

Ph.D. in Aviation

The Doctor of Philosophy (Ph.D.) in Aviation is designed for working professionals seeking to advance their knowledge and conduct research in aviation, contributing to the body of aviation knowledge. The program includes study across areas of aviation and supports development of research skills within the field.

At the **Daytona Beach Campus**, the program is structured through a flexible, primarily online and hybrid format that allows students to continue professional employment while pursuing doctoral education. The program consists of 60 graduate credit hours, including 36 credit hours of coursework, 6 credit hours of residency, and 18 credit hours dedicated to dissertation research. Coursework includes core courses, specialization courses and electives. Students complete a qualifying examination administered over a two-day period to assess subject mastery and readiness for dissertation research. The dissertation is conducted under the advisement of a Dissertation Advisory Committee and must be successfully completed and defended.

Students are required to complete three five-day on-campus residency seminars at the Daytona Beach Campus. These residencies include structured academic activities and provide opportunities for interaction with faculty, staff and other students, supporting preparation for subsequent phases of the program. Residency seminars are scheduled during mid-August. Applications, including all supporting documents, are due by February 1 for the August cohort. The School of Graduate Studies also offers a residential option for students who choose to complete required portions of the program on campus. Assistantship positions may be available to qualified residential students, subject to program resources and approval. Eligibility and continuation of assistantships are governed by University Academic Doctorate Policies.

Program-Level Learning Outcomes

Students will:

- Demonstrate mastery of seminal knowledge, foundational skills, and modern technology and tools in aviation disciplines (safety management, human factors, aviation operations, and intradisciplinary study).
- Pose and solve theory-based and research-based problems designed to advance applications in the field of aviation.
- Extend the aviation body of knowledge by conceiving, planning, producing, and communicating original research.
- Apply expertise in instructional processes.
- Demonstrate leadership, collaboration, and communication necessary for scholarly work in aviation.

Daytona Beach Program Requirements

Core Requirements	12
Area of Concentrations	24
Program Support Electives	
Residency Requirement	6
Qualifying Exam	
Dissertation Requirement	18
Total Credits	60

* The program consists of 60 graduate credit hours. Of those 60 hours, a minimum of 48 hours must be above a Master's degree, and a minimum of 54 hours must be completed at Embry-Riddle.

Core Requirements

All students are required to take the following core courses:

PDAV 721	Quantitative Research Methods in Aviation	3
PDAV 724	Advanced Quantitative Data Analysis - Data Mining and Modeling	3
PDAV 725	Research Methods in Aviation	3
PDAV 726	Quantitative and Qualitative Data Analysis	3
Total Credits		12

Program Support Electives

PDAV 712	Aviation Safety Management Systems	3
PDAV 715	Human Factors in Aviation	3
PDAV 716	Management of Systems Engineering in Aviation	3
PDAV 717	Instructional Design in Aviation	3
PDAV 719	Regulatory Environment of Aviation Safety	3
PDAV 732	Aviation Organizational Dynamics	3
PDAV 733	Multicultural Team Operations in Aviation	3
PDAV 734	Operations Research and Decision-Making	3
PDAV 735	Current Practices and Future Trends in Aviation	3
PDAV 736	Human-Centered Design in Aviation	3
PDAV 737	Topics in Safety Management Systems	3
Total Credits **		12-15

** Total Credits determined by the selected Area of Concentration.

Area of Concentrations

Option I: Aviation Safety

PDAV 712	Aviation Safety Management Systems	3
PDAV 716	Management of Systems Engineering in Aviation	3
PDAV 719	Regulatory Environment of Aviation Safety	3
PDAV 737	Topics in Safety Management Systems	3
Program Support Electives		12
Total Credits		24

Option II: Aviation Human Factors

PDAV 715	Human Factors in Aviation	3
PDAV 716	Management of Systems Engineering in Aviation	3
PDAV 736	Human-Centered Design in Aviation	3
Program Support Electives		15
Total Credits		24

Option III: Aviation Operations

PDAV 732	Aviation Organizational Dynamics	3
PDAV 733	Multicultural Team Operations in Aviation	3
PDAV 734	Operations Research and Decision-Making	3
PDAV 735	Current Practices and Future Trends in Aviation	3
Program Support Electives		12
Total Credits		24

Option IV: IntraDisciplinary

The Intradisciplinary Option is for students who wish to work outside of the traditional academic boundaries, combining coursework from any specialization, while meeting basic course requirements. Students will complete all four core courses and eight other courses.

Total Credits	24
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Residency Requirement

PDAV 701	Residency Seminar I	2
PDAV 702	Residency Seminar II	2
PDAV 703	Residency Seminar III	2
Total Credits		6

Qualifying Exam

Students must pass the Qualifying Examination to be admitted to candidacy. The exam is administered over a two-day period and tests the student’s mastery of completed course subject matter and preparation to conduct dissertation research.

