

2024 - 2025 Major Map

Aerospace Engineering (Autonomous Vehicle Systems), BSE

School/College: [Ira A. Fulton Schools of Engineering](#)
ESAEAVSBSE

Term 1 0 - 16 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 265: Calculus for Engineers I (MATH OR MA)	3	C	- ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students. - FSE 100 required for first-year students and should be completed in the first semester. Non-first-year students: see advisor for petitioning replacement electives. - If ENG 105 is taken, a three hour applicable elective must also be taken prior to graduation. See advisor. - Prep for success using the First-Year Student Guide. - Join a Fulton community. - Explore engineering and technical professions.
ASU 101-AEE: The ASU Experience	1		
CHM 114: General Chemistry for Engineers (SCIT OR SQ) OR CHM 116: General Chemistry II (SCIT OR SQ)	4	C	
ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition	3	C	
FSE 100: Introduction to Engineering	2	C	
Humanities, Arts and Design (HUAD)	3		
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		

Term 2 16 - 32 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 242: Elementary Linear Algebra	2	C	- Create a Handshake profile. - Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
 MAT 266: Calculus for Engineers II (MATH OR MA)	3	C	
 PHY 121: University Physics I: Mechanics (SCIT OR SQ)	3	C	
 PHY 122: University Physics Laboratory I (SCIT OR SQ)	1	C	
ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition	3	C	
MAE 215: Introduction to Programming in MATLAB	1	C	
Sustainability (SUST)	3		
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		

Term 3 32 - 46 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAE 201: Mechanics of Particles and Rigid Bodies I: Statics	3	C	- Prep for success using the Sophomore Guide. - Create a technical resume.
 MAT 267: Calculus for Engineers III (MATH OR MA)	3	C	
 MAT 275: Modern Differential Equations (MATH OR MA)	3	C	
 PHY 131: University Physics II: Electricity and Magnetism (SCIT OR SQ)	3	C	

PHY 132: University Physics Laboratory II (SCIT OR SQ)	1	C
MAE 214: Computer-Aided Engineering I	1	C
Complete CHM 114 OR CHM 116 course(s).		
Complete First-Year Composition requirement.		
Minimum 2.00 GPA ASU Cumulative.		
Complete Mathematics (MATH) requirement.		
Term hours subtotal:	14	

Term 4 46 - 62 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
MAE 202: Mechanics of Particles and Rigid Bodies II: Dynamics	3	C	- Pursue an undergraduate research experience. - Apply for internships. - Attend career fairs and events.
MAE 213: Mechanics of Materials	3	C	
MAE 242: Introduction to Fluid Mechanics	3	C	
EEE 202: Circuits I	4	C	
MAE 384: Advanced Mathematical Methods for Engineers (QTRS OR CS)	3	C	
Term hours subtotal:	16		

Term 5 62 - 78 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
AEE 360: Aerodynamics (L)	3	C	- Plan for success using the Junior Guide. - Network at student organization competitions or professional societies.
AEE 361: Aerodynamics Laboratory (L)	1	C	
MAE 241: Introduction to Thermodynamics	3	C	
MAE 301: Applied Experimental Statistics	3	C	
MAE 318: System Dynamics and Control I	3	C	
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	16		

Term 6 78 - 93 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
AEE 313: Aircraft Dynamics and Control	3	C	- Research and prepare for graduate school. - Apply for an engineering 4+1 program. - Develop a professional profile online.
AEE 325: Aerospace Structures and Materials	3	C	
AEE 362: High-Speed Aerodynamics (L)	3	C	
Upper Division AVS Technical Elective	3	C	
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	15		

Term 7 93 - 108 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
AEE 478: Fundamentals of Autonomous Aircraft Systems	3	C	- Choose an Upper Division SOBE Track Course from the list at the bottom of the major map. - Plan for success using the Senior Guide. - Use Handshake to apply for full-time positions. - Complete an in-person or virtual practice interview.
AEE 463: Aircraft Propulsion	3	C	
Upper Division AVS Technical Elective	3	C	
Upper Division SOBE Track Course	3		
American Institutions (AMIT)	3		
Term hours subtotal:	15		

Term 8 108 - 120 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
AEE 479: Design of Autonomous Aircraft Systems	3	C	
AEE 462: Space Vehicle Dynamics and Control	3	C	

Upper Division AVS Technical Elective	3	C
Global Communities, Societies and Individuals (GCSI)	3	
Term hours subtotal:	12	

Hide Course List(s)/Track Group(s)

AVS Technical Elective	Upper Division SOBE Track Course
EEE 203: Signals and Systems I	PAF 311: Leadership and Change (SOBE OR SB)
EEE 304: Signals and Systems II	PAF 410: Building Leadership Skills (SOBE OR SB)
EEE 350: Random Signal Analysis	POS 301: Empirical Political Inquiry (SOBE OR SB)
EEE 455: Communication Systems	STS 304: Science, Technology and Society (SOBE OR SB)
EEE 459: Communication Networks	SWU 349: Stress Management Tools II (SOBE OR SB)
EEE 480: Feedback Systems	SWU 350: Whole Person Health Across the Lifespan (SOBE OR SB)
EEE 481: Computer-Controlled Systems	
EEE 582: Linear System Theory	
MAE 417: System Dynamics and Control II	
MAE 451: Applied Machine Learning for Mechanical and Aerospace Engineers	
MAE 494: Guidance and Navigation of Aerospace Vehicles	
MAE 506: Advanced System Modeling, Dynamics, and Control	
By approval only:	
MAE 492: Honors Directed Study	
MAE 493: Honors Thesis (L)	
MAE 499: Individualized Instruction	
*Students who do not meet the enrollment requirements for these courses may be allowed to enroll with instructor consent. Courses not listed here require a program petition. To take any 494 class, please check with your advisor first.	

- **Total Hours:** 120
- **Upper Division Hours:** 45 minimum
- **University Undergraduate Graduation Requirements**

Notes:

Mathematics Placement Assessment score determines placement in first mathematics course.

General Studies designations listed next to courses on the major map were valid for the 2024 - 2025 academic year. Please refer to the course catalog for current General Studies designations at time of class registration. General Studies credit is applied according to the designation the course carries at the time the class is taken.