Daniel Guggenheim School of Aerospace Engineering Tentative 5-Year Course Plan*

*Note: This schedule is subject to change at any time based on instructor availability and registration demands. For the most accurate list of course offerings for the present and next semester go to oscar.gatech.edu.

Subject	Course	Title	Curriculum Type	2023-24 Fall	2023-24 Spr	2023-24 Sum	2024-25 Fall	2024-25 Spr	2024-25 Sum	2025-26 Fall	2025-26 Spr	2025-26 Sum	2026-27 Fall	2026-27 Spr	2026-27 Sum	2027-28 Fall	2027-28 Spr	2027-28 Sum	2028-29 Fall	2028-29 Spr	2028-29 Sum	2029-30 Fall	2029-30 Spr	2029-30 Sum
COE	2001	Introduction to Mechanics (Statics)	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
COE	3001	Deformable Bodies	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	1355	Design Competition I	Elective	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	1601	Introduction to AE	Required	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	2010	Thermodynamics and Fluids Fundamentals	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	2011	Fluids Fundamentals	Required (Bridge)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	2220	Dynamics	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	2221	3D Dynamics	Required (Bridge)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	2355	Aerospace Systems Design Competition II	Elective	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	2610	Introduction to Experimental Methods in Aerospace	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	2611	Technical Communications for Aerospace Engineers	Required	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	3030	Aerodynamics	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	3140	Structural Analysis	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	3330	Introduction to Aerospace Vehicle Performance	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	3355	Aerospace Systems Design Competition III	Elective	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	3530	System Dynamics and Vibration	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	3531	Control System Analysis and Design	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	3610	Experiments in Fluid and Solid Mechanics	Required	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4040	Computational Fluid Dynamics	AE Option	x			x			x			x			x			x					
AE	4071	Rotorcraft Aeromechanics	AE Option	x			x			x			x			x			x					
AE	4080	Aerothermodynamics	AE Option	x			x			x			x			x			x					
AE	4132	Finite Element Analysis	AE Option		x			x			x			x			x			x			x	
AE	4220	Structural Dynamics and Aeroelasticity	AE Option		x			x			x			x			x			x			x	
AE	4311	Aircraft Design I	Required (FW)	x			x	x		x	x		x	x		x	x		x	x		x	x	
AE	4312	Aircraft Design II	Required (FW)		x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4321	Space System Design I	Required (Space)	x			x	x		x	x		x	x		x	x		x	x		x	x	
AE	4322	Space System Design II	Required (Space)		x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4331	Rotorcraft Design I	Required (RC)	x			x	x		x	x		x	x		x	x		x	x		x	x	
AE	4332	Rotorcraft Design II	Required (RC)		x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4355	Aerospace Systems Design Competition IV	Elective	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4361	Space Flight Operations	AE Option		x			x			x			x			x			x			x	
AE	4451	Jet and Rocket Propulsion	Required	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
AE	4453	Advanced Aircraft Propulsion	AE Option	x						x						x						x		
AE	4531	Aircraft Flight Dynamics	Required (FW)	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4532	Spacecraft Flight Dynamics	Required (Space)	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4580	Introduction to Avionics Integration	AE Option	x									x									x		
AE	4610	Dynamics and Control Laboratory	Required	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	4701	Wind Engineering	AE Option			x						x						x						x
AE	4760	Engineering Acoustics and Noise Control	AE Option	x			x			x			x			x			x					
AE	4791	Mechanical Behavior of Composites	AE Option	x			x			x			x			x			x					
AE	4793	Composite Materials and Processes	AE Option		x			x			x			x			x			x			x	
AE	4803	Configuration Aerodynamics and Flight Performance	AE Option		x			x			x			x			x			x			x	
AE	4803	Flight Test Engineering	AE Option		x			x			x			x			x			x			x	
AE	4803	Introduction to Safety by Design and Accident Causation	AE Option	x			x			x			x			x			x			x		
AE	4803	Numerical Analysis and Algorithms	AE Option		x			x			x			x			x			x			x	
AE	4803	Planetary Spacecraft Development	AE Option	x			x			x			x			x			x			x		
AE	4803	Robotics and Autonomy	AE Option	x			x			x			x			x			x			x		
AE	4803	Space Instrumentation for Life Detection	AE Option		x			x			x			x			x			x			x	
AE	4806	Space Hardware Laboratory	AE Option	x			x			x			x			x			x			x		
AE	6009	Viscous Fluid Flow	PhD Quals	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6012	Turbulent Flows	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6015	Advanced Aerodynamics	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6030	Unsteady Aerodynamics	Elective	x-DL						x-DL						x-DL						x-DL		
AE	6042	Computational Fluid Dynamics	Elective		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6050	Gas Dynamics	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6060	Aeroacoustics	Elective				x-DL						x-DL						x-DL					
AE	6072	Advanced Aerodynamics for Vertical Lift	Elective				x-DL						x-DL						x-DL			X-DL		
AE	6080	Dynamics of Turbulence	Elective				x						x						x					
AE	6100	Structural Stability I	Elective	x-DL						x-DL						x-DL						x-DL		
AE	6114	Fundamentals of Solid Mechanics	PhD Quals	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6115	Fundamentals of Aerospace Structural Analysis	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6170	Structural Optimization	Elective	x-DL						x-DL						x-DL						x-DL		
