

M.S. in Data Science

Daytona Beach Program Requirements

Core Requirements	15
Specialization	9-12
Option	3
Total Credits	30

Core Requirements

DSCI 500	Database and Information Retrieval	3
DSCI 540	Data Mining	3
DSCI 544	Data Visualization	3
DSCI 615	Data Modeling	3
MATH 506	Probability and Statistical Inference	3
Total Credits		15

Specialization

High-Performance Computing and Big Data

Choose Four of the Following:		
MATH 510	Fundamentals of Optimization	3
SCLM 511	Operations Research	3
DSCI 505	Statistics for Data Science	3
MATH 532	Numerical Linear Algebra for Engineers	3
DSCI 625	Data Compression for Image and Signal Processing	3
MATH 553	High Performance Scientific Computing	3
DSCI 565	Data-Intensive Distributed Computing	3
DSCI 635	Generative Data Modeling	3
DSCI 645	Reinforcement Learning for Intelligent Decision Systems	3
Total Credits		12

Aerospace Engineering

Choose Four of the Following:		
AERO 504	Advanced Compressible Flow	3
AERO 515	Introduction to the Finite Element Method	3
AERO 516	Computational Aeronautical Fluid Dynamics	3
AERO 521	Viscous Flow	3
AERO 522	Analysis of Aircraft Composite Materials	3
AERO 523	Linear Systems	3
AERO 527	Modern Control Systems	3
AERO 528	Advanced Incompressible Aerodynamics	3
AERO 544	Analytical Dynamics	3
MECH 548	Introduction to Continuum Mechanics	3
MATH 532	Numerical Linear Algebra for Engineers	3
Total Credits		12

Aviation Business

Choose Four of the Following:		
ACCT 517	Accounting for Decision Making	3
SCLM 511	Operations Research	3
ECON 523	Advanced Aviation Economics	3
BUAN 610	Airline Optimization and Simulation Systems	3
BUAN 612	Data Analytics for Aviation Business	3
AVMG 645	Airport Operations and Management	3
FINE 520	Managerial Finance	3
FINE 621	International Aviation Finance	3

FINE 623	Aircraft Funding Legal and Financial Analysis	3
FINE 624	Aircraft Transaction and Risk Modeling	3
Total Credits		12

Cybersecurity

Choose Four of the Following:		
CPSC 525	Current Topics in Cybersecurity	3
CPSC 527	System Exploitation and Penetration Testing	3
CPSC 528	Multi-Agent Systems	3
CPSC 529	Computer Security	3
CPSC 532	Software Security Assessment	3
CPSC 538	Applied Cryptography	3
CPSC 602	Big Data Analytics for Cybersecurity	3
DSCI 625	Data Compression for Image and Signal Processing	3
DSCI 565	Data-Intensive Distributed Computing	3
Total Credits		12

Aviation Safety

Choose Four of the Following:		
ASCI 604	Human Factors in the Aviation/Aerospace Industry	3
AVSF 611	Aviation/Aerospace System Safety	3
AVSF 612	Aviation/Aerospace Industrial Safety Management	3
MSAV 608	Aviation/Aerospace Accident Investigation and Analysis	3
MSAV 621	Aviation/Aerospace Safety Program Management	3
AVSF 627	Aviation Safety Data Management and Analysis	3
ASCI 693	Current Research Problems in Aviation/Aerospace	3
MSAV 628	Data Analytics for Aviation Safety	3
Total Credits		12

Human Factors and Bioinformatics

Choose Four of the Following:		
HFCT 501	Human Factors in Systems	3
HFCT 515	Ergonomics for Human Factors	3
HFCT 614	Human Factors in Medicine	3
HFCT 615	Sensation and Perception for Human Factors	3
HFCT 620	Memory and Cognition	3
HFCT 627	User Experience	3
HFCT 635	Human-Computer Interaction	3
HFCT 526	Aerospace Physiology	3
HFCT 500-Level Course (Approved by Program Coordinator)		3
Total Credits		12

Intelligence and Security

Choose Four of the Following:		
MHSR 500	Introduction to Human Security	3
MHSR 511	Cybersecurity, Governance, and Human Security	3
MHSR 515	International Law and U.S. Security Policy	3
MHSR 520	Principles of International Conflict Resolution	3
MHSR 530	Environmental Security	3
HLSC 550	Advanced Topics in Terrorism	3
INTL 502	Data Analytics for Counterterrorism	3
INTL 505	Intelligence and Emerging Security Issues	3
INTL 500-Level (Approved by Program Coordinator)		3

HLSC 500-Level (Approved by Program Coordinator)	3
Total Credits	12

Option

Thesis Option

DSCI 700	Graduate Thesis *	6
Total Credits		6

Graduate Research Option

DSCI 690	Graduate Research Project in Data Science	3
Total Credits		3

Internship Option

COIN 696	Graduate Internship **	3
Total Credits		3

* Thesis need to be taken for 6 credits, 3 credits of which will replace one elective from chosen track

** A second internship may be approved for another 3 credits to replace one elective from chosen track

Suggested Plan of Study

Year One

Requirements	Credits
MATH 506 - Probability and Statistical Inference	3
DSCI 544 - Data Visualization Specilization	3
Semester Hours	9

Requirements	Credits
DSCI 500 - Database and Information Retrieval	3
DSCI 540 - Data Mining Specialization	3
Semester Hours	9

Total Credits

Total Hours for All Requirements: 18

Year Two

Requirements	Credits
DSCI 615 - Data Modeling	3
Specialization or Option	3
Semester Hours	6

Requirements	Credits
Specialization or Option	3
Option	3
Semester Hours	6

Total Credits

Total Hours for All Requirements: 12