

Five Year Plan Update

			Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022
Rotorcraft												
Staff	631	Helicopter Aerodynamics I	X		X		X		X		X	
Chopra	633	Helicopter Dynamics		X		X		X		X		X
Datta	788R	Helicopter Dynamics II	X		X		X		X		X	
Chopra	634	Helicopter Design		X		X		X		X		X
Celi	635	Helicopter Stability & Control				X				X		
Flight Dynamics & Control												
Sanner	641	Linear System Dynamics	X		X		X		X		X	
Faruque	642	Atmospheric Flight Control		X				X				X
Paley/Bauchau	646*	Advanced Dynamics of Aero Systems		X		X		X		X		X
Bauchau	647	Flexible Multibody Dynamics			X			X				
Faruque	742	Robust Multivariable Control				X				X		
Paley	743	App. NL Control of Aerospace Vehicles		X				X				X
Staff	788B	Aircraft System Identification			X			X				
Sanner	788K	Est. & Control of Stochastic Systems	X		X		X		X		X	
Structures												
Chopra	651	Smart Structures	X		X		X		X		X	
Lee	652	Computational Structural Mechanics		X		X		X		X		X
Lee	653	Nonlinear Finite Element Analysis			X				X			
Wereley/Bauchau	654	Mechanics of Composite Structures		X		X		X		X		X
Bauchau	655	Structural Dynamics	X		X		X		X		X	
Haas	656	Aeroelasticity				X				X		
Hubbard/Bauchau	757	Advanced Structural Dynamics		X				X				X
Flatau	788E	Electro-Mechanical System Modeling		X				X				X
Hubbard	788M	Introduction to Morphing Aircraft			X			X				
Wereley	788W	Smart Fluids and Applications		X				X				X
Bauchau	788P	Analysis of Structural Elements	X		X		X		X		X	
Aerodynamics & Propulsion												
Sedwick	663	Intro to Plasmas for Space Prop/Powr		X				X				X
Yu	665	Advanced Airbreathing Propulsion		X		X		X		X		X
Sedwick	667	Adv. Space Propulsion and Power			X			X		X		
Cadou	673	Aerodynamics of Incompressible Fluids	X		X		X		X		X	
Cadou	674	Aerodynamics of Compressible Fluids		X		X		X		X		X
Jones	675*	Unsteady and Inviscid Aerodynamics			X			X				
Martin	676	Turbulence				X				X		
Laurence	682	Hypersonic Aerodynamics		X				X				X
Laurence	683	High Temperature Gasdynamics				X				X		
Baeder	684	Computational Fluid Dynamics I	X		X		X		X		X	
Baeder	685	Computational Fluid Dynamics II		X		X		X		X		X
Oran	788A	Fundamentals of Explosions I	X		X		X		X		X	
Oran	788J/Y	Fundamentals of Explosions II		X		X		X		X		X
Space Systems												
Hartzell	601	Astroynamics	X		X		X		X		X	
Mitchell	602	S/C Attitude Dynamics & Control				X				X		
Hraster	691	Satellite Design				X				X		
Carignan/Akin	692	Intro to Space Robotics	X				X				X	
Israel	694	Spacecraft Communications		X				X				X
Silk	696	Spacecraft Thermal Design		X				X				X
Akin	697	Space Human Factors & Life Support				X				X		
Barbee	741	Interplanetary Navigation & Guidance				X				X		
Akin	788D	Advanced Space Systems Design	X		X		X		X		X	
Barbee	603*	Near-Earth Object Exploration	X		X		X		X		X	
Akin	788X	Planetary Surface Robotics			X				X			
Akin	791	Launch & Entry Vehicle Design		X				X				X
Other												
Celi	681	Engineering Optimization			X				X			
SUSPENDED	788O	Emerging Challenges in Aerospace										
		ENAE646 formerly ENAE788G										
		ENAE647 formerly ENAE788Q										
		ENAE655 formerly ENAE672; ENAE603 formerly 788N										
NOTE: Schedule subject to change without notice.												

Courses outside the Department of Aerospace Engineering

As described in the aerospace department graduate guide, MS students may take courses outside the department to satisfy their graduate course requirements. PhD students are required to take not less than 9 semester hours of coursework emphasizing mathematics, physical sciences, life sciences, or computer sciences. *All courses must be approved by the student's faculty adviser to officially be accepted as part of his/her graduate program.*

Below are a list of programs available at the University of Maryland that students have drawn courses from to include in their graduate plan of study. Each program name is hyperlinked to their corresponding course listings. Please consult the department websites or Testudo to see when specific courses are offered.

Engineering

[Bioengineering \(BIOE\)](#)
[Chemical and Biomolecular Engineering \(CHBE\)](#)
[Civil and Environmental Engineering \(ENCE\)](#)
[Electrical & Computer Engineering \(ENEE\)](#)
[Fire Protection Engineering \(ENFP\)](#)
[Materials Science and Engineering \(ENMA\)](#)
[Mechanical Engineering \(ENME\)](#)
[Reliability Engineering \(ENRE\)](#)
[Systems Engineering \(ENSE\)](#)

Outside Engineering

[Applied Mathematics & Scientific Computation \(AMSC\)](#)
[Astronomy \(ASTR\)](#)
[Atmospheric and Oceanic Science \(AOSC\)](#)
[Biological Sciences \(BISI\)](#)
[Computer Science \(CMSC\)](#)
[Kinesiology \(KNES\)](#)
[Mathematical Statistics \(STAT\)](#)
[Mathematics \(MATH\)](#)
[Neuroscience & Cognitive Science \(NACS\)](#)
[Physics \(PHYS\)](#)