AE	6200	Advanced Aeroelasticity I	Elective		x-DL						x-DL						x-DL						x-DL	
AE	6210	Advanced Dynamics I	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6220	Rotorcraft Structural Dynamics and Aeroelasticity	Elective					x-DL						x-DL						x-DL				
AE	6230	Structural Dynamics	PhD Quals	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6310	Optimization for the Design of Engineered Systems	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6333	Rotorcraft Design I	PhD Quals	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6334	Rotorcraft Design II	Elective		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6343	Aircraft Design I	PhD Quals	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6344	Aircraft Design II	Elective		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6353	Orbital Mechanics	PhD Quals	x-DL	x-DL		x-DL	x-DL		x-DL	x-DL		x-DL	x-DL		x-DL	x-DL		x-DL	x-DL			x-DL	
AE	6355	Planetary Entry, Descent and Landing	Elective					x-DL									x-DL							x-DL
AE	6356	Spacecraft Attitude Estimation and Control	Elective				x-DL						x-DL											
AE	6357	Satellite Orbit Determination	Elective					x-DL						x-DL										
AE	6361	Air Breathing Propulsion System Design I	Elective					x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6362	Safety by Design	Elective			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL
AE	6372	Aerospace Systems Engineering	Elective	x-DL	x-DL	x-DL	x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6373	Advanced Design Methods I	Elective	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6383	Applied Design Laboratory	Elective	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6393	Introduction to System of Systems Engineering Principles	Elective	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6394	System of Systems Engineering Applications	Elective					x-DL						x-DL						x-DL				
AE	6410	Combustion Dynamics	Elective																					
AE	6412	Turbulent Combustion	Elective		x-DL						x-DL						x-DL						x-DL	
AE	6450	Rocket Propulsion	Elective					x-DL						x-DL						x-DL				
AE	6451	Electric Propulsion	Elective	x-DL						x-DL						x-DL								
AE	6503	Rotorcraft Stability and Control	Elective					x-DL						x-DL										
AE	6505	Random Processes and Kalman Filtering	Elective								x-DL						x-DL						x-DL	
AE	6511	Optimal Guidance and Control	Elective	x-DL						x-DL						x-DL						x-DL		
AE	6512	Mathematical Principles of Planning and Decision-Making for Autonomy	Elective								x						x							
AE	6520	Advanced Flight Dynamics	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6530	Multivariable Linear Systems and Control	PhD Quals	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6551	Cognitive Engineering	Elective				x-DL						x-DL											
AE	6580	Nonlinear Control	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6701	Wind Engineering	Elective		x-DL	x-DL					x-DL	x-DL					x-DL	x-DL					x-DL	x-DL
AE	6705	Introduction to Mechatronics	Elective	x			x			x			x			x			x			x		
AE	6721	Evaluation of Human Integrated Systems	Elective	x-DL						x-DL						x-DL						x-DL		
AE	6760	Acoustics I	Elective	x-DL						x-DL						x-DL						x-DL		
AE	6761	Acoustics II	Elective		x-DL						x-DL						x-DL						x-DL	
AE	6762	Applied Acoustics	Elective																					
AE	6765	Kinetics and Thermodynamics of Gases	PhD Quals	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL					
AE	6766	Combustion	PhD Quals		x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL	
AE	6769	Linear Elasticity	Elective		x			x			x			x			x			x			x	
AE	7741	Robotics Professional Preparation I	Elective	x			x			x			x			x			x			x		
AE	7742	Robotics Professional Preparation II	Elective		x			x			x			x			x			x			x	
AE	7743	Robotics Professional Preparation III	Elective	x			x			x			x			x			x			x		
AE	7772	Fundamentals of Fracture Mechanics	Elective		x			x			x			x			x			x			x	
AE	7774	Fatigue of Materials and Structures	Elective		x			x			x			x			x			x			x	
AE	7785	Introduction to Robotics Research	Elective																					
AE	8002	AE Graduate Seminar	Required	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	8741	Robotics Capstone Project	Elective	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	8750	Robotics Research Foundation I	Elective	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	8751	Robotics Research Foundation II	Elective	x	x		x	x		x	x		x	x		x	x		x	x		x	x	
AE	8801	Bioastronautics	Elective	x																				
AE	8803	Advanced Nonlinear Control	Elective					x												x				
AE	8813	Aerospace Propulsion Laboratory	Elective				x						x						x					
AE	8803	Airline Revenue Management	Elective	x									x											
AE	8803	Hamiltonian Mechanics in Space Dynamics	Elective	x									x											
AE	8803	Hydrokinetic Turbine Systems	Elective					x-DL						x-DL						x-DL				
AE	8803	Intelligent Cyber Physical Systems	Elective					x-DL						x-DL						x-DL				
AE	8803	Logistical Planning Methods and Their Application in Space Mission Design	Elective		x-DL						x-DL						x-DL							x-DL
AE	8803	Low Gravity Fluid Mechanics	Elective							x-DL									x-DL					
AE	8803	Model Reduction	Elective		x						x						x						x	
AE	8803	Numerical Analysis and Algorithms	Elective		x-DL						x-DL						x-DL						x-DL	
AE	8803	Optical Navigation	Elective	x						x						x						x		
AE	8803	Optimal Transport Theory and Applications	Elective					x-DL						x-DL										
AE	8803	Optimization Based Learning Control and Games	Elective	x-DL						x-DL						x-DL						x-DL		
AE	8803	Planetary Spacecraft Development	Elective	x						x														
AE	8803	Rotorcraft Aeromechanics	Elective	x-DL						x-DL						x-DL						x-DL		
AE	8803	Smart Cities Workshop	Elective	x-DL			x-DL			x-DL			x-DL			x-DL			x-DL			x-DL		
AE	8803	Space Instrumentation for Life Detection	Elective					x-DL									x-DL							
AE	8883	Spacecraft Engineering I	Elective																					
AE	8883	Spacecraft Engineering II	Elective				x						x						x					