Dissertation Requirement

PDAV 901	Dissertation Research 1	3
PDAV 902	Dissertation Research 2	3
PDAV 903	Dissertation Research 3	3
PDAV 904	Dissertation Research 4	3
PDAV 905	Dissertation Research 5	3
PDAV 906	Dissertation Research 6	3
Total Credits		18

Suggested Plan of Study

The presented study plan is an example only and is intended for illustrative purposes. Students should contact the PhD in Aviation Program and work with the Program Coordinator to develop their actual planning.

Option I: Aviation Safety

Year One

Requirements	Credits
PDAV 701 - Residency Seminar I	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 721 - Quantitative Research Methods in Aviation	3
PDAV 712 - Aviation Safety Management Systems	3
Semester Hours	6

Requirements	Credits
PDAV 725 - Research Methods in Aviation	3
PDAV 716 - Management of Systems Engineering in Aviation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Two

Requirements	Credits
PDAV 702 - Residency Seminar II	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 726 - Quantitative and Qualitative Data Analysis	3
PDAV 719 - Regulatory Environment of Aviation Safety	3
Semester Hours	6

Requirements	Credits
PDAV 724 - Advanced Quantitative Data Analysis - Data Mining and Modeling	3
PDAV 737 - Topics in Safety Management Systems	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Three

Requirements	Credits
PDAV 703 - Residency Seminar III	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
Dissertation	3
Elective Course 1	3
Elective Course 2	3
Semester Hours	9

Requirements	Credits
Dissertation	3
Elective Course 3	3
Elective Course 4	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 18

Year Four

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Option II: Aviation Human Factors

Year One

Requirements	Credits
PDAV 701 - Residency Seminar I	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 721 - Quantitative Research Methods in Aviation	3
PDAV 715 - Human Factors in Aviation	3
Semester Hours	6

Requirements	Credits
PDAV 725 - Research Methods in Aviation	3
PDAV 716 - Management of Systems Engineering in Aviation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Two

Requirements	Credits
PDAV 702 - Residency Seminar II	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 726 - Quantitative and Qualitative Data Analysis	3
PDAV 736 - Human-Centered Design in Aviation	3
Semester Hours	6

Requirements	Credits
PDAV 724 - Advanced Quantitative Data Analysis - Data Mining and Modeling	3
Elective Course 1	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Three

Requirements	Credits
PDAV 703 - Residency Seminar III	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
Dissertation	3
Elective Course 2	3
Elective Course 3	3
Semester Hours	9

Requirements	Credits
Dissertation	3
Elective Course 4	3

Elective Course 5	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 18

Year Four

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Option III: Aviation Operations**Year One**

Requirements	Credits
PDAV 701 - Residency Seminar I	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 721 - Quantitative Research Methods in Aviation	3
PDAV 732 - Aviation Organizational Dynamics	3
Semester Hours	6

Requirements	Credits
PDAV 725 - Research Methods in Aviation	3
PDAV 733 - Multicultural Team Operations in Aviation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Two

Requirements	Credits
PDAV 702 - Residency Seminar II	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 726 - Quantitative and Qualitative Data Analysis	3
PDAV 734 - Operations Research and Decision-Making	3
Semester Hours	6

Requirements	Credits
PDAV 724 - Advanced Quantitative Data Analysis - Data Mining and Modeling	3
PDAV 735 - Current Practices and Future Trends in Aviation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Three

Requirements	Credits
PDAV 703 - Residency Seminar III	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
Dissertation	3
Elective Course 1	3
Elective Course 2	3
Semester Hours	9

Requirements	Credits
Dissertation	3
Elective Course 3	3
Elective Course 4	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 18

Year Four

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Option IV: Intradisciplinary

Year One

Requirements	Credits
PDAV 701 - Residency Seminar I	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 721 - Quantitative Research Methods in Aviation	3

Elective Course 1	3
Semester Hours	6

Requirements	Credits
PDAV 725 - Research Methods in Aviation	3
Elective Course 2	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Two

Requirements	Credits
PDAV 702 - Residency Seminar II	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
PDAV 726 - Quantitative and Qualitative Data Analysis	3
Elective Course 3	3
Semester Hours	6

Requirements	Credits
PDAV 724 - Advanced Quantitative Data Analysis - Data Mining and Modeling	3
Elective Course 4	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12

Year Three

Requirements	Credits
PDAV 703 - Residency Seminar III	2
Semester Hours	2

Total Credits

Total Hours for All Requirements: 2

Requirements	Credits
Dissertation	3
Elective Course 5	3
Elective Course 6	3
Semester Hours	9

Requirements	Credits
Dissertation	3
Elective Course 7	
Elective Course 8	
Semester Hours	3

Total Credits

Total Hours for All Requirements: 12

Year Four

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Requirements	Credits
Dissertation	3
Dissertation	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12