













# 2017 - 2018 Major Map






## Aerospace Engineering (Autonomous Vehicle Systems), BSE

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





Term 1 0 - 16 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (SQ)	4	C	<ul style="list-style-type: none"> <li>An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses.</li> <li>ASU Mathematics Placement Test score determines placement in mathematics course.</li> <li>ASU 101 or college-specific equivalent First-Year Seminar required of all freshman students.</li> <li>ASU 101-AEE and FSE 100 required for freshmen and should be completed first semester. Non-freshmen: see advisor for petitioning replacement electives.</li> <li>If ENG 105 taken, a 3 hr applicable elective must also be taken prior to graduation. See advisor.</li> <li>Prep for success using the <a href="#">Freshman Guide</a>.</li> <li>Join a <a href="#">Fulton community</a>.</li> <li>Explore <a href="#">engineering and technical professions</a>.</li> </ul>
 MAT 265: Calculus for Engineers I (MA)	3	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	
ASU 101-AEE: The ASU Experience	1		
FSE 100: Introduction to Engineering	2	C	
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		

Term 2 16 - 32 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 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	<ul style="list-style-type: none"> <li>Create a <a href="#">Handshake</a> profile.</li> <li>Get involved with EPICS, the Generator Labs, and the <a href="#">Fulton Start-Up Center</a>.</li> </ul>
 MAT 242: Elementary Linear Algebra	2	C	
 MAT 266: Calculus for Engineers II (MA)	3	C	
 PHY 121: University Physics I: Mechanics (SQ)	3	C	
 PHY 122: University Physics Laboratory I (SQ)	1	C	
MAE 215: Introduction to Programming in MATLAB	1	C	
Social-Behavioral Sciences (SB) AND Global Awareness (G)	3		
 Minimum 2.00 GPA ASU Cumulative.			
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	16		



Term 3 32 - 48 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum	Notes
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		Grade	
	MAE 201: Mechanics of Particles and Rigid Bodies I: Statics	3	C
	MAT 267: Calculus for Engineers III (MA)	3	C
	MAT 275: Modern Differential Equations (MA)	3	C
	PHY 131: University Physics II: Electricity and Magnetism (SQ)	3	C
	EEE 202: Circuits I	4	C
	Minimum 2.00 GPA ASU Cumulative.		
	Complete Mathematics (MA) requirement.		
Term hours subtotal:		16	



- Prep for success using the [Sophomore Guide](#).
- Consult the [Resume, Presentation, and Resource Library](#) for tips on how to create a technical resume, job shadow, do informational interviews and mentor with alumni.

Term 4 48 - 62 Credit Hours  Critical course signified by	Hours	Minimum Grade	Notes
	MAE 202: Mechanics of Particles and Rigid Bodies II: Dynamics	3	C
	MAE 213: Solid Mechanics	3	C
	MAE 242: Introduction to Fluid Mechanics	3	C
	PHY 132: University Physics Laboratory II (SQ)	1	C
	MAE 214: Computer-Aided Engineering I	1	C
	MAE 384: Advanced Mathematical Methods for Engineers (CS)	3	C
Term hours subtotal:		14	

- Pursue an undergraduate research experience.
- Apply for internships.
- Attend [career fairs and events](#).

Term 5 62 - 76 Credit Hours  Necessary course signified by	Hours	Minimum Grade	Notes
	AEE 360: Aerodynamics (L)	4	C
	MAE 241: Introduction to Thermodynamics	3	C
	MAE 301: Applied Experimental Statistics	3	C
	MAE 318: System Dynamics and Control I	4	C
Term hours subtotal:		14	

- Both AEE 360 and AEE 362 must be taken to secure Literacy and Critical Inquiry (L) General Studies credit.
- Plan for success using the [Junior Guide](#).
- Network at [student organization](#) competitions or professional societies.

Term 6 76 - 93 Credit Hours  Necessary course signified by	Hours	Minimum Grade	Notes
	AEE 313: Aircraft Dynamics and Control	3	C
	AEE 362: High-Speed Aerodynamics (L)	4	C
	AEE 325: Aerospace Structures and Materials	4	C
	Track Focus Area Course	3	C
	Humanities, Arts and Design (HU) AND Historical Awareness (H)	3	

- Both AEE 362 and AEE 360 must be taken to secure Literacy and Critical Inquiry (L) General Studies credit.
- Research and prepare for [graduate school](#).
- Apply for an [engineering 4+1 program](#).
- Develop a [professional profile online](#).

Term 7 93 - 108 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ AEE 478: Fundamentals of Autonomous Aircraft Systems	3	C	<ul style="list-style-type: none"> <li>Plan for success using the <a href="#">Senior Guide</a>.</li> <li>Apply for <a href="#">full-time positions</a>.</li> <li>Complete an in-person or <a href="#">practice interview</a>.</li> </ul>
AEE 463: Aircraft Propulsion	3	C	
MAE 400: Engineering Profession (L)	3	C	
Upper Division Track Focus Elective Course	3	C	
Social-Behavioral Sciences (SB)	3		
Term hours subtotal:	15		

Term 8 108 - 120 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ AEE 479: Design of Autonomous Aircraft Systems	3	C	
AEE 462: Space Vehicle Dynamics and Control	3	C	
Upper Division Track Focus Elective Course	3	C	
POS 325: Public Policy Development (SB) OR POS 300: Contemporary Global Controversies (SB & G) OR POS 370: Law and Society (SB) OR PHI 306: Applied Ethics (HU)	3		
Term hours subtotal:	12		

- Upper Division Track Focus courses are listed below. Students must select (3) courses from the same track.

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

Guidance, Navigation, and Controls track	Communications track
EEE 480: Feedback Systems	EEE 203: Signals and Systems I
EEE 481: Computer-Controlled Systems	EEE 304: Signals and Systems II
MAE 417: System Dynamics and Control II	EEE 350: Random Signal Analysis
MAE 494: Guidance and Navigation of Aerospace Vehicles	EEE 455: Communication Systems
MAE 484: Internship	EEE 459: Communication Networks
MAE 499: Individualized Instruction	MAE 484: Internship
MAE 492: Honors Directed Study	MAE 499: Individualized Instruction
MAE 493: Honors Thesis (L)	MAE 492: Honors Directed Study
*Students may be allowed by instructor consent to take these courses without having the pre-requisites fulfilled. Courses not listed here require a	MAE 493: Honors Thesis (L)
	*Students may be allowed by instructor consent to take these courses without having the pre-requisites fulfilled. Courses not listed here require a department petition form. MAE

department petition form. MAE  
484/492/493/499 can only use max of 3  
credits towards TE requirements.

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**Total Hours:** 120  
**Upper Division Hours:** 45 minimum  
**Major GPA:** 2.00 minimum  
**Cumulative GPA:** 2.00 minimum  
**Total hrs at ASU:** 30 minimum  
**Hrs Resident Credit for  
Academic Recognition:** 56 minimum  
**Total Community College Hrs:** 64 maximum

### General University Requirements Legend

General Studies Core Requirements:

- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Arts and Design (HU)
- Social-Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed next to courses on the major map were valid for the 2017 - 2018 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.