      | <b>6</b> |

### Total Credits

Total Hours for All Requirements: 15

## Thesis Option (Dual Specialization)

### Year One

| Requirements                                                | Credits  |
|-------------------------------------------------------------|----------|
| ASCI 602 - The Air Transportation System                    | 3        |
| ASCI 604 - Human Factors in the Aviation/Aerospace Industry | 3        |
| MSAV 662 - Statistical Analysis for Aviation/Aerospace      | 3        |
| <b>Semester Hours</b>                                       | <b>9</b> |

| Requirements                                      | Credits  |
|---------------------------------------------------|----------|
| MSAV 670 - Research Methods in Aviation/Aerospace | 3        |
| Specialization 1 Course 1                         | 3        |
| Specialization 1 Course 2                         | 3        |
| <b>Semester Hours</b>                             | <b>9</b> |

### Total Credits

Total Hours for All Requirements: 18

### Year Two

| Requirements               | Credits  |
|----------------------------|----------|
| Specialization 1 Course 3  | 3        |
| Specialization 2 Course 1  | 3        |
| MSAV 700 - Graduate Thesis | 3        |
| <b>Semester Hours</b>      | <b>9</b> |

| Requirements               | Credits  |
|----------------------------|----------|
| Specialization 2 Course 2  | 3        |
| Specialization 2 Course 3  | 3        |
| MSAV 700 - Graduate Thesis | 3        |
| <b>Semester Hours</b>      | <b>9</b> |

### Total Credits

Total Hours for All Requirements: